

**Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health**

Bulk and Air Sampling Report
Monday, September 24, 2001

Investigators from the National Institute for Occupational Safety and Health (NIOSH) collected bulk and air samples in areas immediately adjacent to the debris pile and on personnel actively involved in rescue efforts on or in the vicinity of the debris pile to characterize potential and actual occupational exposures. Below are the sampling results for Monday, September 24, 2001.

Bulk Samples

Metals

- 1 bulk sample of paint was collected from the steel superstructure of the WTC
 - Calcium, chromium, iron, and zinc were found in concentrations greater than 10 mg/G

Air Samples

Carbon Monoxide

- 5 real-time personal breathing zone samples were collected for carbon monoxide
 - Most time-weighted average concentrations were below 24 ppm (a torch cutter had a time-weighted average concentration of 45 ppm)
 - A maximum peak of 1170 ppm was observed on a steelworker on the debris pile
- 3 real-time area samples were collected to determine general background levels of carbon monoxide around the perimeter of the debris pile
 - General background time-weighted average concentrations were at or below 2 ppm

Mercury

- 1 personal and 1 area air sample were collected for mercury
 - Trace amounts of mercury were detected on the air samples

Metals

- 2 personal and 2 area air samples were collected for metals
 - Nothing of concern was found regarding metal analysis

Polynuclear Aromatic Hydrocarbons (PAHs)

- 4 personal air samples were collected for PAHs
 - Very low concentrations of 11 different PAHs were measured (3 of these PAHs are considered to be suspected human carcinogens)
 - Trace amounts of 4 other PAHs were also identified

Volatile Organic Compounds (VOCs)

- 3 personal air samples were collected with charcoal adsorbent tubes for VOCs
 - No VOCs were detected on two of the air samples (trace amounts of benzene, ethyl benzene, styrene, and toluene were detected on 1 of the air samples)

K.M. Wallingford 10/18/01

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