TRACKS 2006 ATLANTA, GA

Implementing The Tracking Network

poster ABSTRACT

Poster No. 4

TITLE

ARE CRITERIA AIR POLLUTANTS SENSITIVE MARKERS OF AIR QUALITY FOR MAJOR POINT SOURCE EMISSIONS? A CASE EXAMPLE FROM PITTSBURGH, PA

TRACK

Network Content

OBJECTIVES

The audience will learn about that criteria air pollutants may not always be sufficient for environmental tracking purposes when a major point source exists in a area.

SUMMARY

Background: In the context of environmental tracking, it is unclear whether routine monitoring of criteria pollutants (e.g. PM10, O3 and SO2) is sufficient to evaluate air quality where a major point source of pollution exists. From the early 1900s to closure in February 1998, the LTV Steel coke oven in Pittsburgh (Hazelwood), Pennsylvania was a key source of air pollution. The facility emitted SO2, coal dust, and the recognized carcinogens, benzene and benzo[a] pyrene (B(a)P). Concentrations of PM10, SO2 and B(a)P were compared before and after plant closure to explore the potential sensitivity of these measures to changes in the environmental landscape.

Methods: Ambient levels of PM10, SO2 and B(a)P from March 1997-July 1998 were obtained for Hazelwood from the Allegheny County (PA) monitoring network. Graphs demonstrate concentrations of each pollutant before and after plant closure..

Results: Monthly averages of PM10 were similar before and after plant closure (19.45-37.25 µg/m3 and 17.39-34.52 µg/m3, respectively). SO2 levels were reduced by 50%. A more striking decline in B(a)P was noted in each month after the closure. Monthly averages of B(a)P ranged from 6.9 to 27 ng/m3 before closure to 0.2-1.6 ng/m3 after.

Conclusion: Ambient air concentrations of criteria pollutants PM10 and SO2 were minimally and modestly affected by the elimination of a single major polluter; conversely, the more coke plant-specific B(a)P levels declined dramatically. Tracking of criteria pollutants might not be solely sufficient to assess changes in a local environmental landscape related to the elimination or addition of a major point source of pollution.

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