



# The Western Coalition of Arid States

## WESTCAS

July 23, 2010

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Mr. Peter Silva  
Assistant Administrator  
Office of Water  
U. S. Environmental Protection Agency  
Ariel Rios Building  
1200 Pennsylvania Avenue (4101M)  
Washington, D. C. 20460

Dear Mr. Silva:

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The Western Coalition of Arid States (WESTCAS) is an organization of over 100 water resource agencies, consulting engineering firms and other water industry professionals from California, Arizona, New Mexico, Texas, Colorado, and Nevada, whose focus is providing sustainable water resources for the arid west. Our members deal every day with a growing population, decreasing water supplies, and all of the complex regulatory requirements that are inherent in operating a western water agency in the 21st century. The Arid west has a unique ecosystem. Many months have no rain, and annual precipitation is often less than 12 inches. Consequently, it is *essential* to protect both the quantity and quality of water supplies.

The western arid states have ecosystems which are very different from other parts of the country. Water bodies in the arid states are made up of intermittent streams, ephemeral streams, effluent dependent waters, dry stream beds and a few natural large flowing rivers and lakes. To support development of the west, the Western states needed to optimize and maintain water sources by building dams and reservoirs and means for moving water from one area to another. Now with limited sources of water stressed by continued growth in water demands and drought, western states have placed a great emphasis on conservation, planning, building and distributing this great resource. As regulations for water tighten and the definition of regulated waterbodies is broadened, it becomes almost impossible to meet and sustain both water supply and water quality in the western states.

WESTCAS is writing this letter to address its members' concerns regarding the *Petition for Rulemaking on Secondary Treatment Standards for Nutrient Removal*. WESTCAS members have read and strongly agree with the position from the National Association of Clean Water Agencies (NACWA) in their latest letter to EPA dated June 8, 2010. We urge you to maintain the definition of Secondary Treatment and not to include "nutrients" in that



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definition. We would like to express our arid west perspective on the comments provided by NACWA. Our comments are briefly summarized below and are discussed in greater detail with technical basis and rationale in the remainder of this letter:

- Decreasing nutrients in discharges from point sources will not necessarily improve water quality because the contribution of nutrients from nonpoint sources overwhelm the point source contributions.
- The impacts of nutrients on ephemeral aquatic communities have not been characterized, thus impairment cannot be determined

The cost of removing the remaining small increment of nutrients at publicly owned treatment works will be exponentially greater than the costs of achieving traditional secondary treatment, with little added environmental benefit

### **Relative Contribution of Nutrients**

We are all concerned with impacts of pollutants on waters of the United States. However due to great strides made since the passing of the Clean Water Act many of the broad sweeping pollutant issues have been addressed by the NPDES Permit Program for Domestic Wastewater Treatment Plants (POTWs) and the Industrial Pretreatment regulations. It is time to look at the issue holistically, instead of casting more regulatory nets over all POTWs on issues such as nutrients, to.

United States Geological Survey (USGS) is a valuable source for studies on nutrients; both on the *sources* of nutrients and *fate and transport* of nutrients. Their study on ***“The USGS National Water Quality Assessment Program Advances in Understanding Sources, Transport, and the Biological Effects of Nutrients from Headwater Streams to Coastal Rivers”*** used monitoring-based observations and watershed models to evaluate nutrients and biological conditions in streams, looking at effects from both human activities and natural processes. The highest concentrations of nitrogen come from non-point source agricultural runoff. The highest phosphorous concentrations come from both agricultural and non-point source urban runoff. Studies provided from a variety of sources support this conclusion, including studies done or directed by the United State Environmental Protection Agency (EPA).

In addition to point and nonpoint sources, atmospheric deposition is another cause of water pollution. With nonpoint sources now considered the highest contributors to water pollution it means that very little reduction of nitrogen will result from the imposition of additional treatment technology requirements on domestic wastewater treatment plants. Phosphorous can also be removed by treatment processes, but again, EPA will not resolve the “nutrients” problem by simply changing the definition of Secondary Treatment to include “nutrients”.

WESTCAS agrees with NACWA that we should no longer continue to depend on the existing menu of approaches being used under the Clean Water Act. Relying on a technology-based approach which requires the same level of control regardless of



receiving water quality will not achieve the goals that EPA is striving for in the 21<sup>st</sup> century. Costs imposed should result in commensurate environmental benefits.

## **Impairment Determination**

WESTCAS as an organization addresses the numerous issues related to the variability of precipitation from rainfall and snow melt in the arid west. It is particularly important to look at the function of water bodies in this area. In 1995 the **Arid West Water Quality Research Project** was completed backed by partial funding from EPA. This detailed study was established under an Assistance Agreement between the EPA and Pima County Wastewater Management Department (now the Pima County Regional Wastewater Reclamation Department - PCRWRD), Tucson, Arizona. The agreement was a significant opportunity for western water resource stakeholders to (1) work cooperatively to conduct scientific research to recommend appropriate water quality criteria, standards and uses for effluent-dependent and ephemeral waters in the arid and semi-arid regions of the West; and (2) improve the scientific basis for regulating wastewater and storm water discharges in the arid West.

This research project provided details of fish and macroinvertebrate, microinvertebrate and vertebrate biota populations found in the arid west streams. The purpose of the study was to develop data and evaluation that would improve the understanding of what needs to be protected in ephemeral streams, desert washes, and arroyos of the Southwest and subsequently the water quality criteria to protect them. The duration of flow is extremely important, as well as proximity to permanent waters. Soil conditions are important, as they dictate the ability of the watershed to detain runoff and extend the time of flowing water. The life history strategies of organisms are important in the opportunistic use of residual pools. During the conduct of the Research Project, sampling was done in New Mexico, Colorado, Arizona and Wyoming.

Sampling took place in watersheds that included a mix of ephemeral environments. The project team looked for watersheds that included both small, isolated dry washes and ephemeral streams and larger ephemeral channels with upstream sources of perennial or intermittent water. This latter physical setting is most similar to the characteristics observed at arid region municipal discharges, where a storm water or effluent stream enters a dry wash that is part of a larger river that may have upstream flow.

In these types of water bodies, flow variations were extreme after storm events. Some stream flows diminished in hours, others after a few days and some of the larger ones were still flowing a week after the storm. Sandy vs. clay soils around the area had major impacts. The results of sampling showed that biological taxa were variable at all of the locations. The resident taxa list for ephemeral streams differs from the national database. The resident taxa list even differs from the effluent-dominate/dependent stream database. The study suggested standards for ephemeral streams would probably be substantially different from national, state, and even site-specific standards for sites with perennial flow.



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The results from this lengthy and important research indicate that applying technology-based nutrient limits to domestic wastewater treatment plants may not provide the results EPA is seeking.

WESTCAS agrees with NACWA, regarding the Petitioners' statement, that addressing nutrient pollution on a case-by-case basis has "failed." The basic problem lies in the ability to identify an adequate scientific approach to determine impairment. To date, none has been developed. The Science Advisory Board (SAB) report has made it clear that the EPA approach is one tool in a tool box but should not be used as a means to an end. It is extremely important that the right tool is used for the job.

### **Cost**

Although cost should not be the driving factor for determining a regulatory standard, it is indeed a high priority at a time when the economy of the nation is in crisis. Despite the public legitimately demanding the highest quality water and wastewater service, this very same public bears 100% of this cost. Today's economy is struggling with serious disasters, including the Gulf oil spill, hurricanes and other natural disasters that require assistance in rebuilding communities, and crumbling infrastructures - from highways and bridges to wastewater collection systems and water treatment upgrades. Health care costs are staggering and that crisis still sits without resolution. The 10% unemployment figures, staggering national debt and education are also in the forefront of public concerns.

Without a sound scientific approach to identify waters that are impaired due to nutrients, it is fiscally irresponsible to move forward with a broad sweeping regulation. Technology alone cannot meet EPA's goal of substantially reducing the number of water bodies that are impaired because of nutrients. Additional approaches will need to be developed, including those incorporating natural processes such as constructed wetlands and low tech alternatives like swales and retention basins, which may be more successful and cost effective at removing nutrients, rather than adding additional processes at treatment plants.

Much progress has been made in cleaning up the nations waters since the Clean Water Act was passed, much of it due to the installation and improvement of domestic wastewater treatment plants. However, the cost of removing the remaining small increment of nutrients at these plants will be exponentially greater than the costs of achieving traditional secondary treatment (i.e. reduction of Biochemical Oxygen Demand and Total Suspended Solids). It is critical that the nutrient issue be viewed and evaluated in a commonsense and rational approach. It is unreasonable to expect the public to pay for more treatment systems which will have little supplemental environmental benefit.

WESTCAS members agree that it is time to utilize the "numerous available ways to improve efficiencies at the Nation's treatment plants and to look for new and innovative



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ways to offset our energy use and minimize our broader environmental footprint. “ It is important that we collectively determine better approaches to measure and determine impairment from nutrients and develop effective practices to reduce the nutrients that are truly causing water quality problems.

NACWA has stated in its letter that it is leading a group of stakeholders — including some of the organizations that recently wrote to you claiming that NACWA is “shirking responsibility for nutrient pollution” — to develop a set of principles for change that are designed to lead to the creation of an integrated approach to water quality. WESTCAS is willing and available to participate in a combined effort with NACWA, petitioners, technical specialists, EPA and others to work toward a resolution.

Sincerely,



Robert A. Hollander  
President