

### **Facility Safety Recommendations**

1. Waste storage facilities must be considered "High Hazard Areas". The biodegradation of waste forms noxious gases such as methane (CH<sub>4</sub>), Hydrogen sulfide (H<sub>2</sub>S), ammonia (NH<sub>3</sub>) and carbon dioxide (CO<sub>2</sub>). This can be fatal to both animals and human beings.
  - **HYDROGEN SULFIDE PARALYZES THE DIAPHRAGM AND THE VICTIM WILL NOT START BREATHING AGAIN WITHOUT ARTIFICIAL RESPIRATION, EVEN AFTER BEING REMOVED FROM THE NOXIOUS GASSES.**
2. Some of these gases can be explosive with the proper gas to air ratio. Use caution with open flames, welding torches and arcs, electrical motors with brushes that spark (skillsaws, electric drills, shop vacs, etc.) when working near waste storage facilities. Be sure the work area is well ventilated.
3. Agitation of liquid manure can release large volumes of these noxious gases. Special care must be taken to provide adequate ventilation during agitation and emptying of the storage facility. If there is a question regarding the adequacy of ventilation, the livestock should be evacuated from the building and the operator should wear an oxygen mask.
4. Operators should avoid working alone during agitating and emptying the facility.
5. A reception pit, tank or other storage facility that has contained liquid/slurry manure should not be entered because gases may remain in the structure. When it is necessary for someone to enter one of the structures for repairs, the following precautions must be taken:
  - a. The reception pit shall be ventilated by the use of fans, blowers, etc.
  - b. There should be at least two people; one to remain on the outside and one to enter the facility.
  - c. The one entering the structure must have a safety line attached so that the "outside" person can pull the victim to safety without entering the facility.
  - d. The one entering must have an air mask, which furnishes outside air through an airline and compressor, scuba equipment with air tanks or other means of positively furnished outside air.

- e. Gas masks must not be used because they operate on the principle of chemically removing unwanted gases from air so the wearer can breathe safely. In manure facilities, the air has been displaced by the noxious gases and when the gases are removed by the gas mask, the wearer will suffocate because there is no air to breathe.
- 6. All lids, gates, hatch covers, shields and safety grates to prevent unauthorized entry by people or livestock must be securely in place when tanks and pit openings are left unattended and must be repaired immediately when damaged.
- 7. Never leave a ladder that stands against an above ground waste storage facility unattended.
- 8. All waste storage facilities must be posted with signs with the following or similar warning:

**DANGER - KEEP OUT**

**THIS IS A WASTE STORAGE FACILITY AND PROLONGED  
EXPOSURE MAY BE HAZARDOUS TO YOUR HEALTH.**

- 9. Inspect and repair/replace, as needed, all warning and hazard signs.