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Health and Safety News

As environmental consultants, it is our goal to provide the highest quality environmental services to our clients. In order to provide the best service, it is paramount to ensure the continuing health and safety of our employees and subcontractors. The health and safety success of our team assures the success of our projects. At Roux Associates, we are dedicated to promoting a positive safety culture in the field, within our offices, and throughout our personal lives.

– Roux Associates

See Something, *Do* Something: Using Stop Work Authority *Kyle Varela, Massachusetts*



“If you see something, say something” is a phrase most of us have committed to memory and is used to help spread awareness about known hazards. However, when saying something isn’t enough to properly mitigate a potential hazard, you must take action and stop work.

At all sites that Roux manages, all workers are granted Stop Work Authority. Stop Work Authority is the ability to halt some or all of the site activities when conditions become unsafe. Communicating that each worker has this authority should be done prior to starting the day’s work, such as during the morning tailgate meeting. In fact, it should be demonstrated that it is each worker’s *responsibility* to initiate Stop Work Authority when an unsafe behavior or condition is detected.

Once Stop Work Authority is used, it’s important to gather the site workers together and openly discuss the situation. First and foremost, the worker who stopped work should be praised for stepping up and addressing a hazard he or she deemed unsafe. This is critical in fostering a culture and work environment dedicated to maintaining safety. Next, the field manager or Site Health & Safety Officer should identify the observed hazardous condition, and everyone should

work together to determine how it can be mitigated or prevented. Then, the proper safety measures should be implemented. Only after conditions are deemed safe should work be continued.

A reckless act by one worker has the potential to harm not only oneself, but everyone else around them. At the end of the day, it is each worker’s responsibility to ensure that everyone goes home safe. Workers should be continually reminded to conduct potential hazard assessments and consider the “Worst Thing That Could Happen.” When that does not work and someone’s safety is at risk, don’t just say something, do something.

When Should Stop Work Authority be Utilized?	Ask Yourself...
When permit conditions change	<ul style="list-style-type: none"> • Are tasks being performed that aren’t listed on the permit? • Has an unaddressed hazard been introduced to the site?
When site conditions change	<ul style="list-style-type: none"> • Has the weather made working conditions unsafe? • Have air monitoring requirements exceeded permissible limits?
When job steps deviate from the Job Safety Analysis (JSA)	<ul style="list-style-type: none"> • Are the tools and Personal Protective Equipment being used different than those listed on the JSA? • Does the JSA need to be updated?
When you see something unsafe	<ul style="list-style-type: none"> • Is someone being careless or reckless? • Are known hazards not properly identified?

Ecological and Biological Hazards at Sites in Rural and Wilderness Areas

Alessandro Sindoni, New York

Most Roux job sites have one hazard in common: the hustle and bustle of people and traffic. Pedestrians and third-party traffic are the main two hazards most of us look for when on a site. However, at our sites that are in or near wilderness areas, people and traffic are the least of our worries.

At these sites, a variety of ecological and biological hazards can pose a major concern. Local wildlife at sites where Roux conducts field work includes grizzly bears, black bears, moose, elk, coyotes, wolves, mountain lions, foxes, and big horn sheep. At these sites, we should remember that we are working in the living room of the wildlife. Most animals will leave you alone if you do not bother them, but that may not always be the case. At sites where bears are prominent in the area, it is important to know what to do if you encounter one. In order to keep bears and animals away from you while working or hiking, you should make sure you are loud and making noise, whether you're talking to your partner or playing music. At such sites, it is important to always carry bear spray in case you do have an encounter. The easiest way to mitigate an encounter with a bear is to slowly back away if one crosses your path, and do not run. Running away can trigger a predatorial instinct for a bear to chase after you. Bears typically will not attack if you do not give them a reason to. However, they are very protective of their offspring, so if you see cubs out in the wild there is an angry and protective mother is somewhere close.

If you are in a circumstance where you are facing an aggressive bear that looks like it is going to attack, use the bear spray. Spray it low and it will create a fog so the bear cannot see you, and the components of the spray will also irritate the bear and cause it to run away. If the spray doesn't work, your last resort is to lay on your stomach and cover your head and neck to protect your spine and vital organs. The bear will most likely just scratch at you and then leave you alone. This is the best way to survive an encounter with an aggressive bear, but again, this is a last resort if all the other tactics fail.



Aside from wildlife, there are other hazards that you need to be aware of while at sites in rural or wilderness areas. It is important to be able to identify poisonous plants such as poison

ivy, poison sumac, and poison oak. Poison ivy typically has three green leaves (or red in the fall) which bud from one small stem. Poison oak typically comes as a shrub with leaves of three, which may have yellow or green flowers and clusters of green-yellow or white berries. Lastly, poison sumac has reddish stems, with elongated leaflets (7-13) arranged in pairs which have a smooth texture and V-shaped point. If poison ivy, oak, or sumac is found in your work area, attempt to avoid the plant entirely. If you must work in that area, remove the plant while using disposable gloves and let others around you know. If you develop a rash from a poisonous plant, apply ointment to reduce the itchiness.

Another hazard to look out for is ticks, as they carry a plethora of vector-borne diseases. You should check yourself regularly to see if you have a tick or a tick bite on you. The best ways to avoid ticks are to wear long pants and sleeves; tuck and tape the bottom of your pants into your socks; avoid walking through overgrown areas; and apply an insect repellent containing DEET to exposed skin, or permethrin to your clothes, in accordance with the manufacturer's recommendations. When working in areas suspected of containing ticks, regularly perform checks of your clothing and remove any ticks observed, and perform a full body check as soon as possible after work is complete. If you find a tick on your body, be sure to remove it with tweezers and grab it from as close to the skin as possible. This will prevent any parts of the tick from getting stuck in your skin. If a bull's eye patterned rash develops, be sure to consult a doctor.

Wildlife is part of what makes many of our sites beautiful places to work, but we need to take precautions while working in rural and wilderness areas because of these hazards.



Poison Ivy; Photos courtesy of U.S. Department of Agriculture



Poison Oak; Photos courtesy of U.S. Department of Agriculture



Poison Sumac; Photos courtesy of U.S. Department of Agriculture



Excavation Safety

Ashley Sweeney, New Jersey

Excavation and trenching operations are among the most hazardous of construction activities completed at Roux. The Occupational Health and Safety Administration (OSHA) defines an excavation as any man-made cut, cavity, trench, or depression in the earth's surface formed by earth removal. A trench is defined as a narrow underground excavation that is deeper than it is wide, and is no wider than 15 feet.

There are several serious hazards associated with excavation and trenching activities. Such hazards can include cave-ins, falling loads, underground utility strikes, and hazardous atmospheres, as well as secondary hazards from mobile equipment used to perform work. Cave-ins are of greatest concern due to the potential to engulf a worker, which equates to a higher likelihood for a severe injury/fatality. Therefore, proper planning and ensuring a competent person is on-site to classify soil and rock deposits is imperative, as it sets the stage to determine proper sloping and trenching as well as excavation activities as they occur in the field.

In recent events, OSHA cited a Fort Pierre, South Dakota company for failing to utilize a trench protective system. The citation arose from an instance which occurred on May 23, 2017: a worker was completely buried when the walls of a 14-foot trench collapsed around him. Fortunately for this individual, workers were able to free his head, which provided critical time for an emergency response team to free the worker from the collapse.

What are some ways to prevent these types of accidents and potential citations from occurring? Inspect the site daily to ensure that the work area is safe, and follow OSHA Standards as well as Roux's Management Programs. If a hazard is identified, work must be stopped to eliminate or mitigate the hazard. Proper planning is critical, such that before any excavation or trenching work is initiated, a One Call should be placed to ensure no utility



lines are hit. As appropriate and deemed necessary by a competent person, proper protective systems should be instituted to eliminate trench/excavation collapse. Some types of protective systems include sloping, shoring, or shielding. To determine the protective system that should be used, the following information should be evaluated: soil classification, depth of cut, water content of soil, changes due to weather or climate, surcharge loads, and other operations in the vicinity. Site safety inspections are also crucial; one must ensure proper engineering controls are in place, safe work procedures are adhered to, and all employees at the site wear the proper personal protective equipment. If there are changes to work activities during the course of an excavation project, work should cease and a reevaluation of potential hazards should occur by the Site Health and Safety Officer and the project team. Depending on the changes, additional controls may be required to implemented. Overall, through proper planning and site safety inspections, trenching and excavation incidents can be prevented.



Some general trenching and excavation rules include:

- Trenches 5 feet deep or greater require a protective system, unless the excavation is made entirely in stable rock.
- Keep loads and equipment at least 2 feet from trench edges.
- Know where underground utilities are located by ensuring that utility mark-outs were completed.
- Test for low oxygen, hazardous fumes, and toxic gases.
- Inspect trenches at the start of each shift.
- Inspect trenches following a rainstorm.
- Do not work under raised loads, buckets, or arms of equipment.
- Access and egress safely from excavations 4 feet or deeper using ladders, steps, ramps, or other safe means, ensuring these devices are within 25 feet of workers.

Working Around Heavy Equipment *Raymond Olson, Illinois*



Incidents involving heavy equipment are commonly fatal due to their size and weight, thus making proper communication around machines imperative to maintaining a safe work environment. Whenever metal meets flesh and bone, metal always wins. This is why it is extremely important to eliminate a man/machine interface.

Based off of recent industry incidents, one example includes January of 2017, where there was a fatality in Oregon from heavy equipment. An excavator had a hydraulic line rupture, causing the bucket to drop on an employee's head. The employee suffered blunt force trauma and later died in the hospital. Another example includes a heavy equipment fatality in Texas, when an excavator operator crushed a laborer inside of an excavation after not properly checking if the hole was clear.

Both incidents could have been prevented with advanced communication procedures and regular health and safety oversight. The accident involving the hydraulic line rupture could have been prevented with monitoring of maintenance records and by maintaining an adequate exclusion zone. As an example, at one of our sites in Illinois, our contractor logs all vehicle hours and performs daily maintenance inspections on all heavy equipment. There is also a strict adherence to a heavy equipment exclusion zone large enough to cover the full swing and tipping radius of the equipment. We also require all personnel within the

worksite to have a radio to communicate locations and actions. In addition, all lessons learned and potential hazards are communicated to the Site Health and Safety Officer, as they are a conduit to relay information to all site personnel. If a hazard is identified, work must be stopped to eliminate or mitigate the hazard. All personnel on-site have the power to exercise Stop Work Authority and are encouraged to do so. Strong communication begins with organization and proper documentation of hazards on-site.

Some general heavy equipment safety protocols include:

- Inspecting and maintaining equipment daily, prior to operation.
- Daily health and safety meetings with examples of past incidents, as well as current hazards.
- High visibility clothing must always be worn on-site.
- Set up and maintain an exclusion zone for construction activities.
- Post signage at the entrance of the exclusion zone, informing others of required PPE and hazards.
- Sirens, horns, and flashing lights on all heavy equipment on-site.
- Designated traffic patterns for all deliveries on-site.
- All personnel on-site must have a radio on hand in the exclusion zone, or be within 5 feet of a person with a functioning radio.
- Always communicate with operators prior to passing. Receive verbal confirmation and wait for an operator to go into inactive mode, where the bucket is placed on the ground and their hands are off the controls.
- When on the ground near an active excavator, stay in communication with the operator and maintain a minimum distance of the equipment's arm and bucket length, plus 5 feet.
- Use of a spotter is required whenever there is equipment backing up, risk of a tip over, when working near overhead powerlines, and while working on slopes.
- Lessons learned should be reported back to the team at the daily health and safety meeting.

3rd Quarter H&S Message

Brian Hobbs, CIH, CSP, Senior Health and Safety Manager

While the Occupational Health and Safety Administration's updated final rule on respirable crystalline silica has been on the docket for quite some time, it has finally been released on September 23, 2017 within the construction industry. This long-awaited ruling has been instituted to aid in the reduction of such illnesses as lung cancer, silicosis, chronic obstructive pulmonary diseases, and kidney disease, by limiting exposures to respirable crystalline silica.

The framework of this ruling focuses on a reduction of the permissible exposure limit (PEL) for respirable crystalline silica to 50 $\mu\text{g}/\text{m}^3$ averaged over an 8-hour shift, with a greater emphasis on controlling exposures with proper engineering controls (e.g. water, ventilation) and ensuring areas of high exposure are only accessed by authorized individuals. Additional requirements for written exposure control plans, similar to our Job Safety Analysis, will further enhance pre-planning and reduction of potential exposure as it relates to site-specific work. Focusing on additional training and implementation of our Corporate Management Programs will keep Roux personnel, our clients, and the community around us safer.

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