

Case Study

Vanderbilt Makes the Move to Clean Harbors Online Services

The Environmental Health & Safety staff at Vanderbilt University are experienced chemical waste managers. Under the direction of Kevin Warren, Assistant Director for Vanderbilt Environmental Health & Safety, the program continues to pace management practices in higher education. With responsibilities for collecting and managing hazardous materials from more than 500 areas that generate 240,000 lbs of chemical waste each year, the EH&S department has to be efficient.

The genesis of a waste management program

The EH&S department formalized the waste management process in 1999. Explained Warren, “We went to each area on campus, every lab, every shop, and talked to them about what kind of waste they might generate. We educated them on proper disposal methods and set them up with collection areas in their labs. That was when the program really took off.”

The department collects and manages chemicals from research and instructional labs, hospitals and clinics. It takes spent batteries from many sources, as well as hazardous waste materials from the art department, the carpentry and paint shops, and vehicle maintenance garages. Buildings and grounds also generate waste from a number of sources, including PCBs (Polychlorinated Biphenyl) from transformers, as well as aerosols and chemicals.

The EH&S department also supports special projects across the campus explained Safety Officer Marty Gish, “If they’ve closed out a building and generated some chemical waste, it will be disposed of through

Highlights

Vanderbilt University’s EH&S department collects and disposes of 240,000 lbs of hazardous and chemical waste from 500 locations. It turned to Clean Harbors Online Services to help manage the collection, storage and disposal process, as well as internal billing. The result was:

- Real-time data sharing with Clean Harbors to expedite shipments
- More efficient chemical profile management
- Improved reporting and internal billing support

The screenshot shows the Clean Harbors Online Services web application. The interface includes a navigation menu with options like Home, View/Select Generators, Vendors, Invoices, Waste Inventory, Profiles, Reference, Compliance, Relief, Reports, and Admin. The main content area displays a table of waste management data for a specific container type (All Labpacks & Drums). The table has columns for Container #, Customer Container, Profile, Waste Class, Profile Status, Shipping Name, Drum Size, Shipping Volume, Shipping Units, Waste Code, Days in Location, Profile Description, Area, Cost Center, and Creation Date. The table lists several containers with details such as waste class (UN1830 WASTE SULFURIC ACID, RQ 31), shipping volume (55.0000 Gallons), and creation dates (12/09/2008).

Container #	Customer Container	Profile	Waste Class	Profile Status	Shipping Name	Drum Size	Shipping Volume	Shipping Units	Waste Code	Days in Location	Profile Description	Area	Cost Center	Creation Date
0000347876	Cust # 1	CH21817	B26A	A	UN1830 WASTE SULFURIC ACID, RQ 31	55GM	55.0000	Gallons	0000	64	Sulfuric Acid solution	Area CHS	Cost Center CHS	12/09/2008
0000347877	Cust # 2	CH21817	B26A	A	UN1830 WASTE SULFURIC ACID, RQ 31	55GM	55.0000	Gallons	0000	64	Sulfuric Acid solution	Area CHS	Cost Center CHS	12/09/2008
0000347878	Cust # 3	CH21817	B26A	A	UN1830 WASTE SULFURIC ACID, RQ 31	55GM	55.0000	Gallons	0000	64	Sulfuric Acid solution	Area CHS	Cost Center CHS	12/09/2008
0000347879	Cust # 4	CH21817	B26A	A	UN1830 WASTE SULFURIC ACID, RQ 31	55GM	55.0000	Gallons	0000	64	Sulfuric Acid solution	Area CHS	Cost Center CHS	12/09/2008
0000347914	Cust # 5	CH25287	F81	A	UN2828 WASTE FLAMMABLE LIQUID, TOXIC CORROSIVE (AQUOCL), S (A3), RFL, RQ 31	55GM	400.0000	Pounds	0000	62	Solvents	Area CHS	Cost Center CHS	12/11/2008
0000347913	Cust # 6	144123344	F81	A	UN1830 WASTE SULFURIC ACID, RQ 31	55GM	55.0000	Pounds	0000	343	RAD Cartridges with Non-RCA, California	Area CHS	Cost Center CHS	12/11/2008

our department. Any chemical waste that’s generated at Vanderbilt will come to us at some point in time.”

As in most chemical waste scenarios, the Vanderbilt EH&S department collects waste from Satellite Accumulation Areas (SAAs) and brings it back to its facility for storage and packaging. It tracks which department generated the waste – the “responsible unit,” and generates information for internal billing.

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“We did away with the old system of having people bring the materials to us because we have the supplies and we have the training to do it safely. It cuts down on spills. It cuts down on problems. It also reduces the staff required to have RCRA [Resource Conservation Recovery Act] training,” said Warren.

Units generally submit an online collection request form on the EH&S website that lists their location and the materials, which then generates an email to EH&S. On a day-to-day basis, Gish and Safety Technician III, Uryan Nelson, group the requests into buildings and areas. Then they pick up the waste in compatible batches and return it to the Main Storage Area (MSA).

The process also gives them an opportunity to make sure that the responsible units are observing proper storage techniques with proper secondary containment, absorbent pads, chemical waste tags, etc. If Gish or Nelson see any issues, they'll contact the appropriate manager.

EH&S further controls the process by using preprinted tags that meet regulatory requirements for labeling and internal recordkeeping. The tags include information on the responsible unit, contact information for the safety officer, room number and container contents. The tag information is used to input the data into the waste management system.

Vanderbilt moves to Clean Harbors Online Services

Clean Harbors has been assisting Vanderbilt with the management and disposal of these materials for several years. “Clean Harbors' reputation was important in our decision because the waste is ours forever and we're liable for it. We felt confident in them, and they had the systems to track the waste and enable us to generate manifests. We can keep track of where it's going and when it reaches the disposal

facility. All of that is very important to us from a regulatory standpoint in addition to the internal tracking we do for billing,” said Warren.

Vanderbilt, which shipped 959 containers totaling 113 tons of waste last year, originally used a personal computer-based system that allowed them to log onto a Clean Harbors service to print manifests and other paperwork. It was state-of-the-art at the time, but was not fully interactive and required Vanderbilt to manually enter data into separate systems to meet all of its tracking and billing needs.

Early in 2008, Vanderbilt moved to Clean Harbors Online Services. It manages chemical profiles and inventories real-time through a convenient web interface to facilitate safe, efficient handling of chemicals on-site. It also expedites chemical recognition, packing, and shipping by producing timely and accurate inventories. Clean Harbors Online Services displays “where,” “how much,” and “how long” waste is in storage to ensure proper management. In addition, waste materials and costs can be related back to specific customer cost centers and business units to report volumes and allocate costs.

Clean Harbors Online Services enables Vanderbilt to accomplish several objectives using a single waste chemical management system. They are happy with Clean Harbors' approach. Said Warren, “Originally, they [Clean Harbors] came and asked what would be beneficial to us. They asked us exactly what it was in the previous system that we absolutely needed and what could be upgraded. So far, they've hit all of our needs.”

Clean Harbors Online Services addresses Vanderbilt's needs

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Clean Harbors Online Services offers advantages on several fronts. Three major areas that are of particular benefit to Vanderbilt include:

- **Real-time data sharing:** Real-time data sharing between Vanderbilt and Clean Harbors facilitates greater efficiency. Gish and Nelson bulk materials into lab packs at the MSA. Through instant communications with Clean Harbors they are able to avoid problems and improve the lab packs right on the spot. In the past, the problem would not become apparent until the client-server system uploaded the shipment information to the Clean Harbors database. “Today, Clean Harbors can immediately see what we have and where we’re at and, if there’s a problem, let us know right then and there – it’s a big benefit for us. It avoids fixing lab pack problems on shipment day, which would cause delays,” explained Gish.
- **Chemical profile management:** Another advantage for Vanderbilt resulting from real-time Online Services is that it helps expedite reactivating expiring waste profiles. In the past, a list of profiles for an upcoming shipment would be sent to Clean Harbors. The list would be reviewed and expiring profiles would be flagged. Vanderbilt would be notified and required to fill out a restart form and fax it to Clean Harbors for review and approval. Now the entire process is handled online, which expedites both profile reactivations and shipments.
- **Internal billing:** The most important change for Vanderbilt, however, is how Clean Harbors Online Services will help them facilitate internal billing. “We’ve got over 500 areas that generate waste, so that’s a lot of information to keep up with,” said Warren. “We have to be right both from internal and regulatory standpoints. It’s a major benefit to have a system that can do it all for us and cut down on the amount of manual

paperwork that we have to do.”

Clean Harbors Online Services generates a report by date range or other parameters that tells Warren how many pounds are generated by each responsible unit during the time period. The information is exported into a Microsoft Excel-readable format for direct import into Vanderbilt’s EH&S billing spreadsheet, which eliminates potential transcription errors.

The weight information from Clean Harbors Online Services becomes the basis for calculating all of the EH&S internal chargeback fees. Warren imports additional data such as equipment, supplies and facilities rental costs, from other internal expense reporting systems. These expenses are factored in based on the weight data provided by Clean Harbors. The spreadsheet’s embedded formulas automatically add the actual Clean Harbors disposal costs and calculate the internal billing results.

Bills totaling almost \$400,000 per year for waste collection and disposal, as well as support expenses, are generated for the College of Arts & Sciences, the School of Engineering, the Medical Center, and Plant Operations.

“The reports are much easier to run. It’s more user friendly. It’s faster and much more robust. We could not do it without the Clean Harbors system. It will allow us to put the information in one time, print accurate manifests, LDR [Land Disposal Restrictions] forms and shipping labels, and correctly charge the departments. It does everything that we did in the past more efficiently,” concluded Warren.