

Health & Safety



The Heat is On!

Workers who are exposed to hot environments may be at risk of heat stress. Exposure to extreme heat can result in occupational illnesses and injuries. Heat stress can result in heat stroke, heat exhaustion, heat cramps, or heat rashes. Heat can also increase the risk of injuries to workers as it may result in sweaty palms, fogged-up safety glasses, and dizziness. Burns may also occur as a result of accidental contact with hot surfaces or steam when a worker loses focus due to a heat disorder.

Examples of Ardaman workers at risk of heat stress include outdoor workers such as field technicians, drillers, environmental professionals, and engineers. Workers at greater risk of heat stress include those who are 65 years of age or older, are overweight, have heart disease or high blood pressure, or take medications that can result in complications for the employee working in extreme heat.

Prevention of heat stress in our employees is important. Ardaman employees should understand what heat stress is, how it affects their health and safety, and how it can be prevented. Here are the heat related disorders starting from severe (heat stroke) to early identifiers (heat cramps).

Heat Stroke

Heat stroke is the most serious heat-related disorder. It occurs when the body becomes unable to control its temperature: The body's temperature rises rapidly, the sweating mechanism fails, and the body is unable to cool down. When heat stroke occurs, the body temperature can rise to 106 degrees Fahrenheit or higher within 10 to 15 minutes. Heat stroke can cause permanent disability or death if emergency treatment is not provided.

Symptoms of heat stroke include:

- Hot, dry skin or profuse sweating
- Hallucinations
- Chills
- Throbbing Headache
- High body temperature
- Confusion/dizziness
- Slurred speech
- Vomiting

First Aid:

Take the following steps to treat an individual with heat stroke:

- Call 911 and notify supervisor
- Move the worker to a cool shaded area.
- Cool the worker using methods such as:
 - ✓ Soaking their clothes with cool water
 - ✓ Spraying, sponging, or showering them with cool water.
 - ✓ Fanning their body.
 - ✓ Placing icepacks under the arm pits or groin area.

HEAT EXHAUSTION	HEAT STROKE
USUALLY A FEVER OVER 100.4° F	HIGH FEVER, OVER 104° F
HEADACHE	HEADACHE
FATIGUE, ANXIETY & FAINT FEELING	FATIGUE, CONFUSION, AGITATION & STUPOR
WEAKNESS & MUSCLE CRAMPS	RAPID HEART RATE
NAUSEA & VOMITING	SEIZURES, COMA & DEATH POSSIBLE
PALE, MOIST SKIN	NAUSEA, VOMITING & LOSS OF APPETITE
DIARRHEA	WARM, DRY SKIN
FIRST AID	FIRST AID
MOVE TO A COOL PLACE & REST	CALL 911
REMOVE EXCESS CLOTHING & FAN SKIN	MOVE TO A COOL PLACE & REST
PLACE COOL CLOTHS ON SKIN	REMOVE EXCESS CLOTHING, DRENCH SKIN WITH COOL WATER & FAN SKIN
DRINK COOL WATER OR SPORTS DRINKS IF FULLY CONSCIOUS	PLACE ICE BAGS ON THE ARMPITS & GROIN AREAS

April 4, 2024
Ardaman & Associates, Inc.
A Tetra Tech Company



Inside this issue

- Heat Disorders..... 2
- Heat Safety Prevention..... 2
- What does Urine Color Say..... 3
- How Hot is it outside 3
- Work Place Safety: Office 3
- Focus 4: Common Injuries 4
- Hazard Recognition 4
- Being Present in the moment..... 4
- Ardaman Update 5
- Quiz 6

Safety Contact Information

Brett Buxbaum: H&S Director
Ryan Blumenschine: H&S Specialist
Phone: (407) 855-3860
Brett Cell: (407) 509-3085
Ryan Cell: (407) 757-6640

BBuxbaum@ardaman.com

RBlumenschine@ardaman.com

Heat Safety Prevention Tips

- Use general ventilation, cooling fans, and evaporative cooling whenever possible;
- Shield heat producing equipment;
- Drink water steadily before and during work in the heat:
 - Drink about 16 ounces before starting and 8 ounces every 15 –20 minutes during hot work activities. On average, we lose 1 quart of water per hour in hot conditions.
 - Pay attention to the color of your urine when going to the restroom. If you are not going to the restroom regularly during the day, you are dehydrated.
- Eat well-balanced meals, avoid heavy or hot food;
- Eat smaller meals before work activities;
- Avoid Caffeine and alcohol or large amounts of sugar as they will all cause your body to dehydrate.
- Work at a steady pace minimizing overexertion;
- Know your own limits and ability to work safely in the heat and monitor others working with you;
- Wear light-colored, loose-fitting, breathable clothing—cotton is good.
- Take breaks in cool shade;
- Work in the shade when possible;
- Find out from your healthcare provider if your medications and heat do not mix, notify your supervisor;
- Know that equipment such as respirators, face coverings, or work suits can increase heat stress.
- Take fast actions for symptoms of heat cramps, exhaustion, or heat stroke.



Heat Disorders: What are they?

Heat Exhaustion:

Heat exhaustion is the body's response to an excessive loss of the water and salt, usually through excessive sweating. Workers most prone to heat exhaustion are those that are elderly, have high blood pressure, and those working in a hot environment.

Symptoms of heat exhaustion include:

- Heavy sweating
- Extreme weakness or fatigue
- Dizziness, confusion
- Nausea, headache
- Clammy, moist/cool skin
- Pale or flushed complexion
- Muscle cramps
- Irritable
- Thirst

First Aid:

Treat a worker suffering from heat exhaustion with the following:

- Have them rest in a cool, shaded or air-conditioned area.
- Have them slowly drink room temperature water.
- Have them rest until they feel better.

Heat Cramps:

Heat cramps usually affect workers who sweat a lot during strenuous activity. This sweating depletes the body's salt and water levels. Low salt levels in muscles causes painful cramps. Cramps may also be a symptom of heat exhaustion.

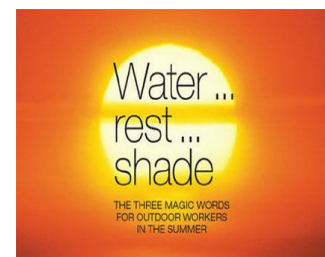
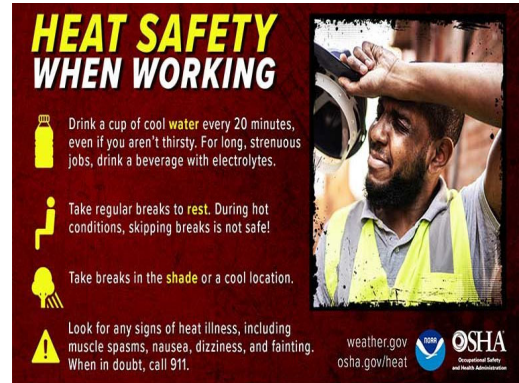
Symptoms of heat cramps include:

- Muscle pain or spasms usually in the abdomen, arms, or legs.

First Aid:

Workers with heat cramps should:

- Stop all activity, and sit in a cool place;
- Slowly drink room temperature water;
- Do not return to strenuous work for a few hours after the cramps subside because further exertion may lead to heat exhaustion or heat stroke.
- Recent studies have shown that drinking water continuously is the best preventative method for staying hydrated. You can also add a commercially available electrolyte replacement to help aid recovery. Eating bananas is an additional aid during recovery.
- Seek medical attention if the worker experiences heat cramps symptoms and any of the following apply:
 - The worker has heart problems;
 - The worker is on a low-sodium diet;
 - The cramps do not subside within one hour.



What Does Urine Color Say About Your Hydration?

Urine color says a lot about our hydration status. Generally, the lighter the color, the more hydrated you are. But why is that? Well, dehydration is caused when the volume of water in the body is depleted. And when we're dehydrated, our kidneys, which filter waste, tell the body to retain water. Therefore, we have less water in our urine, which causes it to become more concentrated and darker.

This chart can help you determine if you're hydrated. It starts with normal, well-hydrated colors. But as you move down the list, dehydration becomes more severe; below the red line indicates dehydration.

Understand the Symptoms of Dehydration

Recognizing colors can be a helpful indicator, especially if you notice the change in color while other symptoms of dehydration are present.

Dehydration symptoms include:

- Thirst
- Dry mouth, dry nose
- Fewer trips to the bathroom
- Headache
- Light-headedness
- Muscle Cramps

Are you hydrated? Urine color chart

1		Congratulations!
2		If your urine matches colors 1, 2, or 3, you are properly hydrated.
3		Continue to consume fluids at the recommended amounts.
4		If your urine is below the RED line, you are DEHYDRATED!
5		You are at risk for cramping, heart attack, anxiety attack, heat illness and more.
6		You need to drink more water now!
7		If your urine is this color, you must drink water immediately or die a slow, painful death.
8		Seek medical attention immediately

How Hot is it really outside?

IT'S HOT OUTSIDE!

STAY COOL.
STAY HYDRATED.
STAY INFORMED.

Heat Index 130° or Higher

Heat Stroke or Sun Stroke imminent

Heat Index 105°-129°

Sun Stroke, heat cramps and heat exhaustion likely. Heat stroke possible with prolonged exposure and physical activity

Heat Index 90°-100°

Sun Stroke, heat cramps and heat exhaustion are possible with prolonged exposure and physical activity.

How To Use Heat Index

1. Across top (Air Temperature) locate today's predicted high temperature.
2. Down left side (Relative Humidity) locate today's predicted humidity.
3. Follow across and down to find "Apparent Temperature" or "What it feels like"

Heat Index Values were devised for shady, light wind conditions. Exposure to full sun can increase values by up to 15°. Strong winds, particularly with hot, dry air can be extremely hazardous.

Source: Centers for Disease Control and Prevention.

Air Temp.	70°	75°	80°	85°	90°	95°	100°	105°	110°
Relative Humidity	Apparent Temperature (Degrees Fahrenheit) →								
0%	64°	69°	73°	78°	83°	87°	91°	95°	99°
10%	65°	70°	75°	80°	85°	90°	95°	100°	105°
20%	66°	72°	77°	82°	87°	93°	99°	105°	112°
30%	67°	73°	78°	84°	90°	96°	104°	113°	123°
40%	68°	74°	79°	86°	93°	101°	110°	122°	137°
50%	69°	75°	81°	88°	96°	107°	120°	135°	150°
60%	70°	76°	82°	90°	100°	114°	132°	149°	
70%	70°	77°	85°	93°	106°	124°	144°		
80%	71°	78°	86°	97°	113°	136°	157°		
90%	71°	79°	88°	102°	122°	150°	170°		
100%	72°	80°	91°	108°	133°	166°			

Work Place Safety Tips: Office Area

Accidents happen in the office, not as frequently compared to the field or lab/shop area but when it does, it is just as serious. Tripping, slipping, and falling ranks second to automobile accidents nationwide. Accidents of this nature happening in the office are a big part of total incidents. The good part is that most of these can be prevented with a few simple tools and reminders.

Keep the walkway clear.

Boxes and bundles, cables, wires and items carelessly piled are tripping hazards. Most times, these are just oops events, other times they are not.

Look before you sit.

Incidents of someone missing the seat often promote silent giggles but this actually could happen to anyone who does not take the time to reach for the chair before sitting down. Leaning back on the chair could end with your back on the floor. This is common for those people who are thinking about something or are trying to reach something, misjudging balance.

Even with all the computerization in the office, filing cabinets are still in use.

Nothing very wrong here except that filing cabinets are heavy. Opening all drawers of the cabinet at the same time tips the balance of the cabinet towards you. Likewise, leaving a drawer open is a bump waiting to happen.

Don't read while walking.

No one saved impressive time by reading while walking, yet this is a very common practice especially looking at your phone. If you must, do not walk into the direction of a crowd area of the office or into a break area.

Don't carry anything higher than your eye level.

Carrying loads higher than the eye level impresses no one. Your visibility may become compromised.

Use the handrails.

Stairway handrails have its reason for being. Use them. People who do not use the handrail tire easy and leave themselves open to injury if balance is lost.

Watch where you step.

Smooth surfaces are not always safe surfaces to step on especially in dark aisles. Water could be dripping or an object may be in the way. Report unsafe conditions, loose steps, burned out lights, defective equipment, overloaded sockets, etc..... The list can be long. The benefits though are immense.

Common Injuries: Focus 4

Awareness begins by educating ourselves on the most commonly occurring injuries in our industry, reducing our risk to them with the appropriate measures, and looking for areas to improve.

Tetra Tech designed the FOCUS 4 Program as a tool to educate our global staff on frequent injuries that occur within our project sites, offices, and homes and how to prevent them.

Struck by or against

- While planning work, eliminate potential struck-by or against hazards
- Be aware of your surroundings and anticipate struck by hazards (e.g., walking in parking lots, entering active work sites or standing near doors that open into walkways)
- Pay attention to the pre-work and daily safety briefings to understand potential hazards in your work zones

Slips, trips, and falls

- Identify areas that are likely to be slippery or have obstacles and mitigate the risk of an accident
- Wear appropriate footwear for your work environment
- If working at heights or near a ledge 4 feet (1.2 meters) or higher, engage in fall hazard assessment and the use of barriers, training, or other safe work practices

Overexertion

- When possible, avoid the need to lift a heavy load (e.g., place heavier items at waist high to avoid lifting from the ground or overhead)
- Use power or manual lifting aids to reduce strain on the body
- Use proper lifting techniques, which include bringing the load closer to the body
- Do not lift heavy or awkward loads by yourself; always use a buddy while moving loads more than 50 pounds (22 kg)

Environmental field hazards

- Make sure you have appropriate shade and enough water while working outdoors
- Know heat stress signs, symptoms, and prevention methods
- Assess the worksite frequently to identify areas where dangerous plants, hives, nests, or animals may be present and avoid them.

Hazard Recognition

Once you train yourself to spot hazards, you'll notice them all around you. They may not always be obvious or immediate concerns, but they can still pose a risk to you and your coworkers. The sooner they're fixed, the better.

- Spotting hazards is all about anticipation. Start to ask yourself, 'If I take this action, what is the worst thing that could happen?'
- This applies to working in dangerous environments, servicing equipment, working on construction sites, performing drilling operations, or simply walking through the office.
- Picture yourself walking around a corner with your hands full. When you ask, 'What might happen?' you can anticipate risks like someone else turning the corner at the same time. Then you can take simple steps – like taking a wider turn – and completely avoid the risk.
- Plenty of hazards will be much more serious, but this same way of thinking can help you spot and avoid them. Just be willing to speak up when you see them to keep your coworkers safe.

How can we all prevent hazards? Once you see a hazard you should always notify your Supervisor/Manager of the hazard. Then we can develop a strategy for safety by singling out the hazards before work starts while identifying and mitigating exposures to occupational hazards before work begins. This should be the objective for us all.

The Hierarchy of Controls is the method we use in eliminating and controlling hazards. The hierarchy starts with the controls perceived to be most effective and moves down to those considered least effective.

- Elimination – Physically remove the hazard
- Substitution – Replace the hazard
- Engineering controls – Isolate people from the hazard
- Administrative controls – Change the way people work
- Personal protective equipment – Protect the worker with PPE

Being Present in the Moment

There are many things going on around us in our physical environment as well as distractions occupying our minds at any given time. With all of the challenges and noise we face in today's world, it is difficult to be truly present in the moment. This can be especially true at work. It is important to realize when our focus, attention, or mind is not fully present in the moment while completing a work task.

A Last-Minute Safety Assessment (LMSA) is the method that is required to be used by all Ardaman personnel prior to performing a task to help ensure all individuals are focused and thinking.

LMSA's are one of the most important tools in the behaviour toolbox. If performed correctly, an LMSA can prevent almost any type of loss or near loss. In fact, an LMSA can prevent 98% of all losses or near losses by addressing the personal or job factors involved.

There are three steps involved in the performance of an LMSA.

Step 1 - ASSESS

The Assess step requires employees to ask two questions:

ASSESS the risk

What could go wrong?

What is the worst thing that could happen if something does go wrong?

The goal of this step is to identify potential hazards before they happen. This step should also identify the result if something does go wrong. Employees should think about the personal consequences of an accident.

Step 2 - ANALYZE

The analyze step requires that employees ask two questions relating to the hazards identified during the assess step:

ANALYZE how to reduce the risk

Do I have all the necessary *Training and Knowledge* to do this job safely?

Do I have all the proper *Tools and Personal Protective equipment*?

These two questions go straight to the root causes of incidents.

Step 3 – ACT!

ACT to ensure safe operations

Take necessary *Action* to ensure the job is done safely!

Follow written procedures! Ask for assistance, if needed!

Once the employee can answer yes to both questions in step 2, they can move on to step three and act to ensure safe operations. The actions will include following the JSA and using the proper equipment. If the answer to either question in step 2 is "no", then employee should either act to solve the problem or should contact someone who has the ability to affect change in the operation.

LMSAs should be performed by employees throughout the day. Specifically, employees should use the LMSA tools when starting a new task, when changing tasks throughout the day, when conditions change, etc. The general rule is that LMSAs should be performed by Ardaman employees "all the time, everywhere".

Ardaman Update



Injury Incidents:

- Employee was breaking drill rod strings using a pipe wrench. They were in the process of pulling the wrench towards them when the rod broke loose, and their right elbow contacted the auto hammer. All rigs should have a breakout table installed and it should be used by the drill crew. The breakout table has a hydraulic wrench on it to avoid the use of hand wrenches, and its use is both a safety measure as well as a method to reduce the physical demands for the job. All injuries are to be reported within 15 minutes or when it is safe to do so. First Aid Only.
- The Drill Crew chief was using a hand auger to clear vegetation. The hand auger became stuck in a bush. They pulled on the t-handle of the auger to free it while the drilling helper stood directly next to them. The auger broke free and the tip swung toward the helper striking them in the nose resulting in a small cut and swelling. Hand augers are not the correct tool for the job. The proper tool would have been a machete or chainsaw. Do not stand in the line of fire and make sure the work area is clear before swinging a tool. Always follow the required PPE at the top of the Job Safety Analysis for each task and take the time to make sure you have the proper tool prior to performing a task. First Aid Only.

Vehicle and Equipment Incidents:

- Employee was backing between two long trucks on a job site while being spotted by two MOT workers. Our driver bumped into a stop sign with the rear bumper of the truck. There is no damage to the sign, it just shifted slightly/leaning. The employee was instructed by the client to wait on site to review/discuss the incident, however, our employee left the job site. Ardaman employees must follow the client rules when working on their job sites.
- Employee was driving from the hotel to the job site in Brazil. A vehicle traveling from the opposite direction failed to yield the right of way on the through lane and came across the intersection striking our driver side of the vehicle and caused our vehicle to veer onto the shoulder of the road. Always Aim High in Steering and look ahead and make sure other drivers can see you.
- Employee was driving to the job site. They were approaching a stopped vehicle (V2) in traffic and our driver thought that they had come to a complete stop. However, our driver closed their eyes for a moment and proceeded to roll our vehicle (V1) into the stopped truck (V2) at approximately 1-2 mph based on the Geotab GPS data. When stopping, always maintain a 1 car length buffer zone in front of the vehicle ahead of you. Keep your foot on the brake pedal at all times to ensure it does not move forward until the area ahead of your vehicle is clear and safe to move forward.
- Employee was traveling west bound on the interstate. They were approaching a ramp to another highway and glanced at their vehicle screen to check the map as this was a new route for them. When they looked back up, traffic had stopped on the ramp and they struck the vehicle in front of them. Always look 15 seconds ahead to provide the necessary time to recognize and react to hazards ahead. Limit distractions while driving and only check map directions while driving on clear or less congested areas of the roadways. Otherwise, move over to the shoulder of the road when it is safe to do so, turn your hazard lights on and stop and review your map.
- Employee was backing up a trailer on the job site. The Ardaman spotter was standing on the passenger rear side behind the trailer while the driver was backing up. Our driver cut the wheel too quickly while making the turn while backing. The quick turn caused the trailer to jack knife and the corner of the trailer made contact with our truck's driver side bumper. Refer to JSA G-9 "Backing and Hitching a trailer." When you back with a trailer, try to position your vehicle so you can back in a straight line. If you must back on a curved path, back to the driver's side so you can see. Back slowly as this will let you make corrections before you get too far off course. Once the trailer starts to turn, you must turn the wheel the other way to follow the trailer but your inputs must be slower to avoid the trailer from turning too quickly.
- The drill crew was drilling when they lost circulation at a depth of six feet. They reviewed the 811 ticket and hand augured the hole location before drilling. When the loss of circulation occurred a utility locator just arrived on site and marked the exact location with orange paint showing a communications line inline with our borehole. Our crew struck a conductor box. Our crew had waited 7 days after the call in ticket before mobilizing to this location. The ticket stated this utility provider had marked the areas 4 days prior on the ticket and no markings were present when our crew was first on site. Always scan the areas around the hole locations and look for other structures that can identify utilities that may have not been marked on 811 tickets.

Near Miss / Hazard Identification

Highlighted Near Miss/ Hazard Identifications from **31 reports** received from the **month of February**.

- Employee was on a roadway job site and had just completed a density test in the intersection. They observed a vehicle from the public driving around the MOT barricades, attempting to drive through the excavated intersection. The contractors were at lunch and the MOT crew was positioned further ahead on the active roadway. Our employee honked their horn and signaled to the driver to stop as there was a 12" drop ahead. The driver stopped and reversed out of the work area. The contractor was notified and the MOT barricades were repositioned to ensure no gaps were present in which a vehicle could pass through them.

Ardaman Safety Audits

Identified Hazards from Loss Prevention Observation/ Safety Audits conducted in the month of March:

- **LMSA:** Drill crew personnel were not aware of what a Last Minute Safety Assessment is and were not performing them. [Refer to article on page 4 Being Present in the Moment for why we must perform them.](#)



Ardaman Health and Safety Recognition Awards

The safety committee reviewed an increased volume of submittals. We are continuing the lottery pool this month and with the increase of submittals this month, we drew two winners at random for a \$25.00 gift card.

February Lottery Winners:
Peggy Anderson: Bartow
Daniel Peace: Sarasota

A Safety Sticker was awarded to the following individuals:

- **Peggy Anderson** for recognition and actions regarding a contractor that had their front loader become stuck in wet material and was close the edge of trench wall that could give way. Our employee notified the operator before they struck the trench wall and contacted their site safety representative for assistance. (Bartow)
- **Evelio Garcia and Saul Talavera** for recognition and actions regarding a vehicle fire on the roadway. Both employees took action to help extinguish the fire and direct traffic away from the area while wearing their proper PPE. They both received gift cards as well. (Miami)
- **Michael Werner** for recognition and actions taken due to and driver entering the MOT area of a job site and almost driving into a excavated area. Refer to Near Miss section for details. (Orlando)
- **Michaelangelo Liming** for observation and actions taken involving a stuck drill bit while coring. The employee stopped the equipment after the safety clutch engaged to prevent the loss of control of the drill. They then turned off and disconnected the equipment and safely retrieved the bit from the ground. (Port St. Lucie)

April 2024 Safety Quiz

Please circle the letter of the answer that fits best. Some answers can be found in the newsletter

- 1. If you notice a potentially hazardous situation or condition, you should take the time to report it and correct the situation if it is safe do so.**
 A. True B. False
- 2. The best thing to drink to prevent heat stress is?**
 A. Soft Drinks B. Water C. Gatorade D. All the above
- 3. Heat stroke occurs when body temperature rises to dangerous levels.**
 A. True B. False
- 4. Symptoms of heat stroke include confusion/dizziness, vomiting, and _____.**
 A. Cool, dry skin B. Hot, dry skin C. Cool, clammy Skin D. Hot, clammy skin
- 5. Symptoms of heat exhaustion include?**
 A. Cool and clammy skin B. Nausea/headache C. Thirst D. All the above
- 6. When heat stroke symptoms occur, you should immediately?**
 A. Drink cold water B. Call for medical attention, move the worker to cool place and try to cool them down
 C. Have them take a nap D. Nothing, they will recover eventually
- 7. If you are staying well hydrated throughout the day, your urine should be what color?**
 A. Dark yellow B. Bright yellow C. Light yellow D. All the above
- 8. If an employee/coworker is showing signs of heat exhaustion you should immediately?**
 A. Move them to a shaded or cooler area B. Have them sip small amounts of room temperature water
 C. Have them rest until they fell better D. All the above
- 9. What precautions should be taken to reduce the likelihood of a heat related disorder from occurring when working in the heat?**
 A. Wear light colored loose fitting clothing B. Drink at least 1 cup of water every 15-20 minutes
 C. Take breaks in the shade or air conditioning D. All the above
- 10. You should consult your physician to check any medications that you are taking that can become problematic if you are working outdoors in the heat, and if so, notify your supervisor.**
 A. True B. False
- 11. The heat index is a combination of the air temperature and relative humidity and tells us how hot it feels.**
 A. True B. False
- 12. Each Field Employee is issued a Cooling Bandana and 1-Gallon insulated thermos to help combat the heat.**
 A. True B. False

All Ardaman employees must complete the quiz and turn it into their H&S coordinator by the end of each month. For those individuals who cannot attend the monthly safety meeting, please complete the quiz and submit it to your supervisor for approval. All completed quizzes must be submitted at a designated location at each office. The supervisor only needs to sign the quiz if you are unable to attend the monthly safety meeting. Please provide a reason for your absence in the box below:

Employee Print Name	Employee Sign Name	Date
Supervisor Print Name	Supervisor Sign Name	Date