Weaver Consultants Group

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MEMORANDUM

To:	Ron Westmoreland Cedar Grove Compost	**Date:**	December 5, 2022
From:	Emmanuel Varona-Torres, Ph.D. Kyle D. Gould, P.E. Weaver Consultants Group, LLC	**Project No:**	N/A
Re:	Odor Control Chemical Neutralizer Mechanism Summary Report		

In accordance with the request of Cedar Grove Compost, Weaver Consultants Group, LLC (WCG) has prepared this Odor Control Chemical Neutralizer Mechanism Summary Report for the odor control chemical neutralizer OdorVore.

OdorVore odor control chemical neutralizer is an aqueous solution that consists of surfactants and a terpene | terpenoid blend (essential oils). OdorVore will neutralize malodors in the air. The term "neutralize" or "neutralization", as used herein, means chemically reacting with malodor components such as protonation, deprotonation, acid-base neutralization, and sorption. The OdorVore neutralizer is diluted with water and atomized into small aqueous droplets, which form a mist or fog and remain suspended in the air for a period of time. The droplets formed, create a large surface area with a film of the active ingredients of OdorVore. The gaseous malodor molecules are attracted to the electrostatic charge on the droplet surface. When the gaseous malodor is in contact with the droplet, neuralization by one or more of the mentioned mechanisms can occur.

Malodors can be classified into one of three categories: acids, bases, and neutral compounds. Compounds such as hydrogen sulfide and mercaptans are acids, compounds such as ammonia and ethyl amine are bases, and compounds such as benzene and toluene are neutral. Gaseous acidic malodors are capable of ionizing in the droplet and will typically react by sorption, deprotonation, and acid-base reaction mechanisms by adding across a conjugated double bond in the active ingredient and forming newly derivatized component such as organic salts, thus no longer odorous. Gaseous basic malodors react similarly as acidic malodors. They typically react by increased sorption, protonation, and acid-base reaction mechanisms and forming

non-odorous organic ammonium salts, which are subject to air oxidation. Gaseous neutral malodors typically react by increased sorption mechanism. Increased sorption decreases the release of the malodor by changing its distribution constant.

OdorVore odor control chemical neutralizer is capable of neutralizing acidic, basic, and neutral malodors by various chemical reactions, and thus not considered an odor masking agent.

This information has been furnished for Cedar Grove Compost.