



To learn more about hazardous gases associated with manure, listen to our FarmSafe podcast episode, *Manure Gas Safety*.

CONFINED SPACE SAFETY



STEPS FOR ENTRY INTO MANURE STORAGE:

1 CLARIFY TASKS TO PERFORM DURING ENTRY

- Why does someone need to enter?
- Explore alternatives to entering for the reason identified in previous step.
- Prepare for entry:
 - Obtain tools, equipment, & PPE needed for the specified task.
 - Gather trained entrant and observer

2 VERIFY "ZERO ENERGY" IN THE SYSTEM BEFORE ENTRY

- Follow lockout/tagout procedures for machinery prior to entry.
- Shut off and remove agitation and pumping equipment before performing services or repair activities.

3 TEST THE AIR QUALITY PRIOR TO AND DURING ENTRY

- Monitor the air for oxygen, hydrogen sulfide, ammonia, methane and carbon monoxide.
 - Oxygen Level: **19.5% - 23.5%**.
 - Carbon Monoxide: If present, identify source. Danger is **>25 ppm**.
 - Ammonia: Danger is **>25 ppm**.
 - Hydrogen Sulfide: No entry if **detectable**.

Monitor Needed:

MGC-S

- Detects combustible gases O₂, (LEL), H₂S, CO
- Lasts 2 years

For more information, visit gpcah.org & go to the "By Topic" page under "Resources" to find our **Manure Gas Safety** page.

4 DETERMINE RISK OF STRUCTURE & ATMOSPHERE

- The manure structure ventilation system needs to have been inspected regularly & prior to entry.
- Fans should be operating & be in good condition to maximize ventilation.

5 COMPLETE AN ENTRY PERMIT OR CHECKLIST

This permit/checklist identifies critical safety issues to check before allowing entry.

6 ALLOW ENTRY ONLY IF:

- All steps above are completed.
- Communication between entrant and observer are maintained.
- Observer remains outside of the entry area to watch entrant at all times.
- Observer is trained, able, and equipped with phone, to call 911 for rescue.