



STATE OF NORTH CAROLINA, DEPARTMENT
OF ENVIRONMENT AND NATURAL RESOURCES
William G. Ross, Jr. Secretary

Land Quality Section
Division of Land Resources
Charles H. Gardner, Director

Vol 9 No 1

January - March 2002

N.C. Division of Water Quality makes recommendations on turbidity standard

At the February 20, 2002, meeting of the N.C. Sedimentation Control Commission (SCC), the N.C. Division of Water Quality (DWQ) presented its staff review of the State's turbidity standard. DWQ Planning Branch Head Boyd Devane told the SCC that the Environmental Management Commission (EMC) had asked the staff to investigate whether the State's turbidity standard needs to be modified.

N.C. Administrative Code (15A NCAC 02B .0211) requires that turbidity in receiving waters not exceed 50 NTUs in non-trout streams and 10 NTUs in trout streams. However, the rule provides that "compliance with this turbidity standard can be met when land management activities employ Best Management Practices (BMPs) . . . recommended by the Designated Nonpoint Source Agency." The SCC is the "Designated Nonpoint Source Agency" for construction.

Devane reviewed the EMC decision that led to review of the turbidity standard:

In October 2000, the EMC heard an administrative challenge to a 401 Water Quality Certification issued by DWQ for construction of the Highlands Cove golf-course development in Jackson County. During construction, turbidity damaged a lake owned by Whiteside Estates, and Whiteside Estates sued for damages in

civil court and also filed the administrative challenge in the Office of Administrative Hearings saying that DWQ knew when it issued the 401 certification that the BMPs would not protect water quality in the stream and their lake.

In a hearing before an Administrative Law Judge (ALJ), Highlands Cove moved to dismiss the challenge because it had complied with BMP requirements, which it asserted was all the department required it to do. The ALJ refused to dismiss and ruled in favor of the petitioner, saying that the Department of Environment and Natural Resources (DENR) had erroneously interpreted the turbidity standard in a manner that allows water quality standards to be violated so long as sedimentation control BMPs are being followed.

The EMC agreed with the ALJ, putting DENR's interpretation of the turbidity standard into question.

In December 2000, DENR asked the EMC to clarify the intent of its decision

and asked if rulemaking should be requested to remove or refine language in the standard. The EMC Water Quality Committee asked the staff of DWQ to study the specific concerns raised by the EMC decision and to report back with recommendations on how to address the circumstances that brought about the EMC decision.

At that meeting EMC Chairman David H. Moreau said "What the EMC said in its decision was that *that* particular situation was an unacceptable outcome of our rules. It seems to me what we reacted to was downstream damage that was state sanctioned. It seems clear that it's not possible to meet the [numeric turbidity] standard instantaneously. However, it's not acceptable to have state-sanctioned damage downstream that can go on for some time."

In his presentation to the EMC Water Quality Committee in December 2001, and to the SCC in February, Devane

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February action of the N.C. Sedimentation Control Commission

At its regular meeting on February 20, the N.C. Sedimentation Control Commission took the following action:

- Unanimously acknowledged the staff of Land Quality using guidance established in May 2001 for determining the width of undisturbed vegetation zones that may be used to ensure compliance with the Sedimentation Pollution Control Act and to incorporate the buffer guidance into the next revision of the N.C. Erosion and Sediment Control Planning and Design Manual.
- Approved delegating authority to implement the Sedimentation Pollution Control Act to Macon County. This delegation brings to 46 the number of local erosion and sediment control programs in North Carolina.
- Approved requests for Local Program Assistance Funds from Macon County (40% of start up costs for the local program), Durham County (cost of a digital camera), Swain County (staff training and travel costs), and the Town of Cary (digital camera cost).
- Approved several reallocations of funds to finish ongoing erosion and sediment control research by Dr. Richard McLaughlin at N.C. State University and initiate new research projects. Staff told the Commission that they are working with the Water Resources Research Institute and the SCC's Education Committee to initiate a research project in the western part of the state that will evaluate the effectiveness of two enhanced sediment control practices for mountain construction sites.
- Heard a report from Dr. Richard A. McLaughlin on his evaluation of sediment control devices and the ability of "floc logs" made of polyacrylamide to reduce turbidity in sediment basin discharge (see July-Sept 2001 *Sediments*).
- Heard a report from Dr. Nancy White and Dr. Daniel Line of N.C. State University on their research project evaluating sediment traps (see July-Sept 2001 *Sediments*).
- Heard a report from Boyd Devane of the N.C. Division of Water Quality on the division's study of whether the State's turbidity standard needs to be changed (see article beginning page 1).
- Heard from Division of Land Resources Director Charles Gardner that in the 2001 appropriations act (S 1005, Session Law 2001-424) the Legislature mandated that the Department of Environment and Natural Resources study the feasibility of transferring the erosion and sediment control program to local governments. Gardner said that a committee including him, Land Quality Section Chief Mell Nevils, Sedimentation Control Commission member Kyle Sonnenberg, and representatives of the N.C. League of Municipalities and the N.C. Association of County Commissioners have been studying ways to provide incentives for local governments to establish erosion and sediment control programs. Gardner said that the report is due to the Legislature April 1 but that it will be completed by mid-March.



SEDIMENTS Vol 9, No 1
January - March 2002

SEDIMENTS is published quarterly by the N.C. Sedimentation Control Commission to provide information and assistance to the regulated community and to facilitate communication among personnel of state and local erosion and sediment control programs.

Send change of address to WRRI, Box 7912, North Carolina State University, Raleigh, NC 27695-7912 (919/515-2815). Send comments to Caroline Medlin, NCDENR- Land Quality, 1612 Mail Service Center, Raleigh, NC 27699-1612. Email: Caroline.Medlin@ncmail.net. Fifty-seven hundred copies of this newsletter were printed at a cost of \$1,387.00 or 24 cents per copy.

Personnel of the Land Quality Section of the N.C. Department of Environment and Natural Resources provide information and assistance for implementation of the N.C. Erosion and Sediment Control Program. For assistance, please contact the Regional Engineer or the Raleigh headquarters listed below:

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The North Carolina
Sedimentation Control Commission

The Sedimentation Control Commission (SCC) was created to administer the Sedimentation Control Program pursuant to the N.C. Sedimentation Pollution Control Act of 1973 (SPCA). It is charged with adopting rules, setting standards, and providing guidance for implementation of the Act. The composition of the Commission is set by statute to encompass a broad range of perspectives and expertise in areas related to construction, industry, government, and natural resource conservation and quality. All members are appointed by the Governor and serve three-year terms, except for the Director of the Water Resources Research Institute of The University of North Carolina, who serves as long as he remains Director. The chairman of the SCC is named by the Governor.

Chairman:
Kenneth H. Reckhow
Durham

Director of Water Resources Research Institute

Commissioners:

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Winston-Salem
Rep. N.C. Environmental Management Com.

John R. Bratton
Knightdale
Rep. N.C. Mining Com.

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Greenville
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James Ferguson
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Rep. Association of County Commissioners/
N.C. League of Municipalities

Ralph Stout
Greensboro
Rep. Carolinas Associated General Contractors

F. Roger Watson
Asheville
Rep. N.C. Home Builders Association

Turbidity standard *continued from page 1*

focused on problems similar to the Highlands Cove case. He showed slides documenting numerous cases of off-site sediment damage.

Some cases of sediment damage were traced to sites that were determined to be in compliance with BMP requirements. DWQ staffer Dr. Sergei Chernokov presented results of a literature review showing the deficiencies of standard erosion and sediment control devices, including silt fence and sediment basins, in removing clay-sized particles from runoff and reducing turbidity.

However, some cases of sediment damage were caused by sites that were not in compliance with BMPs, and Devane also discussed enforcement deficiencies and difficulties that sometimes allow exposed soils to remain bare for long periods of time.

"Our biggest unused tool is ground cover," said Devane. "It is implemented too slowly, so that large amounts of sediment can be carried to streams and serious damage can be done before sites are stabilized."

In 1998, at the request of the Division of Land Resources, the General Assembly amended the Sedimentation Pollution Control Act to shorten the deadline for providing a ground cover on graded slopes to 15 working days or 30 calendar days following any phase of grading, whichever period is shorter.

However, Devane said that establishing ground cover can be difficult, that staff resources are often insufficient to inspect and enforce the requirement, and that contractors sometimes simulate construction activity ("run a dozer around the site") to avoid the requirement.

Devane said that in general, the staff of DWQ recommends retaining the current turbidity standard but improving BMP design and strengthening the ground cover requirement and its implementation. Detailed written recommendations are being provided to the SCC and a joint meeting of the EMC's Water Quality Committee and several SCC members is being planned.

North Carolina Erosion and Sediment Control Field Manual is available.

The Land Quality Section of the N.C. Division of Land Resources has received a new supply of the **revised** N.C. Erosion and Sediment Control Field Manuals. This is a complement to the larger design manual intended as a field reference in the construction process.

To order, send your request and a check for \$13.00 made payable to "N.C. Department of Environment and Natural Resources" to:

**N.C. Land Quality Section
1612 Mail Service Center
Raleigh, NC 27699-1612**

Also available: ■ *The N.C. Erosion and Sediment Control Planning and Design Manual* ■ *The N.C. Erosion and Sediment Control Inspector's Guide* ■ *N.C. Erosion and Sediment Control Practices: Video Modules*. For cost and ordering information visit web address:

<http://www.dlr.enr.state.nc.us/eropubs.html>

Local Program Awards go to Pitt County and Town of Cary

At the local programs workshop in Southern Pines in January, awards for outstanding performance were presented to Pitt County and the Town of Cary.

Pitt County received the Local Program Award for programs with fewer than three staff members. Pitt County was nominated by Washington Assistant Regional Engineer Richard Peed. Peed cited the program for its willingness to take on enforcement responsibility for small municipalities in Pitt County—the county now enforces the erosion and sediment control ordinance for four small municipalities in addition to its own jurisdiction. Peed also praises the Pitt County Program for its education efforts, including a newsletter.

Because Pitt County lies in both the Tar-Pamlico and Neuse River Basins, the Pitt County Local Program must help implement riparian buffer requirement throughout the county's jurisdiction. To help with this effort, the Planning Department overlaid soil survey information on USGS quad maps to produce a map that helps identify where buffers are required. Peed said that production of this map to help with buffer enforcement is another reason he nominated the Pitt County Local Program.



Dwane Jones (second from left), Planning Technician, receives the Local Program Award for programs with fewer than three staff members from N.C. Sedimentation Control Commission member Ralph Stout (right). Joining Dwane for the presentation were James Rhodes (left), Pitt Planning Director, and Phil Dickerson (second from right), Pitt County Engineer.



Tom Horstman, (second from left) Erosion Control Supervisor for the Town of Cary, accepts the Local Program Award for a program with more than three staff members from Sedimentation Control Commission member Ralph Stout. Also receiving the award were Matt Flynn (left) and Ethan Brodnick (second from right), Erosion Control and Stormwater Inspectors.

The Town of Cary received the Local Program Award for programs with more than three staff members. The Town of Cary was nominated by Raleigh Regional Engineer John Holley. Holley said that Cary remains on the cutting edge of technology and praised Cary for its leadership in the Triangle Area Association of Local Sedimentation and Erosion Control Programs (TAALSECP), which provides a forum for discussion and work on common problems. Cary provided the design and graphics capability that allowed the TAALSECP to produce and disseminate electronically standard details for sediment and erosion control BMPS accepted by all the area local programs.

This is the second time the Town of Cary has won a local program award. Tom Horstman received the first local program award for a program with fewer than three staff in 1998. According to John Holley,

Cary's erosion and sediment control program has grown in both size and sophistication as the community has grown.

Use of compost for erosion control is increasing

Research and demonstration projects across the country are showing that compost can be highly effective in controlling erosion from construction sites. Compost is a humus rich soil amendment produced by the biological decomposition of organic material.

At Texas A&M University Riverside, researchers working for the Texas Department of Transportation tested three materials on six plots—three sand and three clay. They applied (1) compost from shredded brush and composted organics from right of way clearing, (2) shredded wood with hydrophilic polyacrylide tackifier, and (3) shredded wood with hydrophilic colloid tackifier.

IECA calls for presentations for 2003 conference

The International Erosion Control Association has issued a call for presentations for the 2003 Conference & Expo to be held February 24-29, 2003, at the Rio Suite Hotel and Convention Center in Las Vegas, Nevada. Abstracts are due April 5, 2002.

IECA solicits abstracts for technical papers to be presented orally, poster presentations, training workshops, forums, product symposiums, and training courses.

Technology sections to be addressed by presentations are slope technology, stream restoration technology, vegetative establishment technology, storm water management technology, wetlands technology, erosion and sediment control technology, and beach and shoreline stabilization.

Those whose abstracts are selected will be notified by May 29, 2002, and final papers/materials will be due August 7, 2002.

For additional details and instructions for submitting abstracts visit the IECA website at <http://www.ieca.org/>.

They then simulated one, two, and five-year storms events. They found that compost and shredded wood with tackifiers are as effective as many standard erosion control material and surpass others in cost-effectiveness, vegetation establishment, and slope protection.

Research conducted for the Connecticut Department of Transportation found that compost application reduced sediments reaching nearby surface waters by 99 percent compared to silt fences and 38 percent compared to hydroseeding.

In a demonstration project conducted by the Texas Natural Resources Conservation Commission and the Texas Department of Transportation compost was used to finally establish vegetation on steep slopes at a highway overpass that had been barren since the highway was constructed in 1968.

Today, compost applications are considered cutting edge erosion control technology in some states, and a number, including Pennsylvania, Washington, and Georgia have adopted specifications for compost used in erosion control.

- Compost controls erosion by
- increasing infiltration into soil (up to 125 percent)
 - reducing runoff and sediment transport in runoff
 - increasing plant growth
 - providing soil cover

The two basic methods for using compost in erosion control are compost blankets and compost filter berms.

Compost blankets are surface applications of high quality compost. The Pennsylvania Department of Environmental Protection requires that compost for erosion control be applied at a rate of 270 - 540 cubic yards per acre (2 to 4 inch layer) for slopes up to 2:1. Compost blankets are most easily applied using a pneumatic blower, especially on slopes where spreaders may not be an option. Compost and manure spreaders work well on open, gradual slopes. Where

vegetation cannot be quickly or easily established, a compost blanket can act as a protective layer until vegetation takes hold, at the same time it filters out sediment.

Compost filter berms are contoured runoff control and erosion filtration applications used for steeper slopes (greater than 4:1) with high erosion potential. Runoff can penetrate the berm, which filters out sediment and pollutants. The berm also slows the flow of runoff. Compost berms also reduce fertilizers, chemicals and metals in runoff. In addition, when compost berms replace silt fences, they keep silt fences—those that aren't abandoned on job sites—out of landfills.

Resources for this article:

"Compost Utilization for Erosion Control," University of Georgia Cooperative Extension Service
<http://www.ces.uga.edu/pubs/PDF/B1200.pdf>

"Erosion Control and Environmental Uses for Compost," *Biocycle* magazine
<http://www.p2pays.org/ref/11/1015810.pdf>

"The Use of Compost as an Erosion and Sediment Control Best Management Practice," Pennsylvania Department of Environmental Protection
http://www.dep.state.pa.us/dep/deputate/airwaste/wm/recycle/Compost_sum/Use_Mulch.htm

"Big Spring Highway Vegetation Project," Texas Natural Resource Conservation Commission
<http://www.tnrcc.state.tx.us/exec/oppr/compost/bigspring.html>

"Restoring Soil Health to Urbanized Lands," State of Oregon Department of Environmental Quality
<http://www.deq.state.or.us/wmc/solwaste/documents/RestoringSoilHealth.pdf>

**Sediment and Erosion Control Workshop
Latest Information
with Hands-On Demonstrations
April 24, 2002 and May 1, 2002
NCSU College of Agriculture and Life Sciences
Sediment & Erosion Control Research &
Education Facility, Raleigh**

The stewards and watchdogs of environmental quality in North Carolina have recently focused their attention on sediment and erosion control at construction sites, often in the form of complaints and lawsuits. If you are a property owner, developer, designer or landscape architect, contractor, site foreman, or in environmental code enforcement, you need to know about technologies that will make your effort more effective, timely and less costly. To provide you with the latest in technology, NCSU, the N.C. Division of Land Quality and the N.C. Sedimentation Control Commission have organized two, one-day workshops to be held at the Sediment and Erosion Control Research and Education Facility off Lake Wheeler Road. The field demonstration will bring you together with experts in the field as well as vendors of products and services, so that you will see the latest techniques in a realistic setting.

**For an agenda and registration information go to website:
<http://www.soil.ncsu.edu/swetc/sediment/sediment.htm>
or contact Mac McKenzie, 919-515-7154,
or email: mac_mckenzie@ncsu.edu**

**“Controlling Erosion
and Sedimentation
on Single Family Home
Construction Sites” brochure
available**

The Land Quality Section of the N.C. Division of Land Resources has just produced a new brochure aimed at helping regional offices and local programs provide erosion and sediment control information to builders of single family homes. The brochure gives information on the Sedimentation Pollution Control Act as it applies to single-family home sites. It also provides information on and diagrams of simple devices that can be used during construction to reduce erosion and sedimentation.

Copies of the brochure can be ordered from the N.C. Land Quality Section, 1612 Mail Service Center, Raleigh N.C. 27699-1612. (919) 733-4574.

Also available: “3 Reasons Why You Should Control Erosion on Your Construction Site” brochure.

SEDIMENTS

Newsletter of the North Carolina Sedimentation Control Commission
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