

Conservation & You

A publication of the
Southeast Pennsylvania
Association of Conservation Districts

Bucks
Chester
Delaware
Montgomery



Spring 2009

The Sedimental Value of Cleanout Elevations

Sediment traps and basins are all designed to accommodate a certain amount of volume storage. This volume consists of sediment storage and water volume storage. While determining the storage is essential in the proper design of a sediment basin or a sediment trap, field measurement of this storage is often missed during the implementation of the plan.

Clean-out elevations are needed for every basin or trap design. This elevation is the maximum storage elevation for sediment within the basin. Most plan drawings should show the location and elevation of a clean-out stake within the basin/trap. Installation of the clean-out stake is often overlooked in the field, which can make it difficult to determine when a basin or a trap requires maintenance. Installation of the stake immediately upon construction will allow for a simple visual evaluation to determine maintenance frequency. Once sediment has accumulated to the clean-out elevation, the sediment within the basin should be removed to restore original capacities.

Simple installation and monitoring of the clean-out elevation in basins and traps can help keep sediment basins and traps in working order, and will also help keep sites in compliance. In basins or traps where stakes are not provided, questions of capacity may arise, potentially resulting in further survey work to determine if basins are, or are not, in compliance.

Installation of clean-out stakes will make routine self inspection easier, more accurate, and will help keep your site in compliance.

Ben Drover

Chester County Conservation District

WORKSHOP OFFERED Administratively Complete Permit Applications June 26, 2009

On June 26, 2009 representatives of the Southeast Pennsylvania Association of Conservation Districts will conduct a four-hour workshop on using the checklist for completing the NPDES permit application, and the E & S Technical Review checklist. Domenic Rocco of the Southeast Pennsylvania Department of Environmental Protection will also provide guidance information on completing the Post Construction Stormwater Management plan, which is a requirement of the NPDES permit. The intent of this workshop is to address the common errors or omissions in the permit application that often result in the need to revise the application.

The workshop will be held at the Cooperative Extension Service (4H Center) located on Route #113 in Creamery, Skippack Township, Montgomery County. Registration: 8:00 a.m.; Session: 8:30 a.m. to 12:30 p.m.

Reservations are required by June 22. Send a check payable to Delaware County Conservation District, Rose Tree Park Hunt Club, 1521 N. Providence Rd., Media, PA 19063. For more information call 610-892-9484.

Site Maintenance is still a Must

Unfortunately we are all suffering through some tough economic times. The building boom of years past seems to be a fleeting memory and more and more sites that were started are now being left behind and seemingly forgotten due to lack of sales. While our economy adjusts to the previous mistakes that were made by all sectors and stabilizes itself, site permit holders cannot forgo their site maintenance responsibilities.

Site maintenance is an ongoing NPDES permit requirement. Too often sites' roads and building pads are graded in at the same time, topsoil is stockpiled somewhere on the site and at most a temporary seed mix and straw mulch is placed on the building pads and any unpaved or un-stoned roads. Due to the lack of topsoil any vegetation growth that occurs is typically sparse and dies off very quickly. And as a site slows down and contractors pull off of the site, maintenance is falling by the wayside.

The NPDES permit requires weekly inspections and inspections after run-off events. These standards need to be followed for the life of the project. As problems arise or stabilization measures die off or blow away, they need to be repaired and re-stabilized. Spreading topsoil on all fallow areas of the site and planting a permanent seed mix is the best option. Not only does this provide permanent stabilization, but it also beautifies the site and reduces maintenance costs.

Joe Sofranko

Chester County Conservation District

A Low Profile Best Management Practice with High Hopes

The Court at Upper Providence in Montgomery County was a much talked about development while under construction, as people were excited to have a Target in close proximity, along with other stores that were proposed to take up residence at The Court. As well, this was the site of the long abandoned HiWay drive-in movie theater. When someone in the Chest-Mont area (the area of these counties along the Schuylkill River, in the northern sections) refers to this shopping center, they often refer to it – in true Pennsylvanian fashion – as “the one with the Target on Township Line” or “the old drive-in” instead of calling it by its given name.

Today, while the masses flock to this shopping center for their one stop needs, the majority of people do not realize that Gambone Brothers Development Company has constructed a living green roof system above, as they shop in a climate controlled environment below. While not every store in the shopping center has a Green Roof, there is 100,000 square feet of green roof at The Court at Upper Providence. This equates to approximately one quarter of all retail space in The Court at Upper Providence having a green roof. The 100,000 square foot area was required for this particular site, as the green roof was implemented as a stormwater Best Management Practice (BMP) to meet the water quality requirements of the Department of Environmental Protection’s (DEP) National Pollution Discharge Elimination System (NPDES) Phase II construction permit.

Hopefully in this day and age, we all know what a green roof is. While green roofs can and do vary in detail and design, they all serve the purpose of decreasing the rate and volume of stormwater runoff. They also serve to decrease the “heat island” effect associated with asphalt pavement and black rubber membrane roofs. This in turn contributes to considerable cost savings in the operation of the climate control systems, thus reducing energy demand.



April 08” - planted fall 07’

With the cooperation of Gambone Brothers Development Company, the Montgomery County Conservation District took their regularly scheduled monthly Board of Directors meeting to the field during April of 2008 to see and walk on a green roof first hand. This particular green roof system is GreenGrid®, designed by Weston Solutions Inc. GreenGrid® uses a grid of trays that hold a growing medium that is very light weight when dry. With in these thousands of trays, a type of plant known as a sedum is established, with wild chives interspersed throughout the grid of trays. Sedums

are generally described as a variety of plant with a thick fleshy leaf. Varieties of cactus, succulents, alpine plants, and epiphytes are considered sedums. These plants tend to thrive in infertile, dry conditions where the temperatures swing drastically from day to night, such as deserts and alpine slopes, or on shopping center roofs. Sedums have the ability to absorb large amounts of moisture through their root system, store that moisture in their plant tissue and utilize it over time, effectively creating a micro stormwater retention structure. Sedums will go dormant during cold and extremely dry periods – living to drink another day. Similarly the growing medium used in the grid of trays that house these sedums is of similar function, absorbing and retaining water like a sponge and releasing it gradually. This roof top ecosystem has the ability to up-take water, reducing runoff rate and volume, and release water through evaporation and transpiration (the evaporation of water through plants). In turn there is a decrease in the amounts of pollutants (particulate and chemical) carried into commonwealth waters, through a reduction in stormwater runoff. Gambone Brothers Development Company indicated that 50-60% of annual rainfall is captured and retained in the GreenGrid® System. As well, 90-100% of typical summer storm showers are absorbed with this Green Roof.

An indirect benefit of reduced energy consumption is also realized with this GreenGrid® system. It is reported that this particular system has an average summertime temperature of 85° F versus a black rubber membrane roof, typical of flat roofs in retail shopping centers, which have an average summer time temperature of 130-140° F.



August 08’ – after one growing season

Unfortunately, it takes a lot of green to build a green roof, which is the main reason we don’t hear about more of them. In this particular case the cost of a GreenGrid® System was estimated to be \$8-9/sq. ft. With 100,000 sq. ft. of Green Roof you can see the million dollar mark on the horizon, and we have not even discussed the cost of reinforcing the roof to handle such weight. While this is the largest of the few Green Roofs of its kind in the area, we certainly hope it is not the last to be built. With emerging markets in carbon credit trading and green technology incentives popping up, it is hopeful that the costs of such BMPs will be somewhat more palatable to the commercial developer and possibly residential developers. It is also hopeful that when a Chest-Mont resident says they’re heading to the store and somebody asks which one, they answer with “the one with the green roof.”

*Gustave C. Meyer IV
Montgomery County CD*

Envirothon Competitions

The Envirothon is a scholastic competition which tests student's knowledge in five different categories: aquatics, soils, forestry, wildlife, and a current issue. Students and advisors spend months studying and preparing for the event, including classroom work, individual research, and field studies. Envirothons are held in most Pennsylvania counties in April, and the Southeast Pennsylvania districts have had strong participation for many years.

Bucks County

Bucks County Conservation District held its Envirothon on April 16, 2009 at Peace Valley Nature Center. Representatives from the district staff, PA Department of Environmental Protection, Heritage Conservancy, PA Game Commission, PA Fish and Boat and Department of Conservation and Natural Resources, Bureau of Forestry manned the stations. This year only three schools participated there were over 50 students in attendance. Teams from Neshaminy High School took first and second place and Central Bucks East High School took third.

Delaware County

Delaware County held its 17th Annual Envirothon at Ridley Creek State Park on April 28. Ten teams from five different High School participated this year. Penncrest High School's Gold Team continued their domination by winning the event for 16th straight year. Second Place was taken by Penncrest's Red Team which they have done for thirteen consecutive years. Third place was awarded to Haverford High Score - Aware 1. High Schools all enter two teams each, so for the past three years we have been awarding Combined Score Awards as well. First Place Combined Score was awarded to Penncrest High School, Second Place to Haverford High Score, and Third Place to Strath Haven High School. Also participating in the event were Glen Mills School and Sun Valley High School.

Montgomery County

The 2009 Montgomery County Envirothon was held at the Lower Perkiomen Valley Park in Oaks on April 21. Eleven teams participated from six schools, with a total of 52 students.

- 1st place – Perkiomen Valley High School
- 2nd Place – Abington Senior High School
- 3rd Place – Cheltenham High School

In addition Montgomery County held both a Middle School and Elementary School "Envirothon" event. Five Middle Schools participated on April 22, with a total of 42 students. Elementary Day on April 23 saw 13 schools participate with 130 students.



Chester County's winning Envirothon Team from Downingtown East High School

Chester County

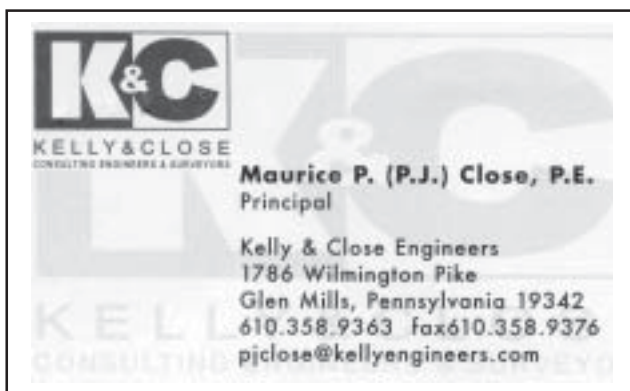
Congratulations to the Chester County Envirothon championship team, Downingtown East High School, and all the participating teams! Downingtown East won the senior title by posting the highest average score in five categories: Aquatics, Current Issue, Forestry, Soils, Wildlife, and Biodiversity in a Changing World, the 2009 current issue.

Overall, 490 students from first to twelfth grade, representing 42 schools in Chester County, tested their knowledge and awareness on environmental topics. Thirteen high school teams and twenty middle school teams demonstrated their knowledge of the current issue.

The Chester County Conservation District and Chester County Parks & Recreation Department coordinated the Envirothon over a three-day period in April at Hibernia County Park. This was a record year for the growth of the elementary level Envirothon with an all time high of 325 students participating.

The numerous volunteers, from teachers and parents who served as team coaches, to professional scientists, conservationists, community business people, and educators who served as station judges, played a major part in the success of the events. We want to especially recognize our Champion Sponsors, Pennsylvania-American Water Company and Iacobucci Homes, in addition to recognizing all our broad-based community sponsors. Their contributions provided students with T-shirts, educational materials, and services for the event including special event lunch programs for the elementary school days.

If you would like to coach a team, enter a team, financially support the Envirothon, or volunteer, please contact your local conservation district.



"A true conservationist is a man who knows that the world is not given by his fathers but borrowed from his children."

- John James Audubon

Bucks District promotes Rain Barrels with Fund Raiser

The Bucks County Conservation District has completed the construction of 25 rain barrels to be sold as a fund raising effort. Barrels will be sold for \$75 dollars plus tax, and proceeds will be used to fund various District activities such as the annual Envirothon Competition.

Barrels have been created from recycled 55 gallon drums. Barrels are white plastic, and can be easily painted to any color you prefer using spray paint.

To order your rain barrel, please contact Gretchen Schatschneider at 215.345.7577x106. Orders will be taken on a first come first serve basis while quantities last. Payment will be due at time of receipt. Payment must be made in the form of a check or money order made out to the Bucks County Conservation District. Rain barrels will be available for scheduled pickup at the Conservation District Office in Doylestown, PA.

*Gretchen Schatschneider,
Bucks County CD*



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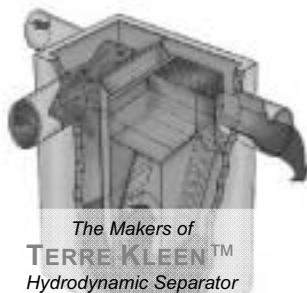
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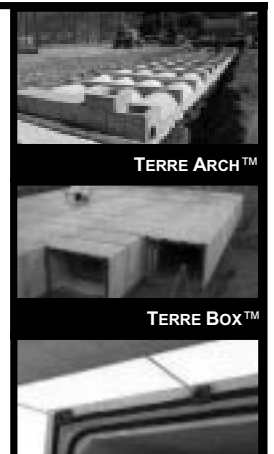
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The *Expire* Strikes Back

Whether an Individual or a General permit, all NPDES permits have a limited lifespan. A permit's "life" begins when the permit is issued. It should be noted that receipt of an adequate plan review letter does not mean issuance of the permit. In Chester County, for example, General NPDES permits shall be issued by the Conservation District, and Individual Permits are issued by the Department of Environmental Protection. Once issued, the NPDES permit has a lifespan of 5 years. The date is noted on the NPDES permit.


Many types of projects can be completed prior to the expiration of the NPDES permits. This includes earthwork, construction of improvements, and permanent stabilization. Other circumstances like construction of a large residential subdivision or a phased project, or even dire economic times, may result in earth disturbance and activity of a particular project exceeding the life span of the NPDES permit.

Given the times and the constant evolution of DEP guidelines and post-construction stormwater management regulations, it would be in the interest of the developer to ensure renewal of the permit prior to expiration. Expiration of an NPDES permit prior to completion of the project may result in cessation of work until a new NPDES permit can be obtained. To obtain a new NPDES permit, engineering for all remaining work to be completed may need to be updated to conform with the most recent regulations and guidelines for erosion and sediment control and post construction stormwater management. Circumstances may vary from site to site, so it's best to contact your local Conservation District for clarification. Through innovations and technology, the standards in the field of E&S and PCSWM can become outdated in a matter of years.

Complete updating of plans to obtain a new NPDES permit can be costly to the permittee, for design and also implementation. Therefore, renewal prior to expiration is the surest way to minimize cost associated with a new permit.

To ensure renewal of the NPDES permit prior to expiration, the process for renewal for an Individual permit should begin a minimum of 180 days prior to the expiration date listed on the reports and the permit, and a General permit requires at least 90 days. These "cushions" allow for the permit renewal to be examined and processed by either the Conservation District (General) or DEP (Individual) to ensure continued maintenance of the NPDES permit. As long as the design or proposal does not change, the process should be simple. Be aware of the expiration and be proactive!

Ben Drover
Chester County Conservation District



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Volunteers celebrate Earth Day by planting 450 trees in Perkiomen Watershed

Henry and Charlotte Rosenberger, owners of Tussock Sedge Farm in Blooming Glen, Bucks County, honored Earth Day this year with the help of the Bucks County Conservation District, a dedicated group of friends, and area students who spent the day planting 450 native trees and shrubs along a tributary to Pleasant Spring Creek. The planting was designed to complement a large-scale wetland restoration project completed on the farm last summer by Dr. Lauren Howard and several Arcadia University biology students. Tussock Sedge Farm, a grass-fed beef operation, serves as an example of sustainable agriculture, and completing this planting demonstrates the Rosenbergers' commitment to enhancing wildlife habitat and to preserving the rural character of Upper Bucks County.

Special thanks to the 45 volunteers who donated their time, including several neighbors, Dr. Lauren Howard and Arcadia University students enrolled in his "Envisioning Sustainability: Contemporary Art and Environmental Science" course, as well as Philadelphia Mennonite High School's Earth Science students. In addition Blooming Glen Farm, a community supported agriculture operation across the street from Tussock Sedge, saved the day by providing necessary reinforcements to the tired planters and helped complete the project by mid-afternoon.

Through the combined efforts of these individuals, approximately 1200 feet of streamside property was planted with a mix of native trees and shrubs including but not limited to American sycamore, green ash, red maple, silky dogwood and winterberry. These plants will help to restore the 'riparian buffer.' The riparian buffer is critical to the health of the entire watershed by stabilizing streambanks and preventing erosion, increasing infiltration of rain and mitigating flooding, and improving habitat quality by providing food sources and cover to shade and cool the water.

This planting project was made possible by a TreeVitalize Watersheds grant. TreeVitalize is a public-private partnership led by PA DCNR to restore tree cover in Pennsylvania. As part of the larger initiative, the TreeVitalize Watersheds program has funded dozens of projects aimed at reducing storm runoff and improving water quality in communities throughout southeastern Pennsylvania. TreeVitalize provides funding for plant material and deer protection to local groups willing to make the effort to get the plants in the ground. Meghan Rogalus, the Bucks County Conservation District Watershed Specialist, acts as the liaison for the TreeVitalize Watersheds program for interested community organizations in Bucks County.

*Meghan Rogalus
Bucks County CD*



*Arcadia University students plant a native Eastern redbud tree.
(Photo by Lauren Howard, Arcadia University)*



*After a morning of planting, Arcadia University students and Dr. Howard enjoy some hot chili.
(Photo by Charlotte Rosenberger)*



*After lunch, many of the volunteers, including Philadelphia Mennonite High School students, pose for a group photo.
(Photo by Mary Ellen Noonan, BCCD)*

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BCCD wrapping up PACD grant program

If you are a faithful reader of *Conservation & You*, I am sure you have been patiently waiting for the follow-up article promised in the Winter 2009 issue on the [Stormwater Management: Riparian Buffer Maintenance for Streamside Property Owners](#) grant project sponsored by PACD.

Your wait is over and I am happy to report that the grant project which is in the final stages has been extremely well received and successful. A final brochure which was developed by Delaware Valley College Environmental Design students and edited by BCCD and PACD was printed and is being distributed. This brochure gives streamside property owners information about how their property is important in maintaining water quality. Using beautiful illustrations hand drawn by the students, homeowners learn why buffers along the streamside should be established and maintained. The brochure lists four easy steps every homeowner can do which will improve their streamside property. It also includes a pictorial overview of a stream bank restoration, as well as some recommendations for native plants which can be used to enhance streamside properties.

A total of eleven properties have been or will be visited by the students who will give recommendations on developing riparian areas. Students will personally emphasize why riparian areas are important and how they help to filter out pollutants and thereby improve water quality.

DVC Juniors Tim Stover and Skyler Sarno visited the Pearl S. Buck House which is listed as a National Historic Landmark and



Delaware Valley College students Celeste Preston and Matt Klauder speak with a landowner on a property along the Neshaminy Creek in Doylestown.

recommended that the grounds crew discontinues mowing a large area of grass that was clearly wetland area. Walking the mowed areas which were squishy under our feet, we were able to identify trout lilies (*Erythronium americanum*) and bluets (*Houstonia caerulea*) both rare wildflowers that grow in moist and wetland soils.

The no mow suggestion was received happily by Jill Reader, finance director who said she will take the recommendation back to the Board of Directors but that not mowing certainly seemed like a good option for the property. The students also recommended that Reader consult with BCCD on a possible TreeVitalize grant for the establishment of a riparian buffer in the mowed area. The Pearl S. Buck House depends upon a dedicated staff of volunteers who maintain the grounds as well as perform other functions, so it is a natural site for a TreeVitalize project.

For more information about this project or to request a brochure email maryellennoonan@bucksccd.org or download a copy from the resources page of the BCCD website at www.bucksccd.org.

*Mary Ellen Noonan
Bucks County CD*


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CONSERVATION & YOU is published by the Bucks, Chester, Delaware and Montgomery County Conservation Districts in cooperation with the PaDEP, Bureau of Waterways, Wetlands and Erosion Control. For advertising information, call (610)892-9484.

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