

THE COPPER PROBLEM

The Regional Water Quality Control Plant (RWQCP) is facing increasingly stringent standards for copper in its discharge to San Francisco Bay.

Figure 1 shows the copper effluent concentration limit of 4.9 parts per

billion (ppb) imposed by the RWQCP's 1993 permit and the dramatic reduction in the discharge limit that has occurred in the last several years.

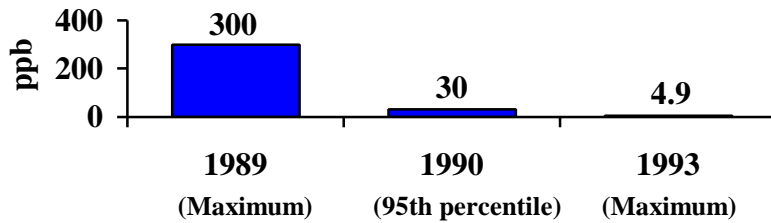


Figure 1: RWQCP Copper Discharge Limits

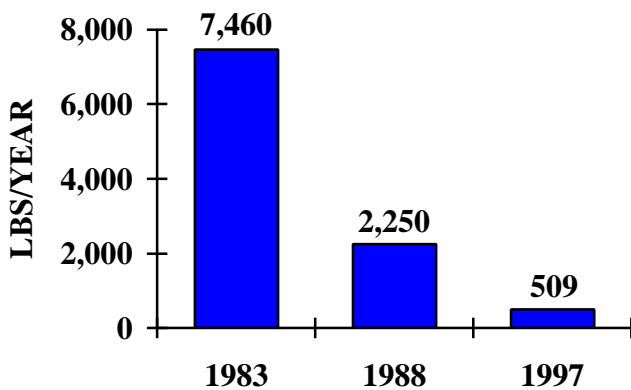


Figure 2: RWQCP Copper Discharge Load

By increasing the level of treatment at the plant, modifying operations, and running an aggressive source control program, the RWQCP has reduced the copper discharged to the Bay more than 10-fold, as shown in Figure 2. However, the RWQCP still exceeded the 4.9 ppb limit by a factor of more than 1.8 in 1997, as it discharged a maximum of 9 ppb.

The industrial copper contribution (including process, cooling, and circulating hot water contributions) has been reduced by 86% since 1988 (see Figure 3). This is the result of the RWQCP's aggressive enforcement program, industry efforts implementing pollution prevention projects, and of manufacturing facilities leaving Silicon Valley. Industry was asked to achieve further reductions through implementation of new ordinance requirements adopted in late 1994.

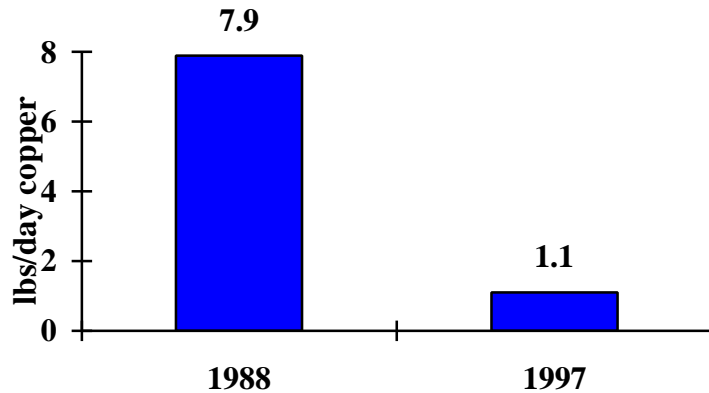


Figure 3: Industrial Copper Loading

Commercial and residential sources make up a larger percentage of the total copper loading than ever before (Figure 4). For that reason the RWQCP's Pollution Prevention Program has expanded to include more commercial and residential sources. Auto Shops, Medical Clinics, Machine Shops, Laboratories, and Cooling Water Systems are now being addressed. Residents are being asked to do their part by changing their practices.

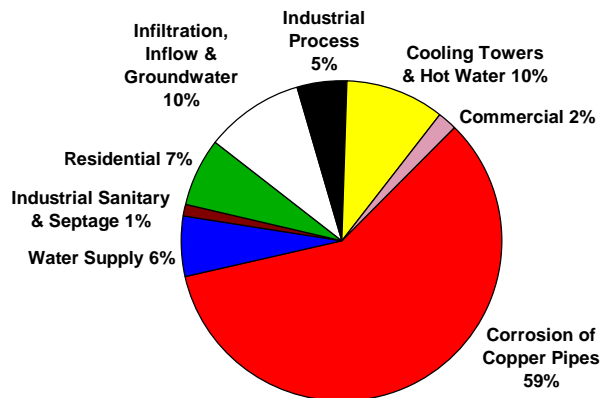


Figure 4: RWQCP Copper Sources