

COOLING TOWER INFLUENCE ON THE RAINWATER
pH NEAR A MAJOR POWER PLANT

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ABSTRACT

The dense network of 12 raingauges, covering an area of 6 km in diameter, was reinstalled near PEPCO's 710 MW Chalk Point power plant in southern Maryland. The rainwater samples were collected from July to December 1974. This second season's collection of rainwater samples were analyzed and results showed a general shifting of pH toward higher values since the operation of a cooling tower. The pH values changed from a range of 3.4 to 4.6 to a range of 4.0 to 4.8. Graphs of mean pH distribution over our dense network show the influence of the cooling tower. Several selected cases of hydrogen ion concentration distribution will be presented to further illustrate this fact.

Analyses of our data confirmed the conclusions we had drawn previously. Chemical analyses show that sulfate and nitrite are the main ingredients of acidity. Hence, the main sources of low pH values were indeed attributable to SO_2 and NO_x from the combustion of coal.