

# **OPERATOR BASICS TRAINING SERIES 2005 WASTEWATER LAGOONS COURSE LEARNING OBJECTIVES AND OUTCOMES**

## **WASTEWATER LAGOONS**

### **Unit 1 - The Basics**

#### **Purpose:**

Provide operators with a basic knowledge of the origins of wastewater lagoon treatment, what constitutes wastewater, how responsibilities are divided in the management of a wastewater lagoon system and the rules and regulations that govern the operation of a wastewater lagoon system.

#### **Key Concepts:**

- 1) Understand the characteristics and constituents of wastewater,
- 2) Identify who is responsible for what aspects of a wastewater system, and
- 3) Gain basic knowledge about federal, state and local wastewater regulations.

### **Unit 2 - Collection Systems and Lagoon Structure**

#### **Purpose:**

Provide operators with a basic knowledge of wastewater collection systems and lagoon structure. Flow and load variations, cross-connection control and backflow prevention, facility security and safety are also discussed in Unit 2 insofar as they relate to wastewater collection systems and lagoon structure.

#### **Key Concepts:**

- 1) Recognize the collection system and wastewater lagoon structure components,
- 2) Become familiar with wastewater flow and load, and
- 3) Understand the importance of cross-connection control and backflow prevention.

### **Unit 3 - Wastewater Treatment**

#### **Purpose:**

Provide operators with the basic knowledge of how biological, chemical and natural physical treatment processes occur in a wastewater lagoon system.

#### **Key Concepts:**

- 1) Understand the biological, chemical and natural physical treatment processes that occur in a wastewater lagoon system, and
- 2) Recognize the importance microorganisms play in the treatment process of a wastewater lagoon system.

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## **Unit 4 - Operation and Maintenance**

Purpose:

Provide operators with a basic knowledge of the different types of lagoon systems, discharge options, disinfection choices, sludge removal options, and safety and security concerns and how all these issues pertain to operation and maintenance.

Key Concepts:

- 1) Comprehend the basic operations of a wastewater lagoon system,
- 2) Become familiar with the proper maintenance required for a lagoon system, and
- 3) Recognize the importance of facility security and safety as related to operation and maintenance.

## **Unit 5 - Monitoring and Reporting**

Purpose:

Provide operators with a basic knowledge of what is involved in collecting wastewater lagoon samples for testing as well as the importance of monitoring influent and effluent flows and sludge accumulation. Operators will also become familiar with the rules and regulations that govern sampling, testing and monitoring.

Key Concepts:

- 1) Identify the types of samples that are collected and their purposes,
- 2) Understand the importance of influent and effluent sample site locations,
- 3) Become familiar with proper sample containers and how to label them, and
- 4) Understand the purpose and methods of monitoring influent and effluent flows and sludge levels.

## **Unit 6 - Troubleshooting Lagoons**

Purpose:

Provide operators with helpful information for troubleshooting problems that can arise within a wastewater lagoon system. Provide basic information about common wastewater problems and offer guidance in identifying causes and solutions.

Key Concepts:

- 1) Become familiar with wastewater lagoon problems,
- 2) Recognize causes of wastewater lagoon problems, and
- 3) Identify solutions to wastewater lagoon problems.