

SUMMARY OF PUBLIC COMMENTS FROM SECOND COMMENT PERIOD WITH DIVISION STAFF REPLIES

MONITORING RULES FOR ANIMAL OPERATIONS

Description

This appendix presents Division staff's summary of the written and oral public comments that were received during the second 60-day public comment period. A staff reply follows each summarized comment or group of comments on an issue. We attempted to provide all commenters the ability to view staff replies to their comments.

The intent of the second comment period was to obtain comments on changes that have been recommended by the hearing officers; specifically the removal of Fecal Coliform and BOD₅ from the list of sampling parameters. As a result, there were far fewer comments received, and far fewer topics discussed when compared to the first comment period. In addition to comments on the subject of BOD and fecal coliform, many commenters requested that their comments submitted during the first comment period be considered again. Comments from the first comment period are not addressed here. For responses to those comments, please see the summary prepared for the first comment period.

Comments on topics other than BOD and fecal coliform are addressed first, then comments on other issues.

The following page provides a linked Table of Contents, and provides a full list of all individual commenters grouped by type. A unique number is assigned to each commenter for reference within the body of the document. The links will take the reader to the full comment that was submitted.

The body of the document is structured as a table:

- The first column provides an ascending comment number, #1 - #19.
- The second column compiles the commenter numbers of all of the individual commenters who made that comment or a comment within that comment group. This column reflects the frequency of a given comment/comment group.
- The final column is the summarized comment/comment group and staff's reply.

Guidance on Searching for Individual Comments

To find an individual party's comments and staff replies, first find the unique number for that party in the commenter list. Search the document for that number using the 'Find' tool under 'Edit'. In the 'Find' dialog box, click 'More', then click 'Format' and select 'Highlight'. Finally, type the unique commenter number in the "Find What" box and click "Find Next" to search for the comments.

List of Commenters

Business/Professional/Environmental Organizations:

1. [Lower Neuse Basin Association](#)
2. [Southern Environmental Law Center](#)
3. [Waterkeeper Alliance](#)
4. [North Carolina Egg Association](#)
5. [North Carolina Pork Council](#)
6. [North Carolina Poultry Federation](#)
7. [North Carolina Dairy Producers Association](#)
8. [North Carolina Farm Bureau](#)
9. [Prestage Farms](#)
10. [Guliford Soil & Water Conservation District](#)

Individual Commenters

11. [Craig Frazier](#)
12. [Jay Weaver](#)
13. [Curtis Barwick](#)
14. [Ron Huggins](#)
15. [Mike Shaw](#)
16. [Amanda Hatcher](#)
17. [Joan Schneier](#)

Form Letter #1

18. [Matt Hardee](#)
19. [William Butler](#)
20. [William Storms \(SP?\)](#)

Form Letter #2

21. [Steve Campbell](#)
22. [Jimmy Reynolds](#)
23. [Jake Reynolds](#)
24. [Sherry Shaw](#)
25. [Keith Baker](#)
26. [Daniel Nutley](#)
27. [Kathryn Shaw](#)
28. [Kathi Shaw](#)
29. [Jean & Clarence Thornton](#)
30. [Christine Monroe](#)
31. [Alex Gooden](#)
32. [Bobby Tatum](#)

Form Letter #3

33. [Charles Hilton](#)
34. [Hilton Monroe](#)
35. [Allen, Leslie, William & Weston Johnson](#)

Form Letter #4

36. [Betty Hardee](#)
37. [Isaac Singletary](#)

Form Letter #5

38. [Walter Campbell](#)
39. [Layton Johnson](#)
40. [Charles Gillespie](#)
41. [Michael Inman](#)
42. [Ronald Gooden](#)

Summary of Public Comments

Subject	Commenter #	Comments Related to BOD and Fecal Coliform
1	2, 3	<p>Sample Parameters – BOD & Fecal Coliform – Add Back to the Rule</p> <ul style="list-style-type: none"> • While BOD and Fecal Coliform may not individually indicate a discharge, they can when combined with ammonia, nitrate, and chloride. • Fecal Coliform and BOD are needed to demonstrate that the waters are safe for public recreation and consumption. The parameters remaining in the rule cannot substitute for BOD and Fecal Coliform in this case. • Chloride is not enough to indicate fecal contamination, because there are a large number of potential chloride sources. All three are needed to form a complete picture. In addition, the presence of fecal coliform can indicate a human health concern that the other parameters cannot. • If fecal coliform is not used, there are other parameters that could be substituted, such as <i>Enterococcus</i>, and <i>E. coli</i>. • BOD is important because it can indicate decreased availability of oxygen for fish and other aquatic life. Testing for BOD can provide a good indication of nutrient pollution and should be retained as a parameter.
2	5, 7, 8, 10, 16, 17	<p>Sample Parameters – BOD & Fecal Coliform – Keep out of the Rule</p> <ul style="list-style-type: none"> • If the rule moves forward, BOD and fecal coliform should continue to be removed from the rule. • Removal of Fecal and BOD will reduce the number of lab tests, but will do little to lessen the on-farm duty to implement the proposed rules. The same number of sample events is required. • The removal of BOD and fecal coliform does little to address the overall concerns with the rule from the first comment period. • Fecal coliform should be removed because it does not differentiate between other warm blooded animals that could be a source, and the 6-hour holding time presents a logistical issue for farmers. • If nutrients are a concern, phosphorus could be tested instead of BOD at a lower cost.
		<p><i>Reply:</i> <i>For several reasons, we feel that fecal coliform should be left out as a routine monitoring parameter from these rules. Although we feel that farm owners/operators are capable of properly collecting samples, there are legitimate issues related to sample collection and holding times. Additionally, many commenters pointed out that there are multiple possible sources of fecal coliform, and that a high sample may not be related to waste from a permitted operation.</i></p>

		<p><i>Although there is a water quality standard for fecal coliform, this testing program does not meet the 5 samples in 30 days requirement that is needed to use fecal coliform sampling as an enforcement tool. In addition, the delay in reporting sample results to DWQ will mean that the samples will not be of much use for public health purposes unless there is a long term trend in the data.</i></p> <p><i>We feel that the combination of ammonia, nitrate, and chloride will provide enough data to identify potential issues at a farm.</i></p> <p><i>We do feel that fecal coliform should remain as a parameter to sample when a discharge of waste occurs.</i></p>
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Subject	Commenter #	Other Comments
3	3	<p>Sample Parameters – Others – Keep/Add/Remove</p> <ul style="list-style-type: none"> • Many other issues are associated with swine waste. Antibiotics, hormones, pesticides, and herbicides are used by CAFOs and can end up in surface and groundwater. However the cost/benefit justification does not exist to require the sampling of these parameters.
		<p><i>Reply:</i> <i>Many of these emerging contaminants are concerns, but as the commenter states, there is no justification to include these parameters at this time.</i></p>
4	1, 2, 3	<p>General Comments on Rules – In Favor</p> <ul style="list-style-type: none"> • An adequate monitoring program is needed to show compliance with the non-discharge requirements and to protect human health and the environment. • In a recent USGS study, researchers found increased concentrations of nitrate and other chemical constituents in the groundwater beneath sprayfields. The nitrate and other chemical constituents ranged from 10 to 35 mg/L with one concentration as high as 56 mg/L. During the four years of spray applications, groundwater nitrate levels increased by a factor of 3.5. • Members of the Neuse River Compliance Association have reduced their discharge of nitrogen by 70%, but nitrogen levels east of Fort Barnwell have not improved as noted in the 2009 Neuse Plan update.
		<p><i>Reply:</i> <i>The goal of this rule is to help identify issues on specific farms that can be addressed. Water quality monitoring at animal</i></p>

		<p><i>operations is one tool of many that DWQ can use, along with ambient monitoring data and inspections by staff. Monitoring data at animal operations is one tool that has been missing up to this point. By addressing issues that are uncovered, we can improve water quality or prevent water quality impairment. An additional benefit includes protection of unimpaired streams in the watershed, and benefits to downstream areas.</i></p> <p><i>As research shows, animal operations are a source of pollutants into surface waters. These rules will be able to help identify issues that can be corrected, resulting in water quality improvements. The USGS research at the Lizzie Farm shows that CAFOs can impact surrounding surface waters, even when operating in compliance with their permits.</i></p>
5	4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 16, FL1, FL2, FL3, FL4, FL5	<p>General Comments on Rules - Opposed</p> <ul style="list-style-type: none"> • The removal of fecal coliform and BOD does not address the concerns that the Pork Council has with the initial rules in 2009. The comments submitted then continue to reflect the Pork Council’s position and should be considered by the Hearing Officers. • The change, removing fecal coliform and BOD do nothing to do make the rule more acceptable and keeps the lack of scientific basis, evaluation and use of data, and the lack of a watershed approach. • The rules should not be required across the board for all animal operations. Surface water monitoring is not needed to demonstrate compliance with permit conditions because the permits themselves do not allow discharge. • The rules would place a burden on farmers, not produce meaningful results, and will not improve water quality. • If the regulations do become effective, they should be revised to specifically exclude dry litter poultry operations. • Adequate permits and inspections are already in place to detect discharges, and waste management plans to outline how nutrients are applied to land. These regulations make the proposed rules unnecessary. • The rules do not consider the varying factors at animal operations; soils, topography, etc. A one size fits all rule will not provide meaningful data.
		<p><i>Reply:</i></p> <p><i>We agree that testing by itself will not improve water quality. However, testing is the first step to water quality improvement. Once issues are identified, resources can be directed to help fix problems.</i></p> <p><i>We do not feel that these rules are overly burdensome. The purpose of DWQ developing the plans is to help relieve some of the burden from the farm owners.</i></p> <p><i>One of the goals of this rule is to help determine where money for BMPs can be effectively spent. Not all BMPs are effective in all situations, and they may not be needed at all farms. Monitoring of surface waters can show where problems may exist, and money</i></p>

		<i>can then be spent to correct identified issues.</i>
6	11, 14, 15, FL4	<p>Costs – Affordability</p> <ul style="list-style-type: none"> • The costs of these rules are too high for the limited data and water quality benefit that will be generated. • This proposal is an inefficient use of the State’s and farmer’s resources. • The dairy industry has suffered the loss of many farms over the past 15 years and cannot afford additional costs. • I have received estimates from a highly respected environmental firm regarding this monitoring that the petitioners are seeking. The cost to our farming operations would be from \$2,000 to \$3,000 per farm per year. We cannot set prices, but must take what the markets bear. These costs cannot be passed on to the consumer. <p><i>Reply:</i> <i>We are sensitive to the issue of cost and how it will affect the farms regulated by this rule. We do recognize that while the animal industry in NC is large, most of the animals are raised on individually owned farms. We also recognize that the costs of the monitoring will fall on the individual farm owners, and not the industry overall. This is a major reason for the cap on the number of sample events and sample points in the rules.</i></p> <p><i>As discussed above, cost is one reason for removal of fecal coliform and BOD from the list of routine monitoring parameters. We feel that we will be left with the minimum number of sample points and events that we feel can still provide useful data. The removal of fecal coliform and BOD from the routine monitoring list will result in a cost reduction of approximately \$400 from the amount stated in the fiscal analysis.</i></p>
7	4	<p>Cost to the State</p> <ul style="list-style-type: none"> • In addition to the costs of over \$2,000 per farm and \$3 million statewide, there will be significant costs to DENR which likely cannot be supported due to the budget situation. <p><i>Reply:</i> <i>We agree that the Division will face costs at least in terms of workload realignment and would benefit from additional staff resources to most effectively implement the rules.</i></p> <p><i>The reduction in parameters to be analyzed will slightly reduce the workload on DWQ.</i></p>
8	4, 8, 9, 10	<p>Current Regulations are Adequate</p> <ul style="list-style-type: none"> • If these inspections are done properly, issues will be identified before problems occur. DWQ can perform as many follow-up inspections as needed to verify compliance and make sure problems are addressed.

		<ul style="list-style-type: none"> The certified animal waste management plans in place are scientifically-based plans for operators to follow to keep illegal discharges from occurring. The plan includes rules based on realistic yield expectations, nitrogen factors, soil types, and crops, among others.
		<p><i>Reply:</i> The twice-yearly inspections by DENR can identify issues before they become large problems. However, routine inspections are not able to identify overall impacts such as the concentration of nutrients in drain tile outlets, seepage from lagoons, and long-term groundwater flow to ditches and streams. Monitoring of surface waters is one more tool we can use to help identify these issues.</p> <p>The Certified Animal Waste Management Plans (CAWMP) that are in place at farms do specify that waste be applied at agronomic rates, and they do certify that proper lagoon sizing and fields are in place to prevent major problems. However, having a CAWMP in place does not assure that there will be no long-term impacts to surrounding surface and ground waters.</p>
9	3	<p>Visual Observations (ADD WKA COMMENTS HERE)</p> <ul style="list-style-type: none"> The first clause of the sentence in .1310(a) should be removed to add clarity. “At least twice per year, f Facilities with known subsurface drains shall make visual observations of subsurface drain outlets within forty-eight hours after a land application event and after a rainfall event subsequent to a land application event for a minimum of two visual inspections per year per field with subsurface drains.”
		<p><i>Reply:</i> The rules were modified to clarify Rule .1310(a)(3) after the first comment period. The intent is to inspect tile drain outlets after waste application, to check for waste leaving the drains. One of these inspections should take place after a rainfall event that occurs after the waste application. Additionally, we have added that the inspections should take place within 48 hours of the application event.</p>
10	4, 13	<p>Sample Collection</p> <ul style="list-style-type: none"> The sampling procedures will result in data with errors that lacks validity. The sampling error will be high, which is troubling since the data is open to public information requests. The average farmer will be unable to perform the testing, resulting in additional cost for contractors. The validity of the data may be compromised by poor sampling techniques. QA/QC procedures in the rule should be improved. DWQ could provide trainings to sample collectors, require that samples be collected by someone with proper certification, and generate site-specific sampling schedules. Record keeping and reporting should also be consistent across farms.

		<p><i>Reply:</i> <i>We recognize that the majority of farm operators have not collected samples using techniques that will be required under these rules. However, we feel that with some brief training, farmers will be able to properly collect samples.</i></p> <p><i>The Division plans on performing several “train the trainer” classes, where county Soil and Water District employees and County Extension agents can learn the proper sampling techniques. Farm operators are required to attend occasional classes to obtain continuing education credits to maintain their operator licenses (A total of 6 hours every 3 years). The staff of Soil and Water Districts and County Extension offices frequently conduct these training classes for operators. The sampling techniques can be incorporated into these classes as a new training topic.</i></p> <p><i>DWQ and DSWC staff are always available to answer questions that producers may have, including those related to sample collection. DWQ routinely splits samples in other regulatory programs, and that could be done occasionally in this program as well.</i></p> <p><i>The farm owner always has the option to contract the sample collection to a 3rd party. For those farm owners who elect to pay a 3rd party to conduct sampling, this will not be an issue.</i></p>
11	2, 3	<p>Sample Locations – More Locations Needed</p> <ul style="list-style-type: none"> • The Rule should not set a maximum number of sampling locations. To do so is unnecessary and limits the ability of the monitoring program to monitor for the discharge of pollutants. • Each facility should be required to have a minimum number of two sampling locations, regardless of whether or not the farm is part of a monitoring coalition. <p><i>Reply:</i> <i>We agree that in general, more monitoring locations will provide more meaningful data. However, we do have to take cost into account. It is important that farm owners be able to accurately predict the cost to their operation. Having an open-ended number of sampling locations would give DWQ more flexibility, but it would leave the farm owner in a position of uncertainty regarding cost. We feel that a maximum of three locations will provide meaningful data, while giving the farm owners a reliable indicator of the cost to them.</i></p> <p><i>We feel that requiring two monitoring sites for each farm in a coalition program would restrict the coalition, and may actually reduce its effectiveness.</i></p>
12	2, 3	<p>Number of Sampling Events</p> <ul style="list-style-type: none"> • The number of tests each year should be increased. This way it will be easier to determine a farm’s impact, especially related to different weather events.

		<ul style="list-style-type: none"> • More winter sampling should be required since there is more likelihood of runoff due to the weather.
		<p><i>Reply:</i> As stated in our response for the comments addressing the number of sampling locations, we generally agree that an increase in the number of samples collected will result in more meaningful data. Again, we have tried to consider the cost impact of the rules to the regulated community. We feel that three sample events per year will provide meaningful data, while helping to keep the cost in line. While there generally more stream flow in the winter, there is also less land application. As a result, we feel that additional winter sampling is unnecessary.</p>
13	10	<p>Reductions in Monitoring</p> <ul style="list-style-type: none"> • DWQ should allow elimination of monitoring where farms are in compliance with permit conditions, BMPs are installed and followed, and monitoring over three years shows no issues.
		<p><i>Reply:</i> We agree that the conditions where a farm can have monitoring reduced or eliminated (.1310(b)(6)) can be better defined. Requests for reductions in monitoring will be evaluated on a case-by-case basis using best professional judgement. DWQ will need to be able to assure the public that the facility does not pose an ongoing risk to surface water quality before reducing or eliminating monitoring requirements. When evaluating a request, DWQ will consider the following factors:</p> <ul style="list-style-type: none"> • Levels of pollutants in previous monitoring data – high or low? • Consistency of previous monitoring data – are all the results generally the same, or do they have a wide variation? Are the concentrations trending upward, downward, or remaining stable? • Changes in management practices on the farm, including a reduction loading rates – has the operation changed such that we expect a reduced impact to surface waters? • Consistency of the farm management practices – has the farm been operating the same way for many years, and do we expect the monitoring data to remain stable as a result? • Installation and maintenance of BMPs. Has the farm installed BMPs to reduce any impact to surface waters, such as increased buffers to streams and ditches, or capping off/removal of old drain tiles?
14	4, 11	<p>Monitoring Plan Development</p> <ul style="list-style-type: none"> • The complexities of animal waste and land application system are not addressed by these rules. As a result, the rules will do little to develop an understanding of the impact of animal operations on surface waters. • It will become quickly apparent that many facilities do not have a consistent defined flow source to adequately conduct surface water sampling. The cookie cutter approach of one up and two down will result in vast quantities of inconclusive data. The proposals do not take into account the difference between monitoring large streams in eastern NC versus small streams on rolling land in the piedmont.

		<p><i>Reply:</i> We agree that we will see a wide variation in geographic settings and operation practices that will affect the location of monitoring stations. We plan on using all tools available to us (GIS, aerial photography, and field work) to ensure that monitoring stations are representative and will provide useful data.</p> <p><i>There may be cases where there is no need for three stations. There may be cases where we decide monitoring is not needed at all due to geographic setting and/or operational practices on the farm.</i></p>
15	9, 13, 14, FL3	<p>Other Sources of Impairment/Fairness</p> <ul style="list-style-type: none"> • Golf courses, conventional row crop and vegetable operations, residential lawn maintenance, all apply fertilizers to the land surface and have the same risks. These rules focus on the only activity that is permitted for this activity. • The pork industry should not shoulder the cost of monitoring when they are one of many sources that are possible contributors to water quality issues. <p><i>Reply:</i> We agree that there are many sources of pollution to be accounted for. Many of these potential sources are being accounted for in other processes. Municipal/industrial discharges, sewer overflows, and stormwater issues have all been the focus of recent activities by the Division. Even the application of fertilizer has been addressed in basin plans for the Neuse and Tar-Pam rivers, and the Jordan Lake watershed.</p> <p><i>Requiring monitoring at animal operations is consistent with the actions DWQ has taken for other regulated entities.</i></p>
16	10	<p>Monitoring Coalitions</p> <ul style="list-style-type: none"> • The coalition monitoring program seems ill-suited for farms in the central/western part of the state due to varying characteristics and the distance between them. • <p><i>Reply:</i> This is a valid concern for farms located in areas with few AFOs. However, the coalition program is strictly voluntary, so there is no negative impact for including this provision in the rules.</p>
17	2	<p>Reporting</p> <ul style="list-style-type: none"> • Reporting of monitoring results should be done on a more frequent basis. The reports should be due the month after the sample collection period (March for January – February, etc.)

		<p><i>Reply:</i> <i>We feel that an annual reporting requirement is the best way to get all of the data to DWQ in a manner that will allow for the easiest data entry and analysis.</i></p>
18	2	<p>Timeline</p> <ul style="list-style-type: none"> • The rules should set a timeline for implementation in each of the listed watersheds. This will help provide the regulated community with an expected date for implementation, and will give a benchmark for water quality monitoring results. <p><i>Reply:</i> <i>Because DWQ is committed to developing the monitoring plans with existing staff and resources, we are uncomfortable in committing to a strict timeline for implementation. We feel that the approach of starting with watersheds that have a documented impairment, and then moving on to those watersheds with a higher concentration of animal operations will allow for the greatest impact and benefit.</i></p> <p><i>The hearing officers have stated that they will ask DWQ to provide annual updates to the EMC on progress in implementing these rules.</i></p> <p><i>We agree that the date of July 1, 2008 should be removed from the rule. The rules have been modified so that any new or expanding operation as of the effective date of the rules will be required to implement a monitoring plan.</i></p>
19	4	<p>Proposed Alternatives to the Rules</p> <ul style="list-style-type: none"> • If monitoring is done, it should be at a sub-watershed scale small enough to generate meaningful results. BMPs should be identified that will address all potentially significant sources of pollutants to surface waters. • Instead of monitoring, a scientific study should be conducted. The study could evaluate potential impacts from animal operations on water quality that could be used to make improvements. <p><i>Reply:</i> <i>Many of the ideas listed above would make great study topics. The issue with any proposal for study is funding. DWQ is currently attempting to locate funding to conduct the types of studies that are suggested above. The EMC does not have the authority to generate money to fund such a study, so it will have to come from an outside source.</i></p> <p><i>The issue with requiring monitoring at a sub-watershed scale is fairness. We would be forced to single out a few operations for monitoring. Additionally, the monitoring required in this case would likely be much more expensive than what is required under these rules.</i></p>

DRAFT – 11/16/2010