



Greenhouse gas (GHG) emission of Oxidation Pond (OP)

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ABSTRACT

The emission of GHG was said to be impossible from well managed wastewater treatment plant (WWTP). To know we tried to estimate the emission of GHG of Methane (CH₄) and Nitrous oxide (N₂O) at the JIT Oxidation Pond (OP) in 2019. We used grab sample in a day time for the proportionate sampling of the waste treatment plant. The sample was taken to Jimma University (JU) Environmental Health Lab for its analysis. The estimation only considered the on-site generation only of GHG emission and it doesn't consider an off-site generation for GHG emission. The estimation was based on the guidelines on IPCC (2006). According to this finding the Methane (CH₄) was estimated to be 3.86 KtCO₂eq/year and the estimated Nitrous Oxide (N₂O) emission was 0.005 KgCO₂eq/year. There was high emission in the first unit and emission death in the subsequent units of the pond itself. This means that all in all emission was from the line digester and to some existent from anaerobic digester. The no emission pass was also facultative pond. We think starting from this result the pond has to be gone back to its design level. There has to be mitigation strategies for all.

Keywords: Methane (CH₄), Nitrous Oxide (N₂O), GHG, Oxidation Pond, Jimma Institute of Technology (JIT)