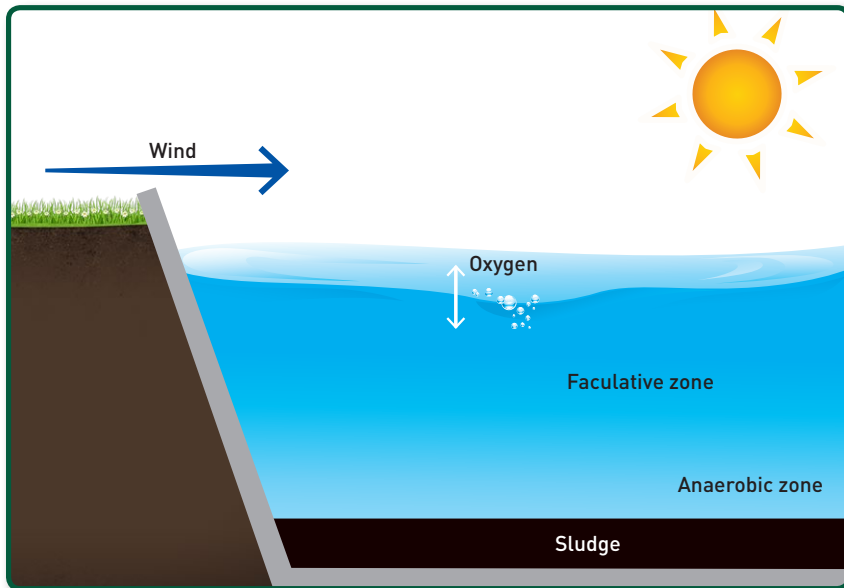


WHAT'S THAT SMELL??!

An overview of seasonal odors from wastewater treatment ponds



The smell of wastewater in the air is a normal occurrence for some communities during fall and early spring because just as the seasons change, so do the conditions in our natural water bodies and wastewater stabilization ponds. The two major contributors to seasonal odors from wastewater ponds are stratification of the ponds and seasonal turnover. These factors can also lead to seasonal odors from natural water bodies such as lakes and ponds.

Stratification is the occurrence of various zones of environmental conditions within the pond. The top layer is oxygen rich due to algae activity and wind action while the bottom (sludge) layer is void of oxygen (anaerobic). The anaerobic conditions in the sludge layer lead to anaerobic digestion of solids in the bottom of the pond. Digestion of the solids

produces sulfur dioxide, methane, and a variety of other potentially odorous gases within the solids layer. A majority of these gases will remain trapped in the solids layer until the solids are disrupted, allowing some of the gases to escape into the atmosphere.

The second and most significant reason for the fragrant seasonal odors coming from the ponds is the natural occurrence of turnover. As temperatures warm in spring, the surface ice begins to melt and produce water near 39° F. Since water is heaviest at 39°F, the surface water begins to sink and leads to a mixing action of the solids layer at the bottom of the ponds. Likewise in fall, the surface water begins to rapidly cool and becomes heavier than the water below it. This too creates mixing of the solids layer. Therefore, release of unpleasant gases from the solids layer can occur during both spring and fall turnover.

Although these odors are impossible to eliminate, operations staff will continue to work diligently to minimize the severity and duration of the odors. While these odors can be offensive if the wind is blowing in the wrong direction, take comfort in the fact that seasonal turnover odors typically last less than seven days. If you have concerns that the odors are especially potent or seem to be lasting a long time, feel free to contact your City's Public Works Department.

