

TOOLBOX TALK #5

SEWER GAS FATALITY



Two male sewer workers walking through an underground pipe drowned after being overcome by a toxic gas – like hydrogen sulfide. The victims' employer specialized in lining sewer and water mains and employed 1,500 people on multiple work crews.

The crew had been working on a five-mile run of pipe for about a year at the time of the incident, although work in the specific section where the incident occurred had been suspended for 10 days prior to the victims' death.

The two men – ages 25 and 19 – entered a manhole 600 feet downstream of an access pit and walked upstream to clear debris from a pipe that was to be lined with cured-in-place pipe liner. The pipe ran 15 feet underground and measured 2 feet wide by 5 feet high, with a flat bottom. The upstream flow of sewage had been block, but the underground sewage duct still contained 1 to 2 feet of untreated sewage. Toxic gas levels were not measured prior to entry and the workers were not equipped with respirators or two-way radios.

Nearing the access pit, one of the workers called for help. When 5 co-workers attempted to respond they were overcome by toxic fumes, and local fire crews were contacted. When a rescue team wearing respirators entered the pipe, they found the two victims face down in sewer water. They were pronounced dead on the scene. The official cause of death was listed as drowning, with acute hydrogen sulfide intoxication as a probable contributing factor. The five co-workers who attempted rescue were taken to the hospital and treated for exposure to the gas. Three were listed in critical condition, but all recovered.

To prevent future occurrences:

- **Hazardous conditions and comprehensive safety procedures must be communicated to employees before any work begins.** The host of the work site – whether they are owners, operators or government agencies – must inform contractors of the hazardous conditions that exist in their facilities and proper safety procedures for reducing those hazards. Employers should inform the host of any permit-required confined space entry in process and obtain available hazard information before entry.
- **Employers must ensure all components of a comprehensive confined space entry program are communicated to workers and strictly enforced.** Although the workers in this case had been trained on proper confined space entry procedures, they apparently became accustomed to a routine that did not follow those procedures. Toxic gas levels were not tested before entry, the workers did not carry gas monitors for continuous air monitoring, and they were not provided with two-way radios for communication with other workers. Workers and their supervisors must be diligent in the implementation of safety protocols.