Examination,Processing and Cost Analysis of Industrial Wastewater：Cases of Wastewater Treatment Plant in Chaghua Coasta

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ABSTRACT

Because of the situation and the policy direction changes, and the convenience of management, the industrial parks were established in almost all cities/counties of Taiwan. In recent years, the environmental protection consciousness raised; all factories are required to construct wastewater treatment facilities. However, the operations of a wastewater treatment system are complicated; to build up a set of appropriate unit processes is necessary. The objects of this research are three manufacturers of chemical products (A1， A2，A3) and three manufactures of metal products (B1， B 2， B3) in Hsienhsi district, Chaghua coastal industrial park. The wastewater treatment equipments, fluid matter indexes (COD and SS), waste water quantities, and expenses of waste water treatment were investigated. The objectives were to improve the operation efficiency, reduce manufacturing pollution reduce, and decrease the cost of the wastewater treatment fee. Based on the standard of Environmental Protection Administration, the results showed that in three manufacturers, problems occurred only in A1 manufacturer. The COD values in February and May (2868 and 1225 mg/L, respectively) and SS value in February (564 mg/L) exceeded the upper limits (800 mg/L for COD and, 500 mg/L for SS). Both quality and quantity of waste water were directly related to the wastewater treatment charge. For example in February, the wastewater treatment charge was 2,640,570NT, compared to 238,104NT in November. The difference is 2,402,466NT. Further investigation showed that the wastewater of A1 manufacturer mainly came from five different locations. Wastewater from two manufacturing processes were first kept in a tank then pumped to the blending pool. And living waste water from three locations inside the factory was transferred to the blending pool after mixing with sulfuric acid or sodium hydroxide. A better improving method could be conducted by using two pumps to transfer certain amount of waste water to the blending pool, and operating self-examination of waste water quality before flowing to the final pool. For the metal product manufacturers, the B1manufacturer's wastewater quantity is 133tons/year,way below the B2 manufacturer's feagure（335.83tons/year）. However, the COD value of the former （223.75mgs/L） is similar to the latter 205.50mgs/L . Advanced the research found that the major work of B1 the manufacturer are wires, iron plates and iron materials; the wastewater is mainly domestic sewage (kitchen, toilet) ,which causes precipitationin (sand, kitchen waste and excrement) in sample well .This directly influence COD and SS values.The suggestion is using tap water to flush emissions and sample well; it should be able to reduce COD and SS values effectively.

Keywords : chemical oxygen demand,biochemical oxygen demand， suspended solid

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