

ATHLETIC TURF

Trenching, Part I: Don't dig your own grave

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By: Barbara Mulhern, T.J. Lentz
LM Direct!



In Greenwich, CT, a 59-year-old groundskeeper installing a drainage pipe in a trench at a country club died after a portion of the trench collapsed. Occupational Safety and Health Administration (OSHA) inspectors found that the walls of the 6-ft.-deep trench had not been shored, sloped or otherwise protected against collapse. The country club paid \$20,250 for seven violations of OSHA standards.

In Reno, NV, a 20-year-old man and his 39-year-old co-worker died following the collapse of a 12-ft.-deep trench at a golf course. OSHA investigators found a number of safety violations, including lack of a protective system to prevent a cave-in, inadequate means of access or egress, failure by the employer to require head protection, and failure to adequately train employees in the recognition of hazards. Among those the 39-year-old worker left behind were three children, ages 12 to 15.

Deaths from Trenching or Excavation Cave-ins

YEAR	DEATHS
2000	40
2001	36
2002	34
2003	48
2004	41
2005	44
2006	28

TOTAL NO. OF DEATHS: 271

Source: *U.S. Bureau of Labor Statistics Census of Fatal Occupational Injuries*

These deaths are among the many that occur each year in trenching and excavation cave-ins throughout the United States. Landscape contractors and grounds maintenance employers whose workers are engaged in trenching and excavation activities must ensure that proper training and safety precautions are in place.

The landscape services industry is a high hazard industry. A single traumatic injury or death can put a small company out of business. According to a National Institute for Occupational Safety and Health (NIOSH) fact sheet titled *Fatal Injuries Among Landscape Services Workers* (NIOSH Publication No. 2008-144), workers in the landscape services industry make up less than 1% of the total U.S. work force — yet they experience approximately 3.5% of all of the occupational fatalities.

In addition to potential OSHA investigations and legal fees, a traumatic injury or fatality will result in increased insurance premiums; downtime; lost management and administrative time; the need to recruit, train and replace workers; poor employee morale; and even the potential loss of good

customers.

Trenching hazards

U.S. Bureau of Labor Statistics (BLS) data show that 271 workers died in trenching or excavation cave-ins from 2000 through 2006. (See "Deaths from Trenching or Excavation Cave-ins.") A review of multiple national databases by NIOSH researchers found that trenching and excavation hazards during construction activities resulted in 488 deaths between 1992 and 2000 — an average of 54 fatalities each year. Sixty-eight percent of those fatalities occurred in companies with fewer than 50 workers. Forty-six percent of the deaths occurred in small companies with 10 or fewer workers.

The NIOSH research also showed that 19% of these workers who died were Hispanic — a fast-growing worker population in the landscape industry. In June 2008, the Centers for Disease Control (CDC) published a report noting that between 1992 and 2006, 11,303 Hispanic workers in the United States died from job-related injuries. The death rate for Hispanic workers was consistently higher than the rate for all U.S. workers. An editorial note in the report stated that factors contributing to higher numbers of work-related deaths among Hispanic workers include inadequate knowledge and control of recognized safety hazards, and inadequate training and supervision of workers, often exacerbated by different languages and literacy levels.

Regardless of workers' ethnicities and primary language, it's critical to ensure they understand the specific hazards involved in trenching and excavation work. In a publication titled *Excavations*, Oregon-OSHA (OR-OSHA) notes that a cave-in can trap a worker within seconds, and kill the person within minutes. Two cubic yards of soil may weigh 4,000 to 6,000 lbs., and a person who is buried will suffocate in less than three minutes, OR-OSHA says. **Note:** The weight of the soil around the person is usually the cause of the suffocation, because the pressure from the soil against the chest prevents the lungs from expanding for breathing.

Yet cave-ins aren't the only hazards workers involved in trenching and excavation face. Among the other hazards are:

- Electrical hazards from overhead or underground power lines.
- Contact with underground natural gas lines or other utility lines. **Note:** Be sure to call 811 before you dig. Each state has different rules and regulations governing digging, some stricter than others. 811 will connect you directly to your local one-call center. For more information on your state's notification requirements, visit www.call811.com/state-specific.aspx.
- Falling hazards.
- Wet conditions.
- Hazardous atmospheres (heat and cold stress, stinging or biting animals and insects, and poisonous plants). **Note:** Refer to the [NIOSH Safety and Health Web Topic Page for Outdoor Worker Hazards](#).
- Confined space issues.
- Heavy equipment/machinery hazards. **Note:** Exhaust fumes from nearby equipment can cause exposures to carbon monoxide and create hazardous atmospheres depriving workers of oxygen.
- Ergonomic injuries resulting from manual material handling.

Reminder: Landscape contractors involved in construction activities, such as digging trenches, are subject to OSHA's construction standards. For more information on federal OSHA's construction standards regulating this type of work, visit www.osha.gov, then refer to these standards: 29 CFR 1926.650, 29 CFR 1926.651 and 29 CFR 1926.652.

In the next issue of *LMDirect*, we will discuss the steps employers can take to prevent hazardous trenching situations, and resources for guidance in the process.

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