DESCRIPTION OF WASTWATER TREATMENT FACILITIES OPERATION

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BWP IW 38
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General Description

M/A-COM, Inc. is manufacturer of electronic components and devices used in defense department and commercial applications. The corresponding Standard Industrial Classification (SIC) codes are 3674 (semiconductors and related devices) and 3679 (electronic components, nec).

Process wastewater is segregated into four separate streams: Acid Waste (AW), Fume Scrubber Waste (FW), DI Regeneration Waste (DW), and metal-bearing waste (WM). Metal-bearing waste is pre-treated for removal of metals and then combined with the other waste streams for pH adjustment and discharge to the city sewer.

Process Description

1. Metals Removal System

Metal bearing wastes are segregated from non-metal bearing wastewaters. Inorganic solids are removed by a pre-engineered Memtek micro-filtration system. Solids are processed in a filter press prior to shipment off-site for disposal.

1.1 General

Metal bearing wastewaters are directed to a main collection sump (S-1). A level control situated in the sump operates a pump that transfers the wastewater to the first reaction tank (RX-1). Treatment chemistry is added and the contents agitated to induce a precipitation reaction. At the designated time, the contents of RX-1 are pumped to the second reactor tank (RX-2) and additional pH adjustments are made. Wastewater from RX-2 overflows by gravity to the solids concentration tank.

Wastewater in the concentration tank is cycled through the Memtek micro-filtration membranes. Permeate is directed to the acid waste collection tank (T-1), and subsequently to the pH adjustment system (described below).

Sludge is collected in a holding tank. From this tank, sludge can be pumped back to the concentration tank or to a filter press. Filter cake is placed in containers for off-site disposal.

2.1 pH Adjustment System

Three reactors in series provide pH adjustment of wastewater prior to discharge to the sewer. Effluent pH and flow are recorded prior to discharge to the City sewer.

2.2 General

Acid and alkali wastewaters from production areas and the fume scrubber flow by gravity to the acid waste collection tank (T-1). Wastewater discharged from the metals removal system is also collected in T-1 (described above). The contents of T-1 are pumped to the waste blending tank (T-3).

In addition to wastewater transferred from T-1, wastewater from the periodic regeneration of the incoming water de-ionization system is pumped to tank T-3. The contents of T-3 flow by gravity through two pH reactor vessels (T-4 and T-5) to the building sewer connection. T-3, T-4, and T-5 are each equipped with a mixer and a pH sensor. Chemical addition may be accomplished in T-4 and T-5. Effluent flow and pH are measured and recorded prior to discharge.