



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

March 11, 2015

MEMORANDUM

From: S. Jay Zimmerman, Director, Division of Water Resources *RF*

Subject: Rescinding Buffer Interpretation/Clarification Memos

On October 24, 2014, the following rules were repealed:

- 15A NCAC 02B .0242 *Mitigation for Existing Buffer in the Neuse River Basin*
- 15A NCAC 02B .0244 *Mitigation for Existing Buffer in the Catawba River Basin*
- 15A NCAC 02B .0252 *Randleman Lake Mitigation for Existing Buffers*
- 15A NCAC 02B .0260 *Mitigation for Existing Buffer in the Tar-Pamlico River Basin*
- 15A NCAC 02B .0268 *Jordan Lake Mitigation for Existing Buffers*
- 15A NCAC 02B .0609 *Goose Creek Watershed Buffer Mitigation Rule*

and replaced with temporary rule 15A NCAC 02B .0295 (*Mitigation Program Requirements for Protection and Maintenance of Riparian Buffers*). As a result, the following buffer clarification memos are hereby rescinded:

- Buffer mitigation and the mining industry (September 22, 2006)
- Clarification regarding stream restoration and buffer mitigation #004 (January 2, 2007)
- DWQ's stance on mitigation credit location in the Randleman Lake Water Supply Watershed #2007-014 (December 10, 2007)
- DWQ's clarification on the location of buffer mitigation credit in the Catawba River Basin #2007-013 (January 2, 2008)
- DWQ's definitions of buffer restoration vs. enhancement and clarification on buffer mitigation credit related to restoration and enhancement activities #2008-017 (January 25, 2008)
- DWQ's stance on whether diffuse flow of stormwater through the newly restored buffers on mitigation sites should be a requirement #2008-019 (August 19, 2008)
- DWQ's stance on the location of buffer mitigation for restoration and enhancement credit #2008-020 (December 3, 2008)
- DWQ determination of buffer mitigation credit where sewer line easements occur within Zones 1 and 2 of the protected riparian buffers #2009-006 (November 17, 2009)

Division of Water Resources – 401 & Buffer Permitting Unit
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Michael F. Easley, Governor

William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P.E. Director
Division of Water Quality

September 22, 2006

MEMO

TO: Interested Parties
FROM: Coleen Sullins 
RE: Buffer mitigation and the mining industry

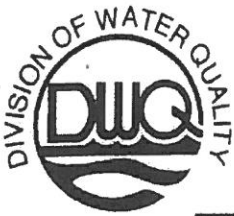
As you may know, the Water Quality Committee and the NC Mining Commission recently directed their staff to meet to discuss various approaches that the mining industry could use to meet the buffer mitigation requirements of the Neuse, Catawba and Tar-Pamlico Riparian Buffer Protection Programs. The rules for those programs list mining as either "allowable" if buffers are established along relocated streams or "allowable with mitigation" if buffers cannot be established along relocated streams (15A NCAC 2B .0233 (5), 2B .0243 (5), and 2B .0259 (5) for the Neuse, Catawba and Tar-Pamlico basins, respectively). The following regulatory guidance helps clarify the mitigation requirement of these rules in the context of the mining industry.

- I. **Allowable without additional mitigation** – Where a mining activity can relocate a stream channel with a 50 foot wide buffer on both sides of the new stream channel with diffuse flow, then no additional mitigation is required.
- II. **Allowable with mitigation** – Where a mining activity cannot relocate a stream channel with a 50 foot wide buffer, then the rules require compensatory mitigation to replace the buffer along the stream which is proposed to be impacted at the ratios specified in the rules. In many instances, the reclamation plan for the mine will result in a permanent waterbody (usually a lake or pond) within the footprint of the mine. In those cases, creation of a 50 foot wide wooded buffer with diffuse flow around the edge of the permanent waterbody may provide compensatory mitigation for impacts to buffers along the streams that will be impacted. Written DWQ approval will be needed for the mitigation plan in accordance with 15A NCAC 2B .0242 (9), 2B .0244 (9) and 2B .0260 (9) for the Neuse, Catawba and Tar-Pamlico basins, respectively. This plan must provide a schedule for planting and five years of monitoring of the buffer and must be coordinated with the Mining Permit issued by the NC Division of Land Resources. In addition as required for all mitigation sites, a conservation easement will need to be placed on the portion of the lake buffer that is needed or proposed for mitigation in order to provide long-

term protection for these areas. Explicit provision can be made for water-dependent activities that may impact the buffer such as boat ramps and docks. The Division of Land Resources will then include this requirement in the Mining Permit in order to coordinate the permitting requirements of our two agencies. This buffer requirement could be put in place once the mining is completed as long as the long-term provision for the buffer is reflected in the mining plan. In some instances, buffer may be created beyond the requirements of the buffer rules. In those cases, the extra buffer may be sold or used for compensatory mitigation for other projects. Finally, this mitigation effort could coincide with the undisturbed mining buffer required by the Mining Permit.

If you have any questions concerning this guidance, please contact Mr. John Dorney of my staff at 919-733-9646.

Cc: Leo Green, III, N.C. Environmental Management Commission
Pete Peterson, N.C. Environmental Management Commission
Sarah Rajala, N.C. Mining Commission
Mell Nevils, DLR
Tracy Davis, DLR
Floyd Williams, DLR
Jim Simons, DLR
John Dorney, DWQ
Cyndi Karoly, DWQ
Amy Chapman, DWQ
DWQ Regional Wetland Contacts
Ren Ivins, Orange County Planning Department



Michael F. Easley
Governor

William G. Ross, Jr., Secretary
Department of Environment and Natural Resources

Alan W. Klimek, P.E., Director
Division of Water Quality

January 2, 2007

Buffer Interpretation/Clarification #004

MEMORANDUM

Clarification regarding stream restoration and buffer mitigation

RE: DWQ has become aware of some misunderstandings about whether it is possible to count the buffers planted as part of stream restoration efforts under 15A NCAC 2H .0506 as buffer mitigation under the Neuse, Tar-Pamlico, Randleman or Catawba Riparian Protection rules (15A NCAC 2B .0233, .0259, .0250 and .0243, respectively).

Solution: Stream restoration is a requirement under the federal Clean Water Act (under sections 401 or 404 of the act), while buffer mitigation is a requirement of the abovementioned buffer rules and are authorized under separate state law. Since both laws' primary purpose is to protect, maintain, and improve water quality, the DWQ allows that riparian buffers planted for stream restoration to also count towards riparian buffer mitigation. To receive appropriate mitigation credit for stream restoration, riparian buffers are required to provide streambank stability for the new stream. For the buffers to count toward mitigation credit for the aforementioned buffer rules, they must be at least 50-feet (as measured perpendicular from the stream bank), and meet all other requirements of the abovementioned buffer rules.

Signature: _____

Date: _____

1/2/07





Michael F. Easley
Governor

William G. Ross, Jr., Secretary
Department of Environment and Natural Resources

Coleen H. Sullins, Director
Division of Water Quality

December 10, 2007
Buffer Interpretation/Clarification #2007-014

MEMORANDUM

RE: The Division of Water Quality's (DWQ's) stance on mitigation credit location in the Randleman Lake Water Supply Watershed (15A NCAC 02B.0250).

Solution: The location for mitigation subject to 15A NCAC 02B.0250 or the Randleman General Major Variance shall not extend outside of the Randleman Lake water supply watershed.

Signature: _____

Date: 12-11-07



Michael F. Easley
Governor

William G. Ross, Jr., Secretary
Department of Environment and Natural Resources

Coleen H. Sullins, Director
Division of Water Quality

January 2, 2008

Buffer Interpretation/Clarification #2007-013

MEMORANDUM

RE: The Division of Water Quality's (DWQ's) clarification on the location of buffer mitigation credit in the Catawba River Basin.

Problem: The Catawba Buffer Rules (15A NCAC 02B.0243) apply to buffers only along the Catawba River mainstem below Lake James and along the mainstem lakes in the Catawba River Basin, excluding wetlands. This has made it problematic for buffer mitigation banks to establish mitigation restoration sites in the Catawba River Basin for projects requiring mitigation due to lack of mitigable areas along the Catawba River mainstem.

Solution: 15A NCAC 02B.0244 (1), states that the purpose of the mitigation requirement for the Catawba River Basin is to maintain and protect existing riparian buffers on the Catawba River mainstem. This is interpreted by DWQ to include all tributaries of the Catawba River mainstem if approved by DWQ or the local government. In addition, in 15A NCAC 02B.0244 (4) it states that the location of the mitigation effort shall be the same distance from the Catawba River as the proposed impacts and as close to the location of the impact as feasible. If it is not feasible to have your mitigation located on the Catawba River mainstem, then upon DWQ or the local government approval, the tributaries of the Catawba River can be used for mitigation.

The mitigation requirements shall be in accordance with 15A NCAC 02B.0244. Mitigable buffers along streams in the Catawba River Basin shall include intermittent and perennial streams as defined by the North Carolina Division of Water Quality's Stream Identification Method that meet the requirements of 15A NCAC 02B.0244. DWQ or a delegated local government shall approve all mitigation sites and plans within the Catawba River Basin.

Signature: _____

Date: _____



Michael F. Easley
Governor

William G. Ross, Jr., Secretary
Department of Environment and Natural Resources

Coleen H. Sullins, Director
Division of Water Quality

January 25, 2008

Buffer Interpretation/Clarification #2008-017

MEMORANDUM

RE: The Division of Water Quality's (DWQ's) definitions of buffer restoration vs. enhancement and clarification on buffer mitigation credit related to restoration and enhancement activities.

Problem: The terms "restoration" and "enhancement" are used in the Neuse River Basin Buffer Rules (15A NCAC 02B .0242(9)); the Catawba River Basin Buffer Rules (15A NCAC 02B .0244(9)); and the Tar-Pamlico Basin Buffer Rules (15A NCAC 02B .0260(9)). However, no definitions of these terms are provided in the rules, nor are criteria provided for evaluating a prospective mitigation site.

Solution: The following definitions/criteria must be used to evaluate prospective buffer mitigation sites and to select the appropriate mitigation strategy for that site. The following apply to woody (tree species) stem counts made within 50 feet of surface waters as described in 15A NCAC 02B .0233(4), 15A NCAC 02B .0243(4), and 15A NCAC 02B .0259(4).

- 1) If woody vegetation (tree species) on a site is dense (greater than or equal to 200 stems per acre), then the site does not qualify for either restoration or enhancement.
- 2) If woody vegetation (tree species) is sparse (greater than or equal to 100 but less than 200 stems per acre) measured within 50 feet of surface waters, the site is suitable for enhancement.
- 3) If woody vegetation (tree species) is absent to sparse (less than 100 stems per acre), the site is suitable for restoration.

All buffer restoration or enhancement projects must comply with all applicable provisions of the Neuse, Tar-Pamlico and Catawba buffer rules. The following also apply to both buffer restoration and enhancement projects.

- 1) In evaluating sites, all stem counts must be tree species native to North Carolina. It is assumed that small specimen trees of species not native to North Carolina will be removed as part of the restoration or enhancement project. Large specimen trees, regardless of whether they are native to North Carolina, may be preserved.
- 2) The mitigation site, either restoration or enhancement, must be a minimum of 50 feet wide to receive buffer mitigation credit.
- 3) The mitigation plan must be consistent with the NCEEP's "Guidelines for Riparian Buffer Restoration" located at <http://www.nceep.net/news/reports/buffers.pdf> unless otherwise approved in writing by DWQ.
- 4) Mitigation credit can be given for restoration/enhancement of riparian buffer along one side of a stream as long as the planted buffer zone is geomorphologically stable. Credit will be based on square footage of buffer enhanced or restored.
- 5) Mitigation credit can be given for riparian buffer restoration that is done in conjunction with a stream restoration project as long as the riparian buffer restoration meets the minimum criteria found in 15A NCAC 02B .0242(9), .0244(9), and .0260(9).
- 6) Where riparian buffers are restored along intermittent and perennial streams, the stream must be stable. In situations where the stream is unstable, a stream restoration or enhancement plan must accompany the riparian buffer mitigation plan unless documentation can be provided to show that this activity is not required.
- 7) Where riparian buffers are restored along ditched streams (modified natural streams), the stream must be subject to the buffer rules as described in 15A NCAC 02B .0233(3) and .0259(3). These streams must not be actively eroding. If the modified stream is unstable, a stream restoration or enhancement plan must accompany the riparian buffer mitigation plan.

- 8) Subsurface drainage from field drainage tiles must be eliminated in order to be certain that the buffer is functional in water quality improvement.
- 9) Surface drainage, either existing or new, must be in a diffuse manner through the entire 50 feet of restored/enhanced buffer. Drainage ditches, swales and any other conveyances must be converted to diffuse flow before entering the buffer to receive mitigation credit.
- 10) As stipulated in Rules 15A NCAC 02B .0242(9), .0244(9), and .0260(9), the area of riparian buffer restoration must be equal to the required area of mitigation pursuant to 15A NCAC 02B .0242(3), .0244(3), and .0260(3). The area of riparian buffer enhancement must be three times larger than the required area of mitigation pursuant to 15A NCAC 02B .0242(3), .0244(3), and .0260(3). The mitigation area must be placed under a permanent conservation easement to protect the nutrient removal functions of the property.

Signature: _____



Date: _____

1-8-08



Michael F. Easley
Governor

William G. Ross, Jr., Secretary
Department of Environment and Natural Resources

Coleen, H. Sullins, Director
Division of Water Quality

August 19, 2008
Buffer Interpretation/Clarification #2008-019

MEMORANDUM

RE: The Division of Water Quality's (DWQ's) stance on whether diffuse flow of stormwater through the newly restored buffers on mitigation sites should be a requirement. Diffuse flow is a requirement for buffer restoration or enhancement in the Neuse River Basin Buffer Rule 15A NCAC 02B.0242(9)(d)(iii), the Tar-Pamlico River Basin Buffer Rule 15A NCAC 02B.0260(9)(d)(iii), and the Catawba River Basin Buffer Rule 15A NCAC 02B.0244 (9)(d)(iii).

Diffuse flow is a requirement for all sites in a buffered basin for buffer mitigation and for for sites providing nutrient offset credit as well.

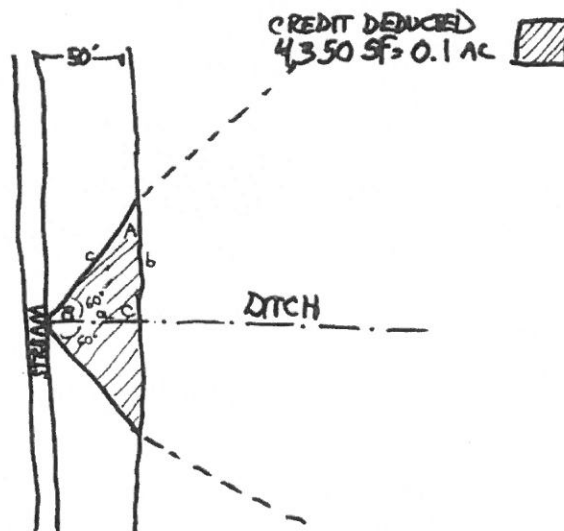
Current Policy: According to the Mitigation rules in the Neuse, Tar-Pamlico and Catawba buffer rules, a grading plan must be provided for buffer mitigation sites. In addition, those rules state that "The site shall be graded in a manner to ensure diffuse flow through the riparian buffer".

Problem: The question has been raised as to whether stormwater carried by lateral ditches that enter buffered streams should provide diffuse flow prior to that stormwater entering the restored buffers.

Solution: The Neuse, Tar-Pamlico and Catawba buffer rules with respect to buffer mitigation sites contain a very clear requirement that states that diffuse flow of stormwater must be maintained through the buffer. Unless otherwise approved by DWQ, all buffer mitigation sites must provide diffuse flow of stormwater from ditches and similar conveyances through the restored buffer.

Where such diffuse flow cannot be attained and where DWQ agrees that such treatment is not possible, deduction of buffer credit will be calculated as follows:

SCENARIO 1



A, B and C are angles. a, b, and c are distances (lengths)

DWQ believes that using an immediate drainage area extending at a 60-degree angle from the point of discharge to the stream is a reasonable approach to the issue of determining the area which is not draining through the restored buffer. To calculate the area of buffer being "short-circuited" by the ditch, the area of the right triangles shown in the figure above must be determined.

$$a = 50'$$

$$A = 30^\circ$$

$$B = 60^\circ$$

$$b = a \cot A$$

$$b = 50 (1.732)$$

$$b = 86.6' (87')$$

The area to be excluded from credit would be the area of the two right triangles:

$$\text{Area} = (a \times b)/2$$

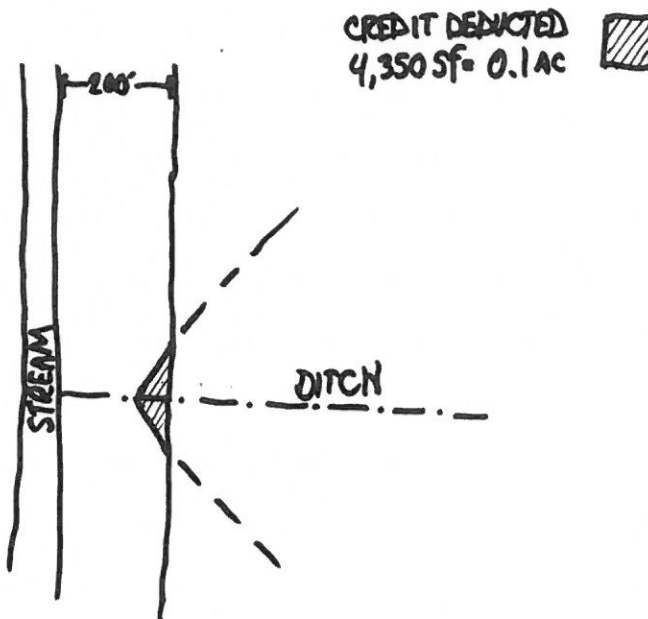
$$\text{Area} = (50 \text{ feet} \times 87 \text{ feet})/2$$

$$\text{Area} = 2,175 \text{ SF}$$

Total deducted area = $2,175 \times 2 = 4,350 \text{ SF}$ or 0.1 acres.

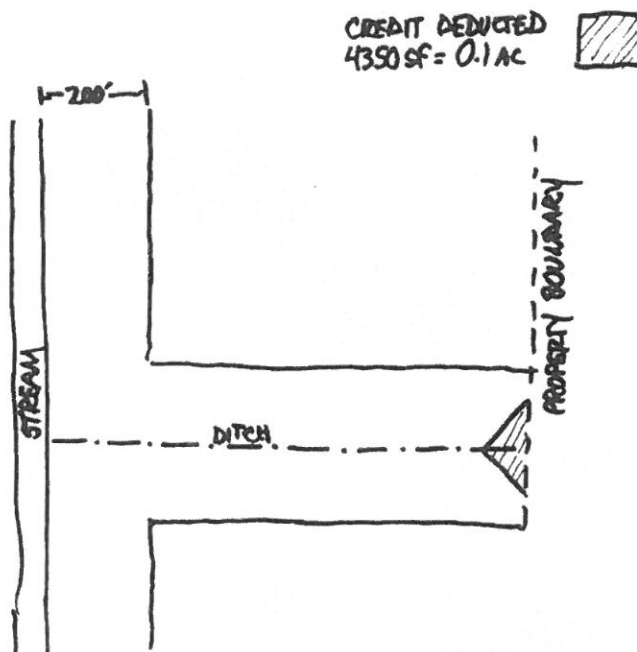
The example shown above assumes a buffer width of 50 feet from the top of bank (riparian buffer mitigation site). For nutrient offset sites, credit can be generated out to 200 feet from the top of bank. The policy applies to sites with larger buffers as follows:

SCENARIO 2



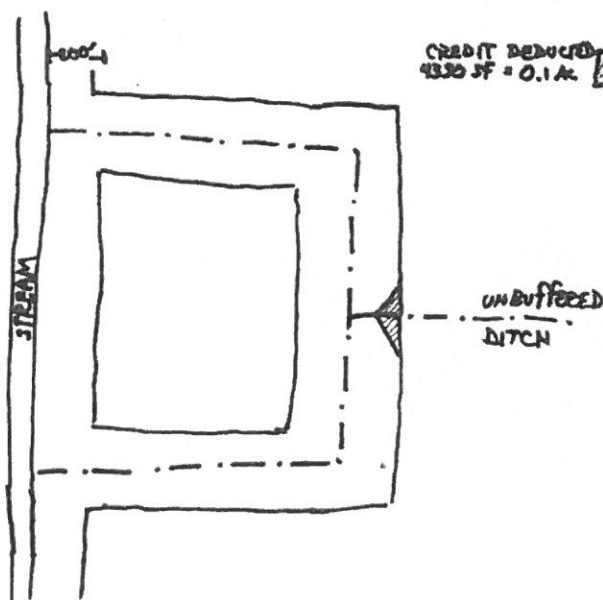
If a ditch leading to a buffered stream is buffered, then no credit is deducted from the stream buffer. If the upstream origin of the ditch is within the buffer, no credit is deducted. If the upstream origin of the ditch is not buffered (e.g. if the ditch begins upstream offsite), the credit deduction is applied to the most upstream portion of the ditch on the property.

SCENARIO 3



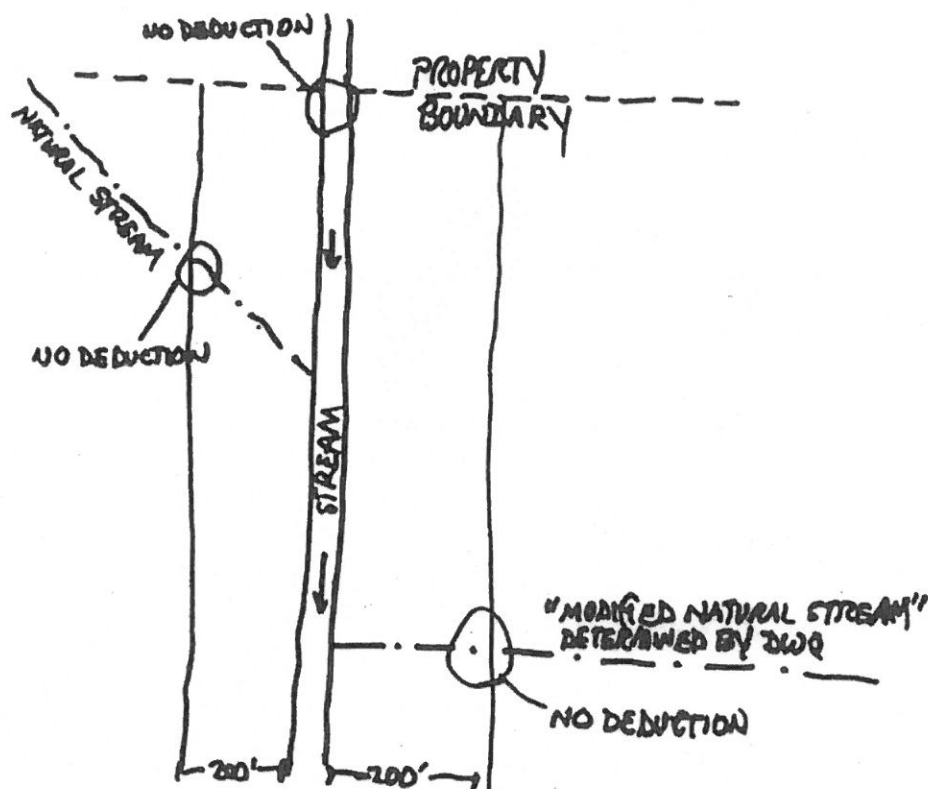
Where a network of interconnecting ditches occurs on a site, and all of the ditches are buffered, the only credit deduction would be at the point where an unbuffered ditch enters the project:

SCENARIO 4



Where a natural stream enters the project site, no deduction of credit will occur. Also, when a natural stream or a modified natural stream flow into a buffered stream, no deduction of credit will occur. The modified natural stream must be subject to the buffer rules, and must be verified to be a modified natural stream (as opposed to a ditch) through an on-site determination by DWQ personnel.

SCENARIO 5



For any additional questions or clarifications on this issue, please contact Eric Kulz or Amy Chapman at (919) 733-1786.

Signature: Max Maurer Date: 8/19/2008

Signature: RLR Date: 8/19/2008



Michael F. Easley
Governor

William G. Ross, Jr., Secretary
Department of Environment and Natural Resources

Coleen, H. Sullins, Director
Division of Water Quality

Working Draft

December 03, 2008

Buffer Interpretation/Clarification #2008-020

MEMORANDUM

The Division of Water Quality's (DWQ's) stance on the location of buffer mitigation for restoration and enhancement credit.

RE: The Riparian Buffer Mitigation Program Rule for the Neuse River Basin [15A NCAC 2B.0242(4)], the Riparian Buffer Mitigation Program Rule for the Catawba River Basin [15A NCAC 2B.0244(4)], and in the Riparian Buffer Mitigation Program Rule for the Tar-Pamlico River Basin [15A NCAC 2B.0260(4)], states that the location of mitigation for restoration or enhancement shall be located the same distance from the estuary as the proposed impact or closer to the estuary than the impact, and as close to the location of the impact as feasible.

Session Law 2008-152, "An Act to Promote the Use of Private Mitigation Banks for Compensatory Mitigation", states that with respect to availability of mitigation credit, the "hydrologic area" within which appropriate credit can be obtained is identified as the eight-digit Hydrologic Unit Code. This contradicts the definition of the location of mitigation as described above.

Solution: The DWQ has taken the stance that the location of buffer mitigation sites in the Neuse, Tar-Pamlico and Catawba basins need to be located within the same eight-digit cataloging unit as designated by the U.S. Geological Survey as the impact to the buffers, in order for the restoration or enhancement to be the acceptable distance from the estuary as required by the above-referenced rules. The Session Law supercedes the above-referenced rules.

For any additional questions or clarifications on this issue, please contact Amy Chapman or Eric Kulz at (919) 733-1786.

Signature: Chris Waller Date: 12/3/08

Signature: Mark Mautner Date: 12/3/08



North Carolina Department of Environment and Natural Resources

Division of Water Quality
Coleen H. Sullins
Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

November 17, 2009
Buffer Interpretation/Clarification #2009-006

MEMORANDUM

RE: Division of Water Quality (DWQ) determination of Buffer Mitigation credit where sewer line easements occur within Zones 1 and 2 of the protected riparian buffers.

- 1) If an existing sewer easement* is located either partially or totally in Zone 1 of the protected riparian buffers, the site is not suitable for a buffer mitigation site.

*NOTE: In many cases, the actual recorded utility easement may be wider than the maintenance corridor that is required to remain cleared and dominated by herbaceous vegetation. The term "easement" used here means the entire recorded easement width, and not just the area of maintained corridor. In the event of a problem with the sewer line requiring major repair or replacement, the entire width of the easement can be cleared. This is unacceptable in Zone 1 of a mitigation site.

- 2) If an existing sewer easement lies partially or entirely in Zone 2, with no part of the easement in Zone 1, DWQ determines this acceptable for a buffer mitigation site. However, the area of buffer outside the maintenance corridor must be wooded. In addition, the area of buffer within the maintenance corridor (e.g. area that must remain herbaceous) **cannot** be used as buffer mitigation credit.

For example, a proposed buffer mitigation site consists of a 100-foot length of stream with a 10-foot wide sewer maintenance corridor located entirely within zone 2 of the buffer. Calculation of the credit would be done as follows:

$100' \text{ (stream width)} \times 50' \text{ (buffer width - one side only)} = 5,000 \text{ SF} - 1,000 \text{ SF (area within maintenance corridor)} = 4,000 \text{ SF total buffer credit.}$

Please note an existing parallel sewer easement located in Zone 2 of the buffer is the only situation where DWQ would allow a buffer mitigation site to not contain a full 50 feet of wooded buffer. An approved, intact buffer mitigation site protected by a conservation easement will no longer be considered suitable for mitigation if a sewer easement is installed after the conservation easement was put into place and the buffer mitigation site was established. In that case, a replacement buffer mitigation site will need to be provided.

Signature: _____

Date _____

Signature: _____

Date _____

