

(KEEP THIS WORKSHEET FOR FEEDYARD RECORDS)
Calculation Worksheet – Ammonia and Hydrogen Sulfide
Beef Cattle Feedyards
 February _____, 2009

The following emissions estimates for ammonia and hydrogen sulfide are based on research data collected by Texas AgriLife Research, Texas AgriLife Extension Service, Texas A&M University, USDA-Agricultural Research Service, and West Texas A&M University. Data has been collected as part of the USDA-CSREES-funded project, "Air Quality: Reducing Emissions from Cattle Feedlots and Dairies," between the years of 2003-2008. Field measurements are on-going and as such these values are a good faith estimate of air emissions based on currently available scientific information.

The final rule on EPCRA reporting issued by EPA on Dec. 18, 2008 and effective Jan. 20, 2009 requires reporting of ammonia or hydrogen sulfide if (1) the feedyard is 1,000 head or larger **and** (2) the ammonia exceeds 100 lbs/day or the hydrogen sulfide exceeds 100 lbs/day. **DO NOT report ammonia or hydrogen sulfide values if the "upper bound" is LESS THAN 100 lbs/day.**

Feedyard Name: _____.

AMMONIA (NH₃) EMISSIONS ESTIMATE

The emissions estimates provided below are inclusive of ammonia emissions from the feedyard pen surfaces and the runoff holding pond(s). Ammonia emission rates are generally lower in the winter and higher in the summer.

AMMONIA (NH₃) EMISSIONS ESTIMATE				
	Lowest Head Count (number of animals)		NH₃ Emission Rate (pounds/hd/day)	NH₃ Lower Bound (pounds/day)
NH₃ Lower Bound =		X	0.16^a	=
^a winter emissions rate from research data				
	Permitted Head Count (number of animals)		NH₃ Emission Rate (pounds/hd/day)	NH₃ Upper Bound (pounds/day)
NH₃ Upper Bound =		X	0.48^b	=
^b summer emissions rate from research data				

Hydrogen Sulfide (H₂S) EMISSIONS ESTIMATE

The emissions estimates provided below are inclusive of hydrogen sulfide emissions from the feedyard pen surfaces and the runoff holding pond(s). Hydrogen sulfide levels are fairly stable throughout the year, especially during dry weather conditions. Higher levels of hydrogen sulfide have been measured after rainfall/wet conditions.

Hydrogen Sulfide (H₂S) EMISSIONS ESTIMATE				
	Lowest Head Count (number of animals)		H₂S Emission Rate (pounds/hd/day)	H₂S Lower Bound (pounds/day)
H₂S Lower Bound =		X	0.0047^c	=
^c dry conditions emission rate from research data				
	Permitted Head Count (number of animals)		H₂S Emission Rate (pounds/hd/day)	H₂S Upper Bound (pounds/day)
H₂S Upper Bound =		X	0.0085^d	=
^d rainfall/wet conditions emissions rate from research data				