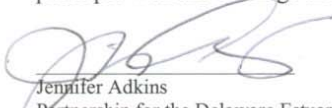



FINAL REPORT
Christina Basin Pollution Control Strategy
November 2007

This report was prepared and approved by the Christina Basin Tributary Action Team. The members of the Christina Basin Tributary Action Team are in general concurrence and agree in principle with the findings and recommendations of the report attested by:


Jennifer Adkins
Partnership for the Delaware Estuary

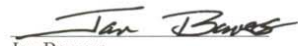

Lorraine Fleming
Christina Conservancy



Jessie Benjamin
New Castle Conservation District


David Fournier
United Water Delaware

Andrea Bennett
USEPA Region 3


Jennifer Gochenaur
Delaware Nature Society


Jan Bowers
Chester County Water Resources Authority



John Harrod
Delaware Nature Society


Randy Cole
DelDOT

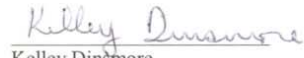

George Haggerty
Department of Land Use, New Castle County


Martha Corrozi
IPA-WRA, University of Delaware


Michael Harris
Department of Special Services, New Castle County


Sarah Deacle
Delaware Center for Horticulture


John Hayes
Delaware Rural Water Association

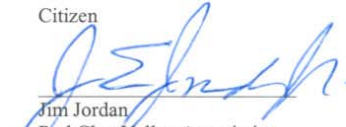

Kelley Dinsmore
City of Newark

Jerry Heisler
Reybold Group

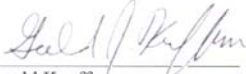
Sean Duffy
Public Works Department, City of Wilmington

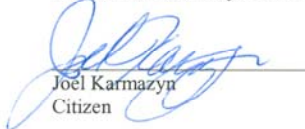
Jason Jones
Citizen


MaryAnne Edwards
Citizen



Jim Jordan
Red Clay Valley Association
Brandywine Valley Association

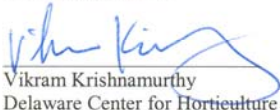
Francis Julian
Homebuilders Association of Delaware


Gerald Kauffman
IPA-WRA, University of Delaware


Joel Karmazyn
Citizen

Jim King
Citizen

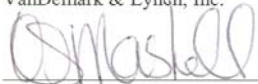

Carl Koch
Greeley and Hansen


Vikram Krishnamurthy
Delaware Center for Horticulture and
CEEP, University of Delaware

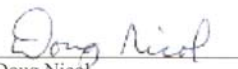
Stephen Lefebvre
Homebuilders Association of Delaware

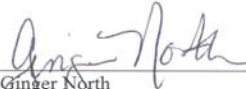

Robert Lonsdorf
Brandywine Conservancy



Molly Mackil
VanDemark & Lynch, Inc.



Karen Marshal
Chester County Parks and Recreation


Stacey McNatt
Department of Land Use, New Castle County

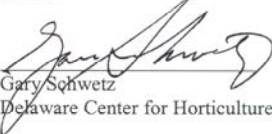

Doug Nicol
Citrosuco


Ginger North
Delaware Nature Society


Bryan Pariseault
URS Corporation

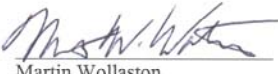

Nancy Parker
Artesian Water Company

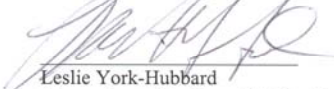
Bart Ruitter
DuPont


Gary Schwetz
Delaware Center for Horticulture

Linda Stapleford
White Clay Creek Watershed Management
Committee

John Stefferud
Natural Lands Trust


Martin Wollaston
IPA-WRA, University of Delaware


Leslie York-Hubbard
Occupational Health and Safety, University of
Delaware

Resource Experts

Numerous DNREC employees from various divisions and branches served as valuable sources of information and data throughout this process. The following individuals are considered resource experts:

- Kathy Bunting-Howarth, Division of Water Resources, DNREC
- Kevin Donnelly, Division of Water Resources, DNREC
- Lyle Jones, Watershed Assessment Section, Division of Water Resources, DNREC
- Anne Mundel, Source Water Assessment, DNREC
- Frank Piorko, Division of Soil and Water Conservation, DNREC
- Morgan Price, Site Investigation and Restoration, Division of Air and Waste Management, DNREC
- Alex Rittberg, Tank Management Branch, Division of Air and Waste Management, DNREC
- John Schneider, Watershed Assessment Section, Division of Water Resources, DNREC
- Laura Whalen, Watershed Assessment Section, Division of Water Resources, DNREC

November 5, 2007

Dear Secretary Hughes:

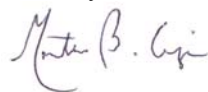
The Christina Basin is a unique watershed with headwaters in Pennsylvania and Maryland. It is the only source of public surface water supply in Delaware and the habitat of the only six trout streams in Delaware. In April 2005 the United States Environmental Protection Agency (USEPA) established the Christina Basin Total Maximum Daily Loads (TMDLs) for nutrients and bacteria to improve the water quality of the rivers and tributaries that comprise the Delaware portion of the Christina Basin. The intent of the Christina Basin Pollution Control Strategy (PCS) is to recommend practices to achieve the load reductions set forth in the USEPA's TMDLs for the Delaware portion of the basin. On behalf of the Christina Basin Tributary Action Team, I propose for your consideration the *Christina Basin Pollution Control Strategy: A Watershed-based Strategy to Implement Total Maximum Daily Loads in the Brandywine, Red Clay and White Clay Creeks, and Christina River in Delaware, October 2007*. This document was prepared by the University of Delaware's Institute for Public Administration-Water Resources Agency (IPA-WRA) in coordination with and on behalf of the Christina Basin Tributary Action Team.

DNREC appointed the University of Delaware's IPA-WRA to form and facilitate the Christina Basin Tributary Action Team to develop the Christina Basin PCS. The team is comprised of nonprofit; local, county, and state government; private industry; water utility; citizen; and academic representatives. The team met 13 times over a year and a half in diverse locations throughout the Christina Basin watershed to develop this strategy. Numerous individuals and organizations assisted in the development of this document. Key contributors include: Artesian Water Company, Brandywine Valley Association, Christina Conservancy, Citrusco, City of Newark, City of Wilmington, Delaware Center for Horticulture, DNREC, Delaware Nature Society, Greeley and Hansen, New Castle County, Partnership for the Delaware Estuary, Taproot Native Design on behalf of New Castle Conservation District, Red Clay Valley Association, United Water Delaware, URS Corp., VanDemark & Lynch, Inc., USDA, White Clay Creek Watershed Management Committee, and multiple volunteer citizens and organizations.

The PCS includes narrative on the unique characteristics of the basin, the resources that make the basin valuable, the TMDLs set for the basin, and the Christina Basin Tributary Action Team process. The most significant component of this document are the 40 recommendations grouped by the following categories: stormwater, open space, wastewater, agriculture, and education. These recommendations were developed through a collaborative effort by the Christina Basin Tributary Action Team. The PCS also includes a chapter on the monitoring stations located throughout the Delaware portion of the basin and the water quality parameters tested at these stations. This chapter discusses the importance of water quality monitoring upon implementation of the PCS. The final chapter in the PCS quantifies the economic benefits of the Christina Basin and provides an estimate of the cost of implementing the recommendations set forth in the PCS. This chapter provides quantifiable evidence that improving the water quality in the Christina Basin makes economic sense.

The Christina Basin Tributary Action Team would like to thank DNREC for the opportunity to develop this consensus-driven document. This document is evidence of a successful watershed management endeavor with cooperation and contributions from many people and organizations. We hope that through our leadership in this process we have developed an executable plan to achieve the nutrient and bacteria reductions necessary to return the Christina Basin to fishable and swimming criteria. We thank all of the organizations and individuals who committed multiple hours of work and volunteer time to this process. Based on the recommendations from these groups, the Christina Basin Tributary Action Team proposes that DNREC promulgate the PCS for the Delaware portion of the Christina Basin including the Brandywine, Red Clay, and White Clay Creeks, and Christina River watersheds in Delaware.

Sincerely,



Martha Corrozi
Coordinator, Christina Basin Tributary Action Team
Watershed Analyst
Water Resources Agency
Institute for Public Administration
University of Delaware