

Course Learning Outcomes for Unit III

Upon completion of this unit, students should be able to:

3. Evaluate the regulatory environment related to industrial and hazardous waste.
 - 3.1 Assess the historical and current regulatory environment.
 - 3.2 Summarize Resource Conservation and Recovery Act Requirements (RCRA).
 - 3.3 Appraise the impact of nonuniform international environmental laws.

Course/Unit Learning Outcomes	Learning Activity
3.1, 3.2, 3.3	Unit Lesson Article: "Hidden Externalities: The Globalization of Hazardous Waste" Unit III Case Study

Required Unit Resources

In order to access the following resource, click the link below.

Müller, S. M. (2019). [Hidden externalities: The globalization of hazardous waste](https://libraryresources.columbiasouthern.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bsu&AN=136447190&site=eds-live&scope=site). *Business History Review*, 93(1), 51–74. Retrieved from <https://libraryresources.columbiasouthern.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bsu&AN=136447190&site=eds-live&scope=site>

Unit Lesson

Introduction

Welcome to Unit III. Previously, we learned the key attributes of solid and hazardous waste. The past unit included descriptions of how to determine if a waste is a solid waste or a hazardous waste. Unit III will present the history of the regulatory environment, Resource Conservation and Recovery Act (RCRA) requirements, the impact of nonuniform internal environmental laws, and the current regulatory environment.

Historical Context

To understand the current regulatory environment, it is helpful to have a historical perspective. The United States declared independence in 1776, which was prior to industrial development. In the early to mid-1800s, inventions such as the steam engine became more and more widely used. Such inventions reduced human work or allowed more work to be done in a given amount of time. Inventions were encouraged by the U.S. government. Commerce was desirable.

With such an emphasis on resource development and commerce, environmental impacts of development were an afterthought. Only when waste limited commerce were laws passed. The 1899 Rivers and Harbors Appropriation Act was enacted, in part, because waste materials dumped into rivers began to impede boat traffic on rivers. Though this act is often considered the first environmental law in the United States, it was passed to aid commerce (U.S. Fish & Wildlife Service, n.d.).

In the dawn of the 20th century, it was common to get rid of waste in the easiest way possible. Eventually, as populations increased in cities, people realized that central locations were convenient for collecting wastes. These were considered dumps. Waste also continued to be dumped into oceans and rivers as long as commerce was not impacted.

With the advent of World Wars I and II, industrial activity grew at a pace far exceeding previous periods. Safe storage of commercial chemicals was a priority. On the other hand, disposal of used and waste chemicals was considered burdensome. Thus, the cheapest way to dispose of unused materials was to simply put them in dumps, pour them on the ground, store them in containers behind a facility, or dump them in rivers—as long as it did not reduce commerce.

With the large amount of waste chemicals being produced by the mid-1900s, adverse impacts of waste disposal methods were appearing. Though sources of noxious odors and fires could be identified and fixes could be implemented, health impacts were more nebulous. If parents noticed that more than the typical number of children who lived in a neighborhood had headaches, it could be blamed on food, a group activity, or coincidence. If more than the usual number of people got skin rashes, it could be explained away by something temporary that they all were exposed to, or, again, a coincidence. If unusual health problems become regular occurrences, then the idea of coincidence loses credence. People will then often start looking for causes.



Love Canal in Niagara Falls, New York, is fenced off due to toxic waste contaminated land. What was a community of homes and a school has been torn down because a chemical company buried drums of hazardous waste before the community was built, and the drums started leaking and causing residents to develop health problems. (Buffalutheran, 2012)

In one of the most notable environmental-related health incidents, the neighborhood of Love Canal in Niagara Falls, New York, experienced an environmental tragedy. The idea of a canal was proposed by William Love at the turn of the 20th century to provide hydroelectric power to a dream community. Unfortunately, the canal was never completed. The site was later used for the dumping of toxic waste by the city and industry. In 1953, the site was covered with soil and sold to the city of Niagara Falls for \$1. Soon after the purchase by the city, a school and homes were built on the site. It seemed like a great place to live (Beck, 2016)

Within approximately ten years, chemicals began oozing out of the ground at the Love Canal site. Neighborhood residents had a high incidence of unusual diseases. In this and other cases typical at the time, the residents could not immediately pinpoint the cause of the health problems. Over years, residents worked together hiring medical and scientific experts, initiating lawsuits, and exerting public pressure. After their successful investigations, companies and government agencies ultimately unburied hundreds of containers containing hazardous chemicals. After years or decades of involvement, residents proved that the disposal of waste chemicals caused health effects (Beck, 2016)

With the many contaminated waste sites nationwide causing health effects due to poor disposal practices (practices which were legal at the time), the U.S. Congress decided to pass strict laws regulating solid and hazardous waste and the cleanup of contaminated sites. As mentioned previously, the main law governing solid and hazardous waste that was passed was the RCRA in 1976 (United States Environment Protection Agency [EPA], 2015b). The law governing cleanup of existing contaminated sites was the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) which passed in 1980 (EPA, 1980). Both of these seminal laws were passed primarily due to the actions of citizens who were reacting to environmental health problems over the previous two decades.

RCRA Requirements

The passage of the RCRA and the CERCLA were testaments to the hard work and long-term commitment of many parents whose children got sick due to living near (initially unknown to them) buried hazardous chemical wastes. The regulatory environment changed as a result of these two laws. This unit focuses on the RCRA, which impacts how companies handle their industrial and hazardous waste.

One of the changes initiated by the RCRA is that it required the EPA to set up new rules for solid waste disposal. Dumps were no longer allowed in the United States. The United States would now have solid waste landfills for municipal waste. Landfills would be required to meet stringent design and operations criteria. Design criteria included clay and plastic liners, pipes in the landfill to carry away liquid that seeps to the bottom (called leachate), gas collection, daily soil cover to prevent waste from blowing away and for rodent control, off-site groundwater monitoring wells, and proper capping upon landfill end-of-life closure. During operation, the groundwater wells would be regularly monitored to make sure chemicals did not migrate out of the landfill. The leachate collection pipes would send the leachate either to a municipal wastewater treatment plant, back to the landfill, or to another treatment source prior to discharge to an off-site waterway (EPA, 2016).



Heathfield landfill site shows bulldozers moving trash and garbage into a landfill with netting (required by EPA guidelines) to prevent waste from blowing away. (Stott, 2010)

RCRA instituted many rules governing hazardous waste. It required hazardous waste treatment, storage, and disposal facilities to be identified as such and to obtain a permit. Rules were set up so that corporations could determine if they had hazardous wastes (this was covered in Unit II). There were now different rules to determine whether or not an organization was a small quantity generator or a large quantity generator. Large quantity generators are subject to higher scrutiny. Per RCRA, hazardous wastes were now required to be tracked via a manifest. When a truck took hazardous waste from one location to another location, the manifest had to indicate the locations, owners, trucking company, and types and quantities of wastes. In RCRA terminology, hazardous waste would now be tracked from "cradle to grave" (EPA, 2015a).

The passage of the RCRA entirely changed the dynamics for companies that generated hazardous wastes. Getting rid of hazardous waste was no longer cheap or simple. It could no longer be simply stored in 55-gallon drums and placed in a field behind a building. RCRA encouraged reducing the use of chemicals, reusing chemicals, and recycling chemicals. If those could not be accomplished, then hazardous waste burial or incineration would be options at licensed facilities.

Impact of NonUniform International Laws

The United States was one of the first countries to enact strict laws such as the RCRA governing hazardous waste. Right away, U.S. companies recognized the increased expense of complying with RCRA mandates regarding industrial and hazardous wastes. Since other countries had weaker laws, some entrepreneurs in the United States found ways to help U.S. companies dispose of hazardous waste in other countries. This would bypass much of the "red tape" of the RCRA and reduce costs. The legality of such an operation was murky (EPA, 2015c).

The assigned article for Unit III discusses two entrepreneurial brothers who formed a company that would pay U.S. generators of hazardous waste for their waste. The brothers would have the waste shipped to an (unlicensed) storage facility. The brothers had contacts with companies in other parts of the world that needed the chemicals for industrial activities. The companies operated in countries that had few, if any, environmental laws. The brothers sold the chemicals to the buyers for a much higher cost than the brothers paid for the chemicals. Essentially, the brothers paid U.S. companies minimal amounts for the chemicals and sold them at higher cost. Though the chemicals were considered wastes to the U.S. companies selling them, the brothers marketed the chemicals as having good quality to the buyers. This worked from the early 1970s into the 1980s when law enforcement and courts finally caught up with the brothers, but not for the expected reason (Müller, 2019).

Current Regulatory Portrait

Now that we are more than 40 years beyond the 1976 passage of RCRA, U.S. companies have matured and generally complied with RCRA requirements, realizing that an environmental focus is a part of business, and that it can be used for positive marketing. Further, the RCRA and later environmental laws such as the 1990 Pollution Prevention Act provide incentives to companies which comply and go beyond the laws' requirements (EPA, 2013). Companies now recognize that they can use environmentally safe chemicals as alternatives in their processes or modify their manufacturing processes to aid the environment. Environmental compliance has essentially become mainstream.

Conclusion

This lesson has presented the regulatory environment related to industrial and hazardous waste. It began with a historical context showing that initially U.S. laws encouraged commerce, only aiding the environment if commerce was impacted. This lesson then moved on to the cause of modern environmental laws. People realized that their health and quality of life were impacted by the unregulated dumping of hazardous wastes, often in residential neighborhoods. Regular citizens, through sheer perseverance, were able to convince Congress to pass environmental laws. As an unintended consequence, the new laws enabled entrepreneurs to move hazardous wastes from U.S. soil to countries with weaker or no environmental laws at a profit. As the decades have passed since the 1976 passage of RCRA, U.S. companies have matured and now generally weave environmental compliance into their business plans. They realize that being a good environmental steward helps, not only the environment, but their public perception and marketing.

References

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- U.S. Fish & Wildlife Service. (n.d.). Digest of federal resource laws of interest to the U.S. Fish and Wildlife Service: Rivers and Harbors Appropriation Act of 1899. Retrieved from <https://www.fws.gov/laws/lawsdigest/RIV1899.HTML>

Suggested Unit Resources

In order to access the following resources, click the links below.

This video, *The Colbert Brothers' Multi-Million Dollar Chemical Con*, is an interview of the Colbert Brothers. The Colbert brothers are the topic of the required article, "Hidden Externalities: The Globalization of Hazardous Waste."

BillMoyers.com. (2015, May 4). [The Colbert brothers' multi-million dollar chemical con \[Video file\]](https://www.billmoyers.com/2015/05/04/the-colbert-brothers-multi-million-dollar-chemical-con/). Retrieved from <https://c24.page/6arw52wusxwkbjvteeegjw9fdn>

To learn more about the regulatory environment related to industrial and hazardous wastes, visit the following U.S. Environmental Protection Agency website for a list of links to the *Code of Federal Regulations*.

United States Environmental Protection Agency. (2015). [Resource Conservation and Recovery Act \(RCRA\) regulations](https://www.epa.gov/rcra/resource-conservation-and-recovery-act-rcra-regulations). Retrieved from <https://www.epa.gov/rcra/resource-conservation-and-recovery-act-rcra-regulations>

To learn more about the "cradle to grave" tracking of hazardous wastes, please visit the following web page.

United States Environmental Protection Agency. (2015). [Hazardous waste](https://www.epa.gov/hw). Retrieved from <https://www.epa.gov/hw>

To learn more about the history of the Resource Conservation and Recovery Act, please visit this web page.

United States Environmental Protection Agency. (2015). [History of the Resource Conservation and Recovery Act \(RCRA\)](https://www.epa.gov/rcra/history-resource-conservation-and-recovery-act-rcra). Retrieved from <https://www.epa.gov/rcra/history-resource-conservation-and-recovery-act-rcra>

Learning Activities (Nongraded)

Nongraded Learning Activities are provided to aid students in their course of study. You do not have to submit them. If you have questions, contact your instructor for further guidance and information.

The EPA has ten regional offices, each of which is responsible for several states and territories. Locate regulatory information about your state by visiting the [EPA website Health and Environmental Agencies of U.S. States and Territories](#). There you can select your state or territory.

For instance, Columbia Southern University is located in the state of Alabama. By selecting Alabama, you can view three links for resources on the state.

- Alabama Department of Environment Management
- Alabama Department of Conservation and Natural Resources
- Alabama Department of Public Health

Find your state or territory, and locate pertinent information on this matter.