

## APES OBJECTIVES

### FriRel: CHAPTER 16 Objectives - WASTE GENERATION & WASTE DISPOSAL

**KEY OBJECTIVES:** The key objective of this chapter is to understand what constitutes waste and how we deal with the problems associated with it. Students should also be comfortable with the 3 Rs – reduce, reuse and recycle – when discussing solid waste.

#### 51. Only Humans Generate Waste

- Explain why we generate waste & describe recent waste disposal trends.
- Describe the content of the solid waste stream in the US. State the percentage of the world's solid wastes that is produced by the United States. State the percentage of solid waste produced in the United States that is municipal solid waste.
- Compare waste management and pollution prevention approaches to solid and hazardous waste

#### 52. The Three R's and Composting

- Describe the three R's.
- Define *compost*. Understand the process & benefits of composting.
- List reuse strategies for refillable containers, grocery bags, and tires.

#### 53. Landfills & Incineration

- Describe the goals, design, & function of a solid waste landfill. Describe a modern sanitary landfill. Summarize the benefits and drawbacks of burying solid wastes in sanitary landfills.
- Explain the design & purpose of a solid waste incinerator.
- Assess the pros and cons of incineration of hazardous and solid wastes.

#### 54. Hazardous Waste

- Define hazardous waste & discuss the issues involved in handling it.
- Describe the laws/regulations/legislation regarding hazardous waste.
- Describe how Superfund (CERCLA) has been subverted and how its enforcement can be improved.

#### 55. New Ways to Think About Solid Waste

- Explain the purpose of life-cycle analysis.
- Describe alternative ways to handle waste & waste generation. Discuss the variety of environmental management methods to deal with solid waste and describe the attributes and drawbacks of each of these methods.
- Integrated Waste Management. Describe each of the elements and priorities in an Integrated Waste Management system.

### VOCABULARY TERMS

|                         |                         |                   |
|-------------------------|-------------------------|-------------------|
| • waste                 | • closed-loop recycling | • bottom ash      |
| • municipal solid waste | • open-loop recycling   | • fly ash         |
| • waste stream          | • compost               | • acid deposition |

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| <ul style="list-style-type: none"> <li>• e-waste</li> </ul>          | <ul style="list-style-type: none"> <li>• leachate</li> </ul>           | <ul style="list-style-type: none"> <li>• hazardous waste</li> </ul>                    |
| <ul style="list-style-type: none"> <li>• reduce</li> </ul>           | <ul style="list-style-type: none"> <li>• sanitary landfills</li> </ul> | <ul style="list-style-type: none"> <li>• superfund</li> </ul>                          |
| <ul style="list-style-type: none"> <li>• reuse</li> </ul>            | <ul style="list-style-type: none"> <li>• tipping fee</li> </ul>        | <ul style="list-style-type: none"> <li>• brownfields</li> </ul>                        |
| <ul style="list-style-type: none"> <li>• recycle</li> </ul>          | <ul style="list-style-type: none"> <li>• siting</li> </ul>             | <ul style="list-style-type: none"> <li>• life-cycle analysis</li> </ul>                |
| <ul style="list-style-type: none"> <li>• source reduction</li> </ul> | <ul style="list-style-type: none"> <li>• incineration</li> </ul>       | <ul style="list-style-type: none"> <li>• integrated waste management</li> </ul>        |
| <ul style="list-style-type: none"> <li>• recycling</li> </ul>        | <ul style="list-style-type: none"> <li>• ash</li> </ul>                | <ul style="list-style-type: none"> <li>• Law - RCRA</li> <li>• Law - CERCLA</li> </ul> |