



ELECTRO PLATING, MICHIGAN

THE CHALLENGE

The electroplating service generates about 6000 gpd. The main contaminants in the wastewater are zinc, chromium, cadmium and tin. Local discharge standards are very stringent. The treatment system consists of an equalization tank, a treatment tank where caustic is added to precipitate metal hydroxides and a flocculent is introduced to enhance sedimentation in a settling tank. Precipitation of zinc and cadmium required that the pH be set at 12. As a result, treated water from the settling tank had to be neutralized to bring pH to 9.5. The water then flows to a holding tank and finally passes through a sand filter before it is released to the sewer. Liquid sludge from settling tank is withdrawn periodically and hauled away as such. The treatment required continuous monitoring by the operator. As the local discharge standards are very stringent, it was always difficult to meet the requirements and avoid fines.

THE SOLUTION

The conventional treatment was replaced with the AQUASIL® treatment. Wastewater flows at the rate of 25 gpm in the system and AQUASIL® AMX-5M product, at a dose of 1000 ppm, is metered directly into the treatment tank without pH adjustment. The water then flows by gravity to the settling tank where sedimentation takes place. The treated water is of excellent quality and it does not require polishing in the sand filter. The Table below shows the analytical results for raw and treated water.

Parameter	Daily Maximum (mg/L)	Before (mg/L)	After (mg/L)
Cadmium	0.004	0.790	< 0.004
Chromium	1.00	5.10	0.10
Copper	1.00	4.12	0.35
Tin	NA	NA	NA
Zinc	1.0	37.40	0.50
pH	6.5 – 9.5	7.40	8.0 - 8.5

Treatment with AQUASIL® was implemented in March 1997. Since then it has brought about and maintained compliance as shown above. In addition, the AQUASIL® reduced the levels of phosphorus and COD in the discharge. As well, The AQUASIL® treatment has eliminated the need for the neutralization tank and sand filter and reduced labor, energy and maintenance costs.

Great Chemistry At Work™