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Arnold AFB, TN 37389

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04/30/09

Std. No.
E9

Safety, Health, and Environmental Standard

Title: Wastewater Discharge Management

Standard No.: E9

Effective Date: 04/30/09

The provisions and requirements of this standard are mandatory for use by all AEDC personnel engaged in work tasks necessary to fulfill the AEDC mission. Please contact your safety, industrial health and/or environmental representative for clarification or questions regarding this standard.

Approved:

A handwritten signature in cursive script, appearing to read "Pat Eagan", written over a horizontal line.

Pat Eagan
Director, ATA Support Services

A handwritten signature in cursive script, appearing to read "Pamela F. King", written over a horizontal line.

Pamela F. King
Chief, Asset Management Flight
704th Civil Engineering Squadron



Safety, Health, and Environmental Standard

WASTEWATER DISCHARGE MANAGEMENT

1.0 INTRODUCTION/SCOPE/APPLICABILITY

This standard provides procedures under which nonhazardous wastewater, acceptable for release to the environment, is approved for discharge. AEDC's National Pollutant Discharge Elimination System (NPDES) permit allows discharges that meet established limits. The purpose of this standard is to ensure that wastewater discharges are in compliance with the provisions of AEDC's NPDES permit, as well as federal, state, and local laws. This process is intended to provide guidance as to the steps that must be followed in disposing of contaminated wastewater. AEDC is authorized by the state of Tennessee to discharge process and non-process wastewater, non-contact cooling water, remediated groundwater, storm water, and treated sanitary wastewater. This authority is derived from the NPDES permit under which limits have been established for contaminants in wastewater discharges. The state of Tennessee issued AEDC's NPDES permit after consideration of processes and conditions identified in the permit application. No wastewater shall be discharged into a sanitary or storm sewer system or storm water drainage structure, dumped onto the ground, or otherwise released to the environment unless the discharge has been identified in AEDC's NPDES permit or application, and written authorization as described in this standard has been obtained.

This standard cannot address every possible combination of contaminants and circumstances of generation. Where uncertainties arise, base Environmental personnel will determine the best course of action to be taken. Common pollutants found in contaminated wastewaters include ethylene or propylene glycol, volatile organics, solvents, metals, fuels, oils, acids, caustics, or sewage.

1.1 Wastewater Discharge Examples Requiring Prior Written Authorization

- Process wastewater discharges not specified in the NPDES permit
- Containerized wastewater
- Water contaminated by an oil or chemical spill that has been captured and containerized
- Wastewater removed from sumps
- Wastewater removed from fuel or oil/water separators
- Wastewater from cleaning operations
- Wastewater from contact cooling operations
- Effluent from wastewater treatment units
- Discharges into treatment units such as air strippers

1.2 Wastewater Examples for Which Authorization is Not Necessary Prior to Discharge

- Processes identified and characterized in the NPDES permit
- Incidental discharges from normal base operations included in the intent of the NPDES permit approval but not listed. These discharges include, but are not limited to, discharges from restroom and drinking fountain drains, janitor sink drains, cafeteria drains, floor drains, and laboratory sinks and drains. Pouring of chemicals into a drain is prohibited and is not considered normal base operations.

- Non-contact cooling water
- Flushing of fire hydrants
- Uncontaminated raw water
- Transfers from one container to another container

2.0 BASIC HAZARDS/HUMAN FACTORS

2.1 Basic Hazards

- 2.1.1 Transporting, filling, and emptying containers can pose risk of both personnel exposure and/or equipment damage. Hoses or pipes should be securely attached to prevent spillage to the environment or spraying nearby personnel. Containers should be secured in such a manner as to prevent overturns. Except in emergencies, no attempt should be made to move any polytank containing liquid unless it is mounted on wheels or on a farm trailer. These polytanks are not designed for lifting. If the polytank contains even a few inches of liquid, the bottom will deform upon lifting. Because the forks pose a significant risk of puncturing the bottom, forklifts should not be used for moving polytanks containing liquid unless adequate protection (e.g. wooden pallets) is provided. Trailers with mounted polytanks should be moved slowly to avoid tipping. Consideration should be given to the terrain and the amount of material in the polytank.
- 2.1.2 The majority of wastewater that has been approved for discharge normally poses little exposure hazard to personnel. However, fuel-contaminated wastewater is commonly processed through oil/water separators to reclaim the organic portion as commingled fuel. In these situations, precautions must be taken to eliminate spark hazards that could ignite fuel vapors.
- 2.1.3 Infrequently, wastewater is collected that exhibits a pH outside the range of that which should be discharged. Environmental regulations, as well as this standard, allow for elementary neutralization of wastewater. Both caustics and acids used in neutralization operations do pose a hazard to personnel involved. Chemical compatibility of the equipment's wetted surfaces exposed to these chemicals must be evaluated prior to placing equipment in service.

2.2 Human Factors

Workers must follow established procedures and be familiar with the Job Safety Analysis for the tasks at hand. Qualified Environmental personnel must supervise all neutralization activities. Failure to follow these guidelines could result in personal injury and/or equipment damage.

3.0 DEFINITIONS

Contaminant—Any physical, chemical, biological, or radiological constituent present in the water in concentrations that could result in degradation of the receiving water body.

Generator—The person or organization responsible for causing the wastewater to be generated.

Hazardous Wastewater—Wastewater that has been mixed with a listed hazardous waste or contains chemical contamination that causes the wastewater to exhibit the characteristics of hazardous waste.

NPDES—National Pollutant Discharge Elimination System.

Permit—Where used in this standard, *permit* refers to the Wastewater Discharge Request/Permit (Form GC-1684), except where preceded by the NPDES acronym.

Polytank—A plastic tank with 200 to 2000-gallon capacity. Portable polytanks should be suitably mounted where possible, such as the saddle tanks that are currently in use.

Sheen—An iridescent appearance, normally caused by fuel or oil, on the surface of the water.

Sludge—Slimes or solids or semi-solids that may accumulate in the bottom of tanks, sumps, or containers.

Wastewater—Water that has been used or contaminated and is no longer acceptable for its intended use. It does not include uncontaminated storm water, raw water, or potable water.

Wastewater Discharge Request/Permit—Written approval of a request to discharge wastewater. Form GC-1684 is used to capture essential information for making a discharge determination and to record all required approval signatures.

4.0 REQUIREMENTS/RESPONSIBILITIES

4.1 Discharge approval for wastewater in containers requires a consensus between the base contractor's Water Quality Program Manager, the pertinent base contractor's System Engineer(s), and the Chief, Asset Management Flight, 704th Civil Engineering Squadron (704 CES/CEA), or their representative. The approval process considers contaminant concentrations, impact on the environment, NPDES limits, and the piping and treatment systems through which the wastewater will pass. The persons responsible for authorizing discharge have the knowledge, training, and experience to make this determination.

4.2 The written approval of each of those listed below must be secured using Form GC-1684 prior to discharge. Approval authorization should occur in the following sequence:

- 1) Requester (Generator)
- 2) Water Quality Program Manager
- 3) System Engineer, whenever discharging into the Sewage Treatment Plant, air strippers, oil/water separators, etc.
- 4) Mechanical Operations Manager, whenever discharging into the Sewage Treatment Plant collection system
- 5) 704 CES/CEA Chief or designated representative

4.3 Wastewater Generator Responsibilities

- Ensures that no intentional discharges occur.
- Collects the wastewater in an appropriate container.
- Attaches appropriate labels to all containers in accordance with E18 (Managing Wastes Containing Chemical or Petroleum Products).
- Contacts Environmental Quality for discharge or disposal.
- Identifies the operation or process generating the wastewater and any potential contaminants.
- Provides any analytical data to Environmental Quality.
- Ensures that all new process effluents are evaluated prior to operation for potential impact on NPDES limits.

- Provide detailed information of all new polytanks to Environmental Quality.

Generators may discharge their own wastewater if it is covered by AEDC's NPDES permit, or if they have an approved discharge permit for this particular wastewater.

4.4 Subcontractor Monitor Responsibilities

Subcontractors are required to comply with this standard. The Monitor must communicate the requirements to the subcontractor and verify compliance.

4.5 Environmental Quality Responsibilities

- Maintains database of polytanks on base including: manufacturer's serial number, approximate capacity, date purchased, owner (individual or organization), and dedicated service, if any.
- Assembles information from Generator concerning wastewater discharge requests. Verifies that all containers are properly labeled in accordance with A9 (Hazard Communication) and E18 (Managing Wastes Containing Chemical or Petroleum Products).
- Initiates the discharge permits and obtains necessary approval signatures from each responsible party.
- Maintains logs of all discharges executed under this standard.
- Executes or oversees the execution of wastewater discharge after proper authorization has been obtained.
- Oversees treatment or completes disposal arrangements if discharge is unacceptable.

4.6 Mechanical Operations Manager Responsibilities

- Ensures that no approvals are issued for wastewater discharges that will adversely impact the sewage treatment facility.
- Notifies the Sewage Treatment Plant operators of any additional precautions or steps that must be taken to process the approved discharge wastewaters.

4.7 System Engineer Responsibilities

- Ensures that no approvals are issued for wastewater discharges that will adversely impact the system.
- Identifies the maximum discharge flow rates that can be accepted by the system.
- Ensures that approval is obtained from any other system engineers that may be affected by the discharge.

4.8 Water Quality Program Manager (or Alternate) Responsibilities

- Administers the wastewater discharge program and procedures.
- Serves as the primary contractor point of contact for wastewater discharges.

- Reviews all discharge requests and makes determination of discharge acceptability and treatment options where appropriate.
- Signs Form GC-1684 and ensures all pertinent information has been assembled and attached.
- Provides discharge justification to other authorizing parties when requested.

4.9 Asset Management Flight (704th Civil Engineering Squadron) Responsibilities

704 CES/CEA has the overall responsibility for wastewater discharges at AEDC. 704 CES/CEA retains final approval of all wastewater discharge requests/permits. 704 CES/CEA approves all requests, and under unusual and/or exceptional circumstances, such as a major treatment system malfunction, notifies TDEC.

4.10 Container Selection

- 4.10.1 For quantities up to 200 gallons, closed-top drums are usually the most efficient means of storage.
- 4.10.2 For quantities greater than 200 gallons, larger containers such as polytanks or tanker trucks should be considered.
- 4.10.3 Chemical compatibility between the wastewater and the container and its appurtenances must be ensured. Low pH wastewater may corrode a steel drum. Some organic compounds will dissolve polyethylene containers.
- 4.10.4 Polytanks and their appurtenances must be inspected by the user prior to use. Those found in poor condition must be repaired or replaced.
- 4.10.5 Polytanks set up in traffic areas should be barricaded to prevent accidental contact with vehicles or mobile equipment.

4.11 Unacceptable Discharges

Wastewater determined to be unacceptable for discharge and unsuitable for treatment is shipped offsite for disposal. Environmental Quality arranges for disposal through the Defense Reutilization & Marketing Office. Large and/or unusual wastewater generation may be considered for possible local disposal through commercial or municipal wastewater treatment systems.

5.0 REFERENCES

ANNEX A – Points of Contact

ANNEX B – Wastewater Discharge Request/Permit (Form GC-1684)

SHE A9 – Hazard Communication

SHE E18 – Managing Wastes Containing Chemical or Petroleum Products

ANNEX A

POINTS OF CONTACT

Base Water Quality Program Manager	Jeff Holt (454-3888)
Alternate Base Water Quality Program Manager	Hunter Beavers (454-6360)
Environmental Quality	Ben Partin (454-3521) – central POC John Casey (454-4027) – polytanks Jim Hicks (454-3628) John Bowles (454-4343)
Chief, Asset Management Flight, 704 th Civil Engineering Squadron	Pam King (454-7609)

ANNEX B

WASTEWATER DISCHARGE REQUEST/PERMIT – GC-1684

WASTEWATER DISCHARGE REQUEST/PERMIT

FROM ORGANIZATION	OFFICE SYMBOL	DATE OF REQUEST	REQUEST NUMBER
REQUESTER'S NAME/PHONE NO.	REQUIRED DATE	BUILDING, FACILITY, OR STREET ADDRESS WHERE GENERATED (Source of Waste)	
DESCRIPTION OF WASTE, HOW GENERATED, COMPOSITION, ETC.			
BRIEF JUSTIFICATION			
APPROVAL SIGNATURES			
REQUESTER	WATER QUALITY PROGRAM REPRESENTATIVE		
SYSTEM ENGINEER	MECHANICAL OPERATIONS MANAGER		
NAME, GRADE, AND SIGNATURE OF AEDC ENVIRONMENTAL REPRESENTATIVE	TDEC NOTIFICATION <input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED	
	DATE OF SIGNATURE		
REMARKS			