

Pit Pumping Guidelines

Developed by

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Hydrogen sulfide can spike quickly and without warning during pit pumping. Aggressive agitation can contribute to the risk of gas spikes when agitation first begins and when the pit becomes nearly empty.

The following guidelines are suggested to improve safety and ventilation performance during manure pit agitation and pumping:

- **People should NEVER enter a building being pumped.**
 - Consider the addition of a physical barrier to entry doors—such as yellow caution tape, large warning placards, and/or lockout tags on doors during pumping.
- **A person should be at the site during pumping. This person should have a copy of the emergency action plan and emergency contact information for the site.**
- **Agitation Strategy**
 - Consider minimal or no agitation until the manure level is at least 1-foot to 1 ½-feet below the support lintel at the pump-out/fan ports.
 - Avoid aggressive agitation when animals are in the building (no rooster tailing).
 - Do not direct agitator nozzles toward pillars or walls.
 - Use only the bottom agitator nozzle.
 - Stop agitating when bottom nozzle is less than 6” below the manure surface.
 - Do not uncover pump-out ports unless necessary for agitation and manure load out.
 - Use a tarp to cover the pump-out opening around the agitator to reduce/minimize this opening as a fresh air inlet into the animal space.
- **Ventilation Strategy—Curtain-sided Barns**
 - During warm weather:
 - When winds exceed 5 mph, open curtains and run all exhaust fans.
 - If winds are calm, leave sidewall curtains closed and operate all exhaust fans.
 - If 50% or more of the pit fans must be idle due to the pumping procedure, curtains should be open regardless of wind speed.
 - During cold weather:
 - For bigger pigs, leave curtains closed and run all exhaust fans.
 - For smaller pigs, provide at least 25-30 cfm/pig during pump-out. In most wean-finish or grow-finish facilities, this is generally all of the pit fans plus at least one wall fan.
 - Reduce static pressure in the animal space by opening ceiling inlets and/or curtains slightly so less air draws from pump-out port openings into the animal space. Air

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distribution may be compromised in the animal zone since velocity will be reduced at ceiling inlets.

- Stir fan usage:
 - The use of stir fans will prevent/reduce concentrated pockets of gases in the pig zone that may result from pit agitation. Use caution with downward-directed stir fans—these may blow air through the pit and back into the pig zone. Parallel-directed fans are preferred for this reason.
- Continue to ventilate at an elevated level for 1-2 hours after pump-out.

➤ **Ventilation Strategy—Tunnel Ventilated Barns**

- During cold weather:
 - As a minimum, run all pit fans plus the 36” fan. Open the tunnel curtain 6-12 inches so air is pulled the length of the barn by the 36” fan.
 - If ceiling inlets are powered, partially close the inlets so air must also enter from the tunnel curtain.
 - Reduce static pressure so the inlet velocity at the tunnel curtain is 300-400 fpm versus the customary 800-1000 fpm.
- During hot weather:
 - Run all pit fans and at least two tunnel fans.
 - Manage the ceiling inlets and tunnel curtain similar to the cold weather recommendation.
- Continue to ventilate at an elevated level for 1-2 hours after pump-out.

➤ **Secure all pit covers after pump-out.**

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