

State of Delaware
Executive Department
Ruth Ann Minner, Governor

TASK FORCE
ON RESPONSIBLE MANAGEMENT
OF FACILITIES HANDLING HAZARDOUS
PRODUCTS

(THE METACHEM TASK FORCE)

Created by Executive Order Number Thirty-Nine,
February 28, 2003

REPORT
May 30, 2003

Cover photo of Metachem facility and cover design by Brian Jefferis



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DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL
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May 30, 2003

The Honorable Ruth Ann Minner
Governor, State of Delaware
Tatnall Building, 2nd Floor
William Penn Street
Dover, Delaware 19901
SLC: D600A

Dear Governor Minner:

I am pleased to forward to you the Report of the Task Force on Responsible Management of Facilities Handling Hazardous Products (The Metachem Task Force). The Task Force was announced by you in your State of the State Address on January 23, 2003, and its creation was confirmed by Executive Order Number Thirty-Nine, dated February 23, 2003. On behalf of the Task Force members and the task force staff, I thank you for the opportunity to serve the State in this special capacity.

On a personal note, I thank you for the privilege of serving with this highly talented task force and for the privilege of association with the Secretary of the Department of Natural Resources and Environmental Control, the staff to the Task Force and the employees of DNREC. I hope the report will be of assistance to Your Excellency.

Sincerely,

William T. Quillen

William T. Quillen
Chairman
Task Force on Responsible Management of Facilities Handling Hazardous Products

Delaware's Good Nature depends on you!

TABLE OF CONTENTS

I. INTRODUCTION

- List of Task Force Members
- Task Force Mission Statement – Objectives and Scope
- Methodology
- Report Format

II. EXECUTIVE SUMMARY AND GENERAL OVERVIEW

III. BACKGROUND AND HISTORY

A. HISTORY IN BRIEF

B. FACILITY OPERATIONS AND PRODUCTS

1. Methods of Production and Problems with Production
2. Toxicity of Chemicals at the Facility
3. Spills at the Standard Chlorine Facility
 - a. 1981 Spill and Associated Problems
 - b. 1986 Spill and Associated Problems

C. THE FORMATION OF METACHEM AND ITS SUBSEQUENT BANKRUPTCY

1. The Charter Oak Acquisition
2. Reasons for Metachem's Bankruptcy and Site Abandonment

D. REGULATORY FRAMEWORK APPLICABLE TO THE FACILITY

1. RCRA Subtitle C Program
2. Tetrachlorobenzene: Product or Waste?
3. Recycler Air Permit Out of Compliance

E. HISTORY OF ENFORCEMENT ACTIONS AGAINST THE FACILITY

1. DNREC/EPA Notices of Violation
2. The DNREC Complaint, October 2000
3. Stipulation of Final Judgment (SOFJ)

F. HEALTH CONCERNS ASSOCIATED WITH THE FACILITY

1. The Scope of Task Force Review
2. Health Review by the Agency for Toxic Substances and Disease Registry

G. CURRENT STATUS OF THE METACHEM FACILITY

IV. PUBLIC COMMENT TO THE TASK FORCE

V. FINDINGS

VI. RECOMMENDATIONS

- A. Legislative Recommendations
- B. Administrative Recommendations

VII. APPENDICES

- A. Toxicological Assessment
- B. DNREC/EPA Notices of Violation
- C. Verified Complaint, Nicholas DiPasquale v. Metachem Products, L.L.C.
- D. Stipulation of Final Judgment, Nicholas DiPasquale v. Metachem Products, L.L.C.
- E. Environmental Compliance Audit Report, ENSR International, Section 2
- F. Public Testimony
- G. Summary of DNREC Activities Since May 2002 Closure as of April 10, 2003
- H. Executive Order No. 39
- I. Letter from U.S. EPA Office of Solid Waste to Standard Chlorine, regarding waste classification, dated April 21, 1988

I.INTRODUCTION

The Task Force

The Honorable William T. Quillen, Chairman

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TASK FORCE MISSION AND PURPOSE

Governor Ruth Ann Minner announced the formation of the Task Force on Responsible Management of Facilities Handling Hazardous Products (The Metachem Task Force) in her “State of the State” speech on January 23, 2003. The Task Force was formally established by Executive Order No. 39 and started work on January 31, 2003. The decision to form the Task Force grew out of concerns that the abrupt cessation of the Metachem chlorobenzene facility would impose significant financial and environmental burdens on the State and federal governments. The Governor directed the Task Force to examine the Metachem bankruptcy and closure and propose processes and policies to mitigate or avoid similar liabilities in the future.

The Governor named retired Delaware State Judge William T. Quillen to chair the Task Force and appointed nine Task Force members from the public with expertise in the areas of public policy and environmental regulation. The Task Force was given a short time frame to work within and submitted its report to the Governor in less than four months after its first meeting.

Based on the Governor’s stated objectives, the Task Force approved the following mission statement:

Mission Statement

Determine what environmental, operational, regulatory, business and financial factors played a determining role in the Metachem situation;

Identify and recommend the corrective actions necessary to prevent this situation from happening again; and

Establish a process for identifying other Delaware industrial facilities which if closed or abandoned according to state and federal bankruptcy laws or otherwise, could impose upon the State (and/or the federal government) the costs of environmental clean-up.

Scope of Work does not include:

Review of other facilities

Assessment of blame, liability, or civil or criminal responsibility vis-à-vis any individual or non-governmental entity

Review of existing remediation at Metachem.

The Task Force met 11 times in public meetings and held one session to receive recommendations and comments from the public on March 28, 2003.

The Task Force was not charged with a duty to investigate or examine federal bankruptcy, legal liability or public health or environmental issues at the facility. An investigation of such a wide array of complex issues was beyond not only the mission of

the Task Force, but its expertise as constituted. These issues are currently being handled⁷ by appropriate State and federal agencies and the courts.

METHODOLOGY

The report and recommendations submitted to Governor Minner are the product of an analysis of the Metachem situation by staff and Task Force members. DNREC and EPA records and legal documents, bankruptcy and financial records, newspaper reports and company fact sheets were reviewed and interviews were conducted with individuals at all levels of involvement in the issue. The Task Force interviewed key individuals involved with the issue in public sessions. For background purposes, Task Force staff conducted separate interviews with individuals employed by Metachem as well as DNREC and EPA enforcement officials, legal and financial experts, environmental policy officials in other states and the federal government and members of the public.

Material collected for review and analysis by the Task Force can be viewed at the Metachem web site:

<http://www.dnrec.state.de.us/DNREC2000/Divisions/AWM/do/metachemtaskforce.asp>

REPORT FORMAT

The report begins with an “Executive Summary and General Overview.” This takes the background material that was collected and reviewed and puts it in the context of what happened and why, and what can be learned from the Metachem case study. Next is the “Background and History” section that outlines the environmental, operational, regulatory, business and financial factors that played a determining role in the Metachem situation. Also mentioned in this section are health concerns that have been raised by the public which are being addressed by appropriate government agencies. The section ends with a status report on current conditions at Metachem. “Background and History” is followed by a summary of public comment received by the Task Force. Complete texts of submitted statements are included in the Appendix. Next are the report’s “Findings.” These are key findings that lead to the recommendations. The “Recommendations” section is the final section and is divided into legislative, administrative and financial recommendations. These are the corrective actions, processes and procedures that the Task Force believes can help prepare and protect the State from another Metachem. Completing the report are the “Appendices,” important information that will assist the reader in understanding various aspects of the issue.

EXECUTIVE SUMMARY AND GENERAL OVERVIEW

A FACILITY ABANDONED BY BANKRUPTCY

In May 2002, Metachem declared bankruptcy and abandoned its polychlorobenzene chemical plant site with 40 million pounds of toxic product and waste to the State and federal governments. Sudden plant closures and the liabilities they leave are not unique to Delaware. Plants have been abandoned across the country and federal and state governments have stepped in to clean up environmental problems to protect public health and the state's natural resources. For more than twenty years, the federal Superfund program has shouldered the burden of the most dangerous contamination, with significant state contributions and programs aimed at less hazardous local sites.

What is different about the shutdown of this facility is that it comes at a time when the State budget is stretched thin and the national Superfund program is cleaning up fewer sites. Superfund expenditures now come out of general appropriations that are less certain than the former fee-based trust fund. Getting sites listed for Superfund cleanup also has become more difficult. In the current round of sites added to the National Priorities List, out of 30 submissions by the states, only 16 were picked.¹ In addition, because of difficult economic conditions, several facilities in Delaware could face closure with varying degrees of uncertainty about their clean-up status.

A POOR ENVIRONMENTAL TRACK RECORD AND UNFAVORABLE ECONOMIC CONDITIONS

The controversy surrounding this situation is more rooted in the actions of Metachem's predecessor, Standard Chlorine, than in Metachem's brief history. Standard Chlorine of Delaware, Inc. started business in the mid-1960s and was bought by a group of investors in 1998 when it was on the brink of bankruptcy. The facility had a history of environmental problems dating back to the 1970s. In the years before its transfer to new owners the facility had been poorly maintained with a record of environmental violations that revealed a pattern of neglect and decline. Metachem inherited these problems and the costs to correct them. However, it was not the facility's environmental problems that led to its closure, it was the convergence of a variety of unfavorable economic conditions.

Charter Oak Corporation, a Connecticut-based venture capital group, formed Metachem in late 1998. Investors believed that they had acquired an aging but serviceable facility with predictable environmental liabilities and a prime position in the volatile chlorobenzene market. In addition, they believed, according to former employees, that vast quantities of tetrachlorobenzene stored on-site provided a discounted feedstock for the plant's unique distillation process that could turn into profits what otherwise would have become waste.

According to former Metachem principals, the investors' strategic business plan was to buy, merge with, or be bought by one of their competitors, thereby shrinking the number of global competitors to three. Such a joinder would constrict available

¹ "Sites are Denied Federal Cleanup Funding," *The Philadelphia Inquirer*, April 25, 2003.

production and allow prices to rise with profits to follow. The investors' plan did not foresee: 9

- Shrinking demand and overcapacity for chlorobenzenes;
- Bankruptcy of a major customer;
- Escalating raw material prices;
- Rising dollar values, limiting their competitive position globally; and
- Competitors unwilling to form a strategic business alliance.

Although regulatory requirements and environmental liabilities contributed to the difficulties that Metachem experienced, it does not appear that such factors played a decisive role in the downfall of the company. In the words of CEO Frank Romanelli: "Environmental issues did not sink the company. Economic issues sank the company."

The financial losses were borne largely by Metachem's investors, who had pumped more than \$40 million into the project over three years. Bankruptcy records indicate more than \$60 million in total substantiated debt. And while investors and creditors suffered significant financial losses, the bankruptcy filing shifted environmental costs to the State and federal governments.

ISSUES OF COST AND RESPONSIBILITY

Since the facility already had a Superfund-supervised cleanup underway, the whole site became eligible for cleanup costs to be paid by Superfund when it was turned over to the EPA in bankruptcy. As matters currently stand, the federal Superfund program, not the State, will likely bear most of the costs of remedial cleanup. These costs are currently estimated to exceed \$75 million with the State share ranging from 10 to 15 percent of the total; however, it should be noted that early cost projections for site cleanups are notoriously inaccurate. Moreover, with the uncertain funding faced by the national Superfund program, it is unclear that continuing remediation funds will be available.

Largely because of the Superfund financial assistance, as a case study for how Delaware might deal with abandoned facility liabilities in the future, Metachem is instructive but atypical. In future cases, the State might not have the financial protection provided by Superfund because the sites would not necessarily qualify. There are also other determining factors that make Metachem different from what might occur at other facilities. For example, it is unlikely that other sites would have the volume of hazardous chemicals requiring removal or disposal that Metachem has. Other facilities in Delaware may have significant volumes of hazardous chemicals onsite, but it would more typically be usable product or feedstock in tanks. In addition, Metachem and its predecessor employed environmental managers who had formerly worked as senior managers at DNREC. This close relationship between the regulated and regulators appears to have adversely influenced the company's approach to compliance and softened DNREC's approach to rigorous enforcement. Finally, when Metachem was formed three-and-a-half years ago it was set up to limit investor's total liability. Therefore, Metachem has no affiliated or parent corporate entity to which liability can be transferred. When Metachem went under, there was no financially viable business entity to tap for cleanup.

This situation is not the norm in Delaware. Approximately 39 chemical facilities currently operate in the State. All but six have parent companies that appear to be able to

provide additional resources and the corporate commitment to fund an orderly cleanup. 10 There is a possibility the State would be faced with cleanup obligations if one of the independent companies were abandoned, but none appear to have the quantities of hazardous materials or contamination on site that Metachem has. None of the facilities other than Metachem has reported significant contamination. If considerable contamination were discovered at one of these sites, it might qualify for remediation under Superfund, but this is not assured. As with any site of this nature, the level of State and federal cost can only be determined after an event occurs and a site is fully assessed.

COMPOUNDING VIOLATIONS AND DELAYED COMPLIANCE

In general, if a beleaguered facility with a long record of environmental problems were taken over by new management with financial resources to turn the facility around and come into compliance, it would be viewed as beneficial to the State's economy. That was the stated intention of Metachem's investors and top management. However, because of the poor record of compliance under Standard Chlorine and the retention of its former environmental managers, DNREC officials were suspicious of the likelihood of an environmental turnaround. The new management's alleged lack of awareness about Standard Chlorine's record of noncompliance resulted in misread signals and poor communications between the company and DNREC. This relationship was only resolved when the environmental managers who had been retained were removed. By that time, significant violations had accumulated, particularly with regard to an unresolved air permit for a key part of the distillation process, and the State belatedly took legal action that resulted in major fines and stipulated penalties. While the legal action taken against Metachem was substantial, the air permit issue preceded Metachem's purchase of Standard Chlorine. It took DNREC three years to confirm that Standard Chlorine/Metachem was significantly exceeding air pollution limits – a major enforcement failing. Metachem principals have stated that they were not fully informed about the true status of the air permit or the extent of environmental problems and operating conditions at the plant when they acquired the facility. Standard Chlorine's former owners dispute this.

Standard Chlorine, almost from the time it began operations, had environmental problems. In 1981, and later in 1986, two significant toxic chemical spills occurred. The first stemmed from a rail car loading accident and the second more serious event occurred when more than 550,000 gallons of toxic chemicals spilled from a tank collapse. Environmental assessments that occurred after the 1986 spill revealed facility leaks into the groundwater dating back to the mid-1970s. At the time of these assessments, if there had been a process in place, such as an "early warning system" or a compliance audit to flag the company as an environmental risk requiring increased oversight, the problems might have been addressed by State regulators more consistently and sooner.

DNREC, for its part, was fully aware of the increasing number of violations and claims of financial distress made by both Standard Chlorine and Metachem, but failed to bring the company into compliance in a timely manner. In fact, according to government officials who worked on the issue, discussions were held about revoking the plant's permits because of continuing violations. Ultimately, the decision to enter into a consent decree with a plan for reaching and maintaining compliance was seen as a more constructive way to deal with the issue. Asked why DNREC was not more aggressive in pursuing enforcement against the company, Ali Mirzakililli, current Administrator of DNREC's Air Quality Management Section, in an extremely frank assessment told the Task Force, "We ... were responding to other situations and putting Metachem on the

back burner. We relied on company representations too much, and showed too much 11
patience by granting extensions. We considered the economic aspects a bit too much
What do we have to do? – Balance workload, environment requirements, bring
companies into compliance, ensure compliance and be in full enforcement mode. What
should we do differently? – Don't rely on setting standards and hope that companies
comply. Continue to enhance technical review and oversight, verify and scrutinize
engineering claims.”

Government officials facing a choice between rigorously enforcing environmental
and worker safety laws or showing “too much patience” must decide when to stop
recidivist violators from operating, even if it means revoking permits and ordering a shut
down. Add to that consideration general policy questions about the kind of industry and
environmental impacts that are acceptable to a community and the issue becomes what
level of effort is warranted to keep undesirable facilities from failing. DNREC's mission²
does not require the Department to keep failing businesses afloat. Its mission is “... to
ensure the wise management, conservation, and enhancement of the state's natural
resources, protect public health and the environment” Other State agencies are
appropriately focused on important economic issues, including jobs and revenues, and
have the responsibility to make policy choices in those areas. Thirty years ago, when
confronted with a similar policy question about the kind of environment it wanted for its
future, Delaware settled the issue by enacting the Coastal Zone Act prohibiting certain
industries from environmentally sensitive areas. Constant evaluation of the chemical
industry, a manageable universe, should be given high priority today.

LESSONS TO BE LEARNED

The Metachem situation and the environmental liabilities it has imposed on
government and its citizens bring together two important issues. One is the role of
government as representative of the public interest and protector of public health and the
natural environment. The other is the role of industry as the generator of goods and
services that creates employment opportunities, wealth and economic vitality. Often
these two roles are seen in conflict, but they should not be. Government has a
responsibility to ensure that companies meet standards that protect public health and the
state's natural resources. But companies, in their capacity as good corporate citizens
have a responsibility to ensure the health and safety of their workers and the communities
in which they operate. The roles should not be in opposition, but should work together to
serve the public. A well-run plant that meets its obligations to protect workers and the
environment serves not only corporate investors, but the broader community as well.

The lessons learned from the Metachem failure should not be that Delaware and
the chemical industry are incompatible. Indeed, the history of this State proves
otherwise, for it has long been host to some highly responsible corporate citizens,
corporations which serve as a model for responsible behavior for this State and at large.
The central lessons learned from Metachem should be the need to ensure that all
industrial facilities in the State measure up to that high level of corporate responsibility.
Delaware's history of close working relations between industry and government has

² **DNREC's Mission Statement:** The mission of the Department of Natural Resources and
Environmental Control is to ensure the wise management, conservation and enhancement of the
state's natural resources, protect public health and the environment, provide quality outdoor
recreation, improve the quality of life, and educate the public on historic, cultural, and natural
resource use, requirements and issues.

certain disadvantages and risks. Certain of those disadvantages became manifest during the slow decline and ultimate failure of Metachem. However, this history of close working relationships also has the potential for making the State a national leader in establishing successful relationships between regulators and industry to the overall benefit of all Delawareans. DNREC must deliberately work to bring all of its industrial facilities to the standard of excellence in environmental management already met by its most responsible corporate citizens. Certain industries may be unwilling to go down this path of systematic corporate responsibility and environmental excellence, and may be unable to meet the environmental standards established in the laws and regulations of this State. But those who own such facilities should understand that DNREC has a legal obligation to respond with timely, strict and consistent enforcement. The path taken by Metachem and Standard Chlorine, the path of consistently poor environmental performance, should no longer be tolerated in this State. Specific recommendations appear in Part VI of this report.

III.

BACKGROUND AND HISTORY³

A. HISTORY IN BRIEF

Metachem, and its predecessor, Standard Chlorine (SC), was an organic chemical manufacturer that produced a variety of polychlorobenzenes for more than 35 years. The facility operated as Standard Chlorine from 1966 to late 1998 when it was purchased by Connecticut-based Charter Oak Capital Partners and renamed Metachem.

The 85-acre site is located three miles northeast of Delaware City, New Castle County, Delaware. The active chemical portion of the plant is located on only 46 acres of the property and contains buildings, process vessels and piping, and a wastewater treatment plant.

Throughout its operation, but particularly in the 1990s, Standard Chlorine had a history of chronic non-compliance with numerous environmental laws.⁴ Tank-related spills and soil and groundwater contamination in the 1980s had already caused the site to be listed on the Superfund National Priorities List. Standard Chlorine's legacy of non-compliance was transferred to the new owners who eventually negotiated a Stipulation of Final Judgment (consent decree) with the State in early 2001 providing for compliance and site cleanup. In many ways, the consent decree demonstrated outstanding State-Industry cooperation in seeking a resolution of environmental issues.⁵ But, overwhelmingly adverse market conditions in the polychlorobenzene business caused the company to declare bankruptcy in May 2002.⁶ With inadequate assets to meet business expenses, including the cost of removing accumulated hazardous product and waste, Metachem abruptly closed the plant and the facility was abandoned to DNREC and EPA. In an effort to remove feedstock chemicals that had become hazardous waste, the EPA has resumed limited operation of the plant with state support as a means of stabilizing and reducing the potential for further environmental problems and accompanying costs.

B. FACILITY OPERATIONS AND PRODUCTS

Metachem and its predecessor SC were leading global producers of a class of highly specialized family of chemicals, known as polychlorobenzenes, composed of chlorine and benzene. SC and Metachem's line of chemical products included, but was not limited to:

- Monochlorobenzene (mono)
- Paradichlorobenzene (para or pDCB for the process)
- Orthodichlorobenzene (ortho)
- Metadichlorobenzene (meta)
- Trichlorobenzene (tri)

³ The bulk of the background information in this section was obtained from EPA Docket No. III-96-73-DC.

⁴ See DNREC/EPA Notices of Violation in Appendix.

⁵ Metachem Task Force Meeting Minutes, Testimony of Nicholas DiPasquale, 2/14/2003.

⁶ Metachem Task Force Meeting Minutes, Testimony of Frank Romanelli, 2/21/2003.

Polychlorobenzenes were Metachem's only product line and were sold throughout the world. Although these chemicals were finished products for Metachem, they were raw materials for the company's customers. Exports of these products to Europe, Latin America, Japan, Malaysia, Singapore, Hong Kong, Korea and the Philippines accounted for approximately 40% of Metachem's annual sales. Metachem's products were used in the manufacture and production of high-performance plastics, pharmaceuticals, insecticides and pesticides, and for certain disinfectants. Paradichlorobenzene is well known for its use in mothballs and sanitary disinfectants.

1. Method of Production and Problems with Production

According to the due diligence report performed by Environmental Strategies Corporation of Washington, DC, the facility used approximately 4 million pounds of liquid benzene per month, transported to the plant by truck and rail cars and stored in aboveground storage tanks. The facility also used approximately 7 million pounds of chlorine per month delivered either as a gas through a pipeline from the nearby OxyChem chlorine plant, or as a pressurized liquid in rail cars. Other raw materials used at the facility included: iron catalysts, wastewater treatment chemicals, ethylene glycol, refrigerants, lubricants, and oils purchased in drums or smaller containers and stored in the areas where they were used.⁷

The chemical production process conducted onsite consisted of a series of reaction vessels and distillation columns. The reaction of chlorine with benzene or various isomers of chlorinated benzene produced a "reactor mass" consisting of mixed polychlorobenzenes and anhydrous hydrogen chloride (HCl) as a byproduct. The primary benzene reaction produced para, meta and ortho. These three chemicals are all dichlorobenzenes and are produced in the same reaction. In addition, tri and tetra were produced in this reaction but in smaller quantities. Thus, paradichlorobenzene, Metachem's most valuable product, could not be created without also producing other chlorobenzenes for which few buyers existed.⁸

Other processes conducted at the facility included a crystallization process for para and a dehalogenation (a.k.a. recycler/hydrogenator) system. The crystallization process involved the purification and chilling of liquid para on a Sandvik belt system to produce a crystalline or flaked para product which is packaged in paper bags for shipment offsite (a.k.a. the Flaker Process).⁹

The dehalogenation process involved the heating of tetra in the presence of a metal catalyst and hydrogen to strip chlorine and recover tri, di, and meta.¹⁰ Tetra is primarily produced during chlorination of benzene at the Main Plant and chlorination of para and ortho at the Tri Plant. The tetra is contained within the polychlorobenzene byproduct streams of these processes.¹¹ This polychlorobenzene byproduct was then

⁷ Phase 1 Environmental Assessment of Standard Chlorine of DE, Inc. prepared by Environmental Strategies, Inc., November 13, 1998. (herein after referred to as Environmental Strategies Report).

⁸ Environmental Compliance Audit Report, ENSR International, Section 2, 10/2001, Amended 3/2002 (see Appendix E).

⁹ Environmental Strategies Report, 1998.

¹⁰ Ibid.

¹¹ Environmental Compliance Audit Report, ENSR International, Section 2, 10/2001, Amended 3/2002 (see appendix E).

stored for later processing at the recycler unit. Given that Standard Chlorine maintained stockpiles of mixed polychlorobenzenes with high concentrations of tetra on site, the dehalogenation process allowed SC and Metachem to convert a byproduct material that would otherwise require costly disposal as a hazardous waste into a commercially useful product.¹² The recycler, though beset with problems, commenced operation in 1996 and operated periodically until the facility-wide shutdown in May 2002. This process, with the accompanying stockpiles of tetra-laced polychlorobenzenes (regarded by investors as a potential “gold-mine”) was one of the prime reasons Charter Oak purchased the SC assets. 15

As part of the chemical production process, PCBs and dioxins were generated as a byproduct. The PCB/dioxin-containing waste stream became part of the distillation column bottoms, which were sent off-site for incineration.

At the time this report was written, up to 40 million pounds of chemicals remain on the Metachem site.¹³ Since Metachem is no longer an operating company, it presently appears that significant amounts of this material could be considered hazardous waste and will have to be removed or disposed of in an appropriate manner.

2. Toxicity of Chemicals at the Facility¹⁴

The facility used and stored toxic chemicals in quantities requiring reporting under Title III of the Superfund Amendments and Reauthorization Act (SARA), also known as the Emergency Planning and Community Right-to-Know Act (EPCRA). In accordance with these regulations, the facility submitted an annual Tier Two report to DNREC, which distributed copies to State and local authorities and emergency response organizations. The facility stored chlorine and HCl at the facility in excess of their threshold planning quantities and, therefore, was subject to the emergency planning requirements of SARA for extremely hazardous substances.¹⁵

Both the chemical wastes produced by the plant’s distilling processes and the products themselves are toxic. Some of the chemicals used at the plant, primarily chlorine and benzene, are among the top 275 most toxic chemicals according to the 2001 CERCLA Priority List of Hazardous Substances. Many of the chemicals are carcinogenic or are suspected carcinogens and most are systemic toxicants. In general, local exposure to benzene and polychlorobenzenes may result in skin and eye irritation and dermatitis. Concentrated, short-term exposure may lead to central nervous system depression as well as headaches, dizziness, nausea, upper respiratory irritation, liver damage, convulsions, coma and death. Long-term exposure adds a risk of blood changes such as anemia and occupational exposure may result in leukemia. Detailed information on the chemicals used and produced at this facility can be found in Appendix A. Most of the ‘acknowledged’ hazardous chemicals used by the facility were stored in a less than 90-day accumulation area on the east side of the plant or in an aboveground storage tank adjacent to the wastewater treatment area in the warehouse.

3. Spills At The Standard Chlorine Facility

¹² Metachem Factline, Volume 2001, Issue 2.

¹³ Metachem Task Force Meeting Minutes, Testimony of Mike Towle, 2/21/2003.

¹⁴ EPA Docket No. III-96-73-DC and 2001 CERCLA Priority List of Hazardous Substances.

¹⁵ Environmental Strategies Report, 1998.

Note must be taken of two spills in the 1980s that created groundwater and soil 16 contamination problems of a significant nature. Standard Chlorine was the owner-operator at the time of each of the spills.

a. 1981 Spill and Associated Problems¹⁶

On September 16, 1981, approximately 5,000 gallons of mono were released while workers were filling a railroad tank car. A portion of the released chemical ran off into surface ditches toward a tributary to the Red Lion Creek.

In response to the 1981 release of mono, SC took action to contain and recover the surface runoff. SC excavated and disposed of contaminated soils at an offsite permitted commercial facility. Additionally, SC conducted an investigation to determine the extent of contamination to the subsurface and found that the groundwater beneath the site was contaminated with various chlorobenzenes. The primary source for the other compounds was attributed to a drainage catch basin associated with leaks from the process, which was originally discovered and repaired by SC in March of 1976. In an effort to remediate the site, SC installed groundwater treatment and recovery systems in 1982. As described below, another more serious spill occurred which led to both spills being included in a CERCLA-based remediation plan under EPA supervision.

b. 1986 Spill and Associated Problems¹⁷

Storage tank #404 collapsed on January 5, 1986 causing two adjacent tanks to rupture. Approximately 400,000 gallons of para and about 169,000 gallons of tri were released. The released material followed two pathways; one easterly onto asphalt-paved plant property, and one northerly along the railroad tracks that run through the site. The released material spread to the unnamed tributary to Red Lion Creek bordering the SC facility, and continued downstream to the point of confluence with Red Lion Creek. The uppermost aquifer beneath the site is the Columbia aquifer with a depth to groundwater ranging from 30 to 60 feet below the ground surface. This aquifer is unconfined, with groundwater typically flowing to the north-northwest, north, and north-northeast toward the same unnamed tributary to the Red Lion Creek.

SC used booms, dikes and a filter fence to contain the 1986 spill and minimize further discharge. In addition, SC entered into an agreement on March 27, 1986 with Occidental Chemical that allowed SC to use land owned by Occidental for remediation efforts associated with the second release. Subsequently, SC built a sedimentation basin on a portion of Occidental's property (later purchased by SC), to store contaminated sediments collected during the remediation efforts. As of May 30, 1996, those sediments remained in the basin, which is part of the site. SC also excavated and stockpiled contaminated soils and sediments on land owned at the time by Occidental, and Air Products and Chemicals Incorporated. SC purchased this property ten years later and it was added to the existing SC-Metachem site.

In May of 1986, DNREC approved a National Pollutant Discharge Elimination System (NPDES) Permit allowing treatment and disposal of groundwater, and proper disposal of treated effluent. In the summer of 1987, the EPA and DNREC conducted an investigation of the site and it was placed on the Superfund National Priorities List

¹⁶ The bulk of the information in this section was obtained from EPA Docket III-96-73-DC.

¹⁷ Ibid.

(NPL). Standard Chlorine accepted responsibility for site clean up. This liability was 17 subsequently assumed by Metachem with the sale of the facility.

On January 12, 1988, SC entered into an Administrative Consent Order with DNREC whereby SC retained an environmental consultant, Roy F. Weston, to conduct a Remedial Investigation and Feasibility Study over five years. The results of this study indicated that the groundwater was contaminated with chemicals that exceeded the Maximum Contaminant Levels established under the Safe Drinking Water Act.

In September of 1992, the EPA released a report summarizing its findings. The EPA was primarily concerned with the various forms of mono that were found in the soil and sediment along the flow path of the spills northwest of the facility toward Red Lion Creek. The EPA found similar contaminants in the shallow depths of the Columbia Aquifer. The contamination formed a plume that extended northeast from the facility toward Red Lion Creek, but no contamination was found in the deeper Potomac Aquifer, which is a drinking water source for New Castle County. The human health risk and ecological risk assessments conducted by the Agency for Toxic Substances and Disease Registry (ATSDR) determined that the potential human health risk was limited to onsite workers, and plants and animals in the path of the contamination.

On March 9, 1995, the EPA issued a final Record of Decision (ROD) for the site, with which the State of Delaware concurred. The ROD described the Remedial Action that the EPA selected for the site. The selected remedy consisted of two components: an interim action for the groundwater, and a final action for the soils and sediments at the site. The interim action for the groundwater addressed containment of groundwater and attempted to minimize the continued release of contaminants through the use of a subsurface barrier wall, and a pump-and-treat system used to remove contamination from the captured groundwater. The final action for soils and sediments recommended by the EPA in the ROD was biological treatment. If the EPA subsequently determined that biological treatment was not feasible for the site, an alternative and more costly remedy identified as low temperature thermal desorption, would be required.

In late 2001, the EPA ordered Metachem to construct a subsurface wall to contain pollutants that had escaped pollution-control wells for years. The EPA also ruled out bioremediation because testing indicated that it would be ineffective. Metachem disputed this claim but the EPA asserted that biological treatment would prove ineffective and ordered Metachem to proceed with thermal treatment of contaminated soil. This change raised the estimated cost of cleanup to \$17 million far exceeding Metachem's original environmental liability estimate of approximately \$6 million.¹⁸ The EPA also said, as part of the revised cleanup plan, that Metachem might be forced to remove polluted soil from nearby wetlands and decontaminate that area as well.

With Metachem in bankruptcy, EPA has taken over the remedial action. The EPA is currently pursuing design and construction of a low temperature thermal desorption treatment system. Design of the system should be completed in 2004 with construction complete by 2006.

¹⁸

Metachem Task Force Meeting Minutes, Testimony of Frank Romanelli, 2/21/2003.

1. The Charter Oak Acquisition

By the mid-1990s, the SC plant, although profitable many years before, had become an aging facility in financial and structural decline. In addition to the environmental liabilities, SC was carrying a significant amount of debt. With the company on the brink of bankruptcy, the principals of Charter Oak Capital Partners, a Connecticut-based venture capital firm with limited experience in the chemical manufacturing industry, approached SC about a possible sale and negotiations ensued. Charter Oak retained Environmental Strategies Corporation, a Washington DC based consulting firm, to handle preparation of a due diligence report. Shortly thereafter, Charter Oak paid \$5 million for the facility, assumed all existing liabilities and renamed the company Metachem. Five months after the transaction, in May 1999, Frank Romanelli was brought in by Charter Oak and named Chief Executive Officer of Metachem. Mr. Romanelli contends that despite abandoning the plant in the end, the investments made by Metachem to improve the facility and come into compliance left the State and federal government with fewer liabilities than if Standard Chlorine had kept operating until a shutdown.

It is estimated that the principals of Charter Oak invested over \$40 million in Metachem and received no return on their investment.

2. Reasons for Metachem's Bankruptcy and Site Abandonment

Chlorinated benzenes and their constituents are highly toxic chemicals used in a variety of manufacturing processes including high performance plastics, pharmaceuticals, pesticides, herbicides and sanitary disinfectants. The market for para has grown over the past decade with prices for liquid para hovering around \$.25-\$.30 per pound and para flakes fetching upwards of \$.40 per pound. Ortho and meta have faced a shrinking market over a similar time period with their prices declining below the cost of production. This is due, in large part, to a softening demand by industries seeking less toxic alternatives. Moreover, tri has had a limited market whereas tetra had no market over the past decade. Tetra had been used in the past as a raw material in the production of insecticides, herbicides, defoliants and other products. As a result, the few remaining chlorobenzene producers worldwide were faced with substantial overcapacity. In response to this disequilibrium, the market price for certain chlorinated benzenes declined considerably, pressuring producers to reduce their capacity or, as was intended by Metachem's investors, buy out or merge with a competitor.²⁰ Another significant economic factor facing Metachem was the bankruptcy of Cedar Chemical, its only buyer of ortho. Because very few buyers of ortho exist worldwide, securing another ortho contract in a short period of time would have been very difficult. Without a purchaser for ortho, and bearing in mind that all three di's are produced in a single reaction, it became difficult to economically produce para and meta. In order to continue producing para Metachem would have had to store or dispose of the ortho. Clearly, this was economically impractical. Para, Metachem's most profitable product and a chemical that was essential to the survival of Metachem, had become too costly to produce.

¹⁹ The bulk of the information in this section was obtained from Metachem Task Force Meeting Minutes, Testimony of Frank Romanelli, 2/21/2003.

²⁰ Ibid.

In addition to the weakening ortho, meta and tri markets, producers were also faced with global currency fluctuations. During the late 1990s, the U.S. dollar appreciated significantly making domestic exports less competitive in world markets thus further eroding SC and then Metachem's market share.²¹

While the environmental penalties imposed by the consent decree and paid by Metachem obviously exacerbated the company's financial difficulties, the prime cause of the company's failure was business factors beyond the environmental arena. Unfortunately, there was no plan for the abrupt closure that occurred and the resultant environmental remediation costs will be at least \$1 million higher than those that would have occurred with a more orderly shutdown.

D. REGULATORY FRAMEWORK APPLICABLE TO THE FACILITY

Due to the nature and scope of the operations at Metachem, a wide array of environmental laws and regulations applied to the facility. However, two areas in particular are deserving of specific consideration: the regulation of hazardous wastes at the facility and the regulation of air emissions. In both areas, the complexity of the operations at Metachem, the lack of adequate staff resources and enforcement shortcomings within DNREC combined to create difficulties in regulatory oversight.

1. RCRA Subtitle C Program

The Resource Conservation and Recovery Act (RCRA) Subtitle C Program, for hazardous waste management, is a federal law that covers hazardous waste generation, storage, treatment and disposal. The RCRA Subtitle C Program, while addressing hazardous waste, does not regulate hazardous materials or chemical processes. Thus many of the activities conducted at Metachem, and its predecessor Standard Chlorine of Delaware, were outside the scope of the RCRA Subtitle C.

While RCRA Subtitle C is applicable to hazardous waste, regulatory requirements differ depending upon the activities conducted at a given site. For example, while the RCRA Subtitle C Program includes regulations pertaining to the need to obtain a permit for activities defined as hazardous waste storage, treatment or disposal, the majority of sites governed by RCRA Subtitle C are not "permitted facilities," the term used to indicate a permitted hazardous waste site. Rather they are hazardous waste generators who store hazardous waste on-site for periods less than those subject to RCRA Subtitle C permitting requirements.

While permitted hazardous waste facilities are required to establish financial assurance to cover facility closure, that is, provide a financial mechanism for the removal of materials defined by regulation as being hazardous waste, large quantity hazardous waste generators that store generated hazardous waste on-site for periods of less than ninety days are not required by regulation to establish a financial assurance mechanism. Therefore, Metachem, as a large quantity generator of hazardous waste, could store its generated hazardous waste on-site for periods of less than ninety days without obtaining a permit and without demonstrating financial assurance. The tetra-laced polychlorobenzene byproduct was claimed by both Standard Chlorine and Metachem as

²¹

Ibid.

2. Tetrachlorobenzene: Product or Waste?

The conclusion that the tetra-laced polychlorobenzene byproduct was not a “waste” for purposes of the hazardous waste regulations was confirmed by the federal EPA in a letter to Standard Chlorine in 1988. However, that same letter aptly warned Standard Chlorine to pay heed to the rules relating to the speculative accumulation of such material.²² If the material were being accumulated with the speculative hopes that it could be processed and marketed in the future, federal regulations under RCRA relating to speculative accumulation could have applied to the situation.²³ Those regulations, if they applied, would have required regulating the tetrachlorobenzene as a hazardous waste. As such, the long-term accumulation of this material would have been prohibited.

Once the volume of the accumulated material became clear in the mid-1990s, DNREC front-line staff supported taking the position that the tetra material in tanks was a violation of the speculative accumulation regulations. Reportedly, the Office of General Counsel for the U.S. EPA initially opposed taking such a position, because they wanted to encourage the recycling of the excess byproduct material, and DNREC declined to challenge EPA’s position. The fact that this material was not regulated as a hazardous waste throughout the 1990s resulted in a significant subsidy to the operations of Standard Chlorine and then Metachem, as significant management and disposal costs were not incurred.

However, while it is tempting to second-guess U.S. EPA with the benefit of perfect hindsight, the decision to hope for success in the recycling efforts of SC may have been reasonable at the time, as SC was making significant efforts to recycle and thus recover this tetra-laced material. SC designed a recycling process in 1996 that would transform the waste byproduct tetra into tri and di which are saleable products.²⁴ In this recycling process, pure tetra was recovered from the polychlorobenzene byproduct stream through a double-distilling process. In the first distillation step, toxic heavy residues were removed. In the second distillation step, pure tetra was recovered and sent to the recycler.²⁵ The effectiveness of the double-distilling procedure in removing the minute amounts of dioxins and furans was tested, and, according to Metachem, the data were evaluated by DNREC before granting approval of the hydrogenation process.²⁶ In

²² See Letter from Sylvia K. Lowrance, Director, U.S. EPA Office of Solid Waste to Anthony R. Sinibaldi, Senior Vice President, Standard Chlorine, dated April 21, 1988. (Attached hereto as Appendix I.)

²³ See 40 C.F.R. § 261.2, which clarifies that recyclable materials, if accumulated speculatively, will be considered a solid waste (and thus a hazardous waste if other criteria are met). The definition of “speculative accumulation” is found at 40 C.F.R. § 261.1(c)(8), which states in part:

A material is ‘accumulated speculatively’ if it is accumulated before being recycled. A material is not accumulated speculatively, however, if the person accumulating it can show that the material is potentially recyclable and has a feasible means of being recycled; and that--during the calendar year (commencing on January 1)--the amount of material that is recycled, or transferred to a different site for recycling, equals at least 75 percent by weight or volume of the amount of that material accumulated at the beginning of the period.

The same definition of “speculative accumulation” was in effect in 1988 and through the 1990s.

²⁴ Metachem Factline, Volume 2001, Issue 2.

²⁵ Metachem Factline, Volume 2001, Issue 2.

²⁶ EPA Memorandum, “Hotline Complaint on Metachem” 8/22/2000.

There was no commercially viable market for tetrachlorobenzene in and of itself after 1990. Before 1990, tetra was used as an intermediate or raw material in the production of herbicides, insecticides and defoliants. It was also used to manufacture other chemicals such as 2,4,5 trichlorophenol and 2,4,5 trichlorophenoxyacetic acid. When Metachem came into the picture, they apparently viewed the accumulated stockpile of tetra-laced polychlorobenzene as free feedstock, provided they could convert the waste chemical, via the hydrogenation process, to the marketable products di and tri. However, Metachem surely was aware that this potential “free feedstock” carried with it a significant risk. Without the use of the recycling system, Metachem would be required to dispose of roughly 13 million pounds of tetra as hazardous waste, at a cost of 50-65 cents per pound. Only a handful of facilities nationwide could have properly handled the disposal of this chemical. In the face of such risk, it is surprising that Metachem did not conduct more extensive due diligence about the efficacy of the recycling process.

In 2001, with Metachem continuing to allow large quantities of tetra-laced material to build up, DNREC finally took forceful action through the Stipulation of Final Judgment between Metachem and DNREC (discussed in further detail below). Under that decree, the plant was obligated to recycle tetra at the rate of three gallons per minute, which would take seven years.²⁸ This consent decree in effect recognized that a speculative accumulation violation had occurred, and was an attempt to reduce the accumulated stockpile in an orderly and efficient manner. Had Metachem not suffered market setbacks, the decree would have represented an effective effort to remedy what had become a difficult situation. If DNREC instead required immediate off-site disposal of the material as hazardous waste, this course of action would surely have hastened the failure of Metachem and left an even larger environmental legacy.

3. Recycler Air Permit Out of Compliance

Essential to the legally permitted operation of the distillation process was approval of an air permit for the recycler. A temporary permit was granted to SC in 1996 contingent on a stack test being performed within 180 days of the permit issuance. The stack test was not performed until three years later in 1999 after the facility had been bought by Metachem.²⁹ Former Metachem CEO Romanelli asserted in statements before the Task Force that he found out about the invalid permit status only in a chance conversation with a DNREC official in 1999. The due diligence report by Environmental Strategies briefly mentions the permit as being under technical review by DNREC. The failure to comply with the requirements of the recycler air permit ultimately resulted in the 2001 consent decree with \$1,450,000 in penalties.³⁰ In late 1999, Metachem retained an environmental consulting firm to perform a test on the recycler stack. The test indicated a benzene output that was 129 times the permit limit.³¹ In response to the excess emissions, Metachem quickly shut down the recycler and redesigned it without requesting a permit change even though they were required by State law to obtain approval from regulators any time they modified their production process, increased emissions or installed new equipment. Metachem claimed that the excess benzene

²⁷ Metachem Factline, DE. Volume 2001, Issue 2.

²⁸ Metachem Task Force Meeting Minutes, February 21, 2003.

²⁹ See section in this report on DNREC Complaint 2000.

³⁰ See section in this report on Stipulation of Final Judgment.

³¹ NJ 2/3/01.

emissions were caused by unauthorized modifications by SC soon after receiving its 1996 operation permit.³² Shortly after that, Metachem executed the changes to the process including the installation of a new absorber unit. The company resumed operation of the recycler and ran another test to confirm a reduction in pollution levels. According to Metachem officials, the second test revealed a substantial decrease in emissions to less than 1% of the permit limit.³³ In order to address concerns about the generation of PCBs, dioxins and furans at the facility, Metachem tested samples of the finished products and according to their results found no detectable quantity of these compounds.³⁴

22

In May of 2001, shortly after the Stipulation of Final Judgment that dealt with this issue, DNREC ordered Metachem to get a new air permit for the hydrogenation process. The new permit would have been separate from an application process that called for new plant-wide permits required under an EPA rule change granting one elaborate permit for the entire facility.³⁵ Before the new permit could be secured; however, Metachem closed its doors in May 2002. The recycler continued to operate until closure, although it was never as efficient as Metachem expected, due to downtime.

E. HISTORY OF ENFORCEMENT ACTIONS AGAINST THE FACILITY

1. DNREC/EPA Notices of Violation

Controversy and litigation surrounded Metachem and its predecessor until the facility's bankruptcy and closing. Before SC was bought by Metachem, DNREC issued 16 Notices of Violation (NOV) between January 22, 1988 and July 16, 1998. During Metachem's existence, it was issued 9 Notices of Violation (NOV) by DNREC between October 26, 1999 and November 13, 2001.

For a period of time Standard Chlorine was out of compliance with the Toxic Substances Control Act (TSCA) requirements relating to PCBs. This included exceeding the storage time limit for temporary storage of PCB items, improper marking of the PCB storage area, missing annual PCB documents, and manifest discrepancies. The storage area for this waste was constructed of concrete and was equipped with a curb for secondary containment. This area held approximately 100 drums of PCB waste. In late 1998, Metachem corrected the TSCA violations.

Summarized explanations of enforcement actions by DNREC and the EPA against SC and Metachem can be found in the Appendix B of this report.

2. The DNREC Complaint, October 2000

On October 31, 1995, SC received a permit for the construction of a Venturi Scrubber ("Construction Permit") to control the emissions of para (pDCB) from its flaking process. On December 16, 1996, SC received a permit for the operation of the Venturi Scrubber ("Operation Permit"). On February 10, 1999, the Department transferred the Air Pollution Control Permits held by SC to Metachem. Condition 1(c) of

³² NJ 4/6/01 and Metachem Factline, Volume 2001, Issue 2.

³³ Metachem Factline, Volume 2001, Issue 2.

³⁴ Metachem Task Force Meeting Minutes, Testimony of Frank Romanelli, 2/21/2003.

³⁵ NJ 5/13/01.

the Operation Permit stated in part: “Actual Emission Rate shall be determined and a limit shall be established based on the stack test results approved by the Department.”²³ Condition 11 of the Operation Permit stated in part: “Within 180 days from the date of this permit issue (sic), the company shall conduct the stack test required in Condition 1(c), and furnish to the Department with a written report of the results of the test.” No stack tests were conducted in accordance with the Operation Permit until Metachem did a stack test on the para flaker process on March 7, 2000. Therefore, Metachem breached Condition 11 of its Operation Permit from February 10, 1999, through March 6, 2000, by failing to conduct a stack test on its para flaker process. SC breached Condition 11 for the period from December 16, 1996 until February 10, 1999.

Pursuant to the permit, the facility was required to achieve an overall reduction in Volatile Organic compounds (“VOCs”) emissions of at least 81 percent. According to the results of the March 7, 2000 stack testing conducted by Metachem, the average reduction of para VOCs by the Venturi Scrubber was eight percent (8%). Therefore, Metachem violated Regulation Number 24, Section 50, subsection (b) by failing to obtain the required 81 percent removal of VOCs. See Appendix C for more details.

DNREC filed a lawsuit in Superior Court on October 16, 2000, that sought penalties of up to \$23.7 million. According to Metachem, the fines were punitive and the testing lapse was due in large part to uncertainty about proper testing protocols related to the tests that were to be conducted by its predecessor SC within the 180-day timeframe stipulated in the Operating Permit.

3. Stipulation of Final Judgment (SOFJ)

The DNREC complaint was resolved by the SOFJ. DNREC and Metachem engaged in negotiations intended to secure compliance by Metachem with all applicable statutory and regulatory standards and permit conditions governing operations at the facility. Without admission of any fact, violation or liability, Metachem voluntarily assisted the Secretary in identifying conditions of noncompliance at the facility, and committed to a plan for the correction of all such violations, and to the establishment of appropriate systems and processes designed to assure going forward on a best practices basis in compliance with all applicable environmental statutes, regulations and permits. By entering into the SOFJ, the Secretary and Metachem declared their intention to cooperatively and voluntarily resolve and settle all environmental violations or claims of environmental violations known by the Secretary at any time up to and including the date of the Order of Final Judgment. The SOFJ also provided Metachem would, using the third party auditor approved by the Secretary conduct a comprehensive, facility-wide environmental compliance audit at the facility. ENSR International completed the audit in March 2001 but the corrective action plan developed in response to the audit could not be completed due to Metachem’s bankruptcy filing in May 2002.

Metachem also was required by the SOFJ to conduct an environmental management system assessment (“EMSA”), to identify the procedures and programs to develop and implement an environmental management system that would have permitted Metachem to conform with the progressive ISO 14001, on Environmental Management Systems. Attached to the requirement was a schedule for completion of the tasks necessary to achieve conformance with the ISO 14001 Standard within three (3) years. Other requirements included a plant-wide chemical process and safety/prevention program audit, stack tests, data on dioxins and furans testing performed with respect to

the hydrogenation process, and an evaluation of the wastewater treatment blast tank VOC emissions. Metachem also was directed to process or properly dispose of within seven years the massive amounts of tetra-laced polychlorobenzene that had been accumulating at the plant since its operation by SC. The seven-year timeframe was to enable Metachem to process the material in an orderly and economically realistic fashion. 24

The Stipulation of Final Judgment effectively settled the Department's claims, and called for a \$450,000 monetary penalty and a \$1 million reinvestment penalty in which Metachem would offset the \$1 million fine with matching upgrades and repairs to the plant. Although this was an innovative and progressive penalty, Metachem's financial viability was becoming more uncertain by the day. Metachem's CEO told the Task Force that the company believed it could continue to operate without undue financial burden under the consent decree, but that economic factors and the bankruptcy of a major client in the end forced the shutdown. The full SOFJ can be found in Appendix D.

F. HEALTH CONCERNS ASSOCIATED WITH THE FACILITY

1. The Scope of Task Force Review

The Task Force was not charged with a duty to investigate or examine public health issues at the facility. Such an investigation is beyond not only the mission, but also the ability of the Task Force as constituted. Nonetheless, the Task Force notes that health concerns have been raised over the years and should receive a full airing by the appropriate government agencies. Currently, the Agency for Toxic Substances and Disease Registry (ATSDR) is reviewing health issues that have been identified by the public (see below). In 1986, DNREC received odor complaints from a New Castle County citizen, Marilyn Harmer. She later formed the Coalition to Stop Metachem's Polluting. The Coalition alleged that Metachem, and SC before it, was violating the Clean Air Act. For years the Coalition gathered information and wrote to State and federal agencies claiming violations. On April 22, 1999 the Coalition sent a letter to the EPA Office of Inspector General (OIG) contending that EPA had not taken adequate enforcement action against Metachem and also alleged that Metachem was performing an illegal recycling process.

The Divisional Inspector General issued a report to EPA Region III Administrator Bradley M. Campbell on August 22, 2000 reviewing the allegations and complaints spanning the decade. In its conclusion OIG states:

We found no evidence to support the Coalition's allegations that EPA has not addressed its concerns. The Region III Administrator has sent six letters in a two-year period addressing and responding to the Coalition's environmental concerns. As a result of an EPA inspection, the facility was listed on the High Priority Violators list in 1996 and paid penalties of \$349,500. EPA Region III sufficiently addressed the Coalition's complaints and, if anything, exceeded its responsibility. Moreover, DNREC was attentive to the Coalition's complaints, found several violations at Metachem and took adequate enforcement action against the facility. In any event, both State and EPA personnel, as well as the OIG Engineering and Science Staff, concluded that Metachem's violations did not cause odor problems at the complainant's residence.

In testimony before the Task Force on March 28, 2003, Ms. Harmer contended 25 that many of her complaints and allegations had not been adequately answered and provided documentation to the Task Force supporting her claims. The documents are available to the public in Task Force files.

Based on its review of the enforcement history, unrelated to Ms. Harmer's specific complaints, the Task Force found that enforcement actions against the facility were, in fact, inadequate (see "Findings" section).

2. Health Review by the Agency for Toxic Substances and Disease Registry

The Agency for Toxic Substances and Disease Registry (ATSDR), an agency of the U.S. Department of Health and Human Services, is currently undertaking a review of the health issues surrounding the Metachem facility.³⁶ This public health assessment addresses health issues related to public exposure that might have occurred during the former operation of the Metachem facility or that might occur in the future. The assessment evaluates the potential environmental pathways by which the public might be exposed to chemicals from the site, including the exposures about which community members have expressed concerns.

ATSDR is directed by congressional mandate to perform specific functions concerning the effect on public health of hazardous substances in the environment. These functions include public health assessments of waste sites, health consultations concerning specific hazardous substances, health surveillance and registries, response to emergency releases of hazardous substances, applied research in support of public health assessments, information development and dissemination, and education and training concerning hazardous substances.

The ATSDR issued a preliminary report in January, 2003 wherein it concluded, "The site currently poses no apparent public health hazard. No residences are near the site, the plant area is fenced and the Delaware Department of Natural Resources and Environmental Control is providing security for the site so public access or trespassing is not likely." Additional assessments are continuing by ATSDR.

G. CURRENT STATUS OF THE METACHEM FACILITY

In general, the full scope of environmental problems caused by Metachem's rapid shutdown will not become clear until remediation of the site is complete. A number of issues, such as the large volume of waste and product chemicals on site and the condition of the facility, were uncovered in the DNREC mandated ENSR compliance audit and a plan to resolve these issues was being developed before shutdown. The true financial impact of the abandoned facility on the State and federal governments cannot be determined until a more complete assessment is conducted. Any estimate generated at this stage of removal and remediation should be considered preliminary and subject to change. Based on discussions with DNREC and EPA staff and contractors, the following points represent the most obvious and resource intensive environmental issues at the site:³⁷

- Decontamination of the wastewater treatment plant.

³⁶ The full text of the preliminary report can be found at www.atsdr.cdc.gov.

³⁷ As of the date of this report.

- Proper disposal of hazardous and non-hazardous waste.
- Sale or disposal of stored and “in-process” chemicals.
- Removal of equipment.
- Soil and groundwater remediation.

When the inevitability of Metachem’s bankruptcy in May 2002 became apparent, DNREC and EPA raised questions about the potential problems that would arise from a shutdown. Given the esoteric nature of the processes and the limited markets for products created at this facility, EPA and DNREC determined that key individuals must remain on site to ensure not only the proper containment and disposal of on-site chemicals but to also facilitate liquidation of Metachem assets. Under Chapter 11 bankruptcy, the debtor and the creditors are allowed substantial flexibility in working together. Consequently, the U.S. Department of Justice approved retention of key Metachem personnel, including some members of the management team, to assist in the post-bankruptcy closure of the plant.

During the weeks following the bankruptcy announcement, EPA and DNREC assessed the situation at the facility and focused on several priorities that were reviewed with Task Force members during briefings and a site visit. The wastewater treatment system required maintenance by qualified individuals in order to achieve the continuous operation deemed necessary by EPA and DNREC. Effluent generated by the plant, inability to store large quantities of chemicals and overall deterioration of the facility supported this plan.

While the operation of the wastewater treatment system was considered an initial priority, the massive inventory of chemicals located on the facility presented the greatest difficulty. More than 40 million pounds of chemicals, many of which are partially reacted and commercially nonviable, are in the process of being contained by EPA’s on-scene coordinator.³⁸ These intermediate chemicals, of value only to Metachem, remain the site’s largest problem. To date, more than 2 million pounds of benzene, 45,000 pounds of trichlorobenzene and other materials have been sold. Approximately 150,000 pounds of chemicals have been removed for disposal. In addition, OxyChem, from whom Metachem obtained chlorine, has drained the chlorine lines thus playing a major role in risk abatement at the site.

Other major EPA/DNREC concerns include the deterioration and potential instability of plant equipment and the concentration of PCBs and dioxins found in the waste stream. Officials have encountered “multiphase” materials at the plant that are problematic during seasonal temperature extremes and frequently cause vessel failures. Much of the equipment was designed to react the chemicals then move them to another location for storage but since the cessation of commercial operations, large quantities of chemicals remain inside these containers. The EPA coordinator is taking steps to transfer these chemicals off-site or move them to more stable containers. Disposal of PCB laden material is complicated and only two incinerators nationwide have the capacity to deal with these chemicals. EPA officials are addressing public concerns surrounding the PCBs and dioxins detected at the facility.

Many challenges exist with respect to the Metachem site. First, it is difficult and time consuming to determine proper designation for stored and in-process chemicals. Waste materials are governed under different laws than finished, commercial grade

³⁸ These “in-process” chemicals could potentially be sold if they were to be completely processed.

products. Moreover, EPA and DNREC do not have the capability of “running” a plant 27 and related business and, as a result, their ability to operate in the market for these specialized chemicals is severely inhibited.

The clean-up activities to date have been authorized and paid for largely under the CERCLA Emergency Removal provisions with EPA as the lead. The two agencies have spent over \$5 million (DNREC has spent over \$1 million). The State has been voluntarily contributing funds from HSCA to stabilize the site and assist in the removal effort. The EPA has determined that the entire site falls within the National Priorities Site listing established after a hazardous materials spill in 1986. This determination makes the site eligible for remediation under the Superfund program. Typically, states are required to pay 10 percent of remedial clean-up costs under this arrangement, but with the uncertain funding faced by the national Superfund program, it is unclear whether those funds will remain available.

Proceeds from the operation, sale, liquidation or other disposition of the environmental assets (e.g., chemicals, processing equipment) are divided 60/40 between the State and federal governments and Metachem respectively in bankruptcy. In addition, the State and federal governments are allowed Chapter 11 administrative expense claims not to exceed 40% of the net proceeds obtained by the Debtor's estate through the sale or liquidation of the Debtor's remaining assets (e.g., office buildings, real estate, rolling stock). A detailed summary of DNREC's activities at the site since the May 2002 plant closure is included as Appendix G to this Report.

IV.

PUBLIC COMMENT TO THE TASK FORCE

Public Comment Session: The following represents a summary of recommendations presented to the Task Force during the public comment session. Complete, written statements, as submitted, have been included in Appendix F.

Lyman Welch spoke on behalf of the Mid-Atlantic Environmental Law Center in his position as General Counsel to the Center. Mr. Welch's remarks covered five subjects: (1) recommendations for more public disclosure and response to public complaints; (2) his assessment of the proposed Chronic Violator regulations; (3) recommendations for increased DNREC inspections; (4) the need for enhanced environmental enforcement; and (5) two recommended legislative bills.

Mr. Welch recommended that greater public disclosure and response to public complaints is needed to address environmental liabilities. He suggested that DNREC maintain a list on its website of all facilities which have violated environmental laws more than once in the past five years.

Mr. Welch noted that the pending Chronic Violator regulations are vague and likely to be ineffective. He said that they would not have required the Metachem site to be reviewed for listing as a chronic violator. Mr. Welch recommended that DNREC increase inspections of regulated facilities, use unannounced inspections and recommended that DNREC seek to conduct more joint inspections with EPA.

Mr. Welch stressed that prompt and effective enforcement of environmental laws was necessary. He said that firm enforcement would prevent smaller environmental problems from growing into multi-million dollar liabilities for the state. He recommended that enforcement actions seek to recover more than the economic benefit received by the facility for its violations.

In his concluding remarks, Mr. Welch recommended that the Legislature enact two proposed environmental protection bills. The first bill, in summary, "establishes inspection and monitoring programs, prevents polluters from benefiting economically from breaking environmental laws, bars chronic violators from receiving state contracts, assists compliant contractors in good standing to get future state contracts, provides for the public reporting of enforcement operations costs, and further requires that information on permit infractions and penalties be publicly reported." The second recommended bill is a "citizen suit" statute like existing laws in 16 other states that would allow any citizen to sue environmental violators under state law and would award the associated litigation costs should the plaintiff(s) prevail. The model bills were entered into the record.

In response to a question from the Task Force about DNREC's Environmental Navigator system, Mr. Welch recommended that the system needed to be updated on a daily basis to be an effective tool.

Marilyn Harmer testified to her resolute efforts to stop Standard Chlorine/Metachem from polluting. She presented to the Task Force more than 200

photographs of the facility taken over the past seventeen years, a volume of correspondence between her and various officials and a list of circumstantial evidence linking Metachem to a variety of health-related maladies in her community.

29

She recommended that the Department pay careful attention to resident suggestions and complaints, monitor air quality upon request and prevent the sale of Superfund sites before full remediation is completed. In addition, she recommended that the Chamber of Commerce terminate its involvement in permitting, use outside expertise when it is needed and for DNREC to thoroughly investigate the claims of the companies it oversees. Photographs and correspondence were entered into the record.

Jim Bryant presented his educational background, accomplishments, and extensive experience, which have led to his international recognition as a leading authority in this chemistry. Mr. Bryant was employed by Standard Chlorine and represented the chlorobenzene industry through the two U.S. industry trade organizations, the American Chemical Council and the Chlorobenzene Producers Association. Through his experiences, Mr. Bryant said he had learned that the chemistry involved in this facility is among the most dangerous chemistry in the world. While the chlorobenzenes themselves produce some major environmental and health problems, these problems are insignificant when compared with the deadly health problems created by the deviation from the standard process permitted by both EPA and DNREC. The deviation consisted of the use of the hydrogenation process, a process voluntarily abandoned by the industry because of deadly byproducts, to convert tetrachlorobenzene, (a chemical originally used to produce Agent Orange) to useful products like trichlorobenzene. These products were then fed into the main stream for fractional distillation, which is incapable of separating the toxins from the products.

Upon learning that the company was operating this unconventional process, Mr. Bryant along with Mr. Robert Touhey informed the Plant Manager and the Research Director that this activity must cease immediately. Mr. Bryant's job was terminated shortly thereafter.

During this time, Mr. Bryant was experiencing health problems. Standard Chlorine denied him paid sick leave accumulated during his years of employment. A lawsuit followed but was later ceased by a federal gag order forbidding each party from disparaging each other but contained an exemption for disclosure to regulatory organizations. Mr. Bryant disclosed extensive information of a criminal nature, which the Special Agent copied for investigation. He later presented the same information to Senator McBride's state environmental committee. EPA's Criminal Investigation Division investigated the complaints but found no evidence of criminal activity at the facility.

Mr. Bryant recommended that the state support the reauthorization of the Superfund Tax cosponsored by Delaware Senator Biden in the U.S. Congress. In addition, he noted that new laws are not needed; just enforce those already on the books.

Elder Louis McDuffy represented the Hamilton Park Advisory Council to DNREC and has extensive training in the chemical engineering field and taught mathematical physics. He expressed concerns surrounding DNREC's handling of

contaminated ground in the Hamilton Park Area and submitted into the record a list of 30 exhibits documenting the Council's involvement in local environmental issues and a letter to Governor Minner et al regarding proposed legislation. Mr. McDuffy feels that the contamination in his community is serious and warrants immediate attention.

Soil testing, he believes, should be permitted at the request of citizens. In light of the fact that testing for a single metal costs roughly \$30, Mr. McDuffy argues that a new law should be enacted that not only allows citizens to request testing by an independent laboratory, but also permits citizens to raise the money for testing from community members and receive the results directly from the lab. This data would likely identify the polluter and clearly illustrate to the community whether or not an environmental/public health issue exists.

Other Public Submissions: The following represents a summary of recommendations submitted to the task force through methods other than the public comment session.

Albert Telsey, author of the "Delaware Environmental Law Handbook," introduced via mail, suggested changes to the Delaware environmental statutory and regulatory system. His recommendations consisted of three basic proposals, (a) a law providing for an Annual Environmental Compliance Report, (b) a law providing for an Annual Report on toxic substances, and (c) a law providing for citizen enforcement. Mr. Telsey noted in his cover letter that what he suggests "is basically self-reporting and largely self-enforcing with very real incentives to comply and very real penalties for failure to comply. In addition, the overall plan does not impose heavy additional responsibilities on DNREC itself. On the contrary, it will lighten DNREC's load. The overall plan is to provide an easy and fairly economical way to bring this regulated industry into compliance." Mr. Telsey also appeared before the Task Force at the request of the Chairman on March 21, 2003, as is reported in the minutes. His materials have been entered into the record.

V.FINDINGS**FINANCIAL FINDINGS**

1. A confluence of negative economic factors relating to the market for chlorobenzenes was the primary cause of Metachem's failure. It does not appear that environmental regulations or penalties were a major contributing cause.
2. While the particular circumstances of the Metachem facility, with large quantities of liquid in tanks that is not product but not clearly waste, may be somewhat unique and unlikely to be repeated with any frequency, the general problem of bankruptcies or facility closure is by no means unique. Many of the facilities that may close or undergo bankruptcy in the State in the future can be expected to present issues of soil and/or groundwater contamination. And while bankruptcies or closures cannot be prevented, steps can be taken to better prepare and protect the State from these occurrences.
3. Current Delaware law does not impose any obligations upon an entity filing for bankruptcy or closing a facility to mitigate or avoid potential impacts to human health or natural resources when the facility is shutdown. Such obligations may be enforced by the federal courts in the case of a bankruptcy, and could be enforced by the State in event of a facility closure.
4. Improved communication between DNREC and DEDO may have provided the State with an opportunity to provide compliance assistance to the facility prior to a point at which bankruptcy became inevitable.
5. The due diligence team hired by Metachem investors did not contact staff at DNREC to inquire about permit conditions before the purchase of the facility. Direct communication may have identified some of the ongoing problems with the plant.
6. If more information had been available to Metachem's investors about the status of environmental permits and operation efficiencies at the plant, they may not have proceeded with the purchase.
7. The protections afforded by Superfund designation and the State's own programs have minimized to date the financial impacts of the Metachem bankruptcy, closing and clean-up.
8. Companies that are consistently unable to meet the levels of environmental performance established in the laws and regulations of the State should be allowed to fail.

1. Standard Chlorine's years of operations were marked by poor environmental performance. The facility had a history of environmental problems dating back to the 1970s. In the years before its transfer to new owners the facility had been poorly maintained with a record of environmental violations that revealed a pattern of neglect and decline. Metachem's environmental problems appear to have stemmed for the most part from Standard Chlorine's poor record.
2. In 1981 and later in 1986 two significant toxic chemical spills occurred, and environmental assessments undertaken after the 1986 spill revealed facility leaks into the groundwater dating back to the mid-1970s. At the time of the assessments if there had been a process in place, such as an "early warning system" or a compliance audit to flag the company as an environmental risk requiring increased oversight, Standard Chlorine's overall problems might have been addressed by State regulators more consistently and sooner. Rigorous enforcement and continued oversight following the 1986 spill at the facility may have prevented Standard Chlorine's compliance decline throughout the 1990s.
3. Metachem and its predecessor employed environmental managers who had formerly worked as senior managers at DNREC. This close relationship between the regulated and regulators appeared to have adversely influenced the company's approach to compliance and softened DNREC's approach to rigorous enforcement.
4. DNREC, for its part, was fully aware of the increasing number of violations and claims of financial distress made by both SC and Metachem, but failed to bring the company into compliance in a timely manner. In fact, according to government officials who worked on the issue, discussions were held about revoking the plant's permits because of continuing violations.
5. It appears that tetrachlorobenzene-laced byproduct was being accumulated with the speculative hopes that it could be processed and marketed in the future. Federal regulations under RCRA relating to speculative accumulation could have been applied to the situation, which would have required regulating the material as a hazardous waste and the long-term accumulation of this material would have been prohibited.
6. Had a determination been made at an earlier point in time that tanks containing tetrachlorobenzene were subject to regulation as hazardous waste because of the speculative accumulation regulations, the buildup of large volumes of this material may have been avoided or reduced, and the ultimate cost of remediation might have been lessened. In addition, the value of Standard Chlorine to investors would have been diminished. This policy decision was, in effect, a monetary subsidy of considerable value.
7. The air permits at the facility contained permit conditions that were not fulfilled by the plant in a timely manner. It took DNREC three years to confirm that Standard Chlorine/Metachem was significantly exceeding air pollution limits. DNREC failed to adequately enforce the conditions of this permit and lacked a follow-up system to identify and act upon these failures by the company.

8. DNREC currently does not systematically evaluate requests for permit transfers 33 or evaluate the status of permit compliance.

VI.

RECOMMENDATIONS

A. LEGISLATIVE RECOMMENDATIONS

1. Recommendation: Enact legislation requiring private parties to evaluate and address contamination at the time of property transfers.

The Task Force recommends that the State consider enacting legislation designed to improve the process of transferring industrial and commercial property. Private parties usually invest resources prior to any transfer of industrial or commercial property in a process of “due diligence,” aimed at evaluating whether the parcel contains hazardous materials which may present risks to human health or the environment. The Task Force believes that legislation may serve to improve the process of due diligence for property transfers. An improved due diligence process can aid the State in identifying and addressing contamination issues before problems grow to a size which might ultimately result in significant costs to the State. There are several elements that the Task Force recommends be incorporated into any statute addressing property transfers:

1. The Task Force recommends that sellers of industrial or commercial properties be required to inform potential purchasers of any information available to the seller relating to the existence of hazardous materials prior to the time of closing on the transaction. According to the Environmental Law Institute, thirty states require that the owners of property containing hazardous materials disclose the existence of such substances to purchasers of the property.³⁹ Delaware law does contain such a provision, but the obligation is limited to properties known to DNREC to contain hazardous substances.⁴⁰ Several other states, however, have broader disclosure provisions, requiring disclosure to a potential purchaser where the seller, as opposed to the government, has knowledge of the contamination.⁴¹ Increased disclosure obligations, including disclosure of contamination, will serve to improve the process of due diligence by increasing the ability of potential purchasers to make informed decisions about transactions. Increased disclosure will, at least to some degree, ensure that parties do not purchase contaminated

³⁹ Environmental Law Institute, “An Analysis of State Superfund Programs, 50-State Study, 2001 Update,” published in November 2002 [hereinafter referred to as the “ELI 50-State Study”], at 35.

⁴⁰ Section 9115 of the Hazardous Substance Cleanup Act, or HSCA, requires that:

when a release of a hazardous substance that has been determined by the Secretary to be a threat to public health or the environment has occurred at a facility or property on which the facility is located, the owner of the property shall place a notice in the records of real property kept by the Recorder of Deeds of the county in which the property is located.

Del. Code Ann. tit. 7, § 9115.

⁴¹ In California, for example, where the owner of a non-residential parcel knows, or has reason to believe, that a hazardous substance is on the property, a written notice to potential purchasers is required. *See* Cal. Health & Safety Code § 25359.7(a). Many other states have similar broad disclosure requirements. ELI 50-State Study at 35-36.

parcels if they lack the resources to address the situation. And certain members of the 35 Task Force also believe disclosure should include unmet permit conditions.

2. The Task Force recommends that parties be required to notify the State at the time of the closing of any contamination identified in connection with the transaction. Connecticut law contains such a requirement, and the statute is credited with assisting in the identification of a great number of contaminated sites. At the time the program was initially implemented, Connecticut believed that it had about 500 contaminated properties. After the program had been up and running for several years, that number had risen to 1,500.⁴² DNREC has identified over 532 sites in Delaware as potential hazardous substance release sites of which 439 have a higher priority because they either are in the State's Voluntary Cleanup Program (VCP) or they pose a risk to public health.⁴³

3. The Task Force recommends that either the seller or purchaser of industrial or commercial parcels be required to undertake a commitment to ensure remediation be conducted by some party in the future at the time of transfer. Both New Jersey and Connecticut require such commitments. The Task Force does not recommend that DNREC require an assessment of the likely costs of remediation at the time of transfer, as is the case in New Jersey.⁴⁴ The New Jersey program requires State approval before a transaction can proceed. The Task Force is concerned that this level of regulatory involvement in property transactions would require too many of DNREC's already limited resources, and would also risk negatively affecting property transactions in the State. Instead, the Task Force recommends a system with more limited involvement by DNREC, as is the case in Connecticut.⁴⁵ Under the statute, certain defined "establishments," including businesses generating 100 or more kilograms of hazardous waste in one month,⁴⁶ must, upon any transfer of ownership, submit certain forms to the Connecticut Department of Environmental Protection (CDEP). Through the forms, the owner is required to certify that no release has occurred at the facility, or that if a historical release has occurred, it has been remediated. If there has been a release at the facility and it is not yet remediated, either the owner or the new purchaser must submit documentation to the CDEP describing a remediation plan and identifying a party responsible for implementation of that plan.⁴⁷ There is no requirement for state approval of a remediation plan prior to the closure of a transaction, although once a remediation is proceeding, (typically after the transaction is completed) CDEP retains its ability to approve the remediation plan. The Task Force recommends that in any new statutory scheme, DNREC likewise retains its ability to approve of proposed remediation plans.

4. The Task Force recommends that the universe of properties affected by the transfer legislation be clearly identified. In both New Jersey and in Connecticut, imprecise descriptions of the universe of properties affected by the legislation have caused problems. This can be avoided by clearly delineating the types of facilities affected. Those facilities having significant quantities of hazardous materials onsite should be within the program. Particular categories of facilities which utilize smaller

⁴² See Collaton and Bartsch, "Industrial Site Reuse and Urban Redevelopment – An Overview," 2 Cityscape 17, 30 (1996).

⁴³ See "Hazardous Substance Cleanup Fund, Notes to the Financial Statement," June 30, 2002 at 10.

⁴⁴ This requirement is an element of the Industrial Site Recovery Act, N.J. Stat. Ann. § 13:1K-6 *et seq.*

⁴⁵ See Conn. Gen. Stat. §§ 22a-134 *et seq.*

⁴⁶ Conn. Gen. Stat. § 22a-134(3). Covered facilities also include any facility generating any amount of waste in more than one location, or any dry cleaner, furniture stripper, or vehicle body repair facility. *Id.*

⁴⁷ Conn. Gen. Stat. § 22a-134a.

quantities, but present high risks of contamination, may also be identified. In Connecticut, the universe of affected properties is specifically defined to include dry cleaners, furniture strippers, and vehicle body repair facilities, in addition to any other type of facility generating more than 100 kilograms of hazardous waste in a month.⁴⁸ 36

5. The Task Force recommends that the property transfer legislation contain provisions specifically applicable to the closure and to the bankruptcy of a company. The Connecticut statute has a separate provision applicable to closure. It requires notification of the closure, followed by removal of certain non-released regulated substances, such as hazardous waste or excess product in tanks or pipelines. The statute also requires identification of any contaminated soil. CDEP must inspect the site after closure.⁴⁹ In New Jersey, the bankruptcy of a facility triggers the property evaluation and remediation process.⁵⁰ Both of these measures would reduce the risk of environmental liabilities falling upon the State if they were included in a property transfer statute.

6. After a property transfer statute is enacted, the Task Force recommends DNREC at that time evaluate whether it is able to oversee effectively the additional remediation activity generated because of the statute. It may be that DNREC will have to evaluate alternative methods for oversight of the more routine incidences of contamination. The property transfer program in Connecticut resulted in the identification of a great number of additional sites, and at first it was difficult for the State to oversee all of the additional remediation activity. This issue was addressed in Connecticut through the development of a system of licensed environmental professionals, who are licensed by the State but retained by private parties. The licensed environmental professionals oversee the process of remediation, and if they fail to require compliance with CDEP remediation guidelines, they risk losing their license.

An important safeguard is built into the Connecticut program. If the State receives notification of a site at the time of transfer, and the State believes that the site may pose a significant risk to human health or the environment, the remediation of the site is conducted with the oversight of CDEP internal staff. However, because remedial activity for many of the smaller, less hazardous sites is proceeding under the oversight of licensed environmental professionals with only minimal government involvement, the statute does not absorb nearly as many governmental resources as does the New Jersey program. Connecticut is successfully addressing a great number of sites in this manner. If, once the property transfer statute is enacted, DNREC discovers that it is having to

⁴⁸ Conn. Gen. Stat. § 22a-134(3).

⁴⁹ Conn. Gen. Stat. § 22a-134g. The provision requires that certain facilities involved in the production, use, storage or handling of any regulated substance take the following actions in the event of closure:

Not later than ninety days after such termination, such owner or operator shall (1) submit to the commissioner a list of all regulated substances located at the facility and all stationary storage vessels, (2) drain, remove, or otherwise dispose of all regulated substances in accordance with any applicable law, (3) post warning signs around any area of land where the soil is contaminated with a regulated substance, and (4) submit a certification to said commissioner with regard to whether regulated substances have been removed and disposed of in accordance with applicable law.

Conn. Gen. Stat. § 22a-134g(c).

⁵⁰ N.J. Stat. Ann. § 13:1K-8 (defining “closing operations” as including any filing under Chapter 7 of the Bankruptcy Code, or any filing of a plan under Chapter 11 of the Bankruptcy Code which provides for a liquidation). *See also* § 13:1K-12 (clarifying that the obligations imposed by the statute are continuing regulatory obligations).

7. Finally, the State should ensure that any statute or program addressing property transfer dovetails well with DNREC's ongoing and developing brownfield program. DNREC should ensure that parties seeking to develop brownfields are not hindered in their efforts by the property transfer statute. As but one example, DNREC should ensure that there are no inconsistent overlaps between the two programs.

2. Recommendation: Enact legislation providing DNREC with authority to impose liens upon the property of parties responsible for the incurrence of response costs.

The Task Force recommends that the State enact legislation empowering DNREC to impose liens upon the property of parties responsible for the incurrence, by DNREC, of investigation or remediation costs. According to a comprehensive analysis of state superfund programs conducted in 2001 by the Environmental Law Institute,⁵¹ some thirty-four states have authority to impose such liens.⁵² The federal EPA has this power as well.⁵³ Delaware law, however, does not provide DNREC with lien authority.

The benefits of a lien provision for an environmental enforcement agency can be significant. As a secured creditor, the agency is more likely to recover any expenses it has incurred in the investigation or remediation of a site. In the event of a bankruptcy filing by the property owner, a lien held by an environmental enforcement agency is particularly helpful. Without the secured creditor status afforded by a lien, the agency would likely find itself in the class of general unsecured creditors, with a lower likelihood of recovering its pre-petition expenses.

An additional benefit of an environmental lien is that the agency can act to create and perfect its lien after a petition for bankruptcy, an opportunity not typically afforded to an entity seeking secured creditor status. The automatic stay provision of the Bankruptcy Code⁵⁴ stops a wide variety of creditor collection activities against a debtor once a debtor petitions for bankruptcy. However, if the lien provision is so drafted, an environmental enforcement agency that has expended pre-petition funds on investigation or remediation may be able to file and perfect a post-petition lien notwithstanding the automatic stay.⁵⁵

The Task Force recommends that DNREC be granted the authority to attach a lien to the contaminated parcel on which it expended funds, and also to any other real or personal property in the State owned by the responsible party. It is often the case that the costs of remediation are higher than the value of the parcel on which there was a release. Accordingly, a lien upon just the contaminated parcel may not always provide for a significant recovery.⁵⁶ The Task Force further recommends that the lien provision be carefully crafted to ensure that the due process rights of the property owner are respected,

⁵¹ See ELI 50-State Study.

⁵² ELI 50-State Study at 36.

⁵³ See 42 U.S.C. § 9607(1).

⁵⁴ 11 U.S.C. § 362(a).

⁵⁵ See *In re 229 Main Street Limited Partnership*, 262 F.3d 1, 12-13 (1st Cir. 2001).

⁵⁶ Other states allow regular (non-superpriority) liens against non-contaminated property. The New Jersey Department of Environmental Protection, for example, has authority to attach a lien to "the revenues and all real and personal property of the discharger," N.J. Stat. Ann. § 58:10-23.11f(f).

that a judicial process precede imposition of such liens, and that a procedure be added 38 to extinguish the lien where circumstances warrant.

In addition to standard environmental liens, the Task Force evaluated so-called “superlien” provisions. A “superlien” automatically obtains priority over any prior lien filed upon a parcel, and thereby would increase DNREC’s ability to recover incurred costs. At least nine states have passed so-called “superlien” statutes.⁵⁷ Such a reordering of priority is viewed as justified, for in many cases, the property in question would have little or no security value had not the state incurred its remediation expenses. However, the Task Force is concerned that the additional benefit of a “superlien” would not outweigh the potential negative impact such liens may have upon credit markets and economic development in the State. Additionally, the use of such liens can present significant constitutional concerns. For these reasons, the Task Force does not recommend that DNREC be granted the power to impose a superlien.⁵⁸

Several provisions in the federal Bankruptcy Code operate to ameliorate the risk to DNREC represented by a bankruptcy of an entity responsible for current or historical releases. However, at least in the situation in which DNREC itself incurs investigation and remediation expenses prior to a bankruptcy petition, DNREC’s current ability to recover those costs is dramatically reduced by a bankruptcy filing. The power to impose a lien upon any property of the responsible party would provide DNREC with a useful tool to minimize this risk.

B. ADMINISTRATIVE RECOMMENDATIONS

General Recommendation: Establish a process to anticipate future closures and prioritize greatest environmental risks.

1. Recommendation: Prioritize oversight of companies.

Companies that present risks of deteriorating environmental performance and compliance should receive special focus from DNREC before more serious problems occur. In the past this has not been done systematically. The Task Force recommends DNREC develop an internal process to prioritize its oversight of companies by assessing the degree of potential harm to the workers, the public, and natural resources posed by the company’s operations. This can be determined in part by ranking the degree of toxicity of the chemicals stored on the premises, used in its processes and/or released by the company. The EPCRA (SARA Title III) and Toxic Release Inventories are readily available databases that can be used in this process. Additional information about on-site storage pursuant to the Extremely Hazardous Substance Risk Management Act and the number of recent NOV’s filed also should be used to determine priority focus.

2. Recommendation: Monitor permits on a multi-media basis and conduct an annual compliance assessment.

⁵⁷ ELI 50-State Study at 37.

⁵⁸ See generally, Nash, “Environmental Superliens and the Problem of Mortgage-Backed Securitization,” 59 Wash. & Lee L. Rev. 127 (2002) (discussing the potential negative impacts of environmental superliens upon the ability of creditors to package and securitize residential and commercial mortgages).

Often, when companies are in violation in one environmental medium, they are also in violation in others, yet this information is not shared consistently throughout DNREC. The Task Force found that Metachem and Standard Chlorine had permit violations in various media that were left unresolved for years. Sharing this information and analyzing multi-media enforcement data can assist DNREC in its allocation of resources and help focus on the facilities that pose the most significant environmental risk.

The Task Force recommends that DNREC should establish an internal system for sharing multi-media compliance data in order to identify patterns of violations at facilities that may signal more serious difficulties. As part of this process, an annual compliance assessment should be conducted by DNREC that reviews enforcement actions on a multi-media basis in an effort to identify areas where more compliance assistance and enforcement resources should be directed. The assessment should be available to the public and would supplement the Early Warning System and Toolbox of Assistance outlined below.

Included in the report should be the status of compliance with all significant permit requirements; a description of all notices of violations, and civil or administrative penalties assessed against the company; a description of corrective actions taken in response to enforcement actions; and where possible, an assessment of significant contamination cleanup costs not remediated by the company. The Task Force recommends all permits for all media of companies whose operations present the greatest threat to the health and safety of their employees, the public and natural resources as prioritized above should be strictly monitored on a more frequent basis and reviewed annually by DNREC.

The Environmental Navigator System should be modified and expanded to track this information and make it available to the public on an ongoing basis. As matters currently stand, it is difficult for the public to access information about environmental violations in the State. There is limited information about specific facilities available on the Environmental Navigator, but it is not always up to date and does not typically contain information about penalties assessed. More complete and more updated information would assist both DNREC and the public.

3. Recommendation: Require additional financial information when companies claim financial distress.

There is a lack of uniformity of information required and requested when a company seeks relief from penalties relating to a violation. In order to receive consideration of its financial condition in the assessment of penalties or fines, the Task Force recommends that DNREC use its existing authority to require the company to supply pertinent financial information. This should include at a minimum:

1. A complete list of all current members of the board of directors, all current corporate officers, all persons owning more than 20 percent of the applicant's stock or other resources, all subsidiary companies, parent companies and companies with which the applicant's company shares two (2) or more directors;
2. Most recent audited annual financial statement, quarterly statements, reports to lending institutions regarding compliance with all covenants and conditions, statements

of sources, and uses of funds, dividend payments, interest payments, principal repayments, applications for financing or refinancing and any other evidence of any financial condition asserted by the company. The information should be received by DNREC on a business confidential basis for evaluation by DEDO and DNREC consistent with the requirements of the DNREC Freedom of Information Act. 40

4. Recommendation: Transfer permits subject to conditions.

The Task Force found that DNREC transferred Standard Chlorine's permits to Metachem without investigating whether Standard Chlorine had fulfilled the conditions required at the time of their issuance. If DNREC had investigated, it would have discovered certain permit conditions were unfulfilled which later became enforcement issues for Metachem. While the private due diligence process should have identified this issue at the time of the transfer, the Agency also should have been aware of it and exercised its authority to make the transfer subject the conditions being fulfilled. Accordingly, the Task Force recommends that upon any request for the transfer of any DNREC-issued permit, DNREC itself use the opportunity to conduct an internal review of the history of compliance with all permit conditions. If DNREC determines that permit conditions have not been fulfilled, DNREC should inform the potential transferee of the outstanding issues. The potential transferee should confirm its willingness to fulfill those conditions within the same time-frame as was dictated by the original permit.

General Recommendation: Improve Inter-Agency Communications.

1. Recommendation: Create an early warning system to identify distressed companies.

The Task Force learned that Standard Chlorine and Metachem were sending clear signals that they both were having difficulty complying with environmental regulations long before Metachem declared bankruptcy. DNREC was the primary recipient of these signals, and factored them into its dealing with the company, but there was no formal mechanism to share this information with other state agencies, such as the Delaware Economic Development Office (DEDO). In certain circumstances this information could be used when difficulties first appear to provide assistance to a company before it is forced to close its doors.

The Task Force recommends that DNREC, DEDO and the Department of Labor (DOL) develop an "Early Warning System" to coordinate the flow of information between them regarding companies that are in distress as determined by each agency. Representatives from each agency would be responsible for sharing information that indicates a company may be experiencing difficulties.

For instance, DNREC would use the system to identify any company that claims it cannot pay a penalty or is having difficulty complying with the environmental laws, regulations, its permits or DNREC orders. DEDO and DOL would similarly use the system to share information garnered from within their area of jurisdiction that might signal a company in trouble.

Any identification of companies should be on an informal, ad hoc basis. There should be no formal designation or announcement to the public that a particular company is considered to be in distress. Additionally, each agency should provide the full

2. Recommendation: Establish a Toolbox of Assistance for Distressed Companies.

Once a company is identified through the Early Warning System, various forms of assistance might be offered ranging from technical assistance to financial assistance. Criteria should be developed to identify companies with particular environmental needs or concerns. Officials from DNREC, DEDO and DOL should cooperate in investigating the cause of the problems and identifying the appropriate business, technical, financial and environmental assistance available. The nature of assistance would depend on the specific need and agency expertise. Each agency would use the administrative and regulatory tools it has to provide appropriate support. Where necessary, DNREC should be granted authority and funding to hire technical assistance to facilitate its review of the distressed company.

In order to ensure that industry, the public, and officials in all three agencies are cognizant of the various resources available, DEDO, DNREC and DOL should develop a "Toolbox of Assistance," describing the various financial, technical and business resources which could be utilized as appropriate.

General Recommendation: Work to improve the environmental performance of regulated industries.

1. Recommendation: DNREC should work to increase the use of Environmental Management Systems (EMSs) to improve the environmental performance of regulated industries.

The Task Force recommends that the DNREC expand upon its efforts to encourage the use of Environmental Management Systems (EMSs) by regulated entities. DNREC should strive to become a national leader in the implementation of EMSs as a regulatory tool to improve environmental compliance.

An Executive Order was signed by Governor Minner on May 20, 2003 that proposes voluntary principles to provide guidance to Delaware manufacturing facilities on how to operate in a manner that protects their workers, the environment and the local community. One of the key principles focuses on encouraging integrated management systems designed to continually improve both product quality and environmental protection.

An EMS is an organizational system that provides a company's environmental and safety programs with a formal structure. It is designed to help a company or a governmental organization meet environmental objectives and achieve and demonstrate improved environmental performance. There are several models for an EMS, but the most widely accepted, known as ISO 14001, was developed and promulgated in 1996 by the International Organization for Standardization. ISO 14001 contemplates a continual, cyclical process of environmental improvement. The process begins with the promulgation by a company of various environmental policies. Those policies are

implemented, followed by a process of monitoring and corrective action, and finally a 42 process of management review. The review process leads to new and improved policies being promulgated, and the cycle repeats.

It is becoming clear that Environmental Management Systems can have a positive impact on environmental protection.⁵⁹ The improved evaluation of resource utilization and environmental impacts contemplated by an EMS can also result in significant savings for industrial facilities, through conservation of electricity and water, and by reducing the volume of solid and hazardous wastes requiring disposal.⁶⁰ Increased adoption of EMSs by industry can also have a positive impact on state environmental enforcement by allowing states to direct limited resources to those facilities that are not managed in this way.

At the federal level, the Environmental Protection Agency is playing a key role in increasing awareness of the effectiveness of EMSs through Performance Track and other programs. Several states are working with EPA on these efforts through an organization known as the Multi-state Working Group on EMS. Delaware is an “observer” state for this working group. The Task Force recommends that DNREC consider increasing the level of its involvement with the Multi-state Working Group.

In support of the Governor’s Principles, the Task Force also recommends that DNREC consider developing innovative programs to increase the use of Environmental Management Systems by Delaware industry and governmental organizations. Many states have implemented programs to encourage the use of EMSs through either legislation or administrative programs.⁶¹ Recent research indicates that governmental incentives may be critical for more widespread adoption of EMSs, particularly for smaller companies and for governmental operations.⁶² Various forms of encouragement might include:

- Modification of regulatory requirements (but not emission or discharge limits);
- Reduced compliance inspections;
- Streamlining permit issuance and renewal;
- Public recognition programs;
- Tax incentives;
- Implementation of an EMS by DNREC or other governmental agencies to establish the effectiveness of the tool;
- Use of pilot or training programs to establish the effectiveness of EMSs for private industry;
- Technical assistance such as the development of EMS templates;

⁵⁹ A study of California’s EMS pilot project reaches this conclusion, finding that environmental protection improved at most of the pilot projects studied. *See* California Environmental Protection Agency, “Environmental Management System Project, Report to the Legislature: Draft Final Report,” Sept. 10, 2002, at 33, available at <http://www.calepa.ca.gov/EMS/Publications/2002/Sept10/default.htm>.

⁶⁰ *See* California Environmental Protection Agency, “Environmental Management System Project, Report to the Legislature: Draft Final Report,” Sept. 10, 2002, at 34.

⁶¹ A useful table compiling information about programs encouraging EMSs in fourteen different states is available on the website of the Multistate Working Group. *See* <http://www.iwrc.org/mswg/ptracktable.doc>.

⁶² *See* Darnall, “Adopting ISO 14001: Why Some Firms Mandate Certification while Others Encourage It,” November 2001 at 17, available at <http://ndems.cas.unc.edu/document/Motivations+for+ISO+14001+mandates.pdf>.

- Development of mechanisms for those facilities in the State using EMSs⁴³ to share their experience with facilities seeking to develop such systems;
- Expanded use of EMSs as required supplemental environmental projects in enforcement settlements, as was done in the case of Metachem; and
- Provide protection from self-reported violations discovered in an EMS, contingent upon satisfactory compliance.

Delaware, with its community of innovative industrial enterprises, and with its history of cooperation between industry and regulators, should strive to be at the forefront of the movement to develop, implement and reap the benefits of Environmental Management Systems.

2. Recommendation: Take early and consistent enforcement action; Utilize Environmental Improvement Projects.

Testimony at the meetings indicated that early and consistent enforcement action sends a clear signal that can serve as an effective deterrent to future violations. The Task Force recommends enforcement actions should be taken on an early and consistent basis as required. It also advises that financial issues should not bar or preclude issuing Notice of Violations (NOVs) or taking enforcement actions including civil, criminal and administrative penalties to protect the health and safety of employees and the public.

The Task Force recommends that Environmental Improvement Projects (EIPs) should be used in consent decrees and judgments against a violator to achieve desired environmental results and additional environmental protections that would not occur using only fines. With growing frequency, EIPs are being used as a supplement to or in-lieu of penalties to address specific environmental problems resulting from a violation. As was the case in the Stipulation of Final Judgment against Metachem in early 2001, EIPs were directed toward the implementation of environmental audits, environmental management systems and the creation of incentives to reduce future environmental liabilities. These innovative EIPs were done in the context of a workable financial framework that allowed the company to meet its environmental obligations while remaining financially viable.

3. Recommendation: DNREC should increase its efforts to keep the Environmental Navigator system routinely updated.

The Environmental Navigator system is a useful public service provided by DNREC, and DNREC should undertake efforts to ensure that the information offered on the system is up to date and complete. Comprehensive information about penalties assessed should also be incorporated into the Environmental Navigator.

General Recommendation: Act to ensure the long-term solvency of the Hazardous Substance Cleanup Fund.

1. Recommendation: Analyze expenditures by the Hazardous Substance Cleanup Fund to determine adequacy of coverage and whether a percentage of the fund should be dedicated solely to orphaned hazardous substance sites.

The Task Force recommends that DNREC conduct an analysis of the Hazardous Substance Cleanup Fund expenditures to determine whether Fund revenues are adequate to cover projected cleanups with a margin of assurance for unanticipated liabilities like Metachem. As part of the analysis, DNREC should determine whether sources of revenue should be expanded and whether a dedicated percentage of the Fund should be reserved solely for orphaned site cleanups.

The Hazardous Substance Cleanup Act (HSCA) was enacted in 1990 to protect the State's citizens from releases of hazardous substances into the environment. The Act created a funding mechanism to pay for problems that arise relating to hazardous waste contamination. The Fund's primary source of revenue comes from the levy of a 0.9% tax on all taxable gross receipts from the sale of petroleum products, with the exception of crude oil. The Fund has been used to pay for post closure activities at the Metachem site (see Background and History, Current Status of the Metachem Facility) and will be the primary source of funding for the State's share of Superfund costs. The Fund also pays for a variety of cleanup and hazardous site-related investments not related to Metachem or abandoned facilities.

DNREC has identified over 532 sites in Delaware as potential hazardous substance release sites of which 439 have a higher priority because they either are in the State's Voluntary Cleanup Program (VCP) or they pose a risk to public health.⁶³ According to a recent independent audit,⁶⁴ "Although funding is adequate to meet DNREC's annual expenditure plans and carryover funds exists, the cost of the future clean up of orphaned sites exceeds the money available in the Fund."

C. FINANCIAL RECOMMENDATIONS

1. Recommendation: Explore requiring companies to demonstrate they have the financial resources to properly conduct closure and post closure in a manner that protects human health and the environment.

The Task Force recommends that DNREC and DEDO examine whether additional companies handling significant quantities of hazardous chemicals should be required to demonstrate an ability to provide financial assurance guaranteeing site cleanup upon closure or abandonment. Their findings should be compiled in a report to the Governor. This evaluation should focus upon specific categories of activity (such as dry cleaners, chemical manufacturing, energy production, or autobody repair) that might warrant a financial assurance requirement, and also upon threshold levels of chemical usage that might warrant such a requirement. Demonstrating financial assurance has the

⁶³ See "Hazardous Substance Cleanup Fund, Notes to the Financial Statement," June 30, 2002 at 10.

⁶⁴ See "Independent Auditor's Report" Prepared by McBride Shopa & Co., December 17, 2002 at 9.

potential to provide the State with protection from costs associated with site abandonment and unanticipated budget impacts. In the case of an abandoned site that does not qualify for federal Superfund cleanup, or is unable to tap into Superfund appropriations, financial assurance could shield the state from all or some cleanup costs. 45

Financial assurance generally involves self-certification, letters of credit, self-insurance (or captive insurance), environmental bonds, and environmental insurance. Environmental bonding, which has been used extensively by companies to satisfy state requirements to guarantee funds for mining reclamation and closure/post closure, has collapsed in the wake of major bankruptcies over the past three years. These financial instruments are no longer available or require nearly 100 percent collateralization.

The Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6901 *et seq.*, establishes the basic parameters of required financial assurance for entities handling hazardous or solid wastes. Regulations promulgated by the federal EPA under that Act provide financial assurance requirements for facilities permitted to treat, store or dispose of hazardous waste (40 C.F.R. section 264, subpart H), for facilities with underground storage tanks (40 C.F.R. section 280 subpart H), for solid waste landfills (40 C.F.R. section 258, subpart G) and for hazardous waste injection wells (40 C.F.R. section 144, subpart F). Financial assurance is already required by the State for owners of underground storage tanks and is being developed in Delaware for aboveground tanks under the newly-enacted Jeffrey Davis Aboveground Storage Tank Act. Metachem, however, did not qualify as a TSDF, and entered bankruptcy prior to the Aboveground Storage Tank Act becoming effective, and therefore was not required to provide guarantees for site cleanup or closure.

Several states have enacted financial assurance requirements above and beyond the federal requirements. Pennsylvania law, for example, requires financial assurance for hazardous waste facilities for “sudden and accidental occurrences, and nonsudden and accidental occurrences” in addition to compliance with RCRA financial assurance requirements. *See* 35 Pa. Code § 6018.5066. New Hampshire law requires financial assurance for hazardous waste facilities at “whatever” level “is necessary” to “[p]rotect the public health and welfare and the environment” and to insure “appropriate measures will be taken to prevent present and future damage to public health and safety or to the environment, in the event that the operations at the facility are abandoned, interrupted or stopped.” *See* N.H. Rev. Stat. § 147-A:5.

Some states have also expanded the categories of facilities that must obtain financial assurance. States have for decades done so with mining operations, but states have also enacted specific financial assurance requirements for facilities such as recycling operations, oil production facilities, and even hog farms.

Delaware will certainly benefit from the additional financial assurance protections coming into effect with the Aboveground Storage Tank Act, but the Task Force believes that further expansion of the types of facilities subject to a financial assurance requirement may be warranted.

At the same time, the Task Force recognizes that most of the mechanisms for financial assurance available to small and mid-sized corporate entities can be costly. Larger corporate entities will often be able to self-certify their ability to cover the costs of future environmental liabilities, but small and mid-sized entities may not be able to do so

and may have to obtain backing from private markets, such as environmental insurance.⁴⁶ The Task Force is reluctant to recommend that broad categories of industry be required to incur these costs without a careful evaluation of how to make the requirement as effective and as targeted as possible. Such an evaluation should be undertaken.

2. Recommendation: Explore requiring environmental insurance for companies with problem sites and/or demonstrated need.

The Task Force recommends that DNREC explore requiring insurance coverage for companies with problem sites or environmental concerns that could develop into bigger problems. Environmental insurance is costly, and to the extent possible should be borne by the individual company, however, there may be situations where the cost could be subsidized through a combination of sources, such as HSCA, an insurance pool and/or general appropriations. Required insurance could also be in-lieu of fines. Subsidized insurance should be considered as one of the items in the “Toolbox of Assistance.” (See “Administrative Recommendations,” above.)

The Task Force heard from an insurance industry representative⁶⁵ who outlined the types of environmental insurance that were available. Of particular interest were insurance instruments designed for abandoned sites. An environmental insurance product potentially could be structured to protect government from costs associated with abandoned site cleanups. According to the presentation, insurance can provide guaranteed funds for remediation, funds for closure/post closure, protection against previously undiscovered pollution, caps for remediation costs, and provide alternatives to hazardous waste trust funds, escrow accounts and indemnity agreements. These instruments can also facilitate potentially responsible parties (PRP) settlements through guarantees and incentives.

A variety of coverage options were discussed with the Task Force, several dealing with possible future abandonment or closures. Because the risks are now known and can be accurately characterized, Metachem would not qualify for a “risk transfer” insurance policy. Sites such as Metachem could be cleaned up using “Finite Insurance” policies. This type of insurance estimates the cost and duration of a cleanup. From those calculations the “Net Present Value” (NPV) of the cleanup is determined. This amount is usually less than the total costs of cleanups and can be coupled with cleanup cost cap insurance to cover potential costs overruns. This type of insurance can be used to guarantee funds for cleanup of both operating and/or bankrupt/defunct facilities. While the offerings are limited for known sites with existing problems, coverage for future potential sites is possible. In this approach facilities can purchase long term (up to 10 years) pollution legal liability insurance that covers issues such as third-party cleanup claims (e.g. – government ordered cleanups). These policies are written after sites are analyzed and characterized by the insurance company’s team of environmental experts.

Coverage can be for individual sites or represent a portfolio of sites. Insurers analyze their costs of cleanup through site assessments and use their expertise to control costs and ensure compliance with state and federal cleanup standards. In effect, the insurer provides third-party verification and cleanup supervision. This other set of

⁶⁵ The Task Force heard from Kevin Matthews, Director of Governmental Relations with AIG Environmental on 3/7/03. A summary of Mr. Matthews’ presentation can be found in the Metachem Task Force Meeting Minutes and record.

Task Force members familiar with environmental insurance warned against viewing these instruments as a simple solution to liability protection. They cited policy limitations, risk exclusions and the site-specific nature of these policies as reasons to proceed with caution. Specifically, they recommended contacting brokers with specific expertise in the environmental insurance field to explore options.

States currently using environmental insurance have focused it mainly in the area of brownfields development, generally subsidizing insurance premiums for developers who want to develop a brownfields site. This form of insurance has been successfully used in Massachusetts, California and Wisconsin.

Information provided to the Task Force regarding environmental insurance coverage was derived primarily from one source. There is a need to obtain input on an industry-wide basis prior to developing any environmental insurance program.

3. Recommendation: Determine costs of recommendations.

The Task Force recommends that DNREC determine the cost of any recommendations requiring funding and that these costs be provided for through the budgetary process.