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DEPARTMENT OF ENVIRONMENTAL PROTECTION

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**Report to the Joint Standing Committee on Natural Resources**  
**Summary of the Scrap Tire Abatement Program 1995-2006**

**Submitted by:**  
**The Maine Department of Environmental Protection**

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## **I. Introduction**

This report summarizes the current status of Maine's scrap tire abatement program which was initiated in 1995 following the passage of legislation concerning the management of scrap tires and scrap tire stockpiles. A previous comprehensive report ("Long-Term Funding Alternatives for the Scrap Tire Abatement Program and Status/Progress Report Concerning the Scrap Tire Abatement Program") was presented to the Natural Resources Committee of the Legislature in January 2000. That report provided additional detailed information concerning program history, funding and specific tire stockpile sites.

## **II. Maine's 1995 Tire Legislation**

In 1995, legislation was passed in Maine (38 MRSA §1316 *et seq.*) that provided important tools to the Department of Environmental Protection for regulating waste tire management and for abating environmental and public health and safety hazards at uncontrolled tire stockpile sites. The law clarified and streamlined the administrative and appeal process by which the Commissioner could designate a site as an uncontrolled tire stockpile, and when the Department could act to abate, clean up or mitigate that stockpile's hazards.

The law also established specific prohibitions on the unlicensed or uncontrolled storage, processing or stockpiling of tires, and provided clear authority to State, county and local law enforcement officers over the transportation of scrap tires. The law prohibits a person from transferring custody or possession of scrap tires to any transporter not licensed and complying with DEP transporter rules; establishes manifest requirements, and specifies penalties that may be imposed for transport violations.

Section 38 MRSA §1316-B of the Tire Stockpile Abatement Law authorized the department to undertake certain actions if a person who owned a tire stockpile that the department determined to be an uncontrolled tire stockpile did not comply with an administrative order, a consent agreement, or a court order. These actions included the processing or removal of all stockpiled tires on the site, the physical alteration of the stockpile site through the construction of fire lanes and fire and pollution barriers, and the permanent closure of the site to the storage or disposal of used tires. Further, the law directed the department to undertake a program to eliminate tire stockpiles determined to be a risk to public safety, to human health and/or to the environment. Specifically, the department was directed to:

- Estimate the number of tires that were stockpiled and that posed a significant risk to the environment or public health;
- Develop a tire stockpile reduction priority plan based on environmental and public health risks;
- Develop or cause to be developed site-specific tire stockpile abatement plans;

- Encourage the beneficial use of tires; and
- Contract for services to reduce tire stockpiles and abate significant risk to the environment and public health at tire stockpile sites.

After passage of the law, Maine DEP revised its rules to better address the management of tire sites. The rules established specific standards for tire stockpile facility siting and operation, including standards concerning fire protection and water quality. The rules also allowed for small scale stockpiling of tires by certain types of businesses under a permit-by-rule provision, and exempted a number of low risk tire reuse activities.

### **III. Implementation of Maine's Scrap Tire Abatement Program**

#### **A. Program Goals**

As the Department worked to establish the scrap tire abatement program in 1996, the following program goals were established:

- Eliminate high priority fire hazards as resources allow
- Maximize actual tire removal from sites
- Ensure that all tires removed from sites are beneficially used
- Maximize effectiveness of expenditures

During 1996, the department conducted a comprehensive statewide survey of scrap tire stockpile sites and provided public information concerning the tire stockpile law. Written information explaining the changes governing scrap tire handling was sent to 3,300 addresses that covered the range of businesses in Maine that potentially generated or handled scrap tires

#### **B. Scrap Tire Inventory**

The department conducted a comprehensive scrap tire stockpile survey that included an on the ground inspection of all known and suspected tire pile sites in Maine. The department evaluated each site for the number of tires in storage and the potential environmental and public safety threats presented by those sites. Factors considered included but were not limited to: proximity to population centers and to environmentally sensitive areas, the pile size and configuration, depth of the pile, availability of fire fighting resources, operational controls and emergency access to the tire stockpiles. A total of 318 tire stockpile sites were evaluated. Following evaluation of these sites, the department established three categories of tire stockpile sites based on risk: Classes A, B and C.

**Class A Sites** - The highest risk category ("Class A") consisted of 5 sites, each having scrap tires and tire rubber scraps exceeding the equivalent of 1,000,000 discarded passenger car tires per site. These sites were

considered to present extremely high risks. Fires at similar sites in other parts of the country had been found to be virtually impossible to extinguish by use of water or foam. If a fire occurred at such a site, each fire could be expected to cost millions of dollars to fight, might require widespread evacuation, and could cause severe environmental damage and economic harm.

The five Class A sites were estimated at that time to contain a total of approximately 16.3 million tires, roughly 85% of all the tires stockpiled in Maine. These sites were the primary focus of the department's enforcement and cleanup effort.

**Class B Sites** - The department classified tire sites containing stockpiles totaling 10,000 to 1,000,000 tires per site as "Class B" sites. In 1996, there were 29 Class B sites. The potential risk presented by these sites varied greatly. Some were abandoned or poorly controlled and could present very high public health, safety and environmental risks. Others had significant oversight and operational control. Many of these sites had owners and operators who were willing and able to work with the department to bring their stockpiles into full compliance with environmental regulatory standards. In total, the 29 Class B sites were estimated at that time to contain a total of 2.1 million tires (11% of Maine's discarded tire total).

**Class C Sites** - Sites with tire stockpiles containing less than 10,000 tires were classified by the department as "Class C" sites. Many of these sites already met the department's regulatory standards for tire storage activity. There were 284 Class C sites in 1996.

### **C. Scrap Tire Stockpile Site Abatement and Remediation**

In 1996, the department started direct action to control and initiate State abatement of a number of the highest risk stockpile sites. This was made possible by the allocation of some general fund monies designated for tire stockpile cleanup and by a \$5,000,000 General Fund Bond Issue authorized by the Legislature and approved through referenda in 1996. Abatement was accomplished primarily through state contracts with private contractors.

#### **Class A Sites**

Department abatement activity was initially exclusively directed to remediation of Class A tire stockpile sites. None of these sites had an owner or operator who was both willing and financially able to adequately abate the safety and environmental hazards presented by the site. In some cases, the department needed to first gain legal authority to take control of the site and to initiate cleanup activity. The largest and highest risk sites

required the completion of numerous remediation contracts over many years to accomplish a final cleanup. By 2000, abatement had been initiated at all 5 Class A sites, and 2 of the sites were completely remediated. By January 2005, the cleanup of all Class A sites had been accomplished with the completion of the final remediation contract for the Botelho Site in Bowdoin, Maine.

**Table 1- Class A Site Summary**

| <b>SITE</b>       | <b>TIRES REMOVED</b> | <b>MONEY SPENT</b> | <b>TIMEFRAME</b>              |
|-------------------|----------------------|--------------------|-------------------------------|
| <b>Nobleboro</b>  | <b>1,400,000</b>     | <b>\$ 895,759</b>  | 1996-1998                     |
| <b>Meddybemps</b> | <b>1,620,000</b>     | <b>\$1,502,945</b> | 1998-1999                     |
| <b>Greenwood</b>  | <b>1,458,960</b>     | <b>\$1,232,222</b> | 2000-2001                     |
| <b>Durham</b>     | <b>2,360,130</b>     | <b>\$1,534,023</b> | 1997, 2000/2001,<br>2003-2004 |
| <b>Bowdoin</b>    | <b>5,714,200</b>     | <b>\$4,670,412</b> | 1999, 2000/2001,<br>2002-2004 |
|                   |                      |                    |                               |
| <b>TOTAL</b>      | <b>12,553,290</b>    | <b>\$9,835,361</b> |                               |

**Class B Sites**

In 1997 and 1998, the department negotiated agreements with persons and municipalities that were responsible for tire stockpiles containing between 10,000 and 1,000,000 tires.

At this time, cleanup of some Class A sites was sometimes delayed by legal, administrative or practical hurdles. When this occurred, the department began to initiate abatement at some of the highest priority Class B sites. In order to take advantage of the economies of a large contract, the department would solicit cleanup of a number of Class B sites in a region under a single contract.

The first Class B site cleanup was a joint cleanup with the City of Lewiston in 1997. The site contained a collapsed abandoned building that had been filled with tires. It was a fire and safety concern to both the city and the department. The department entered into a cooperative agreement with the city allowing for the simultaneous demolition of the building and the removal of the tires by a contractor selected by the city. The demolition activity was paid for by the city while the tire clean up costs, initially paid by Lewiston, received 100% reimbursement from the department.

The department did not consider all Class B sites appropriate for State funded cleanup. In order to be deemed eligible for state funded abatement, a stockpile site needed to meet the following criteria:

- The site was no longer accepting scrap tires;
- The site did not comply with existing tire storage law or rules;
- The site posed an unacceptable hazard to public safety or the environment; and
- The site owner agreed to cooperate with the department in the cleanup effort and to contribute money to the cleanup based upon his/her ability to pay.

Parties that did not enter into cooperative agreements with the department were individually responsible for scrap tire removal sufficient to bring the site into compliance with the department's regulations.

In 1999, the department contracted for the abatement of 5 additional uncontrolled Class B tire stockpiles. Cleanup of these sites was completed in 2000. In 2004, the department contracted for the remediation of another 15 public and private Class B sites. Cleanup of these sites was completed in 2005.

**Table 2- Class B Site Summary**

| <b>SITES</b>   | <b>TIRES REMOVED</b> | <b>MONEY SPENT</b> |
|--|----------------------|--------------------|
| City of Lewiston 1998  | 54,660               | \$60,126           |
| Auburn, Augusta, Baldwin, Gorham, & Porter 1999-2000   | 608,730              | \$541,039          |
| Augusta 2003   | 236,300              | \$193,434          |
| Allagash, Bridgewater, Buckfield, Buxton, Chelsea, Cumberland, Durham, Eddington, Guilford, Limerick, Limestone, Milford, Oxford, W. Baldwin, Windham, 2004-2005 | 1,023,667            | \$998,076.54       |
| <b>TOTAL</b>   | <b>1,923,357</b>     | <b>\$1,792,675</b> |

Since 1997, 11 other Class B tire sites have been remediated by the individual site owners themselves. This has resulted in the removal of 425,100 additional tires from uncontrolled stockpiles.

As of March 2006, 5 additional Class B sites have been identified where remediation is needed and the owners have indicated a willingness to work with the department to accomplish cleanup of the sites. These 5 sites contain an estimated total of 230,000 tires. The remaining \$238,683.43 of unspent tire site cleanup bond money will be used to contract for abatement of these sites.

### Class C Sites

In 1996, all sites containing 1,000 or more tires were assigned a risk rating, whether they met state licensing and regulatory requirements or not. At the time, the department had determined that only sites that were classified as either Class A or B sites were of sufficient concern to merit state funded cleanup. In 2000, the department indicated to the Legislature's Natural Resources Committee that a final recommendation concerning Class C tire sites would be made after all Class A and most Class B sites had been remediated. The fire, safety and environmental risks presented by Class C sites are much lower than those of either Class A and B sites. There are several factors that contribute to this assessment. They include the following:

- Many Class C tire stockpile sites appear to meet the department's current regulatory standards. These regulatory standards minimize the potential threats of fire and consequently most safety and environmental threats. Adequate firebreak, setback and operating standards are generally much easier to achieve for sites containing 10,000 or fewer tires.
- Many Class C tire sites are associated with viable businesses and are **not** abandoned sites. As such, these stockpiles can be sized, managed and reduced to meet appropriate environmental and safety standards as part of ongoing business operations.
- The threats presented by a potential tire fire at a Class C site are generally significantly less than those presented by a tire fire at either a Class A or B site. A tire fire, if it should occur at a Class C site, should be small enough and sufficiently isolated from other tire stockpiles to be readily controlled and extinguished by local firefighters.

Based on the factors cited above, the department has concluded that additional expenditure of state funds for remediation of Class C sites is not warranted. The relatively small number of Class C sites that do not meet the regulatory standards will be addressed with the owners of those sites through regular compliance and enforcement procedures.



#### **IV. Tire Recycling Markets**

All tires that were removed from tire sites under department contracts were processed into tire derived products and were utilized. Some of these tires were processed into "tire derived fuel" (TDF). TDF can be burned by large solid fuel boilers at 3 Maine pulp and paper mills. TDF consists of tire shreds of approximately 1 inch in size, that have had some of the metal and related contaminants removed. Initially, this was the only readily available market for tire derived products in Maine and a company wishing to bid on a department cleanup proposal needed to have a contract to supply TDF to one or more of those paper mills.

The department worked with the University of Maine, the Maine Turnpike Authority (MTA) and the Maine Department of Transportation (MDOT) in exploring new uses for shredded tires in civil engineering projects. Two classes of tire chips were developed for different uses. "Type A" chips can be used as a drainage layer material in general construction and in the construction of landfill leachate collection systems. "Type B" chips, can be used as light weight (low density) fill material. This fill material became particularly useful in minimizing settlement problems when building in soft soils and soils with high clay content. The primary light weight fill material used in Maine before the Type B tire chip was developed and used was an expanded shale material that originated in upstate New York. The production and shipping cost of this material could be a significant construction cost in some MDOT and MTA projects. While the cost to the department of producing Type B chips and making those chips available to road building projects was more than the market price of those chips, all three agencies benefited either from reduced raw material costs or having an additional market and use for tire derived products.

The cooperative effort by the 3 agencies, enabled Maine to lead the nation in the development and use of an entirely new tire derived material. Type B tire chips were used in 3 MTA projects and 2 MDOT projects. Those projects were: MTA's Jetport interchange, new Westbrook exit and new Sabattus exit; as well as MDOT's highway reconstruction projects on Route 111 in Biddeford and a section of Route 9 in Wesley.



## **VI. Conclusion**

Maine's scrap tire abatement program has successfully remediated 27 (Classes A and B) tire stockpile sites that posed potentially serious environmental and public health/safety threats. Five final Class B sites have been identified for abatement this year using the remaining bond funds.

