Effect of The Biogas on Pipes and The related Used Equipments in Damascus Wastewater Treatment Plant *

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Abstract

The corrosion of biogas pipes and equipments damage as generators, boilers and coprocessors is one of the most real important problems in Damascus wastewater treatment plant (at Adra region). These problem caused high financial losses and costs , that it required studying and solving. Biogas is the result of an aerobic digestion process of sludge, it contains about 50-70% of methane as a main resource of power, where the biogas considers free when it release spontaneity. Different analysis have been occurred on the biogas to show its components, tests on the pipes material and analysis of sediment material inside the pipes that caused by biogas.

The results of analysis with previous studies have showed that some components as H_2S & CO_2 are the main reason to act the corrosion in pipes and equipment damaging, where the ratio of corrosion may be reach to about 1mm/year. So, moisture and some of bacteria as (SRB) that produced with biogas, are increasing the speed and rate of corrosion because it forms corroded acidices. As a result of research , it is necessary to find a special system to purified the biogas and remove all its components as (H_2S, H_2O & CO_2) which damage pipes and equipments before transforming or using the biogas, replace the corroded pipes with other as (HDPE) and erect of drainage valves at the lowest points on network of pipes . Also, trying to use this biogas for homes at cases of maintenance or any other reasons in order to prevent burn it , as well as to applying required maintenances and industrial safety system.

Keywords:
Biogas – wastewater treatment – sludge treatment - anaerobic digestion – corrosion .

* For The paper in Arabic see pages(238-227)

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