

Environmental Challenge 2003: How to Audit an Electronics Recycler

by Lauren S. Roman, United Recycling Industries, Inc.

Environmental issues related to disposal of obsolete electronics are no longer news to corporate environmental and risk managers. The big challenge is what to look for when evaluating an electronics recycler (e-recycler) to assure that the company's interests are protected. The main objective is to ensure that systems are in place that conform with corporate environmental goals and minimize exposure to environmental liability-related to improper disposal.

The vast majority of environmental managers auditing electronics' recycling operations arrive armed with an audit form designed for a permitted hazardous waste facility. These audits are designed to gather important site, permit, insurance and hazardous material handling and compliance information. Unfortunately, these auditors often leave the e-recycling facility with an audit form filled with "N/A's" and lacking critical information. What these auditors do not realize is that they failed to ask the types of questions that will determine whether the recyclers' activities are in conformance with corporate liability protection objectives.

For the purposes of this article, standard audit information such as business history, site environmental history, permits and insurance will not be addressed. This information is critical to any audit but here we will focus on information specific to electronics recycling.

Preparing for the Audit

Prior to auditing an electronics recycler, the corporation must determine what standards will be required.

The environmental and legal affairs departments must determine what minimum performance standards are acceptable. For example, much information has come to light over the course of the last year regarding the environmental and social harm that is resulting from export of e-scrap to China and other developing nations. Currently, CRTs fall under the definition of a RCRA¹ hazardous waste and, therefore, may not be exported without a hazardous waste manifest. US environmental enforcement authorities have, however, turned a blind eye to these "recycling" activities. Although China has officially banned e-scrap imports, this has had little effect on the volume of scrap entering its borders. So the corporation must decide whether to take advantage of exporting, which is by far the least expensive way to go, or whether avoiding export will best protect company interests.

Most large US corporations have determined that export of e-scrap is not in line with corporate policy due to the negative environmental and social impacts this inflicts on

¹ Resource Conservation and Recovery Act (www.epa.gov/epaoswer/osw/laws-reg.htm.)- Defines hazardous waste rules and regulations.

developing nations. As such, an audit of an electronics recycler must include collection of critical down-stream information to determine where scrap goes after the recycler in question has completed processing.

The security and risk departments must determine what level of plant and information security will be required. To be sure equipment with residual value is protected, the security department should provide input as to how to ensure protection from theft and other loss. From a data protection standpoint these departments must determine what the minimum acceptable procedure for erasing hard drives will be. Even if the corporation's policies dictate that all drives must be erased prior to leaving company premises, it is commonly-known that many of these drives do, in fact, leave with all data fully in tact. Ensuring secure removal of this information is critical and should be qualified by corporate information security experts.

In addition to standard environmental audit information a pre-audit questionnaire should include the following questions:

- Does the recycler process non-saleable equipment by breaking down or shredding?
- If not, is this outsourced or is it exported?
- Get downstream information.
- Does the facility sell non-working monitors, PCs and laptops?
- If so, where are the markets for these?
- What process does the downstream vendor employ?
- How are residuals managed?
- Are permits required?
- Can the reported process be verified?

Conducting the Audit

During the audit information to be collected and things to look for include the following:

What kind of e-recycler is the recycler?

Since many e-recyclers in the US are engaged in many different types of businesses, find out if the recycler is a broker, reseller or processor. A broker likely acts as a third party arranging for services. If this is the case, get documentation as to where material is being sent. Remember that anyone with a PC can print you a Certificate of Recycling. This is not a legal document. If you begin with a broker you must continue the audit process down stream.

If the recycler is a reseller, it is likely that equipment is being triaged to sort out saleable units from scrap, hard drives are being erased and equipment is prepared for resale. Many resellers are not interested in processing scrap for recycling and ship all non-saleable scrap to processors or brokers. The environmental audit process must continue down-stream to determine how the scrap is being managed.

If the recycler is a processor, facilities for demanufacturing or shredding of electronics will be in place. Many processors also provide resale services and many also use brokers to move commodities.

Demanufacturing areas typically consist of disassembly lines and work benches where fasteners are removed and commodities and hazardous components are sorted. Shredding systems consist of those that simply reduce volume for transportation efficiencies and those that are also fitted with separation systems that separate different types of metallic and non-metallic materials. Unless the recycler is in the business of *processing* batteries, mercury, leaded glass and other hazardous materials, the audit process must still be continued down stream.

Hazardous components in electronics: Most e-recyclers *remove* these components but where do they go?

Lead	CRT (monitor and TV) glass and solder
Mercury	Sensors, relays, fluorescent backlights in laptops, flat screen monitors, switches in telecom equipment, batteries
Cadmium	Batteries, resistors, semiconductors, plastic stabilizers
Hexavalent Chromium	Corrosion protection, batteries
PBE/PBDE	Brominated flame retardants used in plastics
PCBs	Found in older capacitors

Is equipment being tested to determine viability for resale?

If the recycler has an operation for testing equipment for resale they will have the facilities to test equipment for viability and erase data storage devices. Ask about procedures related to these activities. Is equipment that fails testing being sold? Even if broken or obsolete equipment is sold for parts recovery, remember the non-usable components go somewhere.

Where does the non-saleable and/or non-working scrap go?

Non-saleable scrap often includes leaded glass, plastics, broken equipment and components and, in the case of recyclers with shredding and separation systems, a non-ferrous mix. In most OECD² countries, these materials can only be processed on a fee-basis. In developing countries, however, the low labor rates and lack of regulatory restraints enable brokers and exporters to *pay* pennies per pound for these materials. If the e-recycler is selling these materials it is highly likely that they are being exported to developing nations.

² Organisation for Economic Cooperation and Development (www.oecd.org). Member countries control exports and imports of hazardous waste to protect from the indiscriminate and uncontrolled traffic in hazardous wastes that are exported to developing countries. These controls dictate high standards for environmental management that involve costs that must be passed along to customers.

How to I confirm that I am getting the whole story?

Ask the recycler how many pounds of electronics are processed on a monthly basis. Then ask to see documentation showing resale activities and scrap shipments for the previous month that approximates that amount. If documentation falls short, you are not getting the whole picture. Moreover, outbound documentation helps to determine if more downstream research is required.

What physical things should I look for at a facility?

Ask to see the shipping docks and containers. This may require a walk around the outside of the facility where shipping containers are stored. Check trash containers to see if any scrap electronic components are being sent to landfill. Look for shipping containers designed for export. These look quite different from a typical road trailer in that they are entirely made of steel and sit on a flatbed trailer (see picture.) Overseas shipping containers have doors that seal tightly with a rubber gasket and it is apparent that the container is detachable from the trailer.



Overseas Container



Tractor Trailer

Within the facility look for indications of how outbound materials are shipped. If you see only baled or unprocessed scrap, it is likely that it is being exported to developing countries. Recovery of material prepared this way would not be economical in most OECD countries.



Processed Wire



Processed Plastics



Un-processed Materials

Buyer Beware! (Caveat Emptor)

When conducting an initial search of potential e-recyclers for evaluation, there are, unfortunately, some "tricks of the trade" that some e-recyclers use to boost credibility.

The most common among these is e-recyclers advertising themselves as "EPA Permitted". The EPA has no permit process for electronics recyclers. Many times when these recyclers are asked for copies of their "EPA Permit," they offer a copy of an EPA ID number. This typically begins with three letters including the state initials (PAD, for example, might be the beginning of an EPA ID number for a Pennsylvania company) followed by nine numbers. This is merely an EPA-issued number that is required for manifesting hazardous waste for shipment. Anyone who generates hazardous waste must have one to transport material for disposal. It is NOT a permit to recycle electronics.

Additionally, be wary of state permits. Some states do provide electronics recyclers with state operating permits. This does not necessarily mean they are complying with any standards. In New Jersey, for example, the Department of Environmental Protection provides permits to electronics recyclers but there is no qualification process whatsoever.

Similarly, some recyclers tout their "EPA Certified" process. Again, the EPA currently has no certification process for electronics recycling.

Another note of caution is to understand just what a Certificate of Recycling actually is. It is the recycler's own certification of, typically, the total weight of material received on a particular date and confirmation that it was processed "in accordance with all state and federal regulations." It is good to have a Certificate for each shipment that you send for record-keeping purposes but remember, this is a highly unregulated industry and it is up to you to conduct your own due diligence.

The following are some guidelines for review:

- Do your homework: Develop a short list of pre-qualified recyclers. State environmental agencies may be able to provide a list of e-recyclers serving your state but that does not mean they are endorsed by the state.
- Ask the *right* questions: Don't be shy! This is your company you are protecting.
- Audit the facility: It is impossible to conduct due diligence without a physical and detailed facility audit.
- Look under the covers: Get all of the downstream information you require.
- Ask for references: A picture of the recycler's current satisfied clients will lend some credibility to the operations and level of service.

Lauren Roman is Vice President of Marketing for United Recycling Industries, Inc. located in West Chicago, IL. Lauren has over 20 years experience in the environmental industry having spent 13 years in hazardous and solid-waste management and 8 years in electronics recycling. She is responsible for business development, keeping pace with

market and regulatory issues and consulting directly with businesses to assess and address asset management needs.

Lauren has had numerous articles published on topics surrounding computer and electronics and speaks on electronic recycling issues to professional business and recycling groups throughout the U.S. She can be reached at:
Lroman@unitedrecycling.com

