We're designing a system that will collect stormwater on a site in northern Virginia. The water will be coarsely filtered before entering a 50,000 cu.ft. buried cistern. The inflow and overflow structures are sized for a one year storm flow of 48 cfs, two year storm flow of 55 cfs, and 10 year storm flow of 72 cfs.

The water will be withdrawn for landscape irrigation, with a filter on the pumped discharge. Should the water be disinfected?

The client thinks it's necessary to avoid odor when the water is sprayed. Considering the local weather and temperatures, and the projected flow through the cistern to overflow, I don't think the conditions will be conducive to much bacterial action.

I believe that our only cost effective option for disinfection is chlorination. UV requires fairly clear water, which we'll have following the discharge filter, but killing the microbes at that point will not eliminate the odor in the irrigation spray. Aerobic treatment in the cistern could probably help by preventing anaerobic decomposition, but cost is high, especially considering that the system would have to be built to withstand the flow during storm events.