



Health & Safety News



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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, we are dedicated to promoting a positive safety culture in the field, within our offices, and throughout our personal lives.

JLAs – Living Documents

By Kyle Varela, Staff Engineer – Massachusetts

A Job Loss Analysis, or JLA, (also known as a Job Hazard Analysis per OSHA) is a form designed to assist workers in identifying and mitigating potential hazards associated with a task. The form is typically prepared and reviewed by knowledgeable (i.e., familiar with the task) staff, managers, and subcontractors in the office prior to field activities. While compiling JLAs before a field event is an important component of safe project planning, the JLAs run the risk of becoming outdated and consequently, ineffective.

Site-specific and day-specific conditions may require a change in the way a task is performed, and thus, may require an update to the JLA to ensure all workers are aware of the new hazard(s) and preventative measures. Below is a list of just a few scenarios where a JLA revision may be required:

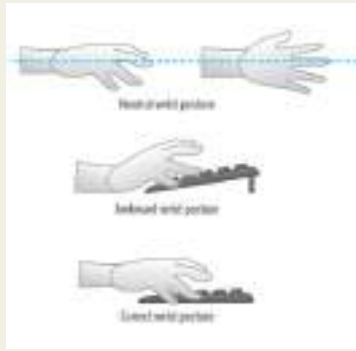
- On a particularly cold day, cut-resistant gloves aren't enough to keep your hands warm. The JLA could be updated to include winter gloves or hand warmers underneath your cut-resistant gloves.
- Early morning dew makes piping that was stored outside wet, and cut-resistant gloves can't hold a grip, making cutting a pipe extra dangerous. The JLA could be updated to add "wipe water off and dry piping" to the job steps.
- A well that needs to be sampled from is on the

side of a normally low-traffic road, but construction on a nearby main road results in a detour to your road. The Traffic Control Plan may need to be updated for a high-traffic situation and the JLA may need to be updated to follow this revised plan.

- Recent landscaping activities buried a well you need to gauge, and you need a shovel to dig it up. The JLA should be updated to include the use of a shovel. (And to place a call into Dig Safe beforehand!)
- A sudden power outage at a site requires the sub-contractor to acquire and use a mobile power generator. The JLA should be updated to include this as required equipment and may even require a new JLA to be prepared in the field for the use of it.

One of the best ways to recognize these hazards is during the JLA discussion as part of the daily Tailgate Safety Meeting. Engage workers and subcontractors in the morning meeting by asking them to identify hazards that might not be reflected in the JLA. This not only encourages and reminds everyone to think through the Assess, Analyze, and Act steps, but also serves as a forum to share and bring awareness to potentially dangerous site conditions. Following these discussions, mark up the JLA and share it with each worker to ensure everyone is aware of the safest way to perform the day's task.

Office Ergonomics



At Roux, we are experts in identifying health and safety concerns in the field—but injuries can happen even from the comfort of the office. Studies have shown that adults in the United States spend 50-60% of their day sedentary

(Healy, 2011). When you consider the time spent commuting, sitting while completing office work, and time expended eating at the table or seated on a couch, it is easy to see the truth of those estimates.

Focused on your work, immersed in a report, it is easy to forget to sit upright or keep your neck in line with your spine, but over time, bad posture can take a toll on your musculoskeletal health. A musculoskeletal injury is an injury or disorder of the soft tissues, including tendons, ligaments, blood vessels, and nerves; or related soft tissues, arising from exposure to risk factors such as awkward posture, repetitive motions, and forceful exertions. Common symptoms include tenderness, weakness, tingling, numbness, pain, fatigue, and difficulty performing tasks or moving certain parts of the body. To combat these symptoms, ensure that your workspace is set up ergonomically, in a manner that best supports your body. OSHA defines ergonomics as the “science of fitting workplace conditions and job demands to the capabilities of the working population.”

Try following the following tips to ensure your workspace is comfortable and promotes good posture.

- Keep your head positioned directly above your neck and avoid craning forward towards the monitor.
- Make sure the weight of your arms is supported to avoid strain on your neck and shoulder muscles.
- Do not slouch. It puts pressure on your back's discs and vertebrae. Adjust your chair so the lumbar support aligns with the curve of your spine, and your feet are flat on the ground.
- Adjust your monitor's height so that the top is at eye level, and its distance an arm's length away.

By Allie Bailey, Staff Engineer Massachusetts

- o If you wear bifocals, the monitor will need to be even lower.
- Place keyboard in front of monitor where you will not have to turn your head frequently.
- Keep the keyboard and mouse close, with your wrists straight.
- If you spend a lot of time on the phone and using speakerphone is not feasible, consider investing in a headset to avoid neck injuries from holding the receiver while typing.
- To reduce eye strain, prevent glare on your monitor by positioning your line of sight parallel to any windows.



- Take breaks to rest your eyes by looking away from your monitor and focus on objects in the distance.
- Drink plenty of water throughout the day.
- Try to change your position throughout the day to avoid prolonged periods of sitting. Get up, walk around, and stretch.
 - o Stretch your neck by slowly lowering your head to your shoulder, holding it there for a few seconds, then repeating on the other side.
 - o Clasp hands behind head, with elbows aligned with ears, pressing your elbows back and squeezing shoulder blades.
 - o Lean forward and touch your toes, hold the position for at least five seconds, slowly return upright.

Wildfire Smoke Safety

My friend Diane lived in Paradise, California with her husband and three kids, ages 3 to 7. On the morning of November 8, 2018, she woke up and began her morning routine of getting her kids ready for school, when they were notified that a raging wildfire was headed their way. They grabbed a few valued possessions and fled. They made it out okay, but in the process, lost their car and home.

You may have followed the California wildfires that occurred in November 2018. The story I share was common to those living in the areas around many of the wildfires that were burning concurrently in California. Those not affected immediately were affected soon thereafter. The air quality in several major population centers of the state plummeted. Pollution levels exceeded those of major cities in China and India, often ranked amongst the worst in the world. These events caused an increase in respiratory hospitalizations statewide and widespread school closures.

Unfortunately, wildfires are becoming more common. They are also amplified by strong winds, sometimes created by the wildfires themselves, which push particulates/smoke across significant distances. Exposure to this smoke, even short-term, can spur a lifetime of asthma, allergy, and constricted breathing according to researchers at Stanford (Source: The New York Times, November 16, 2018, "[Air Quality in California: Devastating Fires Lead to a New Danger](#)"). Exposure can cause damage to lungs, leading to pneumonia or bronchitis. Breathing limited by illness may also trigger heart attacks or strokes.

You can take measures both at home and work to reduce your exposure to smoke during these events.

Know your Risk

There are a few publicly available resources you can access to determine your risk to exposure due to poor air quality. Real time air quality updates are available at the Environmental Protection Agency's [AirNow.gov](#) website by entering your zip code. State and regional air quality management agencies also typically maintain a daily index of air quality. You can also locate the website for your local air quality management agency for information regarding current air quality, and even some information about appropriate days for burning materials in your yard or fireplace.

By Tim Naughton, Technical Director
Oakland, California

Personal Safety

In the event that there is a significantly elevated risk, as was the case last fall in California, there are many ways you can reduce your exposure. Whether at work or at home, if you are in the path of a fire, you should evacuate to a safe location directed by local officials, taking only what is necessary. You should anticipate traffic, but must follow the designated evacuation routes for your safety.

When in a safe place, the best course of action to limit or reduce your exposure to smoke is to stay indoors with the doors and windows closed. You can run an air conditioner with the air intake closed to prevent smoke from entering via the ventilation. Having a high efficiency particulate air (HEPA) filter available, even if it is a small portable one, can dramatically improve your indoor air quality by removing particulate matter found in smoke.

If you must go outside when working or living in an area affected by wildfire smoke, National Institute for Occupational Safety and Health (NIOSH) approved masks rated to reduce exposure to particulates are recommended, such as P100 masks and N95 respirators. Note that wearing either of these presents other risks, including reduced breathing capacity and increased heart rate. Paper dust masks and surgical masks do not protect you from the fine particles in smoke and should therefore be avoided.

Here are some additional recommended safety measures shared in a recent local news article (Source: KQED.org, August 7, 2018, "[How to Protect Yourself From Wildfire Smoke](#)"):

- Avoid activities that increase indoor pollution. Burning candles, cooking on gas stoves, and vacuuming can increase indoor pollution.
- Wash your nose out and gargle with clean water. Do this five times a day until the smoke subsides.
- Take a shower and wash your clothing after being outside.

Lastly, if you are working outdoors, the best course of action is to suspend your work and follow the guidelines above. Reschedule your work for a time when it is safe to work outside.

Fatigue in the Workplace and on the Road

By Jake Lyon, Staff Geologist – Massachusetts

In an interview with a prospective applicant, Michael Roux and I were asked, “what's the biggest challenge a staff level employee must face?” I paused, going through the long list of possible options—balancing a variety of projects and deadlines, managing inexperience when given a new project task, or handling an uncooperative subcontractor. Before I could settle on my answer, Michael responded with maybe the truest and most commonly experienced issue: the fatigue of long days in the car.

All staff learn early on that field work requires early mornings and long drives. Extended field jobs may require a staff member to wake up before 5am for weeks on end. Even without going into the field, many Roux employees have substantial commutes that demand early rising just to get to the office. These early mornings and long drives can pose a serious health and safety risk, but the associated fatigue is rarely addressed because it can be viewed as an unpleasant yet necessary part of the job.

Impacts of Fatigue from Impaired Driving to Poor Decision Making:

- Driving while fatigued or sleep deprived is dangerous, increasing the likelihood of an accident.
- 20% of accidents are related to fatigue, and 40% of highway accidents involve a fatigued driver.
- Long work hours coupled with early mornings significantly increase the risk of on-job errors, accidents, and injuries.
- An estimated 274,000 fatigue-related workplace accidents and errors occur yearly in the United States.
- Long term sleep deprivation increases a person's risk of heart disease, dementia, and obesity.

Roux employees in the field are responsible not only for themselves, but also the well-being of their crew, not to mention the execution of the job scope. A fatigued employee will struggle to handle the field demands as effectively or safely as a well-rested employee.

Ways to Manage Fatigue:

- Managing fatigue is the responsibility of the organization and the individual. It's important for Roux to create a culture where discussing employee fatigue is encouraged and supported. If employees express their fatigue, schedules can be adjusted to accommodate necessary recharge.
- Employees should not compromise sleep on a regular basis. Sleep and recharge time of 8 hours or more is a necessity to avoid short-term and long-term sleep deprivation hazards.
- Moderate amounts of caffeine, short “power” naps of 10-20 minutes, regular short breaks, and daily exercise all provide short-term tools to increase alertness and stave off fatigue. If faced with frequent early drives to the field, buy a few portable coffees the night before to keep in your car in case you get tired, and leave slightly earlier than the drive demands, so you have the option to stop for a short nap or stretch break.
- There's no simple way to fight fatigue, but prioritizing rest (even in small increments), scheduling to allow for recovery after extended tasks, and being open and honest with your coworkers and bosses will help improve work place safety in the office, field, and on the road.

