

- 411 Atmospheric Emissions from Oxidation Ponds. R. Y. Nelson and J. O. Ledbetter.
J. Air Poll. Control Assn. 14, 50-52 (Feb. 1964).

Oxidation ponds have been used for many years and more are being constructed each year as these treatment facilities are recognized as feasible methods for stabilizing domestic and industrial wastes. The work of an oxidation pond—the degradation of organic materials—is brought about through the action and interaction of microorganisms such as algae, bacteria, and actinomycetes. These organisms consume complex organic matter and produce intermediate substances as a part of their metabolic process. Preliminary analysis indicates methane production in the range of 5 cubic feet per lb. biological oxygen demand (BOD) destroyed under the loading conditions of 55 lbs. BOD per acre per day. At night under these conditions carbon dioxide is emitted at the rate of about one cubic foot per lb. BOB destroyed. Studies with tagged sulfur in a well-operated pond show that no significant amounts of sulfur compounds are released. An interesting phenomenon occurred in one pond when odor abruptly developed. No changes in operating procedures were noted, however, the algal population died off. There was a high jump in BOD and decrease in pH at the time of this odor. With the return of algal bloom, odor decreased and BOD and pH have readjusted to some extent.

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