

Executive Summary

State of North Carolina, Motor Fleet Management Division On-Site Recycling of Antifreeze

This initiative is a sustainable environmental effort that also is a cost savings for the state. This initiative can be implemented successfully on a wide-scale basis because of its simplicity and ease of implementation.

The North Carolina Department of Administration, Motor Fleet Management Division has implemented a new process pertaining to the disposal and recycling of antifreeze. The Division has located a vendor who recycles antifreeze on-site. This process involves pumping the used antifreeze out of the 55-gallon drums and filtering out all impurities. The antifreeze is then reformulated to meet the performance requirements of all major engine manufacturers and pumped back into drums for use.

Recycled antifreeze saves \$0.05 per gallon in cost. Motor Fleet Management saves an additional \$0.46 per gallon in the disposal of used antifreeze as a hazardous waste. It is estimated that if all the state-owned shops recycle antifreeze, the State of North Carolina could save at least \$33,323 annually.

The recycling of antifreeze is good for the environment. There is no additional cost and very little additional effort involved in implementing this practice at all government-owned garages. If vendors exist in all 50 states, this initiative could easily be adopted all across the United States.

**STATE OF NORTH CAROLINA
DEPARTMENT OF ADMINISTRATION
DIVISION OF MOTOR FLEET MANAGEMENT
ON-SITE RECYCLING OF USED ANTIFREEZE**

a. Description of Program:

The Motor Fleet Management Division of the North Carolina Department of Administration has implemented a new procedure pertaining to the disposal and recycling of antifreeze. This new initiative is good for our environment. By recycling on-site, our agency eliminates the possibility of accidental spills and the possibility that we will have to pay for cleaning up the spill as specified in the cradle to grave laws. Prior to implementation of the new process antifreeze was stored in 55-gallon drums until it was disposed of by a certified hazardous waste contractor.

Motor Fleet Management located a vendor who recycles antifreeze on-site. This process involves pumping the used antifreeze out of the 55-gallon drums and filtering out all impurities using a reverse osmosis process. The antifreeze is then reformulated to meet the performance requirements of all major engine manufacturers and pumped and back into drums for use.

b. Calculation of Savings

New antifreeze costs \$4.60 per gallon. Each new gallon makes two gallons of usable antifreeze in a 50% water and 50% antifreeze solution ready to be used in automobiles. Recycled antifreeze costs \$2.25 per gallon and does not require dilution costs \$2.25 per gallon. Recycled antifreeze saves \$0.05 per gallon in cost. Motor Fleet Management saves an additional \$0.46 per gallon in the disposal of used antifreeze as a hazardous waste.

The total savings per gallon is \$0.51. Motor Fleet Management accumulates approximately 330 gallons of antifreeze each year that can be recycled. The annual costs saved would be \$168.30. There are 98 Department of Transportation garages and 100 Department of Public Instruction garages that work on school busses. Each of these facilities should generate a comparable or larger amount of used antifreeze. If all these shops recycle antifreeze the State of North Carolina could save at least \$33,323 annually. There are additional state-owned garages located at Universities, State Hospitals, State Parks, State Forestry, and other state agencies. If all state-owned garages will implement the recycling of antifreeze, the savings will be even greater.

c. Quantitative Benefits

We estimate that over 60,000 gallons of used antifreeze can be recovered and reused by the State of North Carolina by using this process. The recycled antifreeze eliminates the time now spent to mix new antifreeze with water and eliminates the need for supplemental coolant additives since these are added during the recycling process. The recycling of antifreeze is good for the environment. Recycling antifreeze eliminates the possibility that the chemical used in antifreeze (ethylene glycol) will find its way into our water supply. Ethylene glycol is poisonous to animals and humans. Antifreeze is a hazardous waste that has to be disposed of by a licensed hazardous waste processor. This waste has to be transported on highways where there is always the possibility of a spill due to an accident. Keeping this material on-site and reusing it is a good, money saving, business practice.

d. Relevancy of Use by Other Governmental Agencies

There is no additional cost and very little additional effort involved in implementing this practice at all government-owned garages. Other state agencies with garages, especially the Department of Transportation and Department of Public Instruction who have most of the garages, only need to be made aware that there are vendors who will recycle their antifreeze on-site. In the State of North Carolina, the Purchase and Contract Division is going to develop a contract for this service. This should lower the cost of the recycled antifreeze and make it easier for state agencies to purchase the service.

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DEPARTMENT OF ADMINISTRATION
DIVISION OF MOTOR FLEET MANAGEMENT
ON-SITE RECYCLING OF USED ANTIFREEZE**

A. Description of Program:

The Motor Fleet Management Division of the North Carolina Department of Administration has implemented a new procedure pertaining to the disposal and recycling of antifreeze. Motor Fleet Management is now recycling and reformulating used antifreeze. This new initiative is good for our environment. By recycling on-site, our agency eliminates the possibility of accidental spills and the possibility that we will have to pay for cleaning up the spill as specified in the cradle to grave laws. Prior to implementation of the new process antifreeze was stored in 55-gallon drums until it was disposed of by a certified hazardous waste contractor.

Motor Fleet Management located a vendor who recycles antifreeze on-site. This process involves pumping the used antifreeze out of the 55-gallon drums and filtering out all impurities using a reverse osmosis process. The antifreeze is then reformulated to meet the performance requirements of all major engine manufacturers and pumped back into drums for use.