

Town of Manchester Planning Board

Proposed Manure Storage Feedback

Information compiled with feedback from the Ontario County Soil and Water Conservation District, the NYS Department of Agriculture & Markets (NYS AGM), and the Cornell PRO-DAIRY applied research and extension program.

A few key points:

Manure storages have been in use on farmsteads since the 1970s, many in close proximity to homes and barns. Though storages have been in close proximity to humans for over 50 years, links to impacts on human health have not been extensively studied.

This facility has been sited to utilize existing woods as a windbreak and placed on elevated ground from the surrounding area, both as practices to further mitigate odor concerns.

For additional background and information on the questions, below, please also see NYS AGM's and NYS DEC's FAQ on manure storage in NYS

(<https://agriculture.ny.gov/system/files/documents/2019/08/FAQmanureStorage.pdf>).

Air Quality

- Is there information regarding air quality and effects on human health based on proximity to manure storages?
 - NYS DEC regulates emissions from farms per State and federal regulations. Emissions from certain low emitting, diffuse sources such as barns, manure storages, covered/flared ambient temperature manure storages, and land applications, are exempt from such regulations.
 - Manure storages have been in use on farmsteads since the 1970s, many in close proximity to homes and barns. Though storages have been in close proximity to humans for over 50 years, links to impacts on human health have not been extensively studied.
 - A study from Penn State University shows some observations of H₂S levels during agitation (when emissions are likely to be highest) at the storage edge and 33 feet downwind with and without gypsum bedding. Will-O-Crest does not use gypsum bedding in their operations. This study showed that none of the farmers using traditional bedding were exposed to conditions above 20 ppm H₂S (i.e., the threshold of daily exposure set by the US Department of Labor) even when working adjacent to the storages on their farmsteads.
 - Air emissions vary based on the animal species, storage, management, location attributes, and weather, so the specific aspects of a farm are important when reviewing studies for comparison. Perhaps as an indication of the complexity of assessing emissions from barns and storages (epidemiological studies bring additional complexity), please find two, thorough northern latitude dairy farm specific reports from the National Air Emissions Monitoring Study (NAEMS):
 - NY dairy barn:
<https://archive.epa.gov/airquality/afo2012/web/pdf/ny5bsummaryreport.pdf>

- WI manure storage:
<https://archive.epa.gov/airquality/afo2012/web/pdf/wi5asummaryreport.pdf>

Water Quality

- Is there information regarding groundwater contamination in regards to manure storages?
 - NYS recognizes manure storage as a key best management practice (BMP) that allows farms to spread at optimal times and field conditions for nutrient uptake and reduced losses to surface water, groundwater, and air. NYS DEC regulates CAFO farms according to the CAFO permit and the associated NRCS Conservation Practice Standards. CAFO permitted farms must follow their Comprehensive Nutrient Management Plan (CNMP) which provides specific requirements for the timing, method, rate, and source of manure and fertilizer applications to fields, including restrictions from spreading on frozen or saturated ground and during other conditions when the potential for nutrient runoff and surface and groundwater contamination is elevated. Manure application setbacks from wells and surface waters are also required. Manure storage capacity is necessary to meet this level of environmental performance required in the CAFO permit.
 - Manure storage systems are designed according to the NRCS 313 Standard by Professional Engineers licensed in NYS (https://efotg.sc.egov.usda.gov/api/CPSFile/28960/313_NY_CPS_Waste_Storage_Facility_2018-copy). Manure storages are specifically designed, built, and operated to completely isolate and protect the storage vessel from surface water runoff and groundwater while safely containing the manure nutrients without leakage for later application to crop fields as the farm's primary fertilizer source.
 - Leak detection systems are also engineered to show failure of the liner and are required to be monitored by the farm.
 - For additional background, please see NYS AGM's and NYS DEC's FAQ on manure storage in NYS (<https://agriculture.ny.gov/system/files/documents/2019/08/FAQmanureStorage.pdf>).
- Are there studies on harmful bacteria and viruses in the manure storages and/or land applied manure?
 - Yes, there are. For that reason, the farm's CNMP, including individual BMPs such as manure storage, is specifically developed, updated, and operated to make the most of organic matter and nutrients in manure while reducing the risk of nutrient and pathogen losses to the environment. Pathogens are common in residential, commercial, agricultural, and natural environments/contexts. In the agricultural context, herd management, manure nutrient management planning, and manure storages are key tools used by farmers every day to reduce pathogen count, viability, and loss risk. Whether from residential, commercial, natural, or agricultural sources, many sectors of society (e.g., governments, organizations, individuals) apply additional layers of protection to further safeguard human health from pathogens in the watershed, such as proper drinking water treatment, well construction and maintenance, wastewater treatment, safe food handling, etc.

Assessment Values

- Is there any data showing reduced property values/assessments in proximity to manure storages?
 - NYS AGM has not located studies or been presented with evidence of reduced property values/assessments when homes in NYS are nearby farms and their best management practices (BMPs), such as manure storage systems. It's understandable that an existing owner may have concerns about their property value, but we don't have information demonstrating that home sales and values are affected by practices like manure storage or any sound agricultural land use. This may be because home buyers are both notified that the property is in an agricultural district prior to purchase and may be more motivated by location than surrounding land uses. Additionally, implementation of new BMPs, like manure storages, improve management relative to the existing condition, but don't represent a change to the long-standing agricultural land use (i.e., it continues as an integrated crop and livestock farm where manure is recycled as the primary source of fertilizer to grow the crops for the farm's herd). The benefits associated with these BMPs are often lighter road use, reduced application odor/emissions, lower runoff and leaching losses, and improved soil health.