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November 23, 2011

Water Docket

U.S. Environmental Protection Agency

1200 Pennsylvania Avenue, NW

Washington, DC 20460

Via email: OW-Docket@epa.gov

Re: Docket ID No. EPA-HQ-OW-2008-0517

The National Association of Clean Water Agencies (NACWA) appreciates the opportunity to comment on the *Final 2010 Effluent Guidelines Program Plan (Final Plan)*. NACWA's public wastewater treatment agency members treat and reclaim a majority of the wastewater generated each day nationwide. NACWA members operate highly successful pretreatment programs and are actively involved in efforts to reduce the quantities of pollutants that are discharged into the sewer system.

In the *Final Plan*, EPA provides information about its plans to develop pretreatment standards for dental amalgam and shale gas extraction and asks for information on industrial manufacturing of nanosilver. Our comments below focus on these three topics.

Dental Amalgam Pretreatment Standards

NACWA has provided EPA with input on pretreatment standards for dental amalgam on several occasions during the last year and these written comments summarize this input. Although many NACWA members have designed and implemented local programs to require dental amalgam separators at dental offices in their service areas, the Association has some concerns with the implementation of a national pretreatment standard that would affect the more than 100,000 dental offices in the U.S. and nearly all publicly owned treatment works (POTWs) with a pretreatment program.

NACWA's primary concern is the potential burden to the pretreatment programs that may be required to verify compliance for hundreds of dental offices in their service areas. The use of best management practices (BMPs) rather than numeric limits may help to reduce the burden on pretreatment programs. While BMPs will help to reduce the burden on utilities, utilities will still need to take action when BMPs are not followed or are not effective.

The classification of dental offices is another major issue that must be addressed by EPA's proposed rule. NACWA understands that EPA has considered defining a new

category specifically for dentists in the 40 CFR Part 403 General Pretreatment Regulations. This is extremely important, since classification of dental offices as Significant Industrial Users (SIUs) would create an excessive burden on POTWs due to the mandatory sampling and inspection requirements associated with an SIU designation. The Non-Significant Categorical Industrial User (NSCIU) designation from the Pretreatment Streamlining rule would be an improvement over SIU classification, but it still has problems. This is an optional provision from the Pretreatment Streamlining rule that authorized states do not have to adopt, and some states that have adopted the NSCIU provision have placed restrictions on its use. For example, Ohio does not allow the use of the NSCIU criteria for facilities tributary to a combined sewer system. The 100 gallon/day flow limit for NSCIUs would be difficult to measure and verify for dental offices. Also, the requirements to obtain and verify NSCIU status may still be too onerous for the large number of dental facilities in some POTW service areas. A new category that is available to all pretreatment programs and minimizes POTW burden is essential.

NACWA also recommends that the dental amalgam pretreatment standard contain a “grandfathering” provision for dental facilities that have already installed dental amalgam separators. Local POTWs that have already established successful mandatory dental amalgam separator programs or other similar BMP programs should also be allowed to continue using their existing programs.

Shale Gas Extraction

Few NACWA members currently accept wastewater from shale gas extraction operations, but the continued growth of the shale gas extraction industry may lead more POTWs to consider accepting this waste. Although POTWs have the authority to establish local limits for any waste to prevent pass through of pollutants and interference with utility operations, a scientifically and economically sound national pretreatment standard for the shale gas extraction industry may provide added and consistent protection to the industry, POTWs, and centralized waste treatment (CWT) facilities by providing a nationally accepted baseline for treatment of shale gas extraction wastewater. A national pretreatment standard for the shale gas industry should be carefully developed and implemented to avoid unnecessary costs to POTWs, CWT facilities, and the industry. Development of the pretreatment standard should include EPA participation in pilot studies with POTWs to generate appropriate data about the treatment of shale gas extraction wastewater at POTWs. NACWA is willing to work with EPA as the Agency studies the industry and develops a pretreatment standard that is protective and not unnecessarily burdensome.

NACWA testified on this issue during a November 16 hearing of the U.S. House Water Resources and Environment Subcommittee, “Hydraulic Fracturing of Shale Beds: Ensuring Regulatory Approaches that Will Help Protect Jobs and Domestic Energy Production.” This testimony is attached as a part of these comments.

Industrial Manufacturing of Nanosilver

Since certain forms of silver can be toxic to aquatic life and can prevent clean water agencies from recycling their biosolids, pretreatment programs have been specifically designed to ensure that discharges of silver are minimized or eliminated. However, little is known about the fate and transport of nanosilver in the environment and its effects on aquatic life and human health. NACWA and its members have therefore been concerned about the increasing use of nanosilver in commercial products, including washing machines and fabrics, as an antimicrobial pesticide.

NACWA has communicated its concerns about nanosilver to EPA many times (copies of these communications are attached). In 2006, NACWA requested that EPA require pesticide registration for consumer products that by design release silver ions into the sewer system, such as silver-ion releasing washing machines. In response, EPA clarified in a September 21, 2007 *Federal Register* notice that this type of equipment indeed required registration as a pesticide if the manufacturer included antimicrobial claims in product information. Since manufacturers could avoid registration by eliminating antimicrobial claims, NACWA supported a petition from the International Center for Technology Assessment (ICTA) and others on the regulation of nanosilver as a pesticide, requesting that EPA further assess the potential impacts of nanosilver and how the Agency addresses products containing nanosilver. Most recently, NACWA submitted comments to EPA's Office of Pesticide Programs (OPP) earlier this year on the Agency's proposed policy for collecting information about nanoscale materials in pesticide programs, urging the Agency to use an approach that would require data generation about nanomaterials before they are approved for use. NACWA also sent a letter last year recommending more data collection before approval of new nanosilver pesticide products.

A comprehensive approach that addresses all sources of nanosilver is essential to reduce or prevent nanosilver discharges from both industrial manufacturing and use of consumer products. Establishing effluent guidelines for nanosilver manufacturing may help reduce discharges from the producers of nanosilver-containing products, but pretreatment programs have no authority over the domestic use of these products. NACWA urges the Office of Water and OPP to work more closely on the issue of nanosilver to study the environmental and human health impacts of nanosilver and to regulate its use as appropriate. Further cooperation with the Food and Drug Administration (FDA) may also be necessary to address the use of nanosilver in some consumer products.

Thank you for your consideration of our comments on the *Final 2010 Effluent Guidelines Program Plan*. Please contact me at 202/296-9836 or cfinley@nacwa.org if you have any questions.

Sincerely,



Cynthia A. Finley
Director, Regulatory Affairs

Attachments

Testimony of:

Martie Groome

**Laboratory & Industrial Waste Supervisor
City of Greensboro Water Resources Department
Greensboro, North Carolina**

**Pretreatment & Pollution Prevention Committee Vice Chair
National Association of Clean Water Agencies
1816 Jefferson Place, NW
Washington, DC**

**Subcommittee on Water Resources and Environment
House Transportation and Infrastructure Committee
U.S. House of Representatives
November 16, 2011**

Introduction

Chairman Gibbs, Ranking Member Bishop, and members of the Subcommittee, thank you for the opportunity to appear before you today. My name is Martie Groome and I am the Laboratory and Industrial Waste Supervisor for the City of Greensboro Water Resources Department in North Carolina. It is a great privilege to be here to testify on how local clean water agencies implement the National Pretreatment Program and how this program may affect the disposal of wastewater from shale gas extraction.

In addition to my duties at the City of Greensboro, I serve as the Vice Chair of the Pretreatment and Pollution Prevention Committee for the National Association of Clean Water Agencies (NACWA) and it is my pleasure to be testifying on NACWA's behalf today. NACWA's primary mission is to advocate on behalf of the nation's publicly owned wastewater treatment works (POTWs) and the communities and ratepayers they serve. NACWA public agency members collectively treat approximately 80 percent of the nation's wastewater. The employees of these agencies are true environmentalists who ensure that the nation's waters are clean and safe, meeting the strict requirements of the Clean Water Act (CWA).

Background on the National Pretreatment Program

The National Pretreatment Program is often recognized as one of the most successful CWA programs for its role in reducing the amount of pollutants discharged into sewer systems and, as a result, into the nation's waters. Since 1983, the National Pretreatment Program has placed public utilities in the role of local regulator for the industries that discharge wastewater to their sewer systems. It is the local wastewater utilities that are responsible for enforcing both national pretreatment standards and any additional limits developed at the local level needed to protect POTW operations and local water quality.

To prevent potentially harmful pass through of pollutants to the environment or interference with the wastewater treatment process, the CWA requires EPA to establish national pretreatment standards for industrial and commercial facilities that discharge wastewater to the sewer system. Pretreatment standards are currently in place for more than 50 industrial categories, and POTWs regulate over 20,000 significant industrial users. New industries with unique wastewater treatment needs and challenges have arisen consistently since passage of the CWA, and clean water agencies through their implementation of the National Pretreatment Program have maintained a strong record of addressing these new challenges. While NACWA does not have a position on fracking per se, the fracking industry is merely another industry similar to others before it and POTWs will act as public servants in appropriately addressing the discharges from this industry.

It is important to underscore, that even in the absence of national pretreatment standards, POTWs can tailor local limits to the particular needs of the POTW and the industrial user. Local limits may be applied to any pollutants that may pass through or interfere with the treatment process or cause a negative impact on water quality. With local limits, POTWs may regulate discharges from any industrial or commercial facilities, not just the categories regulated by national pretreatment standards.

Regulating Industries through the Pretreatment Program

The pretreatment program has been so successful because it gives local POTWs the authority to control the pollutants in wastewater from any industry, using both national pretreatment standards and local limits. National pretreatment standards have the benefit of leveling the nationwide playing field for discharges to sewer systems, preventing industries subject to categorical standards from locating in a municipality that might allow more pollutant discharge than another. However, national pretreatment standards can, at times, be stricter than is necessary to protect a particular POTW and the waters they discharge into. Implementing national pretreatment standards can also require a significant commitment of resources by the POTW. Any national pretreatment standards for the fracking industry should be carefully developed and implemented to avoid unnecessary costs to the public clean water agency and its industrial customers.

EPA has wisely made the decision to take time to study the various elements relevant to developing pretreatment standards and it is NACWA's hope that this will yield a scientifically and economically sound set of standards. It is equally critical that the public understand that any POTWs that accept fracking wastewater during this interim phase must meet their permit requirements and set local limits for the industrial user if necessary. POTWs can make sound technical decisions about whether or not to accept wastewater from a particular industry by conducting research and testing to determine how much of a pollutant their treatment facility can safely handle. In many cases, local POTWs have effectively regulated industries for years before a national pretreatment standard was developed by EPA. If a POTW does not have the capacity to establish such local standards or fails to develop the necessary limits or controls to prevent pass through of pollutants or treatment plant interference, then the POTW should not accept this waste.

Application of the Pretreatment Program to Shale Gas Extraction

EPA's announcement that it will develop a national pretreatment standard for the shale gas extraction industry does not prevent POTWs from accepting hydraulic fracturing wastewater now after working with their state permitting authority to ensure the protectiveness of this practice. POTWs also have the authority to stop taking an industry's wastewater immediately if it causes any problems with the wastewater treatment process. Discharge to a POTW is only one of several options for the shale gas extraction industry. If a national pretreatment standard can ensure that such discharges to a POTW are safe, it may become a more commonly used option.

Conclusion

NACWA does not have a position regarding the use of fracking to meet the nation's growing energy needs. A scientifically and economically sound national pretreatment standard for the shale gas extraction industry, however, may provide protection to both the industry and to POTWs by providing a nationally accepted baseline for treatment of hydraulic fracturing wastewater. NACWA intends to work with EPA as the Agency studies the industry and develops a pretreatment standard that is protective and not unnecessarily burdensome or onerous.

Thank you for the opportunity to appear before you today, I look forward to any questions the Subcommittee may have regarding my testimony.

PRESIDENT
Donnie R. Wheeler
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February 14, 2006

Stephen L. Johnson
Administrator
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

Dear Administrator Johnson:

Request to Require Registration of Silver Ion Pesticide Products

The National Association of Clean Water Agencies (NACWA)¹ respectfully requests that the U.S. Environmental Protection Agency (EPA) review and consider registering as pesticides consumer products that by design contain contaminants which can end up in our sewer systems and waterways. The latest example of such a product is a washing machine that uses silver ions as a disinfectant. NACWA's member agencies are very concerned about the water quality impacts from the discharge of silver ions from this new machine as well as from other residential pesticide uses.

NACWA members have noted the increased marketing of household products that contain pesticides, such as mattress liners and clothing impregnated with permethrin. Products such as these will generate discharges of pesticides to the sewer system when they are laundered. Because of the adverse environmental impacts that can occur from these releases, NACWA believes these products should be registered as pesticides under the Federal Insecticide, Fungicide, and Rodenticide ACT (FIFRA) or some other relevant authority to guarantee that their impacts receive a thorough review. These concerns have been expressed in previous letters from NACWA.

The new washing machine is now being marketed under manufacturer claims that it achieves a 99.99 percent sterilization of bacteria and provides a silver ion residual on clothing that is effective up to 30 days. The washing machine is specifically designed to release silver ions during each wash cycle. These silver ions will then be discharged into sanitary sewer systems when the clothing is washed.

Silver is highly toxic to aquatic life at low concentrations and can bioaccumulate in some aquatic organisms, such as clams. Due to concerns about toxicity and

¹ Founded in 1970, NACWA represents the interests of nearly 300 of the nation's publicly owned treatment works. NACWA members serve the majority of the sewered population in the United States and collectively treat and reclaim over 18 billion gallons of wastewater every day.

strict silver effluent limits in discharge permits, publicly owned wastewater treatment works (POTWs) have implemented pollution prevention programs to identify and reduce silver discharges to sanitary sewer systems. These programs have been very successful in reducing POTW influent and effluent silver concentrations. However, widespread use of household products that release silver ions into sanitary sewer systems could greatly increase silver concentrations in POTW influents and effluents, leading to adverse effects on our nation's waterways.

POTWs are required by EPA and States to monitor their effluent for whole effluent toxicity (WET) and comply with strict toxicity limits in their National Pollutant Discharge Elimination System (NPDES) permits. The addition of this toxic metal will jeopardize their ability to meet these WET limits. While POTWs have the authority to regulate industrial and commercial sources of silver and other toxic pollutants, they have little or no control over the discharge of pollutants from the thousands of households they serve. POTWs are ultimately subject to monetary penalties for the violations of their discharge permits that could result from the silver discharges from such residential applications.

It is distressing to POTWs to observe the increasing prevalence of household products that use pesticides for general antimicrobial purposes. POTWs are proud of their history of taking effective actions that reduce discharges of toxic pollutants to the environment. Silver is a toxic element that cannot degrade in the environment and is registered as a pesticide in numerous products. To allow the unrestricted use of a product that intentionally releases silver into the environment would be an irresponsible neglect of the principles of environmental sustainability that should strongly influence such decisions.

In summary, NACWA recommends that EPA require the registration of products that use silver ions as disinfectants, including washing machines. We also ask, that during the registration process, EPA obtain data on the silver ion concentrations and wash cycle volumes used in such washing machines. This data should be used to impose necessary restrictions to ensure that water quality standards are not exceeded. In addition, ongoing monitoring and reporting of unit sales and silver releases should be required to determine whether registration should be continued or canceled.

Thank you for your consideration of this matter. If you have any questions or need more information, please contact Susie Bruninga, NACWA Manager of Regulatory Affairs, at (202) 833-3280 or at sbruninga@nacwa.org.

Sincerely,

A handwritten signature in black ink, appearing to read "K Kirk".

Ken Kirk
Executive Director

Cc: Benjamin Grumbles, Assistant Administrator, EPA Office of Water
Susan B. Hazen, Acting Assistant Administrator, EPA Office of Prevention, Pesticides, and Toxic Substances
Jim Jones, Director, EPA Office of Pesticides Programs
Jim Hanlon, Director, EPA Office of Wastewater Management

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Los Angeles, CA

EXECUTIVE DIRECTOR

Ken Kirk

March 20, 2009

Attn: Docket ID EPA-HQ-OPP-2008-0650

Office of Pesticide Programs Regulatory Public Docket

Environmental Protection Agency

1200 Pennsylvania Ave., NW

Washington, DC 20460-0001

Submitted via: www.regulations.gov

Dear Sir or Madam:

These comments are submitted on behalf of the National Association of Clean Water Agencies (NACWA) regarding the "Petition for Rulemaking Requesting EPA Regulate Nano-Silver Products as Pesticides" filed by the International Center for Technology Assessment (ICTA) and others. NACWA represents the interests of nearly 300 publicly owned wastewater treatment works (POTWs) nationwide. After decades of controlling the discharge of toxic pollutants – including silver – to the sewer system, NACWA members are concerned that the increasing use of nanoscale silver may have adverse effects on the wastewater treatment process and the environment. NACWA supports the petition's request that EPA further assess the potential impacts of nanoscale silver and strengthen how the Agency addresses products with clear pesticidal properties in the registration process.

POTWs have developed and implemented sophisticated pretreatment programs to prevent the discharge of toxic pollutants to the sewer system from industrial and commercial sources. Since certain forms of silver can be toxic to aquatic life and can prevent clean water agencies from recycling their biosolids, pretreatment programs have been specifically designed to ensure that discharges of silver particles are minimized or eliminated. Pretreatment programs have no authority to control discharges of pollutants from domestic sources, however, and the recent proliferation of consumer products containing silver (e.g., silver treated socks, washing machines that discharge silver ions, and silver-coated food containers) jeopardizes the efforts of clean water agencies to keep silver out of the aquatic environment. Moreover, little is known about the environmental impacts of these nanoscale silver products: they could add to the silver loads that we already know are toxic, they could have completely different impacts due to the unique nature of their "nanoscale" size, or they could be relatively harmless. EPA should therefore study the potential environmental effects of nanoscale silver, as requested in the ICTA petition, and also determine how nanoscale silver affects the wastewater treatment process.

In 2006, NACWA requested that EPA require pesticide registration for consumer products that by design release contaminants into the sewer system, such as washing machines that release silver ions for disinfection purposes. EPA clarified its position on this type of ion-generating equipment in a September 21, 2007, *Federal Register* notice, stating that this equipment is regulated as a pesticide and requires registration. While this notice was a positive step toward controlling the release of nanoscale silver into the sewer system, manufacturers may still try to avoid pesticide classification and registration by eliminating explicit antimicrobial claims from product information. NACWA agrees with the ICTA petition's request that EPA close this regulatory gap for nanoscale silver and silver ion-generating products. EPA should clarify that the pesticidal intent and public health claims of products can be implicit, even if they are not specifically labeled as antimicrobials, and registration as a pesticide cannot be avoided by simply removing explicit claims from product labels and advertising materials.

NACWA appreciates the opportunity to comment on this petition. If you have any questions, please contact me at 202/296-9836 or cfinley@nacwa.org.

Sincerely,

A handwritten signature in cursive script, reading "Cynthia A. Finley".

Cynthia A. Finley
Director, Regulatory Affairs

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Saint Louis, MO

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Milwaukee Metropolitan

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Milwaukee, WI

EXECUTIVE DIRECTOR

Ken Kirk

September 9, 2010

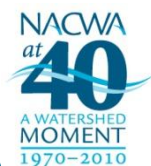
Office of Pesticide Programs
U.S. Environmental Protection Agency
1200 Pennsylvania Ave, NW
Washington, DC 20460
Via Regulations.gov

RE: Docket ID No. EPA-HQ-OPP-2009-1012; Registration of a new nanosilver active ingredient intended for use as a preservative in textile products

The National Association of Clean Water Agencies (NACWA) appreciates the opportunity to comment on EPA's proposed conditional registration of a nanosilver active ingredient – HeiQ AGS-20 – that will be used as a preservative in textiles. NACWA represents the interests of nearly 300 public clean water agencies nationwide. After decades of controlling the discharge of toxic pollutants – including silver – to the sewer system, NACWA members are concerned that the increasing use of nanoscale silver in commercial and consumer products may have adverse effects on the wastewater treatment process and the environment. NACWA's comments below regarding the benefits of these products to the public and the assumption that they will not cause unreasonable adverse effects, though in reference to the HeiQ product and the current registration decision, apply equally to all nanosilver uses in textiles and the lack of available information on their potential environmental impacts given the unique properties of nanosilver.

Wastewater treatment plants have developed and implemented sophisticated pretreatment programs to prevent the discharge of toxic pollutants to the sewer system from industrial and commercial sources. Since certain forms of silver can be toxic to aquatic life and can prevent utilities from recycling their sludge or biosolids, pretreatment programs have been specifically designed to ensure that discharges of silver particles are minimized or eliminated. Treatment plants, however, do not have authority to control discharges of pollutants from domestic sources and the recent proliferation of consumer products containing silver jeopardizes the success of these pretreatment efforts.

The environmental assessments conducted for EPA's registration process, though in need of revision, are the only safeguard ensuring that pesticidal products will not have a negative impact on the environment. Unfortunately, since this conditional



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registration was not released in the *Federal Register*, many stakeholders, including many wastewater treatment plants that could be impacted by this product, will not have an opportunity to provide comments. NACWA only learned of the proposed action through an article in the trade press. Additional outreach to organizations that have commented on this issue in the past or that represent potentially impacted entities could have ensured a broader, more robust review process.

EPA is proposing to grant a conditional registration for HeiQ AGS-20, noting that not doing so would create an unfair market disadvantage because similar products are already being sold. According to the Agency's own records, similar silver-containing products were approved without knowing that the silver was at the nano-scale and without specifically assessing any unique risks posed by the nanosilver. While EPA is requiring the manufacturer, HeiQ, to conduct more studies, and the Agency is planning to ask for more data from those products already on the market, it is planning to allow the use of HeiQ AGS-20 while those studies are being conducted. EPA notes that use of this product is in the public interest and that use of the product during the period that the new data are being developed and reviewed by the Agency will not cause unreasonable adverse impacts.

Use of the pesticide is in the public interest

EPA believes that the use of the HeiQ nanosilver product should result in a lower potential environmental exposure to silver as compared to conventional silver-based pesticides. However, given that the proposed decision document also indicates that silver ionization is greater for nanoscale particles due to an increase in surface area, the supposition of a lower environmental silver exposure resulting from nanosilver products may be false. No studies have been provided comparing the environmental exposure resulting from conventional silver-based pesticides and nanosilver pesticides, so there are no data to support the hypothesis that the overall environmental exposure is lower with nanoscale silver products.

The consumer benefit highlighted is the prolonged antimicrobial activity of silver nanoparticles relative to other silver-based pesticides, but the studies provided were insufficient to effectively assess the leachability of the nanosilver and did not reflect the fact that the size of the silver particle can impact its properties. In fact, EPA's FIFRA Scientific Advisory Panel has noted that a particle's size substantially impacts its properties, such as rate and concentration of silver ion release and reactivity. NACWA believes EPA has insufficient information to declare that a particular nanosilver product has added value over other silver-based pesticides.

EPA's primary reason for the conditional approval appears to be its concerns over market fairness and the fact that other competing products are already on the market. NACWA believes that EPA should instead focus its efforts on existing products and make sure there are sufficient data to determine their potential impacts.

Use of the pesticide during the period that the newly required data is being developed and reviewed by the Agency will not cause unreasonable adverse effects

EPA supports its proposal for conditional registration by indicating that this type of approval is defensible as long as the new product is similar to products currently approved and that any differences that may exist are not likely to cause unreasonable adverse effect on the environment. None of the currently approved products, however, have provided the data necessary to conduct a sound environmental risk assessment for nanosilver. These products were approved for use before EPA's Scientific Advisory Panel recommended that the Agency handle nanosilver ingredients differently from conventional silver pesticides. NACWA understands that HeiQ submitted its application for registration in good faith, but the Agency's position on nanosilver has

subsequently changed. The conditional approval would be the first registration approval for a nanosilver pesticide and EPA must not circumvent the recommendations of its own Scientific Advisory Panel. If the Agency is concerned about creating an unfair market advantage, it should instead focus on getting the necessary information from those products that are already being sold rather than continuing to approve products on which it does not have sufficient information.

In terms of EPA's assessment of the potential for "unreasonable adverse effects", the environmental exposure for the conditional approval was calculated using the Down-the-Drain model and assumed a wastewater treatment removal efficiency of 88%. This removal rate was not based on the removal of nanosized materials and, therefore, such a high rate of removal cannot be assumed. The wastewater treatment process is typically far more effective at removing larger particles than smaller ones and so it is quite likely that there will be considerable pass through of small materials such as silver nanoparticles.

The Biotic Ligand Model (BLM) was used to evaluate the potential for in-stream toxicity from bioavailable silver. The predictions based on this model depend heavily on accurate receiving stream concentrations. These concentrations were derived from the Down-the Drain model output which was potentially flawed due to a likely overestimate of removal efficiency. The models' outputs are directly linked to the validity of their inputs. The removal efficiency must be characterized based on nanosilver and not ionic silver.

Based on the model output, EPA made the determination that the level of environmental exposure was unlikely to cause environmental harm. However, EPA recognizes that neither model considers the additive effect of other silver nanoparticles or silver containing products on the market. In addition, the *Daphnia magna* toxicity values which were used to evaluate the potential for in-stream toxicity, were based on ionic silver. This is problematic as the FIFRA Scientific Advisory Panel stated: "...nanomaterials can deliver ions directly to specific tissues, cell membranes and inside cells – places where other forms of silver cannot reach. Therefore, the hazard profile of silver nanomaterials may differ from other forms of silver." This, coupled with the EPA statement that "...existing data seem to indicate that [nanosilver's] effects are different and/or more severe than for silver", does not corroborate EPA's expectation of "no unreasonable adverse effects" associated with approval for this product.

Additional Comments

From a wastewater treatment perspective, the conditional approval of another nanosilver product is discouraging. Wastewater utilities have been working diligently to reduce the input of silver into their wastestream in order to limit its presence in biosolids and wastewater effluent. Though strict pretreatment programs can limit the amount of silver entering the wastestream, treatment plants do not have the authority or capability to regulate residential waste which is likely to be a large contributor of nanosilver materials.

In addition, the work by Choi and Hu (2008) and Choi et al. (2008), which indicates that silver nanoparticles can have an increased inhibitory effect on the bacterial community vital to the wastewater nutrient removal process, is very concerning. With strict nutrient limitations imposed by National Pollutant Discharge Elimination System (NPDES) permits, there is little tolerance for even minor upsets to the microbial community present within the wastewater treatment plants. In addition to the other data requirements, EPA must require any nanosilver pesticide product to be evaluated to assess its potential for nitrification inhibition at the wastewater treatment plant. In addition, it is not clear if a measure of removal efficiency during the wastewater treatment process is a component of the Tier 2 study requirements. Information on treatability is

vital to characterizing environmental exposure in the Down-the-Drain model and must be a requirement of any Tier 2 data collection efforts.

It is imperative that EPA consider this approval with great caution. Silver is one of the most toxic heavy metals and any decision that may result in its increased environmental exposure must be made with the right scientific data in hand. As far as NACWA has been able to determine, this is not a scenario in which conditional approval is being granted pending the approval of a few additional studies. In this case, there are no current data that can be used to support a conclusion of “no unreasonable adverse effects” for the unique properties of nanosilver. EPA should instead work, to the extent of its authority, to limit the use of the other nanosilver products that have been unknowingly registered until the necessary data are provided.

Again, NACWA appreciates the opportunity to comment on this conditional approval and the Agency’s approach to assessing nanosilver products more broadly. NACWA feels strongly that inadequate public notice has been provided and that insufficient data have been collected to support EPA’s approval at this time. Please contact me at chornback@nacwa.org or 202/833-9106 if you would like to discuss these comments further.

Sincerely,



Chris Hornback
Senior Director, Regulatory Affairs

REFERENCES

Choi, O. and Z. Hu (2008). “Size dependent and reactive oxygen species related nanosilver toxicity to nitrifying bacteria.” *Environmental Science and Technology* 42(12):4583-4588.

Choi, O., K.K. Deng, et al. (2008). “The inhibitory effects of silver nanoparticles, silver ions, and silver chloride colloids on microbial growth.” *Water Research* 42:2066-2074.

EXECUTIVE COMMITTEE

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Sewer District

Saint Louis, MO

EXECUTIVE DIRECTOR

Ken Kirk

August 17, 2011

Office of Pesticide Programs

U.S. Environmental Protection Agency

1200 Pennsylvania Avenue, NW

Washington, D.C. 20406-0001

Submitted via www.Regulations.gov

Re: Docket ID No. EPA-HQ-OPP-2010-0197; Policies Concerning Products Containing Nanoscale Materials

The National Association of Clean Water Agencies (NACWA) appreciates the opportunity to comment on the U.S. Environmental Protection Agency's (EPA) proposed policy for addressing nanoscale materials in pesticide products. NACWA represents the interests of nearly 300 publicly owned wastewater treatment works (POTWs), which treat and reclaim the majority of the wastewater generated each day nationwide.

After decades of controlling the discharge of toxic pollutants to the sewer system, NACWA members are concerned that the increasing use of nanoscale materials may have adverse effects on the wastewater treatment process and the environment. NACWA believes that EPA's preferred information collection policy for nanoscale materials would not give the Agency the essential capability to identify products containing nanoparticles or to evaluate the impacts of the nanoparticles on water quality and POTW operations.

POTWs have developed and implemented sophisticated pretreatment programs to prevent the discharge of toxic pollutants to the sewer system from industrial and commercial sources. However, POTWs have no authority to control discharges of pollutants from residential sources, and any pesticide products containing nanoscale materials that are used in homes may end up in the sewer system. In addition, products used outdoors may wash off into combined sewer systems or directly into waterways. It is therefore essential that EPA require data generation before pesticides – including those containing nanoparticles – are approved for use to ensure that there are no negative impacts on water quality and POTW operations. The potential costs and additional taxpayer burden of mitigating these impacts could be significantly greater than the costs of generating data prior to registration of products containing nanoparticles.

NACWA agrees with EPA that “there is a growing body of scientific evidence showing that differences can exist between nanoscale material(s) and their non- nanoscale counterpart(s).” Since little is known about the environmental impacts of nanoscale materials used in various products, information on the effects of the nanoscale materials on the environment and the wastewater treatment process should be a vital component of approving the use of these materials in any products.

NACWA recommends that EPA use the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) section 3(c)(2)(B) approach, which involves obtaining information using Data Call-In notices (DCIs), to collect data about nanoscale materials. The DCI approach would allow EPA to require that manufacturers generate all of the new data required to ensure that the environmental impacts of the nanoscale materials are fully understood. The benefits of this data and the protection of wastewater treatment and the environment outweigh the initial administrative burden that this approach will place on EPA and product manufacturers from issuing and responding to DCIs. A phased implementation of this approach is reasonable, and NACWA recommends that products containing the types of nanoscale materials that have already been shown to potentially harm aquatic life and/or wastewater treatment, such as nanosilver, nanocopper, and carbon nanotubes, should be prioritized.

EPA states in its proposed policy that the Agency prefers using section 6(a)(2) of FIFRA. This approach, however, would only require that manufacturers submit data that they have already voluntarily generated. It would not allow EPA to identify products containing nanoparticles or require the generation of data that is needed to evaluate environmental risks. NACWA agrees with EPA that the alternative approach of revising the pesticide data regulations in 40 CFR Parts 158 and 161 would unacceptably delay generation of the necessary information. With the recent proliferation of products containing nanoscale materials, EPA must evaluate the impacts of nanoscale materials on POTW operations in a timely manner, since interference with wastewater treatment operations and associated permit violations may be very expensive for utilities.

Furthermore, NACWA asks EPA to obtain all necessary data for complete environmental risk evaluation prior to product registration, rather than using conditional registrations. If EPA does use conditional registration while waiting for appropriate data generation, appropriate limits, such as maximum quantity sold, should be established for products that are most likely to be washed into sewers, storm drains, or waterways. EPA’s review of nanoscale materials should consider not only the nanoscale materials themselves, but also the final product that is sold to the consumer, such as treated clothing or food containers, and the potential risks associated with how the nanoscale materials will disperse from these products into wastewater or the environment.

NACWA recommends that EPA proceed with appropriate evaluation of nanoscale materials using the DCI approach and appreciates your consideration of these comments. Please contact me at chornback@nacwa.org or 202/833-9106 if you would like to discuss these comments further.

Sincerely,



Chris Hornback
Senior Director, Regulatory Affairs

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