



Texas Commission on Environmental Quality

Compliance Support Division
January 2008

Training For Municipal Solid Waste Facility Supervisors Of Type I and Type IAE Landfills and Type IX Landfill Mining

Curriculum Guidance – Class A MSW License Training Course

This is a 28-30-hour course for supervisors of Type I and Type IAE landfills and landfill mining operations. The course must include instruction to ensure supervisors are knowledgeable of rules that regulate municipal solid waste facilities they supervise. The course should include sufficient instruction, demonstrations, and course materials to develop confidence in the supervisor to enable him/her to supervise the day to day operations of the MSW facility in compliance with the rules (30 TAC 330). This course is a stand alone course. Time periods for all course topics are approximate. Renewal of a Class A level license requires 20 hours of approved continuing education.

Course topics should include: (2 Hours)

INTRODUCTION

- Qualifications for obtaining initial licenses and renewal of licenses. 30 TAC 30 Subchapter F.
- **Brief** history of municipal solid waste from unregulated open-dumping to regulated Subtitle D sanitary landfills and recycling today.
- Introduction to statutes and rules pertinent to MSW facilities including, how to locate and understand the rules.
- Definitions and language pertaining to municipal solid waste management facilities.
- General discussion – Texas Health Safety Code 361, 341, 343, 363, 371, 382, and Texas Water Code 7, 26, and 28.

CLASSIFICATION OF MUNICIPAL SOLID WASTE FACILITIES

Type I and IAE landfills may incorporate other regulated processes and activities within its permitted boundary. Therefore, it is critical to include regulations and operating standards for those facilities in this training course. *Example: A Type I or IAE permitted landfill may also operate a Type IV disposal area (an area for brush, construction, or demolition waste, and/or rubbish); a Type V – Processing Facility (recycling, materials recovery), etc.* Overview of MSW facilities—types of wastes accepted, authorizations/notifications required, etc.

- Type I Standard Landfill
- Type IAE Arid Exempt Landfill
- Type IV Brush, Construction and Demolition Wastes
- Type IVAE Arid Exempt Landfill
- Type V Solid Waste Processing
- Type IX Landfill Mining for Beneficial Use

MUNICIPAL SOLID WASTE COLLECTION AND TRANSPORTATION 330.101 – 330.107

Transporters delivering waste to the MSW facility are responsible for removal of unacceptable or unauthorized waste. Transporters are also responsible for collecting spillage on route to the MSW facility as well as maintaining collection vehicles in a manner to prevent loss of waste and fluids from the vehicle. Supervisors of municipal solid waste facilities should be knowledgeable of the responsibilities of transporters that enter the MSW facility.

- Transporters responsibilities in relation to:
 - Delivery and removal of unauthorized waste
 - Collection of spillage
- Transporters responsibilities in relation to:
 - Vehicle sanitation standards
 - Operating condition of vehicles

(12-14 Hours)

TYPE I & TYPE IAE LANDFILLS

GENERAL PROHIBITIONS

- Discharge or imminent threat of discharge of MSW into or adjacent to the waters in the state
- Creation and maintenance of a nuisance
- Endangerment of the human health and welfare or the environment
- Open dumps
- Open burning
- Prohibited wastes

EXEMPTED WASTE MANAGEMENT ACTIVITIES

PERMIT AND REGISTRATION APPLICATION

- Provide a **brief** overview of the permit and registration application process.
- Technical requirements of the permit application process are not recommended for this course.
- Other authorizations – 330.55
 - Standard air permit/authorization
 - Wastewater management
 - Storm water management

WASTE SCREENING/RANDOM INSPECTIONS/HAZARDOUS WASTE IDENTIFICATION

- Procedures to exclude and/or prevent off loading of unauthorized or hazardous wastes
- Recordkeeping, reporting, and record retention requirements
- Emergency preparedness/corrective action plan/contingency plan

INDUSTRIAL WASTE

- Hazardous waste determination
- Industrial waste classification and coding
- Manifesting requirements
- Recordkeeping requirements

SPECIAL WASTE ACCEPTANCE

- Criteria for accepting special waste to include:
 - Disposal criteria
 - Authorization requirements
 - Authorization not required
 - Recordkeeping, reporting, record retention

OPERATIONAL STANDARDS FOR MSW LANDFILLS**

MSW supervisors should be fully aware of requirements of Site Development Plan (330.63(a)) including facility access, waste movement, water pollution control, endangered species protection, surface water drainage, and provisions for all-weather operation to minimize tracking of mud onto public access roads, etc. The supervisor should also have a working knowledge of proposed landfill methods, liner quality control plan, GWSAP, LGMP, closure plan, and post-closure plan. Estimating costs for closure and post-closure, and demonstration of financial assurance is probably not a function of the day to day supervisor—general knowledge only.

- Operating Record - Contents
 - The operating record includes all required documents and plans (SDP, SOP, Final Closure Plan, Post-Closure Maintenance Plan, LGMP, etc.) any deviation from the permit and documents associated with the permit is a violation.
 - Recordkeeping Requirements
 - Site Operating Plan 330.127(1)-(6) and 330.65(a) - A site operating plan (SOP) is required for all permitted and registered municipal solid waste (MSW) facilities in accordance with Title 30 Texas Administrative Code (30 TAC) Section 330.65. A site operating plan discusses how an owner or operator plans to conduct daily operations at a facility. It includes information about functions and qualifications of personnel, equipment, and instructions.
 - Key landfill personnel/chain of command
 - Personnel training
 - Types of equipment- sizes, numbers, functions
 - Fire Protection
 - Fire protection standards
 - Employee training
 - Fire fighting equipment
 - Reporting requirements
 - Access Control
 - Inspections
 - Maintenance and repairs
 - Reporting
 - Unloading of Waste 330.183
 - Size and number of unloading areas
 - Training for spotters – authority and responsibilities
 - Removal of unauthorized waste
 - Recording of unauthorized waste
 - Type IV and IVAE Landfills – Waste Acceptance
 - Acceptable wastes
 - Procedures for excluding putrescible wastes
 - Waste in enclosed containers
 - Facility Operating Hours
 - Site Signage
 - Control of Windblown Solid Waste and Litter
 - Easements and Buffer Zones

- Landfill Markers and Benchmarks
- Materials Along the Route to the Site
- Disposal of Large Items
- Odor Management Plan
 - How to respond to an odor complaint
 - Causes for odor
 - Correction of odor problems
 - Disease and Vector Control
- Site Access Roads
- Salvaging and Scavenging
- Landfill Gas Control
- Endangered Species Protection
- Oil, Gas, and Water Wells
- Compaction
 - Proper compaction techniques
 - Maintaining proper depth for lifts
 - Maximum compaction
- Landfill Cover
 - Daily cover requirements
 - Intermediate cover requirements
 - Final cover requirements
 - Alternate daily cover (ADC)
 - Cover requirements for Type IV and IVAE landfills
 - Cover application logs – content and documentation
 - Erosion control
 - Supervisor's certification
- Ponded Water
 - Prevention/elimination
 - Correction
- Disposal of Special Waste – Special Waste Acceptance Plan
 - What are special wastes
 - Who may accept special wastes
 - Approval for acceptance of certain special wastes
 - Contingency plan for spills
 - Liquid waste acceptance/processing
 - Soils contaminated with petroleum products, crude oil, chemicals
 - Regulated asbestos containing material (RACM) and Non-RACM
 - Empty containers
 - Municipal hazardous wastes from CESQG's
 - Used oil filters (See General Prohibitions)
 - Industrial wastes – Class I, 2, and 3 wastes
 - Acceptance
 - Authorization
 - Disposal
 - Manifest requirements
 - Recordkeeping and reporting
 - Class I wastes prohibited from disposal in IAE landfills
- Visual Screening of Deposited Waste
- Leachate and Gas Condensate Management
- Operational standards for Class 1 industrial solid waste management at MSW facilities

- Requirements for managing Class 1 industrial solid waste at MSW facilities

PERMIT MODIFICATION REQUIREMENTS – GENERAL INFORMATION

SURFACE WATER DRAINAGE

- Storm water Pollution and Prevention Plan (SWP3)
- Managing run-off and run-on
- Surface water drainage
- Permitted drainage patterns
- Protection from flooding
- Storm water sampling – What is a sampling event?
 - Point source
 - Recordkeeping
 - Reporting

LINER SYSTEM, DESIGN, AND OPERATION – BASIC KNOWLEDGE

- Type I landfill liner system
- Alternate liner system
- Type IV liner design
- Class I industrial cell
- Soil liner evaluation report (SLER)
- Protecting the integrity of a liner

LEACHATE COLLECTION SYSTEM

- Controlling Leachate – Best Management Practices
 - Working face size
 - Proper waste compaction
 - Proper landfill cover
 - Preventing excess water in the working face
- Leachate removal
 - Pump and re-circulate
 - Pump and dispose

LANDFILL GAS MANAGEMENT (LFG)

- Methane gas in facility structures
- Methane gas at the facility boundary
- Monitoring – type and frequency
- Concerns of landfill gas
 - Explosion and fire danger
 - Adverse health effects
 - Odor nuisance
 - Complaints
- Uses for LFG
- Locations for gas control systems
- LFG management
 - LFG flares
 - Extraction systems
 - Methane gas levels
 - Exceedance detection and reporting requirements
 - Remediation plan

GROUNDWATER MONITORING AND CORRECTIVE ACTION – BASIC INFORMATION

- Groundwater sampling and analysis plan - GWSAP
- Number of wells required
- Background monitoring wells
- Point of compliance
- Well spacing
- Certification

TYPE IAE and IVAE LANDFILLS – ARID EXEMPTION

- Liner System
- Groundwater Monitoring
- Waste Acceptance Rate
- Practical Alternate
- Annual Average Precipitation

CLOSURE AND POST-CLOSURE – BASIC INFORMATION

- Final cover – infiltration and erosion
- Final cover composition
- Initiation of closure activities
- Post-closure requirements
 - Right of entry
 - Leachate collection systems
 - Groundwater monitoring
 - LFG monitoring
 - Corrective action cost estimates
 - Use of land over closed sites

LOCATION RESTRICTIONS – BASIC INFORMATION

(6 Hours)

OPERATING STANDARDS FOR TYPE V MSW STORAGE AND PROCESSING UNITS

Other processes and storage activities may be allowed at permitted landfills, therefore the following instruction should be included in the A level course. Many topics repeat operating standards for MSW landfills; many are specific to storage and processing units.

- Applicability
- Waste Acceptance and Analysis
 - Sources and characteristics of waste
 - Types and amounts
 - Parameter limitations
 - Storage limits and processing time
 - Effluent sampling
 - Analysis for waste received
 - Recordkeeping
- Facility Generated Wastes
 - Characteristics and constituent concentrations of wastes generated
 - Processing and disposal of facility generated wastes
 - Sludge management
- Contaminated Water Management
 - Liquid disposal

- Contaminated water and leachate management
- Leachate and gas condensate prohibitions
- Discharge requirements
- Effluent limitations
- Storage prohibitions
- Storage Requirements
- Approved Containers
- Citizen's Collection Stations
- Stationary Compactors
- Recordkeeping and Reporting
- Fire Protection
 - Water supply
 - Firefighting equipment
 - Fire protection plan
- Access Control
- Unloading of Wastes
- Spill Prevention and Control
- Operating Hours
- Facility Signage
- Control of Windblown Material and Litter
- Materials Along the Route to the Site
- Facility Access Roads
- Noise Pollution and Visual Screening
- Overload and Breakdown
 - Design capacity
 - Alternate processing or disposal plan
- Sanitation
 - Minimum requirements
 - Onsite storage limitations
 - Wash water disposal
- Ventilation and Air Pollution Control
- Health and Safety
 - Personnel training
 - Facility health and safety plan
- Employee Sanitation Facilities
- Surface Water Drainage
- Closure Requirements for Municipal Solid Waste Storage and Processing Units
- Financial Assurance – Basic Information
- Groundwater Monitoring – Basic Information

FEES AND REPORTING – BASIC INFORMATION

AIR PERMITS FOR MSW LANDFILLS AND TRANSFER STATIONS – OPERATIONAL REQUIREMENTS 330.991(a)-(d)

MEDICAL WASTE MANAGEMENT

- Treatment and disposal of medical waste

(2 Hours)

LANDFILL MINING – TYPE IX FACILITIES – GENERAL INFORMATION

Landfill mining facilities considered to be in conjunction with permitted landfill facilities may be located at municipal solid waste permitted facilities. All landfill mining operations shall comply with all of the following requirements.

- General Requirements
- Variances
- Relationship with Operating Landfills
- Air Quality Requirements
- Operational Requirements and Design Criteria
- Required Reportings
- Sampling and Analysis Requirements for Final Soil Product
- Final Soil Product Grades and Allowable Uses

(6 Hours)

GENERAL TOPICS – (Include Measurable Verification of Comprehension)

REGULATIONS, REGULATORS, AND PUBLIC RELATIONS

- Brief history of municipal solid waste management—the rule making process.
- Authority and relationships with other governmental entities.
- How to effectively communicate with regulators during routine site and complaint investigations.
 - Preparing for site inspection (scheduling time, records needed, sampling)
 - Responding to notices of violation and enforcement
 - Corrective action plan
- Good neighbor relations
 - Responding to complaints
 - Investigating a complaint
 - Corrective action

BASIC MATH

Supervisors of MSW facilities should have basic mathematical skills in order to measure and evaluate basic information. Instruction should be given to include:

- Calculating averages
- Conversion processes (pounds to tons, cubic feet to cubic yards, etc.)

OPERATING EQUIPMENT

In order to comply with an MSW facility's permit, proper equipment operation is a critical function.

- Maximizing airspace through proper cell development, compaction, and fill sequence
- Equipment productivity - proper operating procedures
- Maximizing cover material – best management practices

EQUIPMENT MAINTENANCE

In order to comply with an MSW facility's permit, proper equipment maintenance is a critical function.

- Avoiding unnecessary breakdowns/proper equipment maintenance
- Back up equipment/emergency preparedness

SAFE OPERATING PROCEDURES AND WORKPLACE HAZARDS

Identifying workplace hazards and communicating those hazards to employees and the general public is necessary to protect human health and safety.

- Effective safety programs
- Workplace hazards
- Employee and public awareness
- Working face safety, traffic at the facility, effective communications

GUIDANCE DOCUMENTS FOR MUNICIPAL SOLID WASTE (330.17)

The following guidance documents and templates have been prepared to aid in complying with the revised MSW rules (30 TAC Chapter 330) that became effective March 27, 2006. As a simplified explanation of the rules, the guides below are intended to help achieve compliance with environmental regulations. Guides are just one tool to use to reach full compliance, remember that the rules are what you must follow.

- **TCEQ Web site** www.tceq.state.tx.us
http://www.tceq.state.tx.us/permitting/waste_permits/msw_permits/msw.html
http://www.tceq.state.tx.us/permitting/waste_permits/msw_permits/msw_ris_guid.html
http://www.tceq.state.tx.us/permitting/waste_permits/msw_permits/perm_reg_mod.html
<http://www.tceq.state.tx.us/files/rq-022.pdf> 4005640.pdf
- **TCEQ Occupation License Online Registration and Renewal**
<http://www.tceq.state.tx.us/nav/permits/licenses.html>
- **Rules and Rulemaking**
http://www.tceq.state.tx.us/nav/rules/rules_rulemaking.html
- **Small Business and Local Government Assistance**
The TCEQ's Small Business and Local Government Assistance (SBLGA) program provides confidential technical assistance without threat of enforcement.
<http://www.tceq.state.tx.us/assistance/sblga/sblga.html>
<http://www.tceq.state.tx.us/files/gi-002a.pdf> 4121055.pdf