By Staff

We are proud to introduce our newest CISEC, Inc. Board of Directors members:

- CAN-CISEC #0009 Jill Attwood from Ontario who will bring the Canadian perspective to our board and to further developing the program in Canada. Welcome Jill.
- CISEC #405 Mike Alberson from Escondido California who has been a CISEC instructor and brings a lot of experience and expertise to the program. Welcome Mike.
- CISEC # 507 Ken Kristoffersen from Rancho Santa Margarita California who is also an instructor for CISEC and brings a wealth of experience and knowledge to the program as well. Welcome Ken.
- CISEC #439 Calvin Palmer from Los Lunas New Mexico who is also an instructor for CISEC and has many years of practical experience and knowledge about the industry which will be an asset to the program. Welcome Cal.

We could not forget the contributions, time and expertise our two retiring board members brought to the program and helped us to grow from an idea to a reality.

We thank Jeanne Duarte and Marc Mastronardi for many years they spent on the board; for the valuable counsel and experience they drew on to help the CISEC, Inc. certification become the nationwide professional program it has become. They both deserve more than our thanks for the many hours of volunteering they did as well as serving in elected positions as officers for the board and the program. We will miss their input but wish them the very best as they move forward in their lives and their careers.

Thank you Jeanne and Mark!!!!
UAS (Unmanned Aircraft Systems) Advantages Make SWPPP Inspections Painless

By Blanca Hoffmeier, CISEC #506, CPSWQ #568, CPESC #5593

While drones are not necessary to complete a Storm Water Pollution Prevention Plan (SWPPP) inspection, the benefits are tremendous. Drones are becoming more useful in general for the construction field, as well as becoming even more affordable and safer to use. Software, cameras, and other accessories have all made huge jumps forward technologically in last few years as well. Drones are no longer the ‘Next’ thing, they are the ‘Now’ thing.

On a typical construction SWPPP visit, you check in with your site contact to prepare for your walk through. Many times you climb hills, trudge through shrubs or strain to visually verify BMPs. Then drive to the other side of the site only to do it all again. You take a cell phone picture from a distance or an angle that isn’t quite right but deem it acceptable anyway. However, with a drone, you are free to take any picture, at any angle from just about anywhere. With predetermined GPS locations, your drone will give you the capability flying directly to your site’s potential trouble spots. Software will allow you to repeat those inspection locations for contrasting photos and video in subsequent inspection documentation.

The FAA is making it easier to operate drones for non-hobby and non-recreational purposes. The FAA’s small UAS Rule Part 107, which goes into effect August 29, 2016, has detailed policy for your business uses. Some of the rule basics for drones under 55lbs are: the UAS must remain in your line of site, you must operate during daylight hours with a maximum speed of 100mph and at a maximum altitude of 400 feet. The FAA has also loosened the restrictions for approved UAS flight operator. Previously, UAS operators were required to be a certificate holding pilot. To fly a drone, you had to be able to fly a plane! With Part 107 in effect, UAS operator who are not pilots will need to pass an aeronautical knowledge test and be vetted by the Transportation Security Administration. For complete information on UAS rules, visit the FAA’s page: http://www.faa.gov/uas/

There are increasingly more and more uses for drones in many different site inspection scenarios including, electrical transmission towers, oil and gas platforms, gas pipelines, bridges, solar panels, agriculture, real estate, and any other remote, hard to get to inspections. Recently I participated in The Nature Conservancy’s Phones and Drones’ program http://blog.nature.org/science/2016/01/13/phones-drones-monitor-el-nino-impacts-picture-future-climate-maps/. It was the largest crowd-sourced drone project yet meant to document the effects of last winter’s El Nino on the California coast.

As an aviation enthusiast and private pilot, I have been a drone hobbyist for years. I’ve purchased my fourth drone now, and I’m enjoying the professional benefits. I jumped at the chance to combine my passion of flying with my SWPPP Cal Stormwater Inspections. As drone innovation continues, the advantages of this new technology for site inspectors are growing exponentially.
Lights, Camera and Erosion Staples
Securing Fake Snow for the Big Screen

By Mark Myrowich, CAN-CISEC # 0127, CEO of Erosion Control Blanket

A few years ago, a New York movie set designer contacted Erosion Control Blanket [ECB]. They were filming in upstate New York where a warm winter resulted in little snow. The designer asked how to secure fake snow onto the set. After the conversation, Erosion Control Blanket shipped a Rifle M100 and a box of Factor T staples to New York, and the set designer was able to continue their work.

Factor T staples are a brand of staples in a cartridge for the Rifle M100 but in general ground or sod stakes come loose and are 6 inches long and 1 inch wide and are used for securing materials to the ground. Staples size can vary from site to site due to differentiating soil types.

A number of products may require staples, such as erosion control blankets, turf reinforcement mats [TRM], geotextiles, geogrids, sod, plastic sheeting and – as in the example above – fake snow.

There are numerous methods to staple fabrics in the erosion control and geotextile industries – as well as different staples.

The types of staples include:

1. **Loose staples:** A six-inch by one-inch U-shaped staple made with gauge steel wire is the most common. Typically these staples are installed by hand, hammer or staple setter. The staples can be U-shaped or single-legged with a round top. They vary in length and gauge, depending on the density of the soil. Loose sand may require staples ranging from 12 to 18 inches, where hard soil may require an 8 inch 8 gauge staple.

2. **Staple guns and cartridge staples:** There are various models of guns which include fully pneumatic versions mounted on a turf mower. The staples for the guns are in pre-loaded cartridges for the magazine and are a thinner gauge. They are available in galvanized and non-galvanized. The non-galvanized staple does not last in the ground forever, making it an excellent short term choice.

3. **Biodegradable stakes:** These are designed to be 100 per cent biodegradable. They are available in various lengths. The most common is four-and six-inch. Biodegradable standards for stakes are discussed later in this article.

4. **Earth Anchor:** A more robust securing device, once this product is anchored, it is almost impossible to be withdrawn. This anchor is generally used for high performance turf reinforcement mats [TRM]

**Strength and Length of Staples**

As a rule of thumb, the staple needs to resist the force of a regular number two rubber band. Slip the rubber band under the installed staple and pull up until the band is fully stretched. If the staple does not come out of the ground you have the right staple.

Erosion Control Blanket performance depends on secure staples and the correct amount of staples per the manufacturer’s recommendation. All reputable manufacturers have installation instructions and staple pattern on each blanket roll so there are no excuses for incorrect installation. Continued on Page 4.
Lights, Camera and Erosion Staples
Securing Fake Snow for the Big Screen…(Continued)

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Erosion Control Blanket manufacturers test their products based on the recommended staple patterns. Through extensive testing, ECB has learned the amount of staples affects the performance of the erosion control blankets. The more staples you apply, the higher the performance. If the incorrect number [less that recommended] of staples are used, the blanket’s performance will be less than the test results advertised.

In a low bid environment, it is difficult to ensure proper quality and quantity of staple installation without a reputable erosion control contractor. Staple guns do help in the quality of staple installation as there will be fewer bent staples and typically more staples in the ground due to ease of installation.

Monitor an installation by counting the amount of staples the contractor brings to the site compared to how many leave. Randomly inspect the installation to see if the proper amount of staples are being applied. If there is an area without enough staples per the manufacturer’s recommendations, notify the contractor of the deficiency. If there is a disagreement, refer to one of the installation instructions that is on each roll and review it with them.

Biodegradable, Oxy-Degradable and Photo-Degradable Staples

With a lack of appropriate label rules, there is confusion in the industry surrounding product biodegradable claims.

Under the ASTM D6400 Standard Specifications for Biodegradable Materials, the product has a definitive definition.

Biodegradable products must break down, similar to green waste, in a compost. What remains is a formation of carbon dioxide, water and humus [constituent of soil make up] without other byproducts.

[Source: Garret w/GreenStake®]

In further detail, the ASTM D6400 [European Standard EN 13432] states a biodegradable material must pass the following tests:

**Biodegradability**

The conversion of biodegradable material into carbon dioxide.

This test requires a sample of the material be added into active compost in a sealed flask with a maintained temperature of 58°C. There needs to be adequate oxygen and moisture to sustain microbial activity. The acceptable level is 90 per cent conversion of the sample to carbon dioxide in less than six months.

**Disintegrability**

The fragmentation and loss of visibility in the final compost.

This test requires a sample of the material be introduced into active compost in a sealed flask and maintained at 58°C. There needs to be adequate oxygen and moisture to sustain microbial activity. After three months, the compost is sifted with a two millimetre sieve. The factions gathered must be less than 10 per cent of the initial mass.

There should be no byproducts or heavy metals in the compost, or eco-toxicological effects in the test material.

Products that typically meet this test are called bioplastics or vegetable based plastics. Continued on Page 5.
Lights, Camera and Erosion Staples  
Securing Fake Snow for the Big Screen… *(Continued)*

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**Oxo-degradable Plastic**

Oxo-biodegradable plastic - made from polymers such as PE (polyethylene) PP (polypropylene) and PS (Polystyrene) containing small amounts of metal salts (NOT heavy metals) and tested according to ASTM D6954 or BS8472 or AFNOR Accord T51-808 to degrade and biodegrade in the open environment – (source Wikipedia)

Oxo-degradable products will degrade with the absence of microbial activity

Photo-degradable stakes are 97 per cent petrochemical plastic and polypropylene, and three per cent pro-oxidant which causes the product to degrade in the sunlight. Overtime, a degradable stake will break into smaller pieces, however, the byproduct remains in the soil. Therefore, degradable stakes do not conform to ASTM D6400 biodegradability standards.

A degradable stake will contain petrochemical based plastics such as polypropylene, or polyethylene with an additive. This information can be found in the product MSDS sheet under stake composition.

**Conclusion**

Whether for a movie set’s fake snow or stadium’s artificial turf, staples and stakes are the best method for anchoring a product to the ground. The type of staple or stapling system you use really depends on your project and your soil type. Ask your local distributor for availability in your area, they usually stock a variety of options suitable for your regional condition.

**Construction Inspection - Good Housekeeping Matters**

By Elizabeth Arceneaux, P.E., CISEC #1389, CPESC and Shawn Wolfshohl, CPMSM

Construction site inspections generally focus on sediment and erosion control, stabilized entrances, offsite migration of sediment and windblown dust. One area often overlooked on the site that can contribute significantly to stormwater pollution is good housekeeping and pollution prevention practices. The Construction General Permit describes these best management practices and they are included in SWPPP plans. Why do these practices matter on an active construction site and do they really matter?

Fuel, oil, paint, acid cleaners, cement, glues, litter, Styrofoam and other non-sediment materials can cause substantial harm to soil, runoff and receiving water if left unattended. Look for these items in the laydown area and in areas of active work on the site. In the yard good housekeeping practices should include litter in trash containers, dumpsters in good conditions with drain plugs intact and chemicals stored inside or under cover with clear labels and secure lids. Also, look to see if empty containers, drums of unused chemicals, pallets or damaged BMPs are in the yard taking up limited space. These items are clutter and are sure signs of poor housekeeping.

Pollution prevention practices to look for during an inspection include bulk chemicals (drummed or pallets of 5-gallon containers) left on the ground with no secondary containment. These chemicals can be punctured with forklifts, skylifts or simply run over by heavy equipment. Accidents happen and without secondary containment these products can be spilled onto the ground and carried away with runoff. Secondary containment provides a backup defense and often simply protects the drum in the first place. *Continued on Page 6*
Construction Inspection - Good Housekeeping Matters… (Continued)

Continued from Page 5.

Containment can be in the form of a double-walled fuel tank; a tank within a steel outer containment; drums inside lined wooden boxes; and drums, bucket and 5-gallon cans inside of storage units. Other good pollution prevention practices include spill kits or oil absorbing supplies which are clearly marked and located in visible locations.

Containing concrete washout is both a housekeeping and pollution prevention practice. Concrete washout has a very corrosive pH (11 to 13) and contains metals (chromium, mercury, lead and arsenic) which can harm the environment. This material differs from solidified concrete in that it is primarily aqueous and is more mobile in stormwater. Washout containment can be in lined wooden boxes, sturdy plastic or heavy cardboard containment, lined pits and concrete washout tanks. Look for signs of spillage around the containment or overfilling to the ground. Concrete washout tanks and fuel storage tanks should be located at least 100 feet (30 metres) from all drainage pathways, when possible.

Don’t forget to inspect for Good Housekeeping and Pollution Prevention practices on your next SWPPP inspection. A clean job site portrays a good image to the public, the regulators and the contractors themselves.

Post-Construction Stormwater Management
Start early and keep it maintained

By Brendan Cusick CISEC #0510

Erosion and sediment control protection related to stormwater run-on and run-off from an active construction site is something we are all cognizant of. However do we ever consider how the designs we incorporate into a site during construction can assist us once construction is complete, and the site has achieved successful stabilization? Additionally on many projects when permanent structural controls are installed (e.g. diversion ditches, swales, rock check dams or rundowns) we consider the site to be “good to go” and walk away. Yes these features are designed to accommodate flows and reduce maintenance for the long term; however, emphasis should be on reduction of maintenance, not cessation of maintenance. Long term post-construction best management practices (BMPs) can be incorporated into the construction phase of a project, and may require maintenance from time to time for the life of the structure.

When reviewing a proposed construction site at the design phase, stormwater plan developers are looking at many different aspects including: run-on, run-off, areas of concentrated flow, potential streams/wetlands or other adjacent water bodies, as well as topography.

Once the data is collected then the stormwater management design can begin. Starting with the preliminary phase a developer’s identification of long term stormwater management BMP locations is helpful both from a cost and design standpoint. As an example if a location of concentrated run-on to the site is identified, then during construction an adequately sized temporary diversion swale with intermediate sediment barriers (check dams) may be installed which will convey this run-on away from the project area. Continued on Page 7.
Post-Construction Stormwater Management

Start early and keep it maintained…(Continued)

Continued from Page 6.

Upon completion of construction if high flows are common this swale may be armored with rock, or the temporary sediment check dams replaced with rock check dams; alternatively if low flows are typical then the swale may be seeded and mulched as a vegetated channel while continuing to divert potential run-on. This is just one example of a BMP that can be used both short and long term, which when used in this manner has a cost reduction benefit. An important note is that sediment control logs (wattles), straw bales, or silt fence are not long-term post-construction BMPs.

These temporary BMPs are typically used as erosion and sediment control measures during the pre-construction and construction phases of the project and are not designed for long-term or final stabilization purposes.

As noted earlier once a long term, post-construction BMP is installed the possibility for erosion and sedimentation is still present. Therefore, it is important to inspect and maintain these long-term design features. Occasionally inspecting the BMP for indications of reduced functionality and addressing these concerns on a frequent basis, will lead to a long term successful project. Here are a couple of examples of what to look for:

- Diversion swale or ditch
  - Increased sediment deposition thereby decreasing the water volume capacity of the feature

- Rock run down or check dams
  - Dislodged rocks or rocks undercut (piping) indicative of higher flows that have reduced the functionality of the BMP.
  - Sediment deposition behind the check dams.

- Detention Basin
  - Sediment deposition in the basin reducing the total design volume.

Long term stormwater management begins with the early design phase. If properly constructed and subsequently maintained these BMPs can promote reduced erosion and sedimentation for your site and can actually reduce materials and maintenance costs associated with your project.

“Why is my name not on the CISEC, Inc. Website?”

By Staff

When do you not find your name on the CISEC, Inc. website under “Find a CISEC”, it is due to one of the following reasons:

- We are missing your signed and notarized CISEC Certification Contract or your CAN-CISEC Certification Contract-two copies are sent to you in your certification packet.
- You may have unpaid annual or yearly renewal fees for the current renewal period and/or previous renewal periods (this is a yearly fee required to maintain your active status).
- You may have unpaid late and or reinstatement fees from the current renewal period and/or previous renewal periods.
- We are missing a re-certification contract that was emailed to you for your…Continued on Page 8
The following policy was adopted by the board of directors to address retiree’s specific needs as a CISEC registrant.

Emeritus Status Policy

CISEC, Inc. grants emeritus status to a CISEC or CAN-CISEC registrant that meets the following conditions:

1. The individual is at least 67 years old.
2. The individual has been a CISEC and/or CAN-CISEC registrant in good standing with CISEC, Inc. for at least three consecutive years prior to applying for Emeritus Status.
3. Upon receiving proof** of reaching the age of 67 years and being a CISEC or CAN-CISEC registrant at least three consecutive years prior to applying for an Emeritus Status, CISEC, Inc. agrees that the individual is entitled to maintain his/her Emeritus registration status for the following condition:
   a. A United States Registrant is to pay on or before June 30, of each year, an amount equal to 50% of the annual CISEC registrant renewal fee as set forth by the CISEC Board of Directors.
   b. A Canadian Registrant is to pay on or before September 30, of each year, an amount equal to 50% of the annual CAN-CISEC registrant renewal fee as set forth by the CISEC Board of Directors.
4. Upon receiving proof** of reaching the age of 67 years, CISEC, Inc. agrees that a CISEC or CAN-CISEC Emeritus registrant is to annually submit at least 50% of the CDHs that are required of registrants under the age of 67 years.

A CISEC or CAN-CISEC Emeritus registrant is expected to adhere to the current CISEC or CAN-CISEC Code of Ethics and remain in good standing with CISEC, Inc. in order to maintain an Emeritus Status.

**Proof can include legal documentation, driver’s license, birth certificate or other documentation as approved by the Board of Directors.