

# GET THE MERCURY OUT: IMPLEMENTING A CESQG PROGRAM TO COLLECT MERCURY AND OTHER HAZARDOUS WASTES

**Dana Murray, P.E.**  
SCS Engineers  
Reston, Virginia

**Cathleen Hall**  
SCS Engineers  
Reston, Virginia

## ABSTRACT

Nearly 700,000 conditionally exempt small quantity generators (CESQGs) exist in the United States<sup>1</sup>. CESQGs include small businesses such as auto body shops, dry cleaners, demolition contractors, printing shops, home improvement and painting contractors. These businesses often lack the expertise and experience in dealing with the small quantities of hazardous waste that is generated at their facilities.

Many communities across the United States have implemented successful CESQG collection programs to collect mercury and other hazardous wastes from these businesses. This not only provides a valuable service to small businesses in the community, but also helps to curb the flow of improperly disposed of hazardous waste from entering the solid waste stream.

## IDENTIFYING THE CESQG

The U.S. EPA has established specific requirements for handling hazardous waste in a manner that protects human health and the environment. These requirements control hazardous wastes from the moment they are generated until their ultimate disposal. Effective in July 1991, the regulations were updated, making new wastes subject to federal hazardous waste rules. Many small businesses must comply with these federal hazardous waste laws. The regulations regarding hazardous waste management are designed to encourage businesses to minimize the amount of hazardous waste produced. The less that is produced the fewer regulations you must comply with.

The Subtitle C regulations broadly define the term generator to include any person, by site, who:

- First creates or produces a hazardous waste (e.g. from an industrial process); or
- First brings a hazardous waste into the RCRA Subtitle C system (e.g. imports a hazardous waste into the United States).

A waste is any solid, liquid or contained gaseous material that a business no longer uses and must either recycle, store or dispose. A waste is considered hazardous if it causes injury, illness, or death or pollutes the land, air or water. For regulatory purposes the two categories of hazardous waste are listed hazardous wastes and characteristic hazardous waste.

Listed hazardous wastes are substances that already have been determined to be hazardous and are listed as such in the Federal Resource Conservation and Recovery Act (RCRA) regulations. Currently, more than 400 hazardous wastes are listed.

Characteristic hazardous wastes have certain properties that make them harmful to human health and the environment. The four properties of characteristic hazardous waste are ignitable, corrosive, reactive, and toxic.

The Federal government currently classifies three types of hazardous waste generators, large quantity, small quantity, and the conditionally exempt small quantity generator (CESQG). The latter is the focus of this paper.

The CESQG is a generator that is defined as those facilities that produce less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per calendar month<sup>2</sup>. Approximately 700,000 CESQGs are in the United States, and the number is expected to increase on an annual basis. This number far outnumbers those of small and large quantity generators.

State classifications of generator categories may be different from those outlined above. Generally, most states closely follow federal guidelines for identifying a CESQG; however, some states regulate all generators of hazardous waste (i.e. no exempt category), while other states classify generators by waste type rather than by generated volume. Therefore, generators should contact their state agency to determine if state generator regulations differ from these federal requirements.

## **WHY CONSIDER A CESQG COLLECTION PROGRAM**

Community HHW programs have been evolving over the past couple of decades. Many that started out as periodic collection events have transformed into permanent collection programs, with sophisticated marketing and public education campaigns. Programs have seen increasing success in reducing the amount of hazardous waste entering the solid waste system, reducing the risk to human health and the environment.

In many cases, CESQGs lack the experience in dealing with a hazardous waste or are even unaware that the waste they are generating is hazardous. For example, most businesses that use fluorescent lighting likely are not aware that mercury containing lamps, are in most cases, considered a hazardous waste; however, only an estimated 20 percent of this type of lighting is disposed of properly<sup>3</sup>.

As a next step in improving hazardous waste management, a community may want to consider expanding their HHW collection program to include a CESQG collection option for mercury containing products and other hazardous wastes.

Proper disposal of hazardous waste is extremely important. Yet, it can be complicated and time-consuming. For example, disposal of chemicals, such as mercury, paint, motor oil, solvents, and acids is expensive and difficult. Legally, they do not belong in the trash or down the drain because these wastes are hazardous and they must be specially managed and documented. For this reason, many businesses have waited for an affordable solution to come along.

Businesses that illegally dump hazardous waste in the trash, down storm drains, gutters and sinks, or abandon it in alleys and at job sites, risk fines and/or jail time. Even storing hazardous wastes on-site for long periods technically is not legal. By law, these businesses must make a determination if their wastes are hazardous and are prohibited from disposing of any hazardous wastes in the regular garbage.

## **COMMUNITY CESQG COLLECTION PROGRAMS**

CESQG hazardous waste collection events allow businesses to utilize existing contracted disposal prices, allowing small businesses to take advantage of competitive contracted fees for the hazardous waste disposal.

Prior to participating at one of the city or county sponsored programs, businesses are sent a simple questionnaire to determine eligibility. Usually the waste type(s) and quantity(ies) they wish to dispose of is listed on this questionnaire. If the business qualifies as a CESQG, the jurisdiction could provide them with a disposal cost estimate based on the listed material types and quantities, a transportation variance, and an appointment time to drop off the waste. Payment usually is required at the time of service unless prior arrangements have been made.

CESQG program administrators determine what to charge for disposal. The cost is dependent on the type of waste and contractor fees. The cost most likely will be less for a small business to take its hazardous waste to a CESQG waste collection site rather than to contract separately with a licensed hazardous waste transporter to come to their facility.

Montgomery County, Maryland operates their CESQG program, Eco-Wise, in conjunction with their HHW program<sup>4</sup>. The same contractor that manages the HHW waste also handles the waste collected from businesses. CESQG collection is conducted on the second Wednesday of every month at the County's HHW facility.

Montgomery County's contractor is responsible for collecting fees directly from the business. Since the contractor receives the payment for disposal directly from the CESQG, the contractor benefits by promoting the program and increasing the number of participants. The County also pays the contractor a small monthly set up fee for managing the program. Participants in Montgomery County's program are required to register and make an appointment prior to dropping materials off.

To encourage business participation, and to make the programs even more affordable, several cities subsidize the disposal costs. The City of Oxnard reimburses their businesses up to \$250/visit with an annual maximum of \$500. The City of Ventura reimburses their businesses up to \$100/visit with no annual maximum. And the City of Thousand Oaks pays 50% of the business disposal costs (limitations do apply).

## **PARTICIPATION REQUIREMENTS**

To participate in a CESQG program, small businesses generally need to verify that they meet the requirements of a CESQG by definition.

Communities with CESQG collection programs commonly require participating businesses to provide signed affidavits stating their eligibility. Many communities reserve the right to conduct audits on businesses that are participating in the program to verify their status.

Businesses under Federal guidelines are allowed to transport their own wastes to the collection sites. CESQGs, usually, are not required to have special waste hauling licenses; however, they still must abide by Department of Transportation (DOT) regulations.

The following are some of the DOT requirements for packing and transporting CESQG hazardous wastes:

**Packaging** – The CESQG is responsible for ensuring that hazardous wastes are properly packaged for transportation and the packaging meets regulatory standards. The hazardous waste vendor or program administrator can assist with any questions concerning proper packaging. Packages used for transporting the hazardous waste need to be structurally sound, not cracked or leaking, and compatible with the contents. For example, a plastic container would be suitable for oil-based paint, but not a strong acid. CESQGs should consider using the original containers instead of repackaging the wastes. This will decrease the risk of spills and exposures. Original containers are usually acceptable for transporting wastes as long as they are in good condition. Avoid mixing of wastes.

**Labeling** – The CESQG is responsible for ensuring that all packages meet DOT labeling requirements. The hazardous waste vendor or program administrator should be able to assist with any questions pertaining to labeling. Exemptions for labeling requirements for wastes up to a certain quantity limit exist. Generally speaking, containers purchased at retail outlets are exempt from labeling requirements. However, the CESQG should be sure that the labels on the original containers are legible.

**Transportation** – The CESQG is responsible for following all DOT transportation requirements. CESQGs are not required to placard vehicles because they are below the 1000-pound threshold. Make sure that the wastes are secured before transporting. Keep incompatible wastes separate.

## **PROS AND CONS OF A CESQG COLLECTION PROGRAM**

The benefits of developing a CESQG collection program are two fold; first, the program provides a cost-effective approach to small businesses in the community, which in the past have struggled hazardous waste disposal. Secondly, it ensures that hazardous waste that often ended up in the MSW system is being handled and treated properly.

Improper disposal of waste from businesses present a burden to the MSW management system. Hazardous waste, such as fluorescent lighting, often has to be segregated from the MSW stream and the owner of the solid waste system takes the burden of the cost and responsibility for disposal of the hazardous waste. Broken fluorescent lighting presents a health hazards to those workers who come into contact with the mercury vapors and residues from the broken bulbs. Mercury and other hazardous wastes have had detrimental impacts to the environment, contaminating ground water and soils.

In addition, CESQG programs often are tied into the same hazardous waste management contracts that are used to operate the household hazardous waste collection programs; therefore, often limiting additional expenses of managing a separate contract and program.

Disadvantages of a CESQG collection program include added costs to the municipal solid waste or HHW budget. While many programs require the CESQG to pay the fees directly to the contractor managing the waste, many communities still must pay a small fee for set up and administrative functions.

Solid waste systems and communities should be aware that CESQG waste is a regulated waste unlike HHW. Often the waste collected from the HHW program and the CESQG and must be kept separate from one another. This can present a logistical and storage burden for keeping the two waste streams segregated.

## **CONCLUSION**

Community CESQG collection programs provide businesses and institutions the opportunity to dispose of small quantities of hazardous wastes in an environmentally responsible manner at a fraction of the cost of direct contracting with a hazardous waste management firm.

## **REFERENCES**

1. Association of State and Territorial Solid Waste Management Officials (ASTSWMO) Internet site.
2. U.S. Environmental Protection Agency, RCRA Orientation Manual, January 2003. EPA Document number: EPA530-R-02-016.
3. Association of Mercury and Lighting Recyclers, [www.almr.org](http://www.almr.org).
4. Montgomery County, Maryland, Eco-Wise Website, [www.montgomerycountymd.gov/swstmpl.asp?url=/content/dpwt/SolidWaste/collection\\_services/hw/ecowise/index.asp](http://www.montgomerycountymd.gov/swstmpl.asp?url=/content/dpwt/SolidWaste/collection_services/hw/ecowise/index.asp).