



Environmental  
Protection Agency

Division of Surface Water

## Responsiveness Summary for the Initial Interested Party Draft July 2012

**Rules:** OAC 3745-5-01 to -14: Water Quality Trading Rules

### Agency Contact for this Package

Gary Stuhlfauth

Division of Surface Water

[gary.stuhlfauth@epa.state.oh.us](mailto:gary.stuhlfauth@epa.state.oh.us)

(614) 644-2026

On **September 22, 2011**, Ohio EPA made available for review and comment the initial draft amended rules regarding water quality trading. This document identifies the comments and questions received during the associated comment period, which ended on **October 25, 2011**.

As a result of Ohio EPA working with the Common Sense Initiative (CSI) Office to fulfill the requirements of Senate Bill 2, a second interested party comment period was held between **March 14, 2012 and April 16, 2012**. A summary analysis of the bill can be found here: <http://www.lsc.state.oh.us/analyses129/11-sb2-129.pdf>. In addition to the draft rule amendments, Ohio EPA also requested comments and feedback on the draft CSI Form, which was released with the draft rules during interested party review. Ohio EPA reviewed and considered all comments received during the second public comment period. By law, Ohio EPA has authority to consider specific issues related to protection of the environment and public health.

In an effort to help you review this document, the comments and questions from the second comment period are grouped by topic and organized in a consistent format. The name of the commenter precedes their comments.

**COMMENT 1:** Mr. Scott Bushbaum; email: [carlspackler\\_bench@yahoo.com](mailto:carlspackler_bench@yahoo.com); organization: Ohio Citizen Action volunteer; Dayton, Ohio

3745-5-01: Proposed rule changes in rule 3745-05-01 removes necessary language in regards to technology based effluent limits. The omission of this rule language negates the definitions of technology based effluent limits with respect to C.F.R. 40-133. This rule as currently drafted is important and prudent to environmental standards in the State of Ohio. More information about technology based effluent limits are referenced in rule 3745-33-01 with prudent language in reference to the National Pollution Discharge Elimination System.

3745-5-03 A-3: Proposed changes to the language in rule 3745-5-03 letter A number 3 eliminates the technical information outlined in the prudent language of mentioned C.F.R. 40-133. The language in the National Pollution Discharge Elimination System is important to rule 3745-5-03 letter A number 3.

3745-5-04 D-1: Proposed changes to the language of rule 3745-5-04 letter D number 1 with respect to "nutrient criteria" overlaps rule 3745-5-01 that is critical and important to the Ohio EPA's responsibility to the Miami river watershed's water quality standards. The addition of this language and changes to the rule is detrimental to the water quality trading of the Miami river watershed.

3745-5-06 C-3 and D-2: Proposed changes to the language in rule 3745-5-06 letter C number 3 and 3745-5-06 letter D number 2 with omission of the language "eleven" and "fourteen" and the addition of language "ten" and "twelve" are acceptable. This rule pertains to the size of a water quality trading area. The proposed change is prudent and good with respect to the economic conditions in the State of Ohio. The language changes are favorable with respect to the budget appropriations of the OEPA at the present time.

**Suggested Solutions:**

3745-5-05 C-2: Proposed language with respect to the word "and" is important and prudent to the language of this rule. The addition of the word "and" in this rule gives more authority to the Director and makes the language of rule 3745-5-05 letter C number 2 more strict and important.

3745-5-11 A 1-4: Proposed language changes in rule 3745-5-11 letter A and numbers 1 through 4 are prudent and important to this rule. The proposed language further defines the criteria the Director needs for a variety of water quality trading purposes and National Pollution Discharge Elimination System permit allocations and fines.

**OEPA RESPONSE 1:**

3745-5-01: We removed the definition for "technology based effluent limit" from this rule because the secondary treatment regulations (40 C.F.R. 133) and the national effluent

limitations guidelines and performance standards (40 C.F.R. 405 – 499) are specifically included in amended rule 3745-5-03(A)(4). The prohibition on using water quality credits to comply with technology based limits is unchanged in the amended rule.

3745-5-03(A)(3?): We believe this comment is directed at amended rule 3745-5-03(A)(4). As stated in the previous response, the prohibition on using water quality credits to comply with technology based limits is unchanged in the amended rule.

3745-5-04(D)(1): The Agency believes that the amended rule is supportive of water quality trading in the Great Miami River basin. At this time, Ohio does not have numeric nutrient criteria, and this has been detrimental to the “scaling up” of the Miami Conservancy District’s water quality trading program. We believe the amended rule provides reasonable time for the Conservancy District to update, revise and submit its operations manual for approval in preparation for an increase in trading activity that could occur once nutrient criteria are adopted and provide the basis for water quality based effluent limits in NPDES permits

3745-5-06(C)(3) and (D)(2): No response is necessary.

Suggested solutions for:

3745-5-05(C)(2): No response is necessary.

3745-5-11(A)(1-4): No response is necessary.

**COMMENT 2:** Peter Thomas; Coaltec Energy USA, Inc.; website: [www.coaltecenergy.com](http://www.coaltecenergy.com) ;  
Phone: 434-989-1417

### **Comments and a proposed exception to the current water quality trading restrictions on Ohio CAFOs pursuant to Section 3745-5-03(C)**

#### **I. Background and rationale for a new rule for CAFOs in 3745-5-03 (C):**

- In the Introduction to its November 15, 2011 Nutrient Reduction Strategy Framework for Ohio Waters, the Ohio EPA states: “.....most water resource professionals agree that nutrient enriched waters have reached a critical stage and that immediate actions must be taken to reduce the amount of nutrients reaching our waterways.”
- In the chapter of the Nutrient Reduction Strategy entitled Recommended Management Practices to Prevent Agricultural Nutrient Losses to Surface Waters, the Ohio EPA states on page 64: “The improper management of livestock manure and continued over application of manure on soils that are already saturated with nutrients is a significant challenge in some watersheds where livestock numbers are high. Soils in some watersheds have soil phosphorus levels that would allow generations to pass before

needing additional phosphorus inputs—yet each year some of these same soils continue to receive nutrient applications.”

- On page 36 of the Summary and Conclusion in the Nutrient Reduction Strategy, the Ohio EPA states: “However, an honest assessment of the situation reveals that just doing more of the same will not be good enough. While Ohio EPA and many others have taken actions that have resulted in documented water quality improvements in some areas, the problems with nutrients are mounting and require a fresh look at everything related to the matter: our laws, regulations, educational efforts, research needs, priorities for funding, agency procedures and operations, etc.”

In light of the above comments and the proposals submitted to the U.S. EPA by the Ohio EPA on November 15, 2011, it is ironic and counter-productive that the March 2012 Draft Water Quality Trading Rules include restrictions that prevent Confined Animal Feeding Operations (CAFOs) from participating in water quality trading (see Section 3745-5-03 (C)). In addition, even if CAFOs could participate in water quality trading, they would be restricted by other provisions in the draft trading rules, for example, trading within relatively small watersheds (e.g. where TMDLs exist), rather than being allowed to enter into voluntary agreements in which water quality trading could take place state-wide or between major watersheds such as the Ohio River Basin and the Great Lakes Basin. The current restrictions on CAFOs do not represent adaptive management.

- Neither the no-discharge NPDES permits nor the nutrient management plans for CAFOs prevents the land-application of a CAFO’s raw or composted manure, even within impaired or distressed watersheds as defined in EPA 303 (d). As noted above, although not permitted by regulation, Ohio’s water quality officials are well aware that the land-application of raw or composted manure often occurs where phosphorus soil levels are in excess of 100 ppm. Even when phosphorus soil levels are below 100 ppm, the repeated land-application of manure on soils in western Ohio, as well as runoff from rain, results in excess levels of phosphorus and nitrogen in soils, surface water, lakes and sub-surface water. For these reasons, there are strong environmental and regulatory incentives for the Ohio EPA to add a rule that will provide CAFOs with an incentive and an economically viable opportunity to voluntarily:
  1. Stop land applying raw and composted manure;
  2. Significantly reduce ammonia volatilization; and
  3. Participate in a large-scale, state-wide or a multi-state, water quality trading program.

## **II. A Large-scale Nutrient Removal Technology for Ohio CAFOs:**

The deployment and operation of point-source, high-temperature animal waste gasification facilities by CAFOs would not only eliminate the land application of manure and poultry litter on a very large scale, but it would also significantly reduce ammonia volatilization (an air and

watershed nitrogen pollutant). USDA-NRCS Conservation Practice Code 735 (“Waste Gasification Facilities”), for example, is intended for deployment by large CAFOs and thus has the greatest beneficial impact on watersheds.

Animal waste gasification facilities utilize “generally accepted engineering methods,” pursuant to Ohio Administrative Code Chapter 3745-5-08 (B) (2), namely:

1. Calculating and recording the mass of manure about to be processed by the gasifier;
2. Periodically conducting lab analysis of the N and P in the raw manure before it is fed into the gasifier and recording the results, and
3. Periodically conducting lab analysis of the N and P in the biochar (ash) coming out of the gasifier and recording the results, and
4. Monitoring air emissions in real-time and recording the results.

The wide-scale deployment and operation of manure gasification by CAFOs in Ohio can generate millions of pounds of low-priced nitrogen and phosphorus credits annually, as well as carbon credits. By approving the proposed water quality trading rule for CAFOs, nitrogen and carbon credits could be sold between major watersheds state-wide, or between states if the multi-state Ohio River Basin Trading Program becomes a reality.

The Ohio EPA will feel far more confident about issuing and enforcing the Nutrient Reduction Strategy Framework for Ohio Waters if they know that CAFO facilities throughout Ohio can generate millions of pounds of nitrogen and phosphorus water quality trading credits for purchase by those who would otherwise be in violation of lower nutrient discharge limits.

## **II. A rule that will allow CAFOs to participate in water quality trading:**

- As a voluntary incentive to encourage CAFOs to participate in water quality trading, we propose the following addition to Chapter 3745-5-03 (C) of the Draft Water Quality Trading Rules: Add Paragraph (4) to read:

“(4) Point-source, high-temperature manure processing facilities that are owned or operated by CAFOs, or are owned or operated by business entities acting on behalf of CAFOs, which eliminate the land-application of raw or composted manure and significantly reduce ammonia volatilization, may participate in water quality trading throughout Ohio with utilities, POTWs and other permittees, pursuant to Chapter 3745-5-10 (A), after certified nutrient reduction calculations have been made using an appropriate nutrient loss model (e.g. DRAINMOD-N II) pursuant to Chapter 3745-5-08 (B)(2). Additional nutrient reductions may be calculated, and pound-for-pound water quality trading credits may be certified, pursuant to the outcome of USDA studies if the use of a nutrient loss model is not feasible or practical (e.g. in calculating nitrogen credits based on reduced ammonia volatilization).”

This proposed rule, which would allow CAFOs to participate in voluntary water quality trading projects, is not only supportive of the Ohio EPA's goals in the 2011 Nutrient Reduction Strategy, but it is also consistent with Governor Kasich's Common Sense Initiative.

**OEPA RESPONSE 2:**

Under Ohio's trading rules, a CAFO is an animal feeding operation that is defined as a large CAFO or as a medium CAFO by the terms of 40 CFR 122.23, or that is designated as a CAFO by the director or regional administrator [3745-5-01(D)]. Discharging CAFOs must obtain coverage under NPDES permits issued by Ohio EPA. All large CAFOs are required to operate under permits-to-operate issued by the Ohio Department of Agriculture whether they discharge or not. Ohio EPA believes that the ability of CAFOs to participate in water quality trading activities must be consistent with the basic premise of CAFO regulation – that they are zero-discharge facilities.

The CAFO production area is subject to a no discharge technology limit, although some NPDES permits allow a discharge under extreme conditions, which are defined in the permit. Land application of manure is done under a nutrient management plan that is required by the CAFO's permit. Under the management plan, manure must be applied at agronomic rates and with appropriate setbacks and other restrictions. There should be no manure discharges from the fields and very little nutrient run off.

Given that this is the basis of CAFO regulation, the Agency believes that the provision currently included in the trading rules – “Load reductions that are achieved by implementing BMPs or habitat restoration projects are eligible for the generation of water quality credits provided the practices or projects are not implemented to comply with a nutrient management plan required under an NPDES permit.” – is appropriate in scope.

However, because some large CAFOs may operate only under a permit-to-operate, we are going to revise 3745-5-3(C)(5) as follows:

*(3) Load reductions that are achieved by implementing BMPs or habitat restoration projects are eligible for the generation of water quality credits provided the practices or projects are not implemented to comply with a nutrient management plan required under an NPDES permit **or a permit-to-operate.***

The addition to the rules suggested by the commenter would significantly change the way that CAFOs are covered under the trading rules provided that they implement the management practice advocated by the commenter. The Agency does not believe this change is appropriate for facilities that are regulated as “zero-discharge.”

Considering that CAFOs are a small percentage of the animal farms in Ohio, there could be other opportunities for installing manure gasification units as an alternative to land applying manure. However, to be able to generate water quality credits, you must be able to demonstrate and

calculate an overall net reduction in the nutrient load going to the receiving waters. There are several issues that need to be addressed.

Given that manure is required to be land-applied at agronomic rates with appropriate setbacks and other restrictions, there should not be a significant nutrient load coming from the fields. Also, without manure, a farmer would need to apply another type of fertilizer, presumably at agronomic rates, thus making a net reduction in nutrient load difficult to determine.

**COMMENT 3: U.S. Environmental Protection Agency, Region 5**

The U. S. Environmental Protection Agency has reviewed the draft revisions for consistency with the requirements of section 402(b) of the Clean Water Act (CWA) and EPA's Water Quality Trading Policy (2003). Our comments are enclosed.

The enclosed comments reflect EPA's preliminary technical review of Ohio's proposed code revisions. These comments do not constitute an approval or disapproval action by EPA under 402(b) of the CWA.

EPA appreciates the Ohio Environmental Protection Agency's extensive effort over the past years in adopting and now revising the water quality trading rule.

1. OAC Chapter 3745-5-01 (DD) provides for the definition of a trading ratio. The definition is incomplete. Water quality trade ratios are composed of four parts: delivery and/or location, equivalency, uncertainty, and retirement. The U.S. Environmental Protection Agency has published guidance on pollutant trading that sets out necessary terms and conditions of a trade. *See the Water Quality Trade Policy (2003) and page 30 of the Water Quality Trading Toolkit/or Permit Writers (2007).*

2. OAC Chapter 3745-5-03(A)(4) provides that a credit shall not be used to comply with a limit based on secondary treatment standards or national Effluent Limitations Guidelines or New Source Performance Standards. Ohio should add to this provision that a credit shall not be used to comply with a technology-based effluent limitation that is established based on the best professional judgment of the permit writer pursuant to section 402(a)(1)(B) of the Clean Water Act and 40 C.F.R. § 122.44(a)(1).

3. OAC Chapter 3745-5-08 (A) and (C) provide for the possibility of effluent and ambient monitoring to determine load reductions if methods and procedures are available. EPA regulations at 40 C.F.R. §§ 122.44 (i) and 122.48 provide that permits must require monitoring: (1) to assure compliance with effluent limitations, (2) according to test procedures in 40 C.F.R. part 136, and (3) of a type and at an interval and frequency that are sufficient to be representative of the monitored activity. EPA interprets OAC 3745-5-08(A) to require compliance with these federal regulations to measure pollutant loads and determine compliance of permittees that engage in trading. When a water quality trade is granted for a

point and nonpoint source, EPA recommends ambient monitoring or monitoring of releases to waters from the nonpoint source. Without such monitoring, it is unclear how Ohio Environmental Protection Agency (Ohio EPA) would determine whether the trading goal is met or compliance achieved.

4. OAC Chapter 3745-5-09 (B) (2) and (3) provides for setting pollutant load baselines. EPA understands that all Ohio National Pollutant Discharge Elimination System permits have general effluent limitations that are based on the narrative criteria in Ohio water quality standards. When a pollutant which is proposed for trading is not subject to a numeric water quality-based effluent limit (WQBEL) but is subject to a general effluent limitation, EPA interprets 3745-5-09(B)(I) to establish the general effluent limitation as the baseline. To determine the baseline, the trade proponent or State would likely need to numerically express the applicable general effluent limitation. Moreover, prior to issuing the permit the State would need to establish a numeric WQBEL based on a narrative criterion to the extent that the discharge causes, has a reasonable potential to cause, or contributes to an excursion beyond the criterion. Please see 40 C.F.R. § 122.44(d)(I)(vi). A discharger with a technology-based effluent limit can sell a pollution credit, provided that the seller's effluent limit is protective of any applicable narrative or numeric water quality criterion.

5. OAC Chapter 3745-5-09(C) provides for setting pollutant load baselines for nonpoint sources to participate in a water quality trade program. The provision does not make a distinction between nonpoint sources in pre-Total Maximum Daily Load (TMDL) and TMDL waters. Regardless of the time to comply with a load allocation, trade programs need to provide for the accounting of pollutant load reductions made as part of a TMDL and those that are part of a trade. If Ohio EPA establishes a trade, it should track the load allocation reductions and offsets generated by nonpoint sources participating in a trade program. EPA would not prohibit activities that make progress toward individual load allocations or the portion of the TMDL for that sector concurrent with reductions that are part of a water quality trade. A point source may trade with a nonpoint source prior to the nonpoint source achieving its load allocation. See Section D of the *Water Quality Trade Policy* (2003) and *Water Quality Trading Toolkit/or Permit Writers* (2007).

### **OEPA RESPONSE 3:**

1. OAC Chapter 3745-5-01(DD): Our rules, OAC 3745-5-10, set default trading ratios. The definition included in rule -01(DD) is meant to work within the context of our rules and provide an easy to understand explanation of what a ratio of 1:1 or 2:1 means. We believe it does that. If a trading program proposes to use alternate, technically-based trading ratios derived from project-specific information, we would expect the factors listed to be part of that determination. That information is available in the guidance cited, and we do not believe it needs to be included in our rule.

2. OAC Chapter 3745-5-03(A)(4): We agree that technology based effluent limit established based on the best professional judgment of the permit writer pursuant to section 402(a)(1) of the Clean Water Act and 40 C.F.R. § 122.44(a)(1) should be subject to the same prohibition as limits based on the secondary treatment regulations or the national effluent limitations guidelines and performance standards. We will revise 3745-5-03(A)(4) as follows:

*(4) Not be used to comply with a technology based effluent limit; ~~or based on either the secondary treatment regulations as specified in 40 C.F.R. 133, the national effluent limitations guidelines and performance standards as specified in 40 C.F.R. 405 through 499, or established based on the best professional judgment of the permit writer pursuant to section 402(a)(1) of the Clean Water Act and 40 C.F.R. § 122.44(a)(1), but may be used to comply with the best available demonstrated control technology limits for total nitrogen and total phosphorus specified in rule 3745-1-05, Table 5-1, of the Administrative Code; or~~*

3. OAC Chapter 3745-5-08(A) and (C): Ohio EPA will include monitoring, reporting and any necessary special conditions in NPDES permits so that the Agency can evaluate the compliance status of point sources participating in water quality trading. As is common in water quality trading programs, the pollutant load reductions from nonpoint source BMPs that are used to generate credits will typically be calculated using procedures specified in the rule.

Rule 3745-5-08(C) addresses a situation where a trading program would want to use actual load reduction data instead of calculations to determine the water quality credits generated by a BMP. Collecting adequate ambient data to support this – enough samples collected at appropriate locations under appropriate conditions to establish initial and final conditions – would be a substantial undertaking, which is why calculations are typically used. However, the rules do allow for this option.

Rule 3745-5-14 addresses the minimum ambient monitoring requirements for determining the water quality impacts of a trading program, either positive or negative. A monitoring program developed under this rule would be different than one done in support of 3745-5-08(C).

4. OAC Chapter 3745-5-09(B)(2) and (3): Section (B) of this rule addresses the water quality baseline for a point source, NPDES permit holder located in a pre-TMDL area or in an area that is fully supporting its designated uses. In our rules, water quality baseline is defined as the level of pollutant reduction that must be achieved before water quality credits can be generated.

The rule currently states that in this case the baseline is the lower of: the existing water quality based effluent limit; a technology based performance standard; or the current discharge level. The use of “water quality based effluent limit” was taken from U.S. EPA’s 2003 trading policy. However, U.S. EPA’s 2007 *Water Quality Trading Toolkit for Permit Writers* states that NPDES permit limits provide the baseline for a point source credit seller, without specifying whether the limit is water quality based, technology based or based on BPJ.

Considering this, the Agency is proposing to amend rule 3745-5-09(B) to state that the water quality baseline for an NPDES permit holder located in a pre-TMDL area or in an area that is fully supporting its designated uses is the lower of: the existing NPDES permit limit; a technology based performance standard; or the current discharge level.

As an example of why this makes sense, consider that many NPDES permits for municipal wastewater treatment plants in the Lake Erie basin include a 1.0 mg/l monthly average limit for total phosphorus. While this is not a water quality based effluent limit, it would be an appropriate baseline in a pre-TMDL area or in an area that is fully supporting its designated uses unless the current discharge level was lower.

5. OAC Chapter 3745-5-09(C): Under Ohio's trading rule OAC 3745-5-03(E), nonpoint source load reductions that are funded under a federal grant program (for example, traditional farm bill programs), under a grant from Ohio's 319 program or through Ohio EPA's Water Resource Restoration Sponsor Program (WRRSP) are not eligible to generate water quality credits. There is a high level of participation in these programs in Ohio. We believe that load reduction data from projects funded under these programs should be available in a way so it can be compiled, tracked and go towards meeting the load allocations required in TMDL areas.

Our experience in Ohio is that nonpoint source reduction projects that are implemented as part of a trading program to generate water quality credits are separate from and in addition to projects funded by federal grants, the 319 program or the WRRSP program. Our rules require this. In fact, the only reason they are happening at all is to provide credits for point source credit buyers. In "TMDL accounting", credits from these projects go towards meeting the point source wasteload allocation.

To require that a portion of these load reductions, which are only happening to generate credits for point sources, must go towards meeting the TMDL load allocation is going to make it more difficult for point source – nonpoint source trading programs to be successful.

For example, it's not unusual to see a TMDL recommend a 50 percent reduction, or greater, in nonpoint source loading. If a project is implemented that makes a 100 pound reduction in total phosphorus, and 50 percent of that has to go to meeting the load allocation, and then you apply the 3:1 trading ratio required by Ohio's rules, that 100 pound reduction yields only 16 pounds of credit. That 50 percent discount has a serious impact on the number of projects that must be implemented to produce an adequate supply of credits.

If the desire of U.S. EPA and Ohio EPA is to encourage and support water quality trading so that we can learn if and when it can be an effective tool for improving water quality, that 50 percent discounting of the load reduction isn't helping – especially when the load reduction is only happening to generate credits for point source buyers. It is in addition to projects funded by federal grants, the 319 program or the WRRSP program. Requiring the 50 percent load allocation discounting of these projects ignores the fact that there is a whole set of nonpoint

source projects happening outside of water quality trading that can and should be used to achieve the TMDL load allocation.

Along the same lines, to say that nonpoint source reductions cannot be used to generate credits in a TMDL watershed until the entire load allocation for the watershed is achieved would seem to preclude any point source – nonpoint source trading from happening – at least in the near term. Again, we do not believe this position is one that encourages and supports water quality trading – especially not in a state like Ohio that has adopted rules for trading, that has been serving as an incubator of sorts for trading programs of different sizes, and where current and proposed trading programs are predicated on operating consistent with our trading rules.

Ohio EPA understands the importance of TMDLs, and we work to implement them through our 319 program, our WRRSP program and our NPDES permit program. We believe the flexibility discussed above in implementing the baseline provisions of what is a national policy on water quality trading will support trading in Ohio and will not hinder TMDL implementation. At this time, we are not planning to amend rule 3745-5-09(C).

***End of Response to Comments***