Technical Evaluation for the Re-use of Wastewater
Produced by Albereh Station
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Abstract

The current study was conducted in order to recognize the procedures used in Albereh sewage treatment plant for purification of wastewater and to evaluate the environmental impact of this station on humans in the surrounding area. The study also aimed at evaluating the possibility for the re-use of treated wastewater for various human uses.

The researcher collected raw materials and data from various resources including specialists working in the field within the treatment plant. The study supported by obtaining water samples at the various stages of treatment to be analyzed and tested. The stages in the plant include various steps:

At the beginning, wastewater arrives at the station through the sewage networks including wastewater from kitchen, bathrooms, toilets washing machines and factories.

1. Sieving stage: at this stage separation of other waste products carried out from the basin through two mechanical sieving machines, which remove all plastic, stones, and other materials that do not belong to the sewage network.

2. Precipitation grooves: precipitated particle in these groves usually pumped out and remaining water left out for shot period and allowed to flow at low rate.

3. Ventilation tank: this stage represent the basic principle for biological treatment as bacterial growth and degradation for wastewater begins yielding slimy precipitates

1. Filtration stage: at this stage, water separated from the slimy precipitate, which recycled again to the filtration tanks.

1. Condensation stage: after degradation of wastewater, condensation of precipitated materials is carried out in order to reduce the volume of materials to be treated at a later stage and to reduce the water content of precipitated materials

2. The stage of water removal: water is separated at this stage through the use of pressure and mechanical filtration aided by the use of additional accessory materials

3. Mechanical treatment stage: this includes the exposure wastewater to ultraviolet light which in turn harmful bacteria from spreading to ground water and the surrounding valleys, however this stage was not functioning at the time of study

The results of the analyzed samples of the current study showed that the treatment station is working in good satisfactory level, proved to be capable through the various working stages to get red of water contaminants, and resulted in re-usable water for use in agricultural cleaning of streets purposes. However, if the last stage was working the yielded water might be even for human usage. Solid wastes are also safe to be used as fertilizers.

The treatment plant also carried out experimental work on purified water in order to evaluate the possibility of its re-use. Their results

proved that the treatment plant is satisfactory and the purified water can be used for irrigation purposes without constituting any harm or spreading of disease, thus, the treatment plant achieved its two major goals; first to prevent pollution and secondly re-use of treated water that helps in solving water crises in the Palestinian territories.