Hydrogen Sulfide Safety – Barn Ventilation

Importance of Hydrogen Sulfide Safety

Hydrogen sulfide can spike quickly and without warning during pit pumping. Barn ventilation is necessary to remove gasses released from the manure and dilute concentrates with fresh air entering the facility. As agitation will release gasses from the manure, obtaining adequate ventilation is essential for animal and human safety.

People should NEVER enter a building or facility while agitation is occurring. Use yellow caution tape to mark barn entrances and alert everyone that manure agitation and pumping is occurring. Consider lockout tags during pumping.

When possible remove animals from the portion of the barn in which manure agitation and removal is occurring. If not possible only use subsurface agitation and consider reducing agitation intensity.

Ventilation Strategy

- Ventilation should be maximized during agitation.
- Back-wall curtains should be completely opened to allow maximum air flow.
- A cross wind (through the barn) of at least 7.5 mph is recommended. Note: wind velocity must maintain this speed and be directed through the barn.
- If wind direction is at an angle to barn, 10 mph wind speeds recommended.
- Watch for changing weather conditions as many times night air is more still than daytime air.
- Warming air can help disperse hydrogen sulfide, cooling air causes it to settle and pool. As hydrogen sulfide is heavier than air this can create dangerous conditions.
- Consider using PTO driven fans to provide extra ventilation (figure 1). If conditions are calm use large, PTO driven fans to increase ventilation and air exchange.

Figure 1. Example of PTO driven fan that can be used to increase barn ventilation.

- If present, turn on stir fans in the barn. This moves air around and will decrease the chance of air “dead zones” where inadequate ventilation exists.
- Consider adding pump out curtains (tarps) around manure agitation airs to limit air exchange near of hydrogen sulfide gas near the agitator. Example is shown in figure 2. This curtain blocks some of the pit air from swirling back towards pump operator.

Figure 2. Example pump out curtain. Weight (often a PVC pipe with some gravel in it) should be attached to the curtain to hold it at the manure surface.