

Carbon monoxide poisoning after use of explosives

CHAS 25

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Three cases of carbon monoxide (CO) poisoning occurred in a manhole, including one fatality, from CO migrating through soil after nearby use of explosives at a municipal sewer project. A construction worker who descended into the manhole 45 minutes after the explosion collapsed within minutes, and two co-workers descended into the manhole to rescue him. Air monitoring was conducted with real-time instruments, and air samples were collected in Tedlar bags. Laboratory analyses of the bag samples collected near the bottom showed 1905 parts per million (ppm) CO. Subsequent chamber tests on sample explosive yielded 27 liters CO per kilogram detonated. The CO in this incident most likely was released from the nearby explosion and migrated through soil and fractured rock into the manhole. Confined space entry procedures (including monitoring confined space atmospheres before entry) should be observed; CO monitoring of confined spaces in the presence of blasting can prevent future incidents such as this one.

[How Did that Happen? Learning from Our Mistakes](#)

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