



Stormwater Management Plan 2016 Annual Update

Town of Wilton
Wilton, Connecticut

March 2017

**WILTON PUBLIC WORKS DEPARTMENT
TOWN HALL ANNEX
238 Danbury Road
Wilton, Connecticut 06897**

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2016 Annual Update
Town of Wilton

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Stormwater Management Plan– 2016 Annual Update

Town of Wilton

Section 1 – Public Education and Outreach

1.2.1 Newsletters and Brochures

Progress

- 2016: The Wilton Conservation Commission published a newsletter in the Spring of 2016 that was distributed to local households. The newsletter included articles on watershed health, student involvement in water quality sampling, open space and environmental tours. The Commission's newsletters are also available at the Conservation Commission's website at <http://wiltonct.org/departments/conservation.html>. Please refer to Appendix A.

The Norwalk River Watershed Association (NRWA) maintains its website and links to numerous stormwater management sites, and also publishes two newsletters per year for its members. NRWA's newsletters are located in Appendix B. NRWA's website is <http://www.norwalkriver.org/>.

1.2.1a Alternative Information Sources

Progress

- 2016: Stormwater management and related posters are on display in Town Hall offices. The Conservation Commission's website has links to hazardous waste collection and soil conservation resources, including past versions of its newsletters, household hazardous waste collection locations, and compact fluorescent bulb recycling locations. The Conservation Commission's website can be found at <http://www.wiltonct.org/departments/conservation.html>.

1.2.2 Library of Educational Materials

Progress

- 2016: The Department of Public Works (DPW) continues to maintain stormwater library materials both on the DPW's server and in its files; these are available upon request.

1.2.3 Storm Drain Marking/Stenciling

Progress

- 2016: The Town has replaced certain catchbasins and is evaluating a policy on replacing stencils on catchbasins.

1.2.4 Tributary Signage

Progress

- 2016: The DPW continues to consider a standard policy of placing tributary signage routinely as part of bridge and culvert replacement projects.

1.2.5 Participate With Regional Watershed Initiatives

Progress

- 2016: The Town of Wilton Inland Wetlands Commission provided funding to the Norwalk River Watershed Association to monitor water quality in the Norwalk River. Results of the Water Quality Monitoring can be found in Appendix C. The NRWA maintains its website with numerous links to stormwater management sites, and sponsors events focused on watershed awareness and recreational activities throughout the year. NRWA's website is <http://www.norwalkriver.org/>.

Section 2 – Public Involvement / Participation

2.2.1 Wilton NPDES Phase II Working Committee

Progress

- 2016: Members of the Working Committee continue to discuss concepts for stormwater management in land use applications as needed.

2.2.2 Public Information Meetings

Progress

- 2016: The Town continues to provide meeting space and participates in several meetings of various environmental community organizations, such as the Norwalk River Valley Review Committee, and the Norwalk River Watershed Association. In addition, citizens have the option to discuss various concerns before the various land use agencies.

2.2.3 Brochures/Fact Sheets at Public Information Meetings

Progress

- 2016: The Wilton Conservation Commission prepared a newsletter in the Spring of 2016, mailed to Town residents, highlighting environmental issues related to those affecting water bodies and watercourses. The newsletters are also available at the Conservation Commission's website at <http://wiltonct.org/departments/conservation.html>. Please refer to Appendix A.

The Norwalk River Watershed Association (NRWA) maintains its website and links to numerous stormwater management sites, and also publishes newsletters for its members. NRWA's

newsletters are located in Appendix B. NRWA's website is <http://www.norwalkriver.org/>.

2.2.4 Storm Drain Marking / Stenciling

Progress

- 2016: The Town has replaced certain catchbasins and is evaluating a policy on replacing stencils on catchbasins.

2.2.5 Annual Household Hazardous Waste Collection Day

Progress

- 2016: The Household Hazardous Waste Collection Day occurred on October 29, 2016. Town residents could also participate in seven other collection days held in surrounding municipalities throughout the year.

2.2.6 Town-Wide and Norwalk River Cleanup

Progress

- 2016: The Town-wide cleanup occurred on April 23, 2016. An additional Norwalk River clean-up, sponsored by Trout Unlimited and The Nielsen Company, took place on June 2, 2016 along Route 7. The Town of Wilton conducted a household hazardous waste collection day on October 29, 2016. The Conservation Commission continues to notify residents of a prescription drug take-back box that was installed in the Wilton Police Department foyer in 2011.

2.2.7. Tributary Signage BMP

Progress

- 2016: The DPW continues to consider a standard policy of placing tributary signage routinely as part of bridge and culvert replacement projects.

Section 3 – Illicit Discharge Detection and Elimination

3.2.1 Town Policy Regarding Non-Stormwater Discharges

Progress

- 2016: The Town's field staff looks for discharges as part of standard procedure when cleaning or maintaining catchbasins. If they do find illicit discharges, they trace the source of the discharge, and notify the appropriate property owners.

3.2.2 Storm Sewer System Map

Progress

- 2016: Storm sewer mapping is ongoing.

3.2.3 Illicit Discharge Detection and Elimination Program

Progress

- 2016: Outfall monitoring was performed, and the results are included in Appendix D.

3.2.4 Future Illicit Discharge Detection and Elimination

Progress

- 2016: Town policy continues to require that connections to the Town's storm sewer system be approved by DPW. Town

maintenance personnel continue to routinely check for illicit discharges and connections during the course of maintenance work, and notify appropriate property owners when they identify the source.

Section 4 –Construction Site Stormwater Controls

4.2.1 Requirements and Guidelines for Erosion and Sediment Control

Progress

- 2016: The Town continues to apply its regulations to land use applications.

4.2.2 Procedures for Notifying Construction Site Developers and Operators of Requirements for Registration

Progress

- 2016: The Town continues to apply its regulations to land use applications.

4.2.3 Requirements for Construction Site Operators to Implement Erosion and Sediment Control Best Management Practices

Progress

- 2016: The Town continues to apply its regulations to land use applications, and follow-up with monitoring and/or enforcement actions as needed.

4.2.4 Requirements for Construction Site Operators to Control Waste at the Site

Progress

- 2016: The Town continues to require waste control at sites, and the Inland Wetlands Agency regulates site work within 100 feet of wetlands and watercourses.

4.2.5 Procedures for Site Plan Review

Progress

- 2016: The Town continues to apply its regulations to land use applications.

4.2.6 Procedures for Subdivision Plan Review

Progress

- 2016: The Town continues to apply its regulations to land use applications.

4.2.7 Procedures for Receipt and Consideration of Information Submitted by the Public

Progress

- 2016: The Town continues to follow established procedures for consideration of information submitted by the public.

4.2.8 Procedures for Site Inspection and Enforcement of Control Measures

Progress

- 2016: The Town continues to follow established procedures for site inspections and enforcement actions.

Section 5 –Post Construction Stormwater Management for New Development and Redevelopment

5.2.1 Requirements for Structural and Non-Structural BMPs

Progress

- 2016: The DPW continues to provide storm water management advisory reviews to the Planning and Zoning Department for land use applications. Similarly, the Environmental Affairs Department continues to review stormwater management aspects of applications under its purview. Stormwater BMPs are required, and evaluated on a project-specific basis. In some instances, pollutant removal calculations are required.

5.2.2 Procedures for Addressing Post Construction Runoff from Construction and Reconstruction Projects

Progress

- 2016: The Town continues to require post-construction stormwater monitoring to evaluate the effectiveness of installed BMPs on a project-specific basis.

Section 6 –Pollution Prevention/Good Housekeeping for Municipal Operations

6.2.1 Operation and Maintenance Program

Progress

- 2016: The Town continues to follow operation and maintenance requirements, including preventative maintenance on the Town system as needed.

6.2.2 Employee Training Program

Progress

- 2016: The Town continues to incorporate stormwater management elements into its training programs. Employees are trained on an as-needed basis. Training includes discussion of procedures and protocol on how to check for illicit discharge during routine maintenance operations.

6.2.3 Street Sweeping Program

Progress

- 2016: The Town sweeps Town roadways and specific parking lots annually, with certain areas receiving additional sweeping as needed.

6.2.4 Catchbasin Maintenance Program

Progress

- 2016: The Town continues to prioritize and maintain catchbasins as stipulated in the Plan.

APPENDIX A

Did you know that the Conservation Commission collaborates with the Wilton Garden Club and the Norwalk River Watershed Association to offer monthly guided walks in our parks and open spaces? In collaboration with those two organizations as well as the Wilton Library and Wilton Go Green, we host periodic lectures on a wide variety of conservation related topics.

The goals of these programs are:

- to familiarize our residents with the array of beautiful and abundant spaces that are preserved throughout Wilton for enjoyment by individuals, families and even dogs
- to raise awareness about the many environment issues that are forcing changes in our area, many of which we can personally address through adopting different practices on our own properties.

The guided walks are typically held on Sunday afternoons. Occasionally, the schedule changes to accommodate the theme of the walk such as the full moon snowshoe walk we held in winter or the birding walk we held in mid-morning when birds are most active. All of the walks have concluded with some light refreshments providing time for questions and answers.

The talks are environmentally focused presentations held at the Wilton Library. They provide opportunities to learn about subjects including Low Impact Development, Herbaria, and Healthy Backyards. We are currently planning to host a professional to discuss establishing pollinator-friendly environments in our backyards.

If there is a conservation subject you wish to learn more about, please contact us and we can try to work it into our schedule. The walks and talks are advertised in our local newspapers as well as on the Conservation Commission's website and Facebook page. We hope to see you at our next event!

- Jackie Algom



RESIDENTIAL CUSTOMER
WILTON, CT 06897



Wilton Conservation Commission Newsletter



WATERSHED HEALTH BROUGHT TO YOU BY HARBOR WATCH

Did you know that there are over 200 rivers and streams in Fairfield County? At Harbor Watch, we study the water quality of those waterways and work to ensure that the water flowing through our communities and into Long Island Sound is clean and free from pollution. The mission of Harbor Watch is to provide the people of Connecticut with the data, knowledge, and field expertise necessary to safeguard our waterways, educate citizens about watershed issues, and train volunteers and student interns through hands-on research. We have been working in Wilton for over 25 years, and have worked closely with the town's Conservation Commission, and local residents to achieve that mission.

In Wilton, our research and monitoring efforts have focused on the Norwalk River. The Norwalk River flows through the heart of Wilton and many residents enjoy walking the trails, birdwatching, and experiencing nature along its banks with their families. Where the Norwalk River meets the sound is an active area for shell fishing, so many of our local restaurants also feature oysters that have been harvested from the Norwalk River estuary. This river flows from Ridgefield to Norwalk and experiences a variety of land uses along its banks as well as a diverse suite of human impacts. Working with our partners such as the Wilton Environmental Affairs Department, the Norwalk River Watershed Association, the Norwalk River Watershed Initiative, the CT Department of Energy and Environmental Protection, and others, we have worked to reduce sources of pollution entering the river. Our ongoing work in monitoring and source detection will ensure that the river has clean water for our community.

We are very proud of our partnerships in Wilton itself, but actually one of Harbor Watch's most exciting partnerships with Wilton actually occurs further downstream. Each year, we partner with the Wilton High School Marine Biology Club on a harbor fish study to get students involved with natural resources. Students from the club join us on our research vessel, the RV Annie, once each week from June through October. Six students join us on each sampling day and we conduct a series of bottom trawls. The students help our field staff deploy the net, sort the catch, and record the species collected. These students also present their work at the end of each fall to the public. This has been a great partnership that we are excited to continue. Beyond the fish study, we also have Wilton students participate in our spring, summer, and fall internship programs, and we also have enjoyed having adult volunteers join us and participate in sample collection on the Norwalk River.

In 2016, we plan to continue our intensive monitoring work in the Norwalk River and work with the Town to increase the efficacy of our track-down efforts. We are excited to continue this important research in Wilton and we are grateful to the Wilton community for all of their support! Please visit www.harborwatch.org for more information.

- Sarah Crasby, Director of Harbor Watch

CARRY IN, CARRY OUT

Some of our parks and fields have trash cans at the entrances and trail heads, but many do not. Every trash bin incurs cost for the town – maintaining, emptying – and becomes an attractor for rodents, bugs and other animals. In short, in many cases, the convenience for park-goers is outweighed by the cost and mess.

Many communities are starting to adopt the philosophy that many state and national parks have subscribed to forever: “Take nothing but memories, leave nothing but footprints.”

When it comes to your picnic lunch, your water bottle or sports drink, or your energy bar, this simply translates as “carry in, carry out.” Over the coming months, we are planning to post signs in many of our parks asking you to do exactly that. It’s easy, it’s environmentally sound and clean, and if we all cooperate, we can save the town a few dollars in the process by eliminating the need for trash pickups and disposal fees.

The next time you visit your favorite Wilton park or trail, please consider trying the following – it’s a small ask and will keep our parks pristine and enjoyable for all:

- If you bring food to eat, bring a bag as well. Put your discards in the bag, bring it home with you and dispose of it there.
- Your plastic water and sports drink bottles are recyclable. Even if we had trash bins, we don’t have recycling bins, and again, more bins = more cost. Please take your empty bottles with you and recycle them.
- Energy bar wrappers will fit nicely in your pocket, especially after you’ve eaten the contents! Please try not to let them flutter away. The empty wrapper will be much happier in your kitchen trash bin than on one of our trails.
- Dog waste in the middle of a trail is a real downer for your fellow hikers. Please use a plastic bag to pick it up, and please do not leave the plastic bag on the trail! It’s no one’s job but yours to clean up after your dog.
- If you carry it in, please carry it back out. Thank you for helping to keep our parks clean!

Dan Berg, Chairman

CONTROLLING THE DEER POPULATION

The Wilton Deer Management Committee was formed in 2001 as the Conservation Commission recognized the need to address the numerous issues with white-tailed deer overpopulation in Wilton. Addressing the spread of Lyme disease, safety concerns with automobile collisions, and the depletion of understory vegetation in our woodlands were the main reasons the committee was formed.

A 2002 deer density study conducted by the Connecticut Department of Energy & Environmental Protection (CT DEEP) found 79 deer per square mile in Wilton. Studies have determined that reducing the deer population to between 10 to 20 per square mile would address the public health, safety & ecological concerns.

While many options to handle the overpopulation were initially discussed, such as deer birth control and relocation of herds, those options are expensive and difficult to accomplish with the amount of deer that were in Wilton. Ultimately the Wilton Deer Management Committee established a controlled deer hunting program.

The annual controlled hunt is managed by the Committee and its staff, as well as the CT DEEP Wildlife Division to ensure a safe and successful program. Volunteer hunters are fully vetted to ensure they will work within the program guidelines including an assessment of each hunter by the Wilton Police Department on each hunter. Hunting occurs on land owned by the Second Taxing District Water Company, the Wilton Land Trust and the Town of Wilton. For the periods that each property is being hunted, they are closed to the public during the hunting season which begins on September 15th and ends on January 31st. After many successful years of implementing the controlled hunt, a new deer density study was completed showing 45 deer per square mile in our area.

In an effort to expand the effectiveness of the controlled hunt, several years ago, the committee started a homeowner-hunter match program. The program works to match pre-screened, vetted bow hunters with private land owners who are willing to allow hunting on their property. Through this additional effort the committee aims to make further progress on the goal to reduce the deer population

throughout the entire town.

We are cognizant of the money that Wilton residents spend each year to repel, fence, apply insecticides, and repair our cars in response to our over abundant deer population. And while we are still working to reach our harvest goals, the Deer Committee believes that without these programs, the deer overpopulation problem would be significantly worse and the amount spent by residents in Wilton to combat the deer population would be even higher. Additionally, Connecticut still maintains one of the highest rates of infection for Lyme disease in the country and there is no indication that our forests are recovering, except on land where hunting has persisted diligently for more than five years.

Any property owner that would be interested in participating in the homeowner match program can email the committee at deercommittee@wiltonct.org.

*- Michael Rusznok, Chairman,
Wilton Deer Management Committee*

ALICE LEVIN – AHEAD OF HER TIME

[Editor’s note: The following is the omitted portion of an article that appeared in our Fall 2015 Conservation Newsletter. Alice Levin, a longtime Wiltonian, passed away in Spring 2015.]

In 1966, Alice Levin and her husband Peter led a group of Wilton citizens in an attempt to balance the checkerboard methods of dividing land for residential development based on 2-acre zoning with the need to preserve the connectedness of the woods, fields, streams, and hills of Wilton. The Levins felt that by looking at a place as a whole region rather than as individual 2-acre boxes, the beauty of the land would be protected which, in turn, would raise the private value and the public value. They believed that by considering the public value when making local land-use decisions, people would gain a sense of thinking responsibly on behalf of the whole community. In Alice’s own words, protected would be “land with trails and natural vistas, streams of steady and pure flow, much undisturbed swampland, and wooded acreages in differing stages of evolution.”

Alice and Peter produced a document called “A Proposal for Cooperative Landholding & Development”. It was a comprehensive vision for

300 acres at risk of subdivision which included “the longest stretch of natural valley in Wilton” and which would “preserve the character and pattern developed long before the advent of zoning.” The hope was to save a portion of the land for privacy, recreation, and the enjoyment of nature in a way that would also increase profits for the developers. The document was presented to the landowners one-by-one and concluded with the simple question, “Will you or will you not participate?” Not a single positive response resulted.

Land-use planners today know that it’s not development that causes problems, only patterns of development. In the case of the conventional checkerboard, some of the best land for home sites is wasted. If within a larger landscape smaller parcels for houses are allowed, more open space is protected and the cost of roads, utilities, and sewage reduced. Today we have “set asides” required by subdivision zoning laws that produce tiny isolated fragments of land of dubious value for use as a park or recreation space. On the other hand, streams and wetlands, not suitable for housing yet often included in our building lots—and what the Levins were asking to preserve—are ecosystems vital to the health of wildlife, plants and people. Alice and Peter wanted the flexibility to think about the whole landscape and not just the individual parcels, giving everyone more in the end.

Eventually, this episode of planning for a better Wilton was forgotten—except by Alice. Just weeks before she passed away, a yellowed file of typewritten notes appeared on her coffee table in the off chance that someone would pick it up and tell her story. Alice wanted to pass along the lessons she learned. She hoped that someone else would see the beauty of Wilton’s natural resources and the possibility of working together to preserve it for our children.

- Donna Merrill

WILTON CONSERVATION COMMISSION

Town Hall Annex
238 Danbury Road
Wilton, CT 06897
(203) 563-0180



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APPENDIX B

In the Mainstream

Newsletter for Members of the Norwalk River Watershed Association [NRWA]
New Canaan, Norwalk, Redding, Ridgefield, Weston, Wilton, CT, and Lewisboro, NY

www.norwalkriver.org

Spring/Summer 2016

OYSTERS, WATER QUALITY AND YOUR BACKYARD

BY LOUISE WASHER

The way homeowners and businesses in the watershed manage their properties affects water quality, and since the Norwalk River drains into Norwalk Harbor, it also profoundly affects the health of sea life in the Sound, especially oysters and clams. Oysters and clams filter seawater in search of nutrients, which makes them vulnerable to toxins but also makes them a great asset to a healthy Sound. These interconnections are why Norm Bloom of Norm Bloom & Son oyster facility headquartered at Norwalk Harbor, has worked with clean water initiatives such as Harbor Watch and Long Island Sound Keeper for over 20 years. "Oyster farmers by trade are invested in protecting and enhancing environments where they raise oysters," says Bloom.

Family-owned Norm Bloom & Son has been "caring for, farming and harvesting" oysters in the Sound since the 1940s. It has use of 12,000 acres of land under the Sound where it meticulously manages the life cycles of hundreds of thousands of oysters a year. That process involves laying beds of shell for future oysters to cling to, moving young oysters to protected areas after they "set" on shell beds, harvesting the oysters, sorting and measuring them, and then returning those less than 3 inches long to the sea. Only the oysters big enough to go to market are bagged and shipped out.

At the same time, Bloom keeps a



Dick Harris, founder of Harbor Watch, and Norm Bloom of Bloom & Son oyster facility work together to help protect water quality

close watch on water quality in the harbor by constantly monitoring it. In fact, Harbor Watch operates a state-licensed water-testing lab onsite at Bloom & Son. Because oysters filter seawater, any high levels of e-coli or chemical toxins in the water threaten them. Many of the stresses on the Norwalk River Watershed stem from pesticides and fertilizers homeowners, office complexes and golf courses use, which wash into the waterways and make their way to the Sound, as do the truly toxic used cigarette butts people casually toss to the ground. Cigarette butts and other

--continued on page 2

STUDENTS HELP SHORE UP THE RIVER BANK WITH NATIVE PLANTS AT MERWIN MEADOWS PARK

Stable riverbanks and riparian buffers are vital to maintaining a healthy river. High school students from Builders Beyond Borders, a community service organization based in Norwalk, worked last fall with NRWA to remove invasives and plant native plants along eroding banks at Merwin Meadows. Their work has made a real difference.



OIL LEAK CONTAMINATES THE RIVER IN BRANCHVILLE

Fifty to 75 gallons of heating oil spilled into the river in late February from an underground tank behind the marble and granite business along Route 7 in Branchville. The CT Dept. of Energy and Environmental Protection directed the tank removal and clean-up which involved using absorbent booms shown here. Underground oil tanks remain one of the leading causes of ground water contamination.

--Oysters continued

trash washes down rainwater drainage systems along with oil and gas residues from the streets and often feed directly into the River. One of Harbor Watch's jobs is to test the outfall from these drainage systems to find out which ones contain toxins at levels that exceed EPA safety levels, then track down the pollution sources and report them to the city, so it can correct the problem.

Two ways homeowners and businesses can help protect water quality are to include rain gardens in their landscape designs and to promote and protect healthy natural buffers along river and stream banks and wetlands. Water that is caught in a rain garden after falling from a roof, driveway, street or parking lot will percolate through the soil, which will filter out pollutants before it joins the ground water. Similarly, runoff that, instead of draining straight into wetlands or waterways, is allowed to enter healthy lush riparian borders along waterways will also slow down and percolate through the soil. More information on rain gardens and riparian buffers is available at norwalkriver.org.

Watershed residents all play a role in maintaining the quality of Connecticut's oysters--some of the best in the country.



THANK YOU TO OUR DONORS

We gratefully acknowledge donors from March 1, 2015, through March 1, 2016. Contributions received after this date will be listed in the Spring/Summer 2017 newsletter.

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CT Dept. Energy and Environmental Protection

GIFTS OF SERVICES

Linda Olsen—Website Redesign and Maintenance
David Park—Management of Facebook Page & Trail Map Sales; Donations of a Portion of Sales from his Kayaking Guide Sold at norwalkriver.org.
St. Luke's School, New Canaan—Meeting Space
Wilton Library—Meeting space
REI Norwalk—Donations of hiking gear



Our annual Amphibian Walk is at Merwin Meadows in Wilton this year on April 3rd

SCHEDULE OF EVENTS

NRWA programs highlight the importance and features of the river and its watershed and ways people can improve the region. Programs are free unless otherwise specified, but space may be limited and reservations are suggested. Call the leader listed or NRWA toll free at 877-NRWA-INFO (877-679-2463) for more information and reservations. Hikers should wear hiking shoes and bring water. See our events page at norwalkriver.org for updates and more information.

Sunday, April 3, 1PM. Amphibian Walk. Join us in search of frogs and salamanders! Dave Havens of NRWA will begin with a short introduction on amphibians and how to spot them, then lead a woodland walk along the Norwalk River to visit vernal ponds coming to life with salamanders, newts, frogs and toads. Discover some of the many species in our area, search for eggs and tadpoles, and learn about amphibian development. Meet at the hiking trail entrance off the parking lot at Merwin Meadows Park in Wilton. Tall, waterproof boots are suggested. All ages are welcome to this free event, which is co-sponsored by the Wilton Garden Club and NRWA. Contact us at info@norwalkriver.org or 1-877-NRWA-INFO (877-679-2463) for more information and to register.

Sunday, April 3, 1-3 PM. "Rites of Spring" Walk in Devil's Den. This is the second in a series of four short walks sponsored by *Weston Walks* and led by Dr. Tom Failla that offer the chance to observe nature coming alive from deep winter slumber to full vibrancy in late spring. Tom, who has led hikes in Devil's Den for fifteen years, is a Professor at Pace University and has a remarkable understanding of the Den's ecology. The hike is casual and is rated as easy. Hikers will meet at the Pent Road parking lot. (Rain date April 10th). Info at westonbikeped.com.

Saturday, April 9. Keep Norwalk Beautiful Cleanup Day. Keep Norwalk Beautiful is sponsoring a spring litter cleanup in conjunction with the nationwide Great American Cleanup campaign. They will provide gloves, bags, and litter grabbers (while supplies last) to those who volunteer to help clean up the common areas and open spaces including parks, beaches, schools and streets. Public Works will pick up filled litter bags. April 9th is a target date, however, should another date work better for your neighborhood association, school, business or organization, they will accommodate your needs. For more info contact David Shockley at 203-854-7810 ext. 46782 or dshockley@norwalkct.org.



Saturday & Sunday, April 9&10. Rid Litter Days in Ridgefield. Help keep Ridgefield beautiful. Pick up litter in your neighborhood or anywhere else you see it. Encourage family and friends to help. Refuse bags and safety vests can be picked up at Parks and Rec or the Chamber of Commerce. Drop off points for filled refuse bags are: Farmingville Elementary School, East Ridge Middle School, Ridgefield High School, Fox Hill Lake Area.

Sunday, April 24, 10AM-12PM. Guided Birding Walk at Allen's Meadows. Another in the fabulous walks series co-sponsored by Wilton's Conservation Commission, Wilton Garden Club and NRWA. The walk is free and all are welcome, though for (just) this walk, dogs, even on leash, are not included. To register, call 203-210-5240 and leave a message with your contact infor-

mation and the number of persons who will attend.

Saturday, April 30, 1PM. Poetry Hike. Bring a poem to read, yours or a favorite. Ralph Adams will lead this fairly easy 3-4 mile hike for *Weston Walks*. Info at westonbikeped.com. Meet at the parking lot on Valley Forge/Newtown Turnpike.

Sunday, May 1, 11AM-4PM. Wilton Go Green Festival. Visit the NRWA table and help us celebrate green living. Event includes live music, healthy food, educational and fun activities. Held at the Town Green and Wilton Library, Wilton. For more info visit www.wiltongogreen.org.

Sunday, May 1, 1-3PM. Walk in Devil's Den. This is the third "Rites of Spring" walk offered by *Weston Walks*. Meet at Pent Road entrance to Devil's Den. Easy walk. (Rain date May 8). Info at westonbikeped.com

Friday, May 6, 12-6 PM & Saturday, May 7, 9AM-12PM. Wilton Garden Club Plant Sale. At the gazebo on the Green in Wilton Center.

Friday & Saturday, May 6 & 7, 9:00AM-3PM. Ridgefield Garden Club Plant Sale. Rain or shine! Annuals and Perennials: Master

Help Wanted

NRWA is looking for volunteers and a part time (10 hours/month) executive director to help with:
Publicity and Social Media--promoting our events, spearheading initiatives for building membership, managing our social media presence and website.

Writing--managing and writing grants and/or contributing to our newsletter and website content.

Advocacy/Research--contributing to our advocacy efforts, following legislation and development proposals in the watershed.

Business/Corporate Sponsorship Outreach--building our Responsible Business Network (more info at norwalkriver.org), attracting the support and membership of more businesses, especially those along the river.

Fundraising/Membership Management--upgrading our membership database system, fundraising approach and outreach to potential new members.

Events Management--helping with planning, organizing and overseeing our annual walks, lectures, and cleanups

Contact us at info@norwalkriver.org

Gardeners on hand to help select plants. Proceeds go to benefit Ridgefield community gardens and conservation projects. Ballard Park Greenhouse (Rear of Ballard Park).

Wednesday, May 25, 6:30PM. Water Quality Update: NRWA Annual Meeting at the New Harbor Watch Lab. Director Sarah Crosby will provide a tour of the beautiful new lab at Harbor Watch and demonstrate how the organization tests water samples from the Norwalk River. She will also report on the state of water quality in the River and the Sound as well as the changing fish populations in the Sound. All are welcome to this free event. Harbor Watch operates out of Earthplace, 10 Woodside Lane, Westport. More info at 877-NRWA-INFO; (877-679-2463) or info@norwalkriver.org.

Saturday, May 21, 11AM-3PM. The Connecticut Tree Festival. This 9th annual festival offers family-style activities such as a rope tree climb for kids and showcases a diverse line-up of environmentally-minded exhibitors (including NRWA). Rain or shine, free admission. Cranbury Park, 300 Grumman Ave, Norwalk. More information at norwalktreealliance.org.

Friday, June 3, 9AM-3:30PM. Historic 25th Annual Long Island Citizen's Summit: Citizen Science, Translating Science into Action for Long Island Sound. This historic event will focus on the very citizens who are taking action to protect the Sound! It will celebrate their efforts, roll out new innovative tools for understanding the Sound's health and dedicate an entire afternoon of workshops to citizen science monitoring, data analysis, and communicating

science with clarity and impact. At Stony Brook University. Register with Save the Sound at ctenvironment.org.

Saturday, June 4. Trail Repair Project at Weir Farm in Celebration of Trails Day. Sponsored by Weir Farm, NRWA, the Ridgefield Conservation Commission, and the Norwalk River Valley Trail Planning Committee. Wear sturdy walking shoes and bring water. Weir Farm is on Nod Hill Road in Wilton. Free but registration is required. Call 203-834-1896 ext. 28 for more information and to sign up.



Saturday, June 4. Trails Day Hike in Katherine Ordway Preserve. Cynthia Fowx will lead this 2-3 mile easy hike through the richly bio-diverse, 62-acre preserve that remains relatively unknown. The Katharine Ordway Preserve is located at 165 Goodhill Road, Weston. Check norwalkriver.org or westonbikeped.com for more information in the coming weeks.

**NORWALK RIVER
VALLEY
HIKING TRAIL
MAPS
&
KAYAKING
IN AND AROUND
THE
NORWALK ISLANDS**



*Available at
Norwalkriver.org*

Saturday, June 11, 5-7PM. Cocktails and Clams, Harbor Watch. In celebration of clean water and the work Harbor Watch does to protect Long Island Sound, join Harbor Watch for Cocktails & Clams dockside at Norm Bloom & Son's oyster processing facility. Unlimited raw bar straight off the fishing boat. Signature cocktails, wine & beer. Live music. Adults only. Please enter at 22 Cove Avenue in Norwalk. Tickets available at Earthplace.org.

Saturday, August 20, 10AM-12PM. Butterflies! Victor DeMasi, lepidopterist, research affiliate for Yale's Peabody Museum and NRWA Advisory Board member, has been studying butterflies and moths in an area along the Norwalk River since 1977. He will introduce area butterflies and moths, discuss their food and habitats and show his remarkable collection. Meet at 10 Simpaug Turnpike, Redding, a half-mile east of Rt. 7. Easy walk. For reservations, contact DeMasi at victormonarch@yahoo.com or 203-448-0106. (Rain date: Sunday, August 21)

Officers of NRWA Board of Directors

Kristen Begor, President (Wilton)
Louise Washer, Vice President (Norwalk)
Kitsey Snow, Treasurer (Ridgefield)
Elizabeth Craig, Secretary (Wilton)

In the Mainstream © 2016 Norwalk River Watershed Association, Inc.

The Norwalk River Watershed Association, incorporated in 1996, is a not-for-profit membership organization whose mission is to improve the water quality and fish and wildlife habitats of the 40,000-acre Norwalk River watershed; to restore the riverbanks, meadows and forests through invasive plant abatement and promotion of native species; to encourage recreational use of the river, its trails and the surrounding open space; and to promote research, legislative advocacy, education, cooperation, and action on the part of the stakeholders in the seven watershed towns in CT (Ridgefield, Redding, Wilton, New Canaan, Weston, and Norwalk) and NY (Lewistown).

NATIVE PLANT OF THE MONTH: AMELANCHIER CANADENSIS

FOR WILDLIFE VALUE AND BEAUTY ADD SHADBLOWS TO YOUR GARDEN

BY ELIZABETH CRAIG

Shadblow, or Serviceberry, is one of the first small understory trees to bloom in the spring. It has frost-resistant flowers that are fragrant, white and showy and bloom before the leaves open. These flowers provide an important early season nectar source for butterflies and other beneficial insects. A Connecticut native, with tremendous wildlife value, shadblow was so named because it fruits in June when the shad (a northern fish) run. Researchers have documented at least 26 different types of wildlife that feed on its berries, starting in June when its fruit reaches maturity. The berries, red to dark-purple-black when ripe, are especially popular with songbirds, including bluebirds, robins, cardinals, orioles, waxwings and thrushes, in addition to chipmunks and squirrels.

A handsome landscape plant, that is low-maintenance, shadblow grows well in full sun or part shade. It reaches an average height of 6-15 feet, depending on the amount of sunlight and moisture it receives. Generally a shrubby tree, it will grow as a single-stemmed tree if shoots are removed. Shadblow shows a wide soil tolerance and can even grow in heavy clay soils. Able to thrive in suburban landscapes, its native habitat includes woodlands, grasslands and coastal riparian areas or wetlands. Leaf color ranges from light green in spring, to dark green in summer, and fall color is striking with shades of orange, gold, red and green.

Shadblow plantings are particularly effective against a dark or shaded woodland edge, which tends to highlight its form, flowers and radiant fall color. It is also effective along stream banks and ponds. Good companion plants include Eastern Redbud, Eastern Sweetshrub, violets and sedges.

(NATIVE PLANT OF THE MONTH, a new series by NRWA master gardeners, Jackie Algon and Elizabeth Craig, will also appear in the News Section at Norwalkriver.org)



Household Hazardous Waste Collection Days 2016



April 30-Weston. Dept Public Works, 78 Old Hyde Rd. (8:30am-12:30pm)
May 7-Greenwich. Island Beach Parking Lot, Arch St. (8am-1pm)
June 4-Darien. Noroton Heights RR Station, Hollow Tree Ridge Rd (9am-1pm)
July 16-Stamford. Rippowam Middle School, 381 High Ridge Rd (9am-2pm)
August 27-Norwalk. Norwalk High School, 23 Calvin Murphy Dr (8am-2)
September 17- New Canaan. Wastewater Treatment Plant, 394 Main Street (8am-2pm)
September 24-Westport. Yard Waste Site, 180 Bayberry Lane (9am-2pm)
October 29-Wilton. Miller/Driscoll School 214 Wolfpit Rd. (9am-3pm)

MEMBERSHIP FORM

☐ Enclosed is my tax-deductible, annual membership contribution of \$_____.

I would prefer to receive the semi-annual newsletter, *In the Mainstream*,

☐ By mail

☐ By email

Riparian Society

Steward \$1000 and up

Protector \$500-\$999

Patron \$100-\$499

Basic Membership

Supporter \$50-\$99

Donor \$30-\$49

Other \$_____



Yes, my company has a Matching Gift Program. Company Name _____

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Norwalk River Watershed Association, Inc., P.O. Box 197, Georgetown, CT 06829

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www.norwalkriver.org

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Protect our surface water and ground water. Do NOT flush medicines down the drain or toilet. Instead, turn them in at your town's Drug Take-Back Day, your local pharmacy's take-back program or locked box located at your police station.

2016 ANNUAL MEETING MAY 25TH AT 6:30 PM
JOIN US FOR AN UPDATE ON WATER QUALITY
AND A TOUR OF THE LAB WHERE OUR WATER IS TESTED

This year NRWA will hold its Annual Meeting in the new lab at Harbor Watch in Westport and will feature an update on water quality from the organization's new director Sarah Crosby. Sarah took the helm as the director of Harbor Watch, which has been monitoring water quality in the Norwalk River since 1986, upon the retirement of founder Dick Harris in late 2014. NRWA supports and works with Harbor Watch on water quality initiatives and publishes its water quality reports online at norwalkriver.org.

Sarah is a marine ecologist with training in conservation science and extensive research experience in coastal and marine ecosystems. Under Crosby's direction, Harbor Watch has opened a new, larger lab at its headquarters at Earthplace in Westport and has expanded the number of watersheds it works in, reaching south to Greenwich and north to Danbury. "The larger lab has enabled us to increase the number of high school and college interns in our internship programs," says Crosby. Interns focusing on the rivers collect water samples from specific sites and test them in the lab. During the summer, a team of interns also trawl for fish in the harbor each week. The trawling is part of research that results in Harbor Watch's annual Report on Norwalk Harbor Juvenile Benthic Marine Fish. The report is available at norwalkriver.org and includes an overview of fish population levels since 1990.

Thanks to Harbor Watch, the Norwalk River is one of the few in the nation to have water quality data that reaches back as far as almost three decades. Crosby says she and her team are also increasing the organization's focus on track-down work, by "putting more boots on the ground" to identify sites with contaminated water and track down the sources of the pollution, so municipalities can take action to correct the problem. "The Norwalk River is our number one priority," she says, "and our partnership with public works, something Dick Harris worked hard to establish, is stronger than ever."

Sarah grew up locally and is excited to be back. She now lives in Cos Cob with her husband, Alex, and her dog, Daisy. NRWA welcomes her and thanks her for her dedication to the region's watersheds.



Fall 2016 Newsletter

Protect Our Waterways: Avoid Dumping Leaves Into Wetlands

By Elizabeth Craig

Residents and homeowners in the Norwalk River Watershed, especially those with wetland properties, play an important role in keeping our waterways clean and Long Island Sound healthy. Some 75 percent of all wetlands are privately owned in the USA, making landowners important participants in wetlands management and protection. Choosing not to dump leaves or other yard debris into wetland areas and along riverbanks is a critical step towards preserving water quality.

Even though leaf litter is 'natural', organic and biodegradable, in excess it can kill native wetland vegetation and allow invasive plant species to take hold. In our waterways, excessive amounts of leaf litter deplete oxygen, causing fish kills. These leaves are actually valuable and can be easily composted upland from wetlands and used to mulch and to create more fertile soil on your property.

Healthy wetlands are beautiful, especially in fall. They act as natural sponges helping control drainage and floodwaters during periods of heavy rainfall and slowly releasing water during periods of



Fall in a New England red maple swamp.

draught. These important functions become impaired when wetlands are clogged with leaves and debris.

Does your lawn grow to the edge of your wetland or to the edge of your wetland buffer? Consider expanding your buffer zone by planting natives in these areas. They enhance the beauty of your property, improve water quality and offer benefits to native birds and butterflies.

NRWA's International Coastal Cleanup 2016 A Huge Success! Over 50 Volunteers Removed Close to 100 Garbage Bags With Over 1600 Pounds of Trash From the Norwalk River



Volunteers from Woodcock, NRWA and Earthplace pictured here helped pick up trash Sept. 10th.

Curbside Compost Makes Composting Easy

Food waste is the single largest component of solid waste in Connecticut according to the Department of Energy and Environmental Protection. Composting food scraps reduces the amount of waste in our landfills and eliminates the need to incinerate them—a process that uses energy, creates harmful emissions and results in ash, which still must be disposed of in landfills. Compost can also eliminate the need for chemical fertilizers on lawns and gardens. The phosphorus and nitrogen found in commercial fertilizers makes its way into waterways where they cause algae blooms and threaten water quality.

Curbside Compost, a new Ridgefield-based business, makes composting easy by providing customers with a fresh container and weekly pick-up of food scraps including meat and bones, which are difficult to compost at home. Customers can also

order the finished, compost by the sack or yard. As co-founder Nick Skeadas puts it, "By making it easy for people to compost, we reduce their carbon footprint while simultaneously creating a useful, organic product." Find out more at curbcompost.org.



Nick and Erica Skeadas of Curbside Compost.

Farewell And Thank You NRWA President Kristen Begor



NRWA bids farewell to board president of 5 years and long-time member Kristen Begor (far left with fellow board members) who has relocated to New Hampshire with her family. Kristin, a trained hydro-geologist, used her knowledge of watershed issues to lead NRWA's efforts to improve local water quality and protect our shared natural habitat. Kristen also brought NRWA into the digital age, overseeing the launch of a new website and e-newsletter. Thank you, Kristin, for your vision, energy, patient diplomacy, warmth, sense of humor and most of all your friendship.

New Watershed Trail Maps Coming Soon

REI, the outdoor gear and clothing co-op, has awarded NRWA a \$5000 grant to create a new hiking trail map of the Watershed and vicinity. The map will highlight completed and future sections of the Norwalk River Valley Trail (NRVT) system that will eventually stretch 38 miles from Calf Pasture Beach in Norwalk to Danbury along the Norwalk River as well as other trails across the seven watershed towns.

REI and NRWA will also partner with the town of Wilton to host two volunteer trail stewardship events. See Events at Norwalkriver.org for details.

NRWA offers special thanks to Highstead Foundation of Redding and conservation associate Mary Buchanan who spent countless volunteer hours creating the new map before heading to graduate school in geography this fall at UCONN.



Mary Buchanan of Highstead (right) working with NRWA's Louise Washer.

Featured Native Plant: Winterberry

By Jackie Algon



Winterberry, a deciduous native shrub is commonly found at the edge of woods and swamps. A lovely addition to the garden, it prospers under cultivation as well as in the wild, growing 6' – 10' tall with an oval shape, often forming large clumps. While the foliage is not especially showy in autumn, it is offset by large numbers of bright orange or red glossy berries that are a treat to birds and that persist into the winter. These make Winterberry an excellent alternative to Japanese barberry, the invasive shrub known to harbor the white-footed mouse which can carry the deer tick that causes Lyme Disease. A male and at least one female planted in proximity are required for pollination and berries, so ask the nursery for both! Winterberry grows well in full sun to part shade, though it will bear more fruit with more sun. It can tolerate poorly drained soils, though it prefers moist, acidic soil conditions.

FALL EVENTS

NRWA and Woodcock Nature Center have launched a Community Conservation Series pairing expert lectures with volunteer action.

Saturday, October 8

9:30AM- 12:30 PM

Volunteer Action: Invasive Plant Removal & Riverbank Restoration at Merwin Meadows, Wilton

Information/registration
info@norwalkriver.org or
877-NRWA-INFO

Tuesday, October 18, 7:00 PM

Expert Lecture: Gardeners, Keepers of Our Natural Heritage

Wilton Library
registration: Wiltonlibrary.org

Monday, November 7, 7:00 PM

Expert Lecture: Hiking in Fairfield County, The Places You'll Go and Things You'll See!

Ridgefield Library
registration: info@norwalkriver.org

Saturday, November 12

**8:45 AM-1:00 PM Volunteer Action:
Trail Maintenance**

Details will be posted soon on
norwalkriver.org

For a full listing of events and to join online, visit norwalkriver.org

Membership Form

Becoming a member helps NRWA continue to protect local water quality, hiking trails and natural habitats.

Riparian Society	Membership
Steward \$1,000+	Supporter \$50-\$99
Protector \$500-\$999	Friend \$30-\$49
Patron \$100-\$499	Other \$_____

☐ My company has a matching gift program. (company name) _____

☐ Enclosed is my tax deductible Annual Membership gift of \$_____.

Please make check payable to NRWA, Inc. and mail to NRWA, Inc. P.O. Box 197, Georgetown, CT 06829

Name _____ Phone _____

Address _____ City _____ State _____ Zip _____

I would like to receive updates and events info. My email is _____

News Briefs

DOT Releases Impact Study for

Bridge Overhaul in Norwalk Harbor On Tuesday, September 6 the CT Department of Transportation released the impact study for the planned \$30 million overhaul of the Yankee Doodle Bridge that carries I-95 over the Norwalk Harbor. The release triggers a 45-day comment period for local residents and stakeholders to weigh in on the plan. NRWA and the Norwalk Harbor Commission are concerned that plan fails to address the problem of storm water runoff that drains directly from the bridge into the harbor carrying contaminants from cars, trucks and the roadway. The DOT will hold a public hearing on the report at 6 p.m. Oct. 6 at Norwalk City Hall, 125 East Ave. Please visit the News page at norwalkriver.org for more information.



US Senator Chris Murphy Releases Long Island

Sound Investment Plan After meeting with NRWA and other conservation organizations, US Senator Chris Murphy announced the release of his Long Island Sound Investment Plan. The plan calls for \$860 million of federal funding to protect and improve Long Island Sound. Because wastewater treatment plants have already been improved, new initiatives would target inland sources of pollution including crumbling infrastructure, leaky sewer pipes, fertilizer and road run-off. To find out more, visit murphy.senate.gov.

Volunteers helping clean up Oyster Shell Park, where the Norwalk River meets the Sound, as part of NRWA's International Coastal Cleanup.

The Norwalk River Watershed Association works to improve the water quality and fish and wildlife habitats of the 40,000-acre Norwalk River Watershed including Ridgefield, Redding, Wilton, Weston, Norwalk, New Canaan & Lewisboro.



NORWALK RIVER WATERSHED ASSOCIATION INC.
P.O. Box 197, Georgetown, CT 06829
www.norwalkriver.org

APPENDIX C

FAIRFIELD COUNTY **RIVER REPORT**

Harbor Watch | 2016

Fairfield County River Report: 2016

Sarah C. Crosby
Nicole L. Cantatore
Joshua R. Cooper
Peter J. Fraboni

Harbor Watch, Earthplace Inc., Westport, CT 06880

This report includes data on:

Byram River, Farm Creek, Mianus River, Mill River, Noroton River, Norwalk River, Poplar Plains Brook, Rooster River, Sasco Brook, and Saugatuck River

Acknowledgements

The authors wish to thank Jessica Ganim, Fiona Lunt, Alexandra Morrison, Ken Philipson, Keith Roche, Natalie Smith, and Corrine Vietorisz for their assistance with data collection and laboratory analysis. Funding for this research was generously provided by Jeniam Foundation, Social Venture Partners of Connecticut, Copps Island Oysters, Atlantic Clam Farms, 11th Hour Racing Foundation, City of Norwalk, Coastwise Boatworks, Environmental Professionals' Organization of Connecticut, Fairfield County's Community Foundation, General Reinsurance, Hillard Bloom Shellfish, Horizon Foundation, Insight Tutors, King Industries, Long Island Sound Futures Fund, McCance Family Foundation, New Canaan Community Foundation, Newman's Own Foundation, Norwalk Cove Marina, Norwalk River Watershed Association, NRG – Devon, Palmer's Market, Pramer Fuel, Resnick Advisors, Rex Marine Center, Soundsurfer Foundation, Town of Fairfield, Town of Ridgefield, Town of Westport, Town of Wilton, Trout Unlimited – Mianus Chapter. Additional support was provided by the generosity of individual donors.

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Key terms and information about this report:

Acronyms:

- CT DEEP: Connecticut Department of Energy and Environmental Protection
- CFU/100 mL: Colony forming units per 100 mL. This is a unit of measurement for bacteria concentrations. A colony is raised from a single bacterium to a visible colony for counting by providing the preferred heat range and media for 24 hours.

Study Site Naming:

- Sites are numbered with the lowest number (1) being closest to the mouth of the river where it meets a larger body of water or Long Island Sound. Sites with the highest numbers are located furthest upstream.
- Site names that include "SD" indicate that the sample location is a storm drain outfall rather than an instream location. These sites are not held to the same pass/fail assessment standards as instream sites and were not included in the figures.

Terms in Tables:

- No Sample: Indicates that a sample was not taken at that time for reasons including broken or lost sample bottle, stagnant water, inaccessibility due to construction or other factors, or dry river bed.
- TNTC: The colonies on the petri dish were too numerous to count.
- N/A: Indicates data not available because the site was added to the sampling plan for that river at a later date.
- Wet: Rainfall is indicated as "Wet" if >0.1 inches of rain fell within 2 days prior to sampling.
- Dry: Rainfall is indicated as "Dry" if <0.1 inches of rain fell within 2 days prior to sampling.

Introduction

The mission of Harbor Watch is to provide the people of Connecticut with the data, knowledge, and field expertise necessary to safeguard our waterways, educate our communities about watershed issues, and train volunteers and student interns through hands-on research. Here, we present a study of water quality in rivers throughout Fairfield County, Connecticut. The objective of this monitoring was to assist in the location of sources of sewage pollution from point and non-point sources, using *Escherichia coli* (*E. coli*) as an indicator.

Harbor Watch has been conducting monitoring projects throughout Fairfield County for 30 years. With the help of dedicated municipal partners, we have been able to identify and remediate numerous sources of sewage pollution to our rivers and Long Island Sound. The 2016 monitoring season was the largest range in geography in the history of the Harbor Watch program; the furthest east waterway tested was the Rooster River in Bridgeport, the furthest west was the Byram River in Greenwich, and the farthest north was the Saugatuck River in Redding. In this report, we present the data that we collected in 10 rivers throughout 14 towns.

This report focuses on the results of three water quality indicators; *E. coli*, dissolved oxygen, and conductivity. *E. coli* was selected for study because it is the indicator bacteria of choice for the Environmental Protection Agency and Connecticut Department of Energy and Environmental Protection (CT DEEP) for sewage pollution in freshwater systems. Its presence in high concentrations suggests that there are likely also more harmful pathogens present. Dissolved oxygen is an important water quality indicator because many aquatic species rely on dissolved oxygen for survival, similarly to how land animals rely on oxygen in the air. When dissolved oxygen is not available, species like fish and macroinvertebrates will relocate to higher quality waters, or die due to the lack of oxygen. Conductivity is a measure of how easily the water can carry an electrical current by measuring the ionic strength of the water. It can quantify the intrusion of salt water or other sources of salts and other compounds into a waterway.

Methods

Each river was visited approximately twice per month from May through September for a total of 10 sampling days per river. Sites were selected based on access and representativeness of the river, with effort made to space sites evenly throughout the length of the river. Monitoring was carried out under Quality Assurance Project Plans approved by the CT DEEP (RFA #14102, #16080, #16079, #16081, #16082, #16044, #16083, and #16084).

Monitoring teams left Earthplace in Westport, CT in the mid-morning to begin sampling and would return within 2-3 hours. Each team was comprised of fully-trained Harbor Watch employees, sometimes accompanied by volunteers. At each site, a water sample was collected and kept on ice. Water temperature, dissolved oxygen, and conductivity were measured at each site using a YSI Pro2030 meter.

Upon return to the Harbor Watch laboratory, the water samples were analyzed for fecal coliform and *E. coli* using membrane filtration methods set forth in Standard Methods (SM9222D and SM9222G). *E. coli* concentrations were evaluated using the criteria published in the CT DEEP Surface Water Quality Standards on 10/10/13 (Table 1). Because the rivers we tested do not contain designated swim areas, the “all other recreational uses” criteria will apply.

Table 1. CT DEEP criteria for *E. coli* levels as applied to recreational use, effective 10/10/13.

Designated Use Recreation	Class	Indicator	Criteria
Designated Swimming	AA, A, B	<i>Escherichia coli</i>	Geomean less than 126 CFU/100 mL; Single Sample Maximum 235 CFU/100 mL
Non-designated Swimming	AA, A, B	<i>Escherichia coli</i>	Geomean less than 126 CFU/100 mL; Single Sample Maximum 410 CFU/100 mL
All Other Recreational Uses	AA, A, B	<i>Escherichia coli</i>	Geomean less than 126 CFU/100 mL; Single Sample Maximum 576 CFU/100 mL

Results and Discussion

A. Fairfield County Summary

From May through September 2016, Harbor Watch monitored 10 waterways, many of which were new to the roster of waterways we have previously monitored. There were 104 unique sampling locations that were sampled 10 times each. We found that many of these rivers did not meet the state criteria for bacteria (Table 1) and may be a conduit for sewage pollution to Long Island Sound. 62% of sites failed the CT DEEP geomean criterion of <126 CFU/100 mL (Figure A1 Left). One third of these sites were double the state criterion. In addition, 47% of sites failed the CT DEEP secondary single sample maximum criterion of <10% of *E. coli* samples at each site >576 CFU/100 mL (Figure A1 Right). The Mianus River, which flows through Stamford and Greenwich, had the fewest exceedances of the CT DEEP criteria. The Rooster River, which traverses the Bridgeport/Fairfield line, had the most exceedances of the CT DEEP criteria (Figure A1).

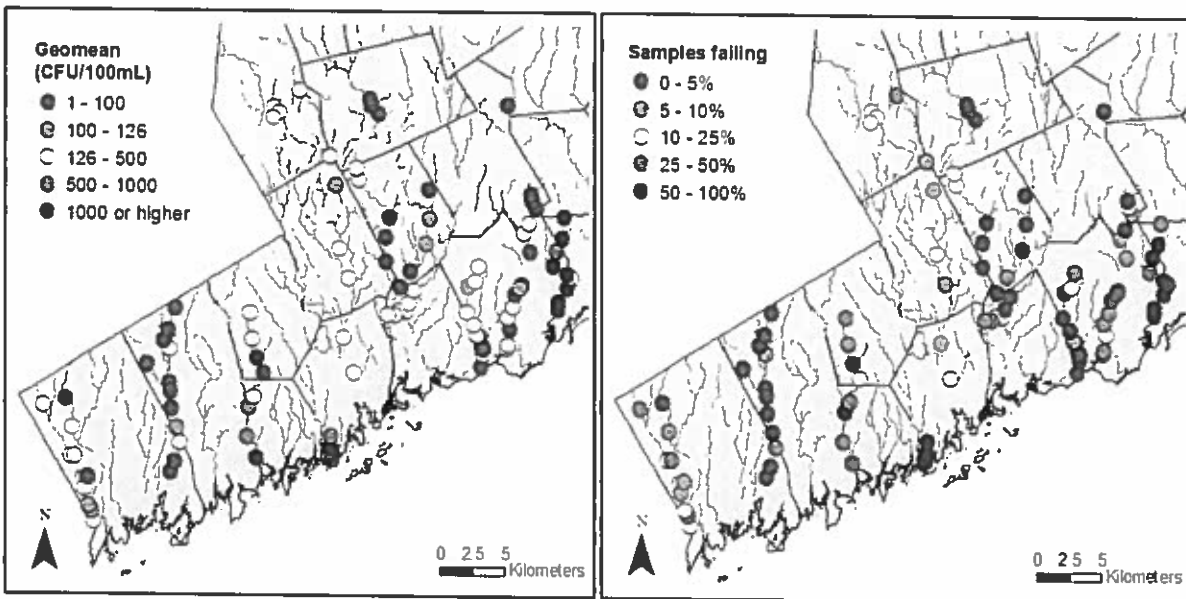


Figure A1. Map of 2016 sampling locations and *E. coli* concentrations. (Left) *E. coli* geomean for each site. The bacteria level for each site was compared to the state criteria for recreational waters. Passing sites have a geomean less than 126 CFU/100 mL. (Right) *E. coli* single sample maximums for each site. The bacteria level for each sample was compared to the state criteria for recreational waters. Passing sites have less than 10% of their samples exceeding 576 CFU/100 mL.

The state has also set the criterion for dissolved oxygen levels at a minimum of 5 mg/L. While many of the sampling sites met this criterion, a number of sites had mean dissolved oxygen values which fell below 5 mg/L (Figure A2). Prolonged events of low dissolved oxygen conditions can be harmful to aquatic and marine organisms. Dissolved oxygen values can be attributed to a number of different factors such as low flow, decomposition of organic matter,

and warm water temperature, many of which we observed over the course of the sampling season.

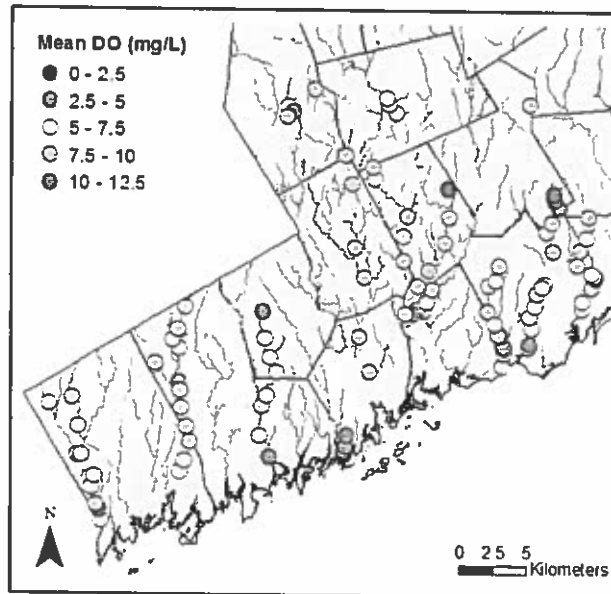


Figure A2. Map of 2016 river sampling locations and mean dissolved oxygen values. The dissolved oxygen level for each sample was compared to the state criterion of a minimum of 5 mg/L.

During the 2016 monitoring season very little rain fell from May through September. July had the largest precipitation totaling 4.8 inches and June had the least amount totaling 1.26 inches (Figure A3; Weather Underground-KBDR). Rainfall can help improve water quality by pushing a larger volume of water through the river bed. This in turn can alleviate low flow problems such as decreased dissolved oxygen levels which tend to occur during droughts. However, rainfall can also push runoff from yards, forests, and impervious surfaces into the waterway, impacting bacteria concentration and conductivity values.

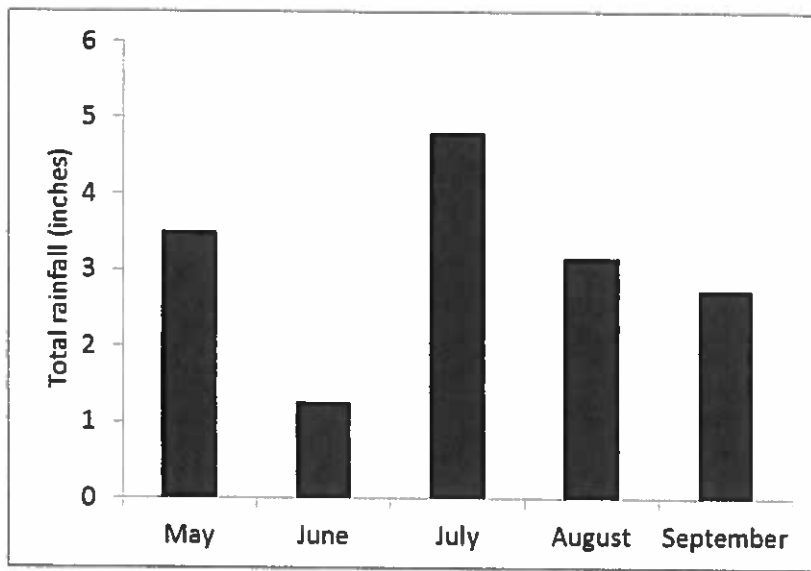


Figure A3. Monthly rainfall totals for 2016 (Weather Underground-KBDR).

Harbor Watch collects data on Fairfield County waterways for a number of different reasons. One goal is to better understand the ecological health of our watersheds by monitoring dissolved oxygen, conductivity, water temperature, and bacteria levels. Another goal is to use data that we collect to inform where pollution sources may be so that they can be remediated. This data can focus our efforts on areas that are in need of further investigations. During 2016, we conducted 4 pollution track-down surveys in Darien, Norwalk, and Fairfield storm water systems. These pollution track-down surveys are ongoing and will continue year-round. Our process has been successful in identifying point sources of pollution such as leaking sanitary sewer lines, broken sewer laterals, and pipes illegally hooked into the storm water system. By partnering with municipalities to fix these problems, we have seen up to 95% reductions in bacteria concentrations entering our waters from previously observed sources! However, the prevalence of failing bacteria concentrations observed this year (Figure A1) indicate that there is still much work to be done to protect and restore our rivers and Long Island Sound.

In the chapters that follow, we present the detailed results of the water quality monitoring conducted in the 10 waterways studied by Harbor Watch in 2016 (Byram River, Farm Creek, Mianus River, Mill River, Noroton River, Norwalk River, Poplar Plains Brook, Rooster River, Sasco Brook, and Saugatuck River).

G. Norwalk River

The Norwalk River watershed encompasses portions of seven communities whose political boundaries fall within the states of Connecticut and New York. The six Connecticut towns, all located in Fairfield County, are New Canaan, Norwalk, Redding, Ridgefield, Weston and Wilton. The seventh town is Lewisboro, New York, in Westchester County (NRWI, 1998). The watershed is roughly 40,000 acres or 64.1 square miles. Approximately 64 percent of the watershed land use is developed by commercial/light industry uses, residential neighborhoods, and roads (NRWI, 1998). The remaining 36 percent is comprised of woodland, open lands, water, and wetlands (NRWI, 1998). The main stem of the Norwalk River is approximately 20 miles in length, beginning in the Great Swamp in Ridgefield. From there the river runs north approximately a mile, before turning south discharging in Norwalk Harbor where the last three miles are a tidal estuary (NRWI, 1998).

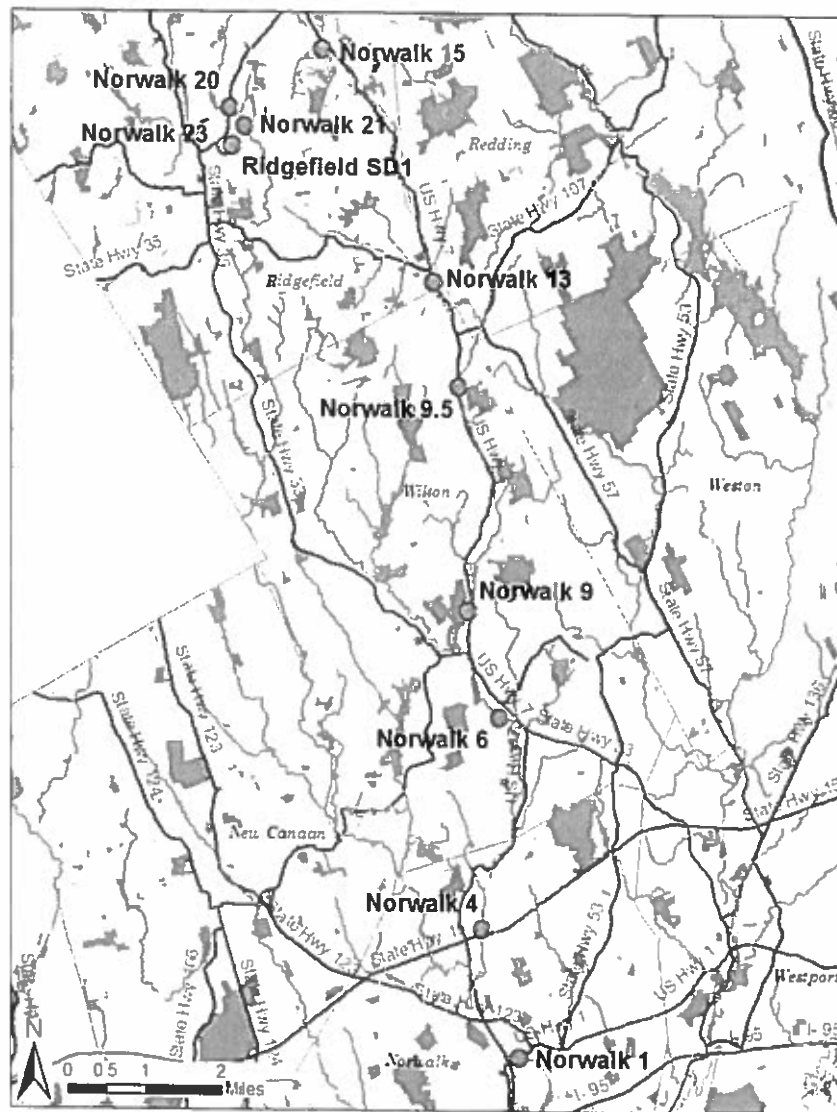


Figure G1. Sample locations for 11 sites on the Norwalk River.

We have monitored the Norwalk River year-round for 18 years, with the highest frequency of sampling during the May through September monitoring season. Our results indicate that water quality conditions in the river during 2016 were worse than 2015, but better than 2014 (Figure G2). Currently the river exceeded the CT DEEP criteria for *E. coli*, but dissolved oxygen values did meet the minimum CT DEEP criterion.

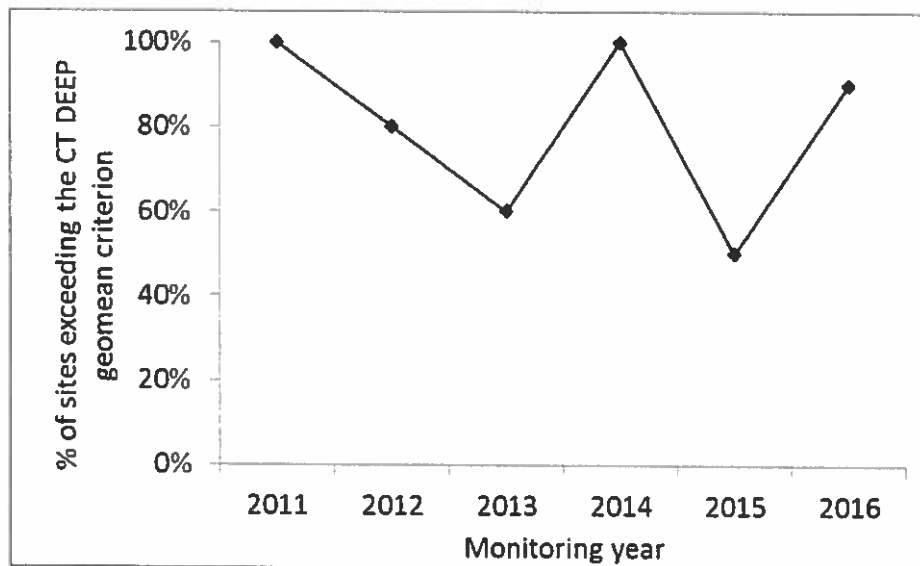


Figure G2. Historic look at Norwalk River CT DEEP geomean criterion exceedances.

In 2016, site Norwalk 9.5 was the only site that passed the CT DEEP *E. coli* geomean criterion of <126 CFU/100 mL (Figure G3, Table G1). All 11 sites on the Norwalk River exceeded the CT DEEP single sample maximum criterion (<10% of *E. coli* samples at each site >576 CFU/100 mL; Table G1). Elevated bacteria counts were observed on sampling days which had at least 0.1 inches of rain fall during sample collection and/or within the two days prior to sample collection. Site Ridgefield SD1 in Table G1 is the Ridgefield Wastewater Treatment Plant effluent pipe where it enters the Norwalk River. From April through October, the plant utilizes ultra-violet lights which the treated wastewater flows past for a final bacteria elimination process. The bacteria counts were very low at this site, and were frequently 0 CFU/100 mL (shown in blue cells in Table G1). These data show that the plant was not discharging untreated water to the Norwalk River during the study period.

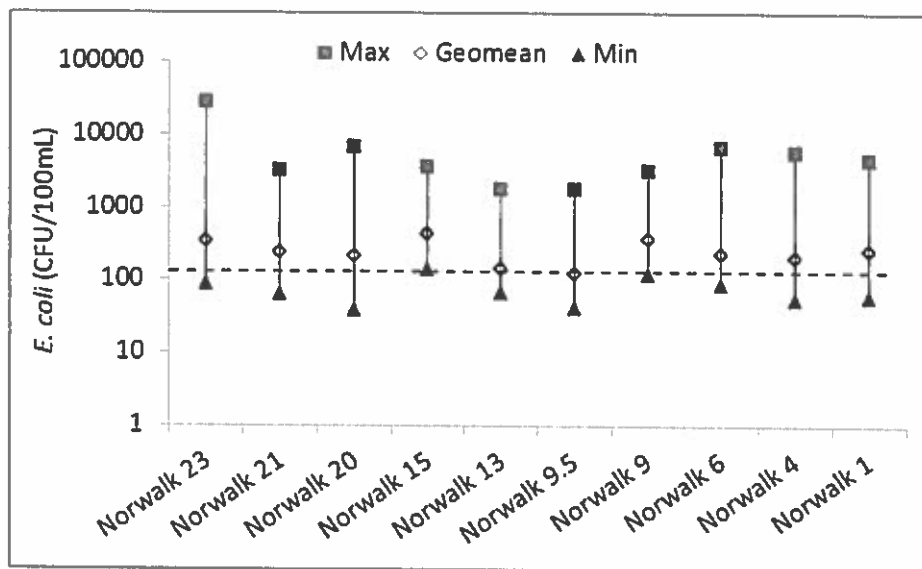


Figure G3. Norwalk River *E. coli* concentrations. Maximum, geomean, and minimum for each site. Dotted line represents the CT DEEP geomean maximum of 126 CFU/100 mL.

Table G1. Norwalk River *E. coli* concentrations and relation to CT DEEP water quality criteria. Blue cells represent actual *E. coli* count of 0 CFU/100mL, but were changed to calculate geomean (rainfall data: P. DiPietro, personal communication, Oct 26, 2016)

	5/24	6/7	6/15	7/8	7/13	8/4	8/18	9/1	9/8	9/19	Geomean	% >576
Norwalk 23	3860	240	116	96	116	164	152	84	196	28100	327	20%
Ridgefield SD1	1	1	1	1	1	1	1	1	1	4	1	0%
Norwalk 21	2220	176	104	164	60	88	72	340	140	3200	228	20%
Norwalk 20	1360	252	260	36	64	44	60	284	140	6700	207	20%
Norwalk 15	680	356	132	3660	212	540	TNTC	240	170	700	417	33%
Norwalk 13	96	188	136	140	116	80	84	92	64	1800	140	10%
Norwalk 9.5	60	64	128	96	120	72	140	124	40	1800	118	10%
Norwalk 9	320	268	188	280	420	116	220	760	340	3200	363	20%
Norwalk 6	380	160	164	116	132	140	140	184	84	6900	224	10%
Norwalk 4	440	212	116	148	124	88	88	196	52	5700	197	10%
Norwalk 1	420	228	244	136	120	240	76	580	56	4600	252	20%
Rainfall	Wet	Wet	Dry	Wet	Dry	Dry	Dry	Wet	Wet	Wet		

Dissolved oxygen averages at all sites pass the CT DEEP minimum criterion of 5 mg/L (Figure G4). Individual readings fell below 5 mg/L at Norwalk 21 and Norwalk 20 on multiple days over the course of the monitoring season (Table G2). Flow through these sites was slow as the river courses through the Great Swamp in Ridgefield, CT.

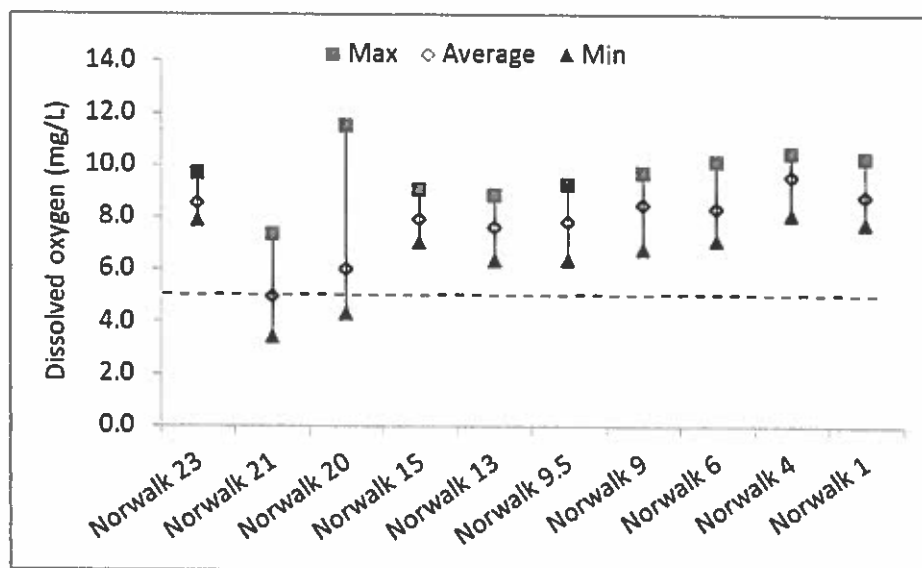


Figure G4. Norwalk River dissolved oxygen concentrations. Maximum, average, and minimum for each site. Dotted line represents the CT DEEP minimum of 5 mg/L.

Table G2. Days during which dissolved oxygen levels fell below 5 mg/L

Site	Date	Value (mg/L)
Norwalk 21	7/8/2016	4.3
	7/13/2016	4.1
	8/4/2016	3.4
	8/18/2016	3.4
	9/1/2016	4.1
Norwalk 20	8/4/2016	4.6
	9/1/2016	4.3
	9/19/2016	4.7

Conductivity values in the upper Norwalk River had wider ranges than sites located in the lower portion of the Norwalk River. This may be attributed to the geology in Ridgefield, CT and the prevalence of limestone beds that increase conductivity from runoff and erosion. Ranges in conductivity begin to stabilize at Norwalk 9.5 which is below where two tributaries, Comstock Brook and Cooper Brook, converge with the river. These tributaries add an influx of low conductivity freshwater to the system.

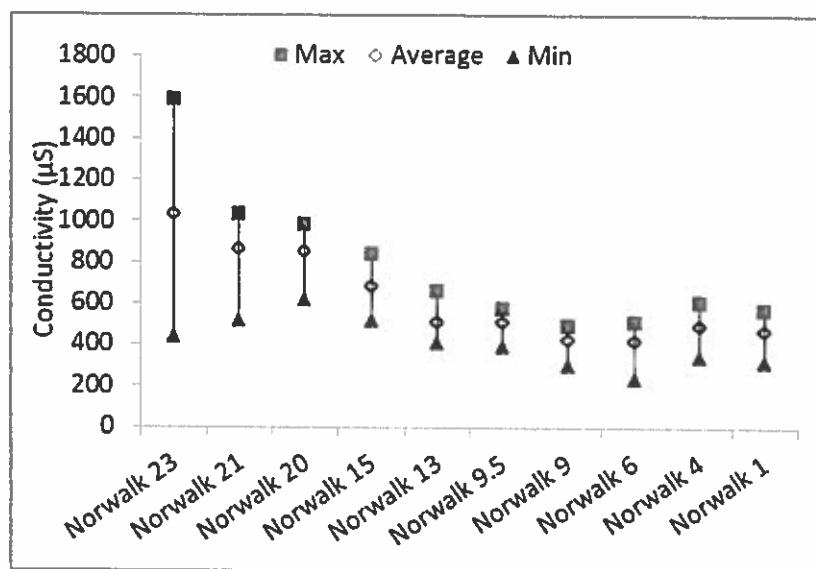


Figure G5. Norwalk River conductivity values. Maximum, average, and minimum for each site.

Table G3. GPS coordinates and site locations for the Norwalk River

Station Number	Latitude	Longitude	Town	Comments
Norwalk 1	41.11938	-73.41724	Norwalk	40 Cross Street
Norwalk 4	41.14349	-73.42669	Norwalk	10 Glover Avenue
Norwalk 6	41.18341	-73.42276	Wilton	187 Danbury Road
Norwalk 9	41.20354	-73.43094	Wilton	School Road, trail head across from Cider Mill School
Norwalk 9.5	41.24590	-73.43409	Wilton	Old Mill Road park
Norwalk 13	41.26550	-73.44079	Ridgefield	787 Branchville Road
Norwalk 15	41.30909	-73.46931	Ridgefield	30 Stonehenge Road
Norwalk 20	41.29787	-73.49232	Ridgefield	195 Danbury Road
Norwalk 21	41.29444	-73.48843	Ridgefield	68 Farmingville Road
Ridgefield SD1	41.29077	-73.49155	Ridgefield	Ligi's Way. Wastewater Treatment Plant effluent discharge
Norwalk 23	41.29055	-73.49337	Ridgefield	22 South Street

K. Saugatuck River

The Saugatuck River watershed encompasses portions of nine communities whose political boundaries fall within the state of Connecticut. The Connecticut towns, all located in Fairfield County, are Danbury, Ridgefield, Bethel, Redding, Wilton, Weston, Easton, Westport, and Norwalk. The watershed is approximately 38,704 acres or 60.5 square miles and is defined by two main drainage basins and a tributary: the Saugatuck River, the West Branch of the Saugatuck River, and Poplar Plains Brook (presented in section H of this report). The land use is a combination of protective preserve around the Saugatuck Reservoir, residential, and light commercial. The Saugatuck River begins in Redding and flows southeast into Weston, and then south into Westport discharging to Long Island Sound through the Saugatuck Harbor. The West Branch of the Saugatuck River is located primarily in Weston, with a small portion traveling southwest into Westport.

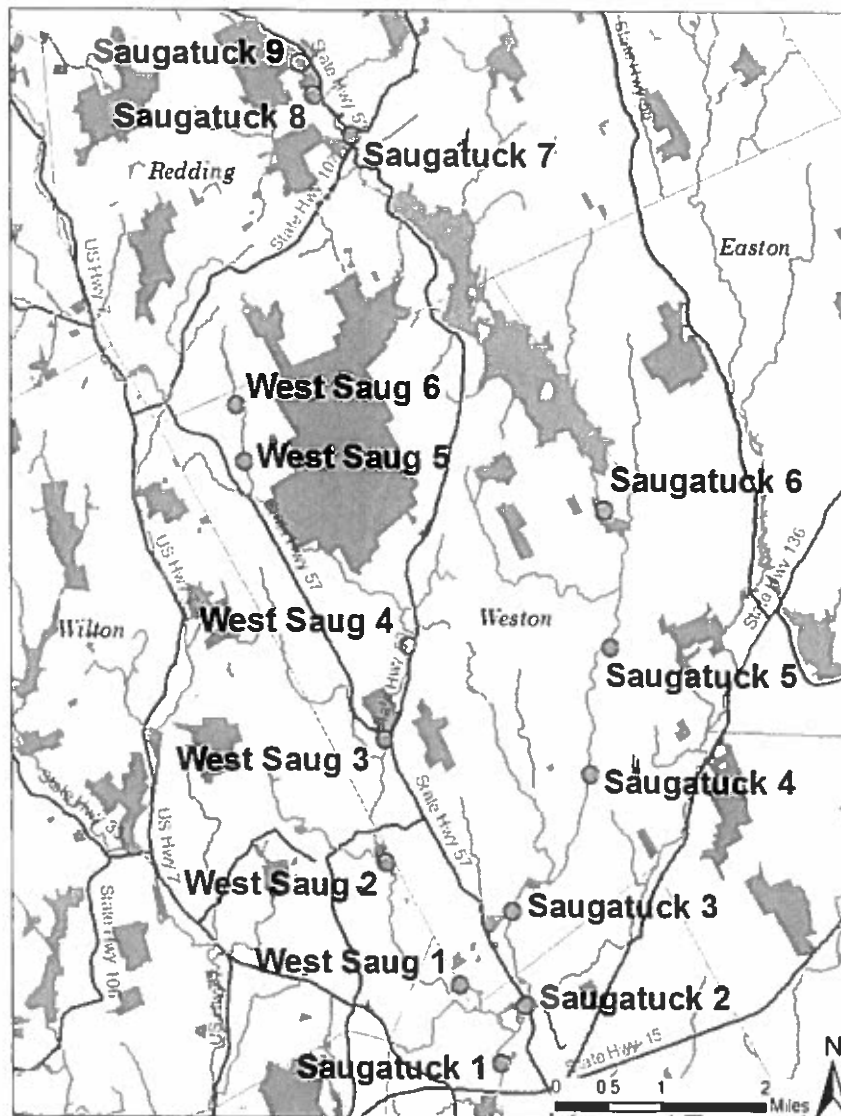


Figure K1. Sample locations for 15 sites on the Saugatuck River.

Harbor Watch has been monitoring the Saugatuck River for approximately 10 years. While the percentage of sites exceeding the CT DEEP geomean criterion has fluctuated through the years, overall the percentage has remained relatively low (Figure K2). More sites exceeded the criterion in 2016 than 2015, but the 2015 samples were only collected in October and November when we tend to observe lower bacteria concentrations due to the colder temperatures. We suggest continued monitoring of the river to identify any sources of sewage pollution for remediation, though overall water quality in the river was good in 2016.

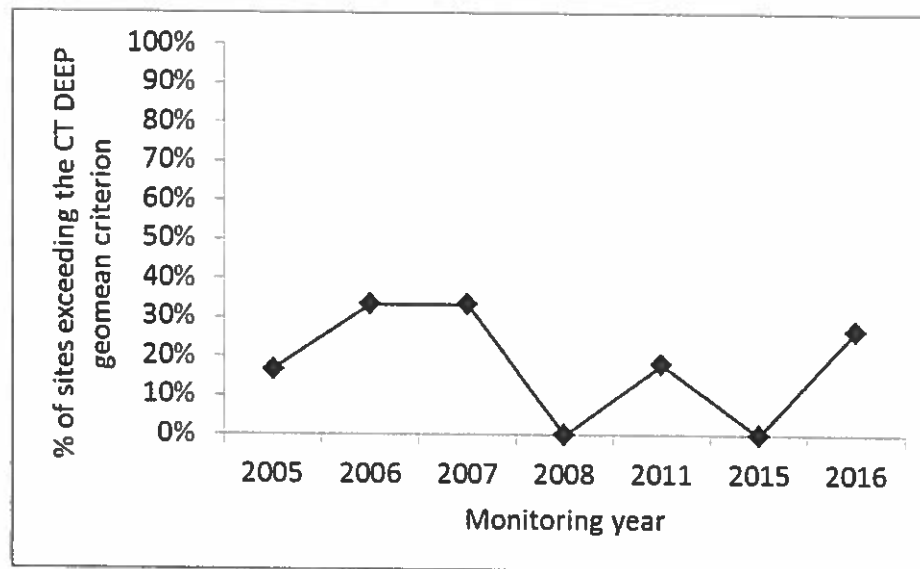


Figure K2. Historic look at Saugatuck River CT DEEP geomean criterion exceedances.

In 2016, four sites, West Saugatuck 6, West Saugatuck 5, Saugatuck 2 and Saugatuck 1, exceeded the CT DEEP *E. coli* geomean criterion (<126 CFU/100 mL; Figure K3, Table K1). Three sites, West Saugatuck 6, West Saugatuck 5, and Saugatuck 3, exceeded the single sample maximum criterion (<10% of *E. coli* samples at each site >576 CFU/100 mL; Table K1). The samples collected during wet weather conditions tended to have elevated bacteria counts (Table K1).

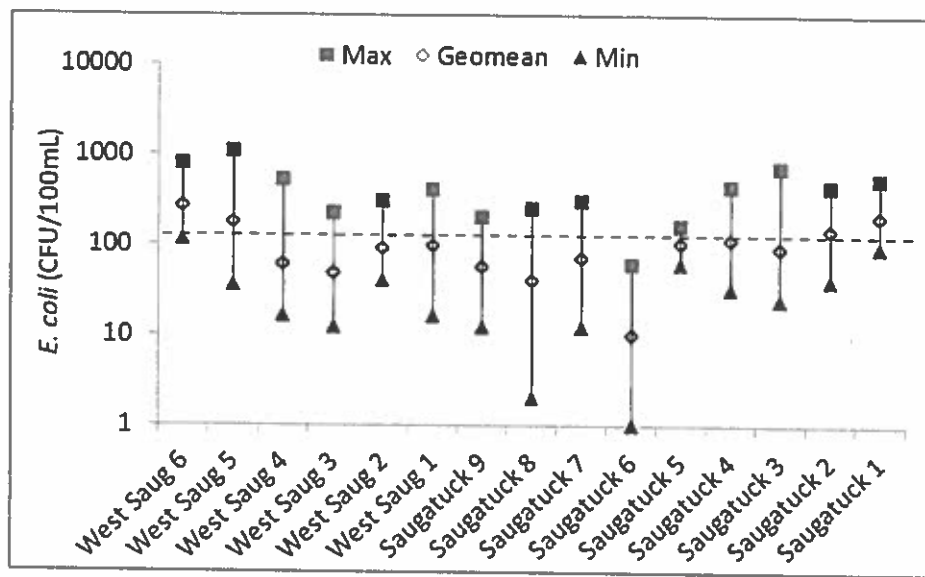


Figure K3. Saugatuck River *E. coli* concentrations. Maximum, geomean, and minimum for each site. Dotted line represents the CT DEEP geomean maximum of 126 CFU/100 mL.

Table K1. Saugatuck River *E. coli* concentrations and relation to CT DEEP water quality criteria. Blue cells represent actual *E. coli* count of 0 CFU/100mL, but were changed to calculate geometric mean (rainfall data: E. Long, personal communication, Sept 30, 2016)

	5/25	6/2	6/16	7/6	7/19	7/27	8/9	8/25	9/13	9/26	Geomean	%>576
West Saugatuck 6	172	116	176	316	780	520	224	268	No Sample	No Sample	269	13%
West Saugatuck 5	172	80	36	176	84	700	176	1080	No Sample	No Sample	177	25%
West Saugatuck 4	340	76	28	240	16	520	16	92	16	18	60	0%
West Saugatuck 3	184	48	No Sample	180	12	220	36	36	20	14	49	0%
West Saugatuck 2	168	72	132	300	52	200	40	68	68	48	92	0%
West Saugatuck 1	120	64	116	160	68	400	144	240	36	16	97	0%
Saugatuck 9	200	64	48	64	148	100	36	64	20	12	56	0%
Saugatuck 8	248	20	28	56	100	128	32	40	48	2	41	0%
Saugatuck 7	184	24	40	80	304	188	60	116	12	50	71	0%
Saugatuck 6	20	1	12	60	20	16	20	4	8	4	10	0%
Saugatuck 5	68	60	104	88	100	164	124	156	128	88	103	0%
Saugatuck 4	80	32	56	440	76	260	176	160	100	106	114	0%
Saugatuck 3	192	24	68	116	52	720	88	92	60	54	90	10%
Saugatuck 2	288	120	440	224	140	292	68	108	100	40	145	0%
Saugatuck 1	480	540	160	320	120	400	96	176	144	112	211	0%
Rainfall	Wet	Dry	Dry	Wet	Wet	Wet	Dry	Dry	Dry	Dry		

Each of the sites on the Saugatuck River had a mean dissolved oxygen value above the CT DEEP minimum criterion of 5 mg/L (Figure K4). However, individual readings fell below 5 mg/L at West Saugatuck 5 on 8/9 and 8/25, West Saugatuck 3 on 7/19, and Saugatuck 9 on 7/6, 7/19, 8/9, and 9/13.

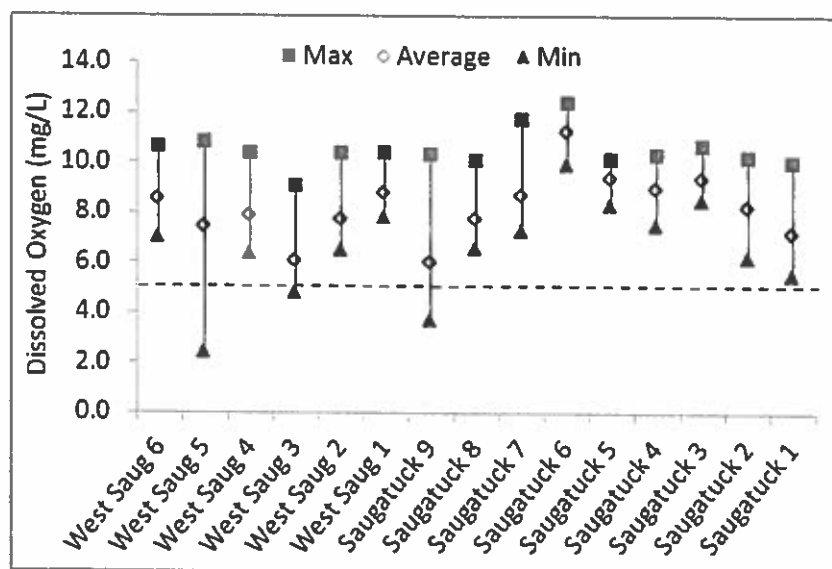


Figure K4. Saugatuck River dissolved oxygen concentrations. Maximum, average, and minimum for each site. Dotted line represents the CT DEEP minimum of 5 mg/L.

Ranges in conductivity throughout the river were narrow (Figure K5). Mean conductivity values increased in the West Branch of the Saugatuck at sites closer to the confluence with the Saugatuck River (Figure K5). There was a drop in mean conductivity values between Saugatuck 7 and Saugatuck 6, which may have been attributed to the Saugatuck Reservoir, which is located in between the sites. The area around the reservoir is protected land which acts as a buffer between the roads and the water.

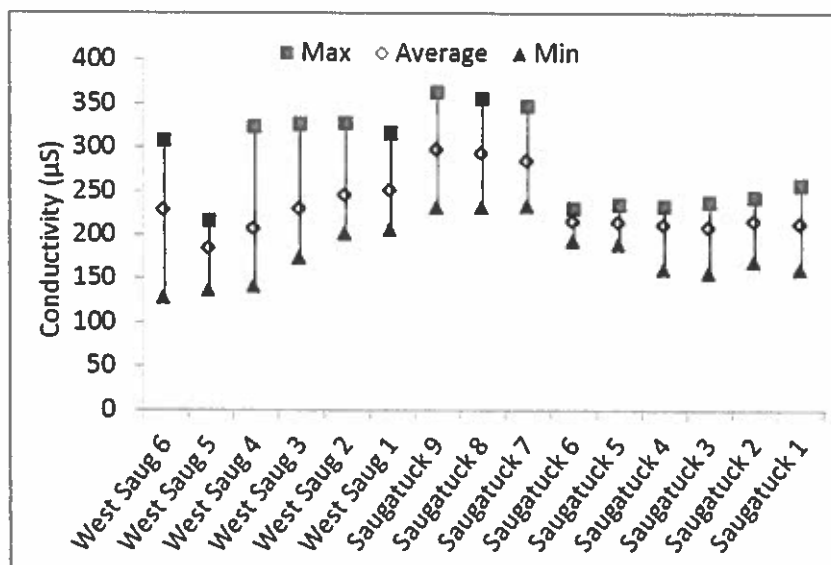


Figure K5. Saugatuck River conductivity values. Maximum, average, and minimum for each site.

Table K2. GPS coordinates and site locations for the Saugatuck River

Station Number	Latitude	Longitude	Town	Comments
Saugatuck 1	41.16748	-73.36647	Westport	Michele Lane on Clinton Avenue
Saugatuck 2	41.17553	-73.36193	Westport	Weston Road by Glendinning Place
Saugatuck 3	41.18830	-73.36441	Weston	27 River Road
Saugatuck 4	41.20722	-73.35043	Weston	1 Cartbridge Road
Saugatuck 5	41.22469	-73.34670	Weston	18 Davis Hill Road
Saugatuck 6	41.24343	-73.34785	Weston	153 Valley Forge Road
Saugatuck 7	41.29439	-73.39480	Redding	Route 53 and Route 107 intersection
Saugatuck 8	41.29987	-73.40161	Redding	Diamond Hill Road by Mark Twain Library
Saugatuck 9	41.30420	-73.40415	Redding	Saugatuck Falls Trail
West Saugatuck 1	41.17809	-73.37404	Weston	21 Cavalry Road
West Saugatuck 2	41.19480	-73.38763	Wilton	23 Stonebridge Road
West Saugatuck 3	41.21162	-73.38800	Weston	Intersection of Georgetown Road and Old Mill Road
West Saugatuck 4	41.22465	-73.38366	Weston	3 Michaels Way
West Saugatuck 5	41.24954	-73.41377	Weston	20 Indian Valley Road
West Saugatuck 6	41.25730	-73.41533	Weston	86 Old Farm Road

Citations

1. State of Connecticut Department of Energy and Environmental Protection. "Connecticut Water Quality Standards." (2013): 22-90. Eregulations.ct.gov. Web. Accessed: 28 Nov. 2016.
2. The Norwalk River Watershed Initiative Committee. *The Norwalk River Watershed Action Plan*. 1998. 38 pp.
3. "Weather History for KBDR." *Weather Underground*. The Weather Company, LLC. Web. Accessed: 28 November 2016.
4. "Fairfield Town Hall KCTFAIRF27." *Weather Underground*. The Weather Company, LLC. Web. Accessed: 04 November 2016.
5. "Weather History for KHPN." *Weather Underground*. The Weather Company, LLC. Web. Accessed: 04 November 2016.

APPENDIX D



General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Stormwater Monitoring Report Form

PERMITTEE

Please send completed form to:

STORMWATER GROUP
BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

INFORMATION

Town: Wilton

Mailing Address: Town Hall Annex, 238 Danbury Road, Wilton, CT

Contact Person: Tom Therkettle

Title: Director of Public Works

Phone: 203-563-0154

Permit Registration #GSM: 000040

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): Outfall to Norwalk River across street from Stop & Shop Plaza (Old Ridgefield Rd) (Sample ID C-1) N631052.06, E812785.07- NAD83

Please check the appropriate area description: ☐ Industrial ☒ Commercial ☐ Residential

Receiving Water (name, basin): Norwalk River, S.E Coast Basin

Time of Start of Discharge: 9:53

Date/Time Collected: 09/19/2016, 10:50

Water Temperature: ---

Person Collecting Sample: Chris Dubuque

Storm Magnitude (inches): 0.26

Storm Duration (hours): 3 hrs.

Date of Previous Storm Event: 09/10/2016

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM 4500 H+B	7.4 su	Test America
Rain pH	---	---	---
Hardness	SM 2340B	16 mg/L	Test America
Conductivity	SM 2510B	74.0 umhos/cm	Test America
Oil & Grease	1664A	ND	Test America
COD	410.4	74 mg/L	Test America
Turbidity	180.1	59 NTU	Test America
TSS	SM 2540D	20.0 mg/L	Test America
TP	SM 4500 P E	0.030 mg/L	Test America
Ammonia	350.1	0.21 mg/L	Test America
TKN	351.2	1.0 mg/L	Test America
NO ₃ +NO ₂	353.2	0.39 mg/L	Test America
E. coli		1,011 cfu/100 mL	Environmental Monitoring Lab

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the MS4 General Permit. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official:

Michael S. Ather, Field Engineer
(Print Name)

Signature: [Signature]

Date: 10/10/16



General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Stormwater Monitoring Report Form

PERMITTEE

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STORMWATER GROUP
BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

INFORMATION

Town: Wilton

Mailing Address: Town Hall Annex, 238 Danbury Road, Wilton, CT

Contact Person: Tom Thurkettle

Title: Director of Public Works

Phone: 203-563-0154

Permit Registration #GSM: 000040

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): Outfall to Norwalk River behind Village Market (108 Old Ridgefield Road) (Sample ID C-2) N632059.96, E812727.20 - NAD83

Please check the appropriate area description: ☐ Industrial ☒ Commercial ☐ Residential

Receiving Water (name, basin): Norwalk River, S.E. Coast Basin

Time of Start of Discharge: 9:53

Date/Time Collected: 09/19/2016, 11:00

Water Temperature: ---

Person Collecting Sample: Chris Dubuque

Storm Magnitude (inches): 0.26

Storm Duration (hours): 3 hrs.

Date of Previous Storm Event: 09/10/2016

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM 4500 H+B	6.60 su	Test America
Rain pH	---	---	---
Hardness	SM 2340B	16 mg/L	Test America
Conductivity	SM 2510B	29 umhos/cm	Test America
Oil & Grease	1664A	ND	Test America
COD	410.4	33 mg/L	Test America
Turbidity	180.1	5.7 NTU	Test America
TSS	SM 2540D	13 mg/L	Test America
TP	SM 4500 P E	0.12 mg/L	Test America
Ammonia	350.1	0.31 mg/L	Test America
TKN	351.2	0.83 mg/L	Test America
NO ₃ +NO ₂	353.2	.15 mg/L	Test America
E. coli		130 cfu/100 mL	Environmental Monitoring Lab

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the MS4 General Permit. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official:

Michael S. Ahern, Field Engineer
(Print Name)

Signature: Michael S. Ahern

Date: 10/10/16



General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

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79 ELM STREET
HARTFORD, CT 06106-5127

INFORMATION

Town: Wilton

Mailing Address: Town Hall Annex, 238 Danbury Road, Wilton, CT

Contact Person: Tom Therkettle

Title: Director of Public Works

Phone: 203-563-0154

Permit Registration #GSM: 000040

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): Outfall from parking area into retention pond at elementary school (Sample ID C-3) N636320.12, E812289.29 - NAD83

Please check the appropriate area description: ☐ Industrial ☒ Commercial ☐ Residential

Receiving Water (name, basin): Norwalk River, S.E Coast Basin

Time of Start of Discharge: 9:53

Date/Time Collected: 09/19/2016, 11:12

Water Temperature: ---

Person Collecting Sample: Chris Dubuque

Storm Magnitude (inches): 0.26

Storm Duration (hours): 3 hrs.

Date of Previous Storm Event: 09/10/2016

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM 4500 H+B	6.3 su	Test America
Rain pH	---	---	---
Hardness	SM 2340B	4.0 mg/L	Test America
Conductivity	SM 2510B	48.0 umhos/cm	Test America
Oil & Grease	1664A	ND	Test America
COD	410.4	23 mg/L	Test America
Turbidity	180.1	8.2 NTU	Test America
TSS	SM 2540D	4.0 mg/L	Test America
TP	SM 4500 P E	0.020 mg/L	Test America
Ammonia	350.1	0.13 mg/L	Test America
TKN	351.2	0.52 mg/L	Test America
NO ₃ +NO ₂	353.2	0.25 mg/L	Test America
E. coli		2,420 cfu/100 mL	Environmental Monitoring Lab

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the MS4 General Permit. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official: Michael S. Ahern, Field Engineer

(Print Name)

Signature: [Signature]

Date: 10/10/16



General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

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PERMITTEE

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79 ELM STREET
HARTFORD, CT 06106-5127

INFORMATION

Town: Wilton

Mailing Address: Town Hall Annex, 238 Danbury Road, Wilton, CT

Contact Person: Tom Therkettle

Title: Director of Public Works

Phone: 203-563-0154

Permit Registration #GSM: 000040

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): Drainage stream flowing into retention pool behind football field (Sample ID R-1) N639017.45, E811579.83 - NAD83

Please check the appropriate area description: ☐ Industrial ☐ Commercial ☒ Residential

Receiving Water (name, basin): Streets Pond, Comstock Brook, S.E Coast Basin

Time of Start of Discharge: 9:53

Date/Time Collected: 09/19/2016, 11:25

Water Temperature: ---

Person Collecting Sample: Chris Dubuque

Storm Magnitude (inches): 0.26

Storm Duration (hours): 3 hrs.

Date of Previous Storm Event: 09/10/2016

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM 4500 H+B	7.3 su	Test American
Rain pH	---	---	---
Hardness	SM 2340B	60.0 mg/L	Test America
Conductivity	SM2510B	220 umhos/cm	Test America
Oil & Grease	1664A	ND	Test America
COD	410.4	26.0 mg/L	Test America
Turbidity	180.1	120.0 NTU	Test America
TSS	SM 2540D	110 mg/L	Test America
TP	SM 4500 P E	0.09 mg/L	Test America
Ammonia	350.1	ND	Test America
TKN	351.2	0.96 mg/L	Test America
NO ₃ +NO ₂	353.2	3.4 mg/L	Test America
E. coli		2,420 cfu/100 mL	Environmental Monitoring Lab

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the MS4 General Permit. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official:

Michael S. Ahern, Field Engineer
(Print Name)

Signature: Mr. Ahern

Date: 10/10/16



General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Stormwater Monitoring Report Form

PERMITTEE

Please send completed form to: STORMWATER GROUP
BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

INFORMATION

Town: Wilton
Mailing Address: Town Hall Annex, 238 Danbury Road, Wilton, CT
Contact Person: Tom Therkettle Title: Director of Public Works
Phone: 203-563-0154 Permit Registration #GSM: 000040

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): Drainage stream, south side of Olmstead Road, runs behind H.S. soccer field (Sample ID R-2) N641864.63, E811271.38 - NAD83
Please check the appropriate area description: ☐ Industrial ☐ Commercial ☒ Residential
Receiving Water (name, basin): Norwalk River, S.E Coast Basin
Time of Start of Discharge: 9:53
Date/Time Collected: 9/19/2016, 11:50 Water Temperature: ---
Person Collecting Sample: Chris Dubuque
Storm Magnitude (inches): .26 Storm Duration (hours): 3 hours
Date of Previous Storm Event: 9/10/2016

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM 4500 H+B	7.0 su	Test America
Rain pH	---	---	---
Hardness	SM 2340B	32.0 mg/L	Test America
Conductivity	SM 2510B	150.0 umhos/cm	Test America
Oil & Grease	1664A	ND	Test America
COD	410.4	58 mg/L	Test America
Turbidity	180.1	19 NTU	Test America
TSS	SM 2540D	22 mg/L	Test America
TP	SM 4500 P E	0.26 mg/L	Test America
Ammonia	350.1	0.095 mg/L	Test America
TKN	351.2	1.1 mg/L	Test America
NO ₃ +NO ₂	353.2	0.48 mg/L	Test America
E. coli		1,733 cfu/mL	Environmental Monitoring Lab

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the MS4 General Permit. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official:

Signature:

(Print Name)

Date:



General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Stormwater Monitoring Report Form

PERMITTEE

Please send completed form to:

STORMWATER GROUP
BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

INFORMATION

Town: Wilton

Mailing Address: Town Hall Annex, 238 Danbury Road, Wilton, CT

Contact Person: Tom Thurbett

Title: Director of Public Works

Phone: 203-563-0154

Permit Registration #GSM: 000040

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): Outfall along east side of Nod Hill Road
(Sample ID R-3) N641444.32, E805807.88 - NAD83

Please check the appropriate area description: ☐ Industrial ☐ Commercial ☒ Residential

Receiving Water (name, basin): Streets Pond, Comstock Brook, S.E. Coast Basin

Time of Start of Discharge: 9:53

Date/Time Collected: 09/19/2016, 12:00

Water Temperature: ---

Person Collecting Sample: Chris Dubuque

Storm Magnitude (inches): 0.26

Storm Duration (hours): 3 hrs.

Date of Previous Storm Event: 09/10/2016

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM 4500 H+B	7.1 su	Test America
Rain pH	---	---	---
Hardness	SM 2340B	68.0 mg/L	Test America
Conductivity	SM 2510B	280 umhos/cm	Test America
Oil & Grease	1664A	ND	Test America
COD	410.4	30 mg/L	Test America
Turbidity	180.1	9.7 NTU	Test America
TSS	SM 2540D	12 mg/L	Test America
TP	SM 4500 P E	0.45 mg/L	Test America
Ammonia	350.1	0.097 mg/L	Test America
TKN	351.2	0.96 mg/L	Test America
NO ₃ +NO ₂	353.2	1.3 mg/L	Test America
E. coli		1,986 cfu/100 mL	Environmental Monitoring Lab

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the MS4 General Permit. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official:

Michael S. Ahern, Field Engineer
(Print Name)

Signature:

Date: 10/10/16

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

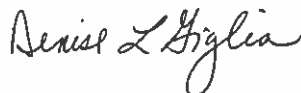
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-106183-1
Client Project/Site: NPDES Wilton MS4

For:
Tighe & Bond
1000 Bridgeport Avenue
Floor 3
Shelton, Connecticut 06484

Attn: Lori Carriero



Authorized for release by:
9/23/2016 5:13:02 PM

Denise Giglia, Project Management Assistant II
denise.giglia@testamericainc.com

Designee for

Steve Hartmann, Project Manager I
(413)572-4000
steve.hartmann@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Tighe & Bond
Project/Site: NPDES Wilton MS4

TestAmerica Job ID: 480-106183-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
-----------	-----------------------

HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
----	--

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
--------------	---

"	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Tighe & Bond
Project/Site: NPDES Wilton MS4

TestAmerica Job ID: 480-106183-1

Job ID: 480-106183-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative 480-106183-1

Receipt

The samples were received on 9/20/2016 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.7° C and 3.0° C.

General Chemistry

Method(s) 353.2: The results reported for the following samples do not concur with results previously reported for this site: C-1 (480-106183-1), R-1 (480-106183-4) and R-3 (480-106183-6). Reanalysis was performed, and the result(s) confirmed.

Method(s) 9040C, SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: C-1 (480-106183-1), C-2 (480-106183-2), R-1 (480-106183-4), R-2 (480-106183-5) and R-3 (480-106183-6).

Method(s) 9040C, SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following sample has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: C-3 (480-106183-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client Sample Results

Client: Tighe & Bond
Project/Site: NPDES Wilton MS4

TestAmerica Job ID: 480-106183-1

Client Sample ID: C-1

Lab Sample ID: 480-106183-1

Date Collected: 09/19/16 10:50

Matrix: Water

Date Received: 09/20/16 09:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease	ND		4.8		mg/L		09/21/16 06:15	09/21/16 07:43	1
Ammonia	0.21		0.020		mg/L			09/20/16 13:33	1
Total Kjeldahl Nitrogen	1.0		0.20		mg/L		09/21/16 03:10	09/21/16 10:50	1
Nitrate as N	0.39		0.050		mg/L			09/20/16 17:50	1
Nitrite as N	ND		0.050		mg/L			09/20/16 17:50	1
Chemical Oxygen Demand	74		10		mg/L			09/20/16 17:03	1
Hardness as calcium carbonate	16		4.0		mg/L			09/20/16 11:45	1
Phosphorus	0.030		0.010		mg/L			09/21/16 09:30	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	59		1.0		NTU			09/20/16 15:30	1
Specific Conductance	74		1.0		umhos/cm			09/20/16 13:51	1
Total Suspended Solids	20		4.0		mg/L			09/21/16 10:39	1
pH	7.4	HF	0.1		SU			09/20/16 15:03	1

Client Sample ID: C-2

Lab Sample ID: 480-106183-2

Date Collected: 09/19/16 11:00

Matrix: Water

Date Received: 09/20/16 09:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease	ND		4.8		mg/L		09/21/16 06:15	09/21/16 07:43	1
Ammonia	0.31		0.020		mg/L			09/20/16 13:34	1
Total Kjeldahl Nitrogen	0.83		0.20		mg/L		09/21/16 03:10	09/21/16 10:50	1
Nitrate as N	0.15		0.050		mg/L			09/20/16 17:52	1
Nitrite as N	ND		0.050		mg/L			09/20/16 17:52	1
Chemical Oxygen Demand	33		10		mg/L			09/20/16 17:03	1
Hardness as calcium carbonate	16		4.0		mg/L			09/20/16 11:45	1
Phosphorus	0.12		0.010		mg/L			09/21/16 09:30	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	5.7		1.0		NTU			09/20/16 15:30	1
Specific Conductance	29		1.0		umhos/cm			09/20/16 13:53	1
Total Suspended Solids	13		4.0		mg/L			09/21/16 10:39	1
pH	6.6	HF	0.1		SU			09/20/16 15:05	1

Client Sample ID: C-3

Lab Sample ID: 480-106183-3

Date Collected: 09/19/16 11:12

Matrix: Water

Date Received: 09/20/16 09:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease	ND		4.7		mg/L		09/21/16 06:15	09/21/16 07:43	1
Ammonia	0.13		0.020		mg/L			09/20/16 13:35	1
Total Kjeldahl Nitrogen	0.52		0.20		mg/L		09/21/16 03:10	09/21/16 10:50	1
Nitrate as N	0.25		0.050		mg/L			09/20/16 17:53	1
Nitrite as N	ND		0.050		mg/L			09/20/16 17:53	1
Chemical Oxygen Demand	23		10		mg/L			09/20/16 17:03	1
Hardness as calcium carbonate	4.0		4.0		mg/L			09/20/16 11:45	1
Phosphorus	0.020		0.010		mg/L			09/21/16 09:30	1

TestAmerica Buffalo

Client Sample Results

Client: Tighe & Bond
Project/Site: NPDES Wilton MS4

TestAmerica Job ID: 480-106183-1

Client Sample ID: C-3

Lab Sample ID: 480-106183-3

Date Collected: 09/19/16 11:12

Matrix: Water

Date Received: 09/20/16 09:45

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	8.2		1.0		NTU			09/20/16 15:30	1
Specific Conductance	48		1.0		umhos/cm			09/20/16 15:32	1
Total Suspended Solids	4.0		4.0		mg/L			09/21/16 17:38	1
pH	6.3	HF	0.1		SU			09/21/16 15:18	1

Client Sample ID: R-1

Lab Sample ID: 480-106183-4

Date Collected: 09/19/16 11:25

Matrix: Water

Date Received: 09/20/16 09:45

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease	ND		5.1		mg/L		09/21/16 06:15	09/21/16 07:43	1
Ammonia	ND		0.020		mg/L			09/20/16 13:36	1
Total Kjeldahl Nitrogen	0.96		0.20		mg/L		09/21/16 03:10	09/21/16 10:50	1
Nitrate as N	3.4		0.050		mg/L			09/20/16 17:54	1
Nitrite as N	ND		0.050		mg/L			09/20/16 17:54	1
Chemical Oxygen Demand	26		10		mg/L			09/20/16 17:03	1
Hardness as calcium carbonate	60		4.0		mg/L			09/20/16 11:45	1
Phosphorus	0.090		0.010		mg/L			09/21/16 09:30	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	120		1.0		NTU			09/20/16 15:30	1
Specific Conductance	220		1.0		umhos/cm			09/20/16 13:57	1
Total Suspended Solids	110		4.0		mg/L			09/21/16 10:39	1
pH	7.3	HF	0.1		SU			09/20/16 15:11	1

Client Sample ID: R-2

Lab Sample ID: 480-106183-5

Date Collected: 09/19/16 11:50

Matrix: Water

Date Received: 09/20/16 09:45

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease	ND		4.8		mg/L		09/21/16 06:15	09/21/16 07:43	1
Ammonia	0.095		0.020		mg/L			09/20/16 13:36	1
Total Kjeldahl Nitrogen	1.1		0.20		mg/L		09/21/16 03:10	09/21/16 10:50	1
Nitrate as N	0.48		0.050		mg/L			09/20/16 17:55	1
Nitrite as N	ND		0.050		mg/L			09/20/16 17:55	1
Chemical Oxygen Demand	58		10		mg/L			09/20/16 17:03	1
Hardness as calcium carbonate	32		4.0		mg/L			09/20/16 11:45	1
Phosphorus	0.26		0.010		mg/L			09/21/16 09:30	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	19		1.0		NTU			09/20/16 15:30	1
Specific Conductance	150		1.0		umhos/cm			09/20/16 13:59	1
Total Suspended Solids	22		4.0		mg/L			09/21/16 10:39	1
pH	7.0	HF	0.1		SU			09/20/16 15:14	1

TestAmerica Buffalo

Client Sample Results

Client: Tighe & Bond
Project/Site: NPDES Wilton MS4

TestAmerica Job ID: 480-106183-1

Client Sample ID: R-3

Lab Sample ID: 480-106183-6

Date Collected: 09/19/16 12:00

Matrix: Water

Date Received: 09/20/16 09:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease	ND		4.8		mg/L		09/21/16 06:15	09/21/16 07:43	1
Ammonia	0.097		0.020		mg/L			09/20/16 13:37	1
Total Kjeldahl Nitrogen	0.96		0.20		mg/L		09/21/16 03:10	09/21/16 10:50	1
Nitrate as N	1.3		0.050		mg/L			09/20/16 17:57	1
Nitrite as N	ND		0.050		mg/L			09/20/16 17:57	1
Chemical Oxygen Demand	30		10		mg/L			09/20/16 17:03	1
Hardness as calcium carbonate	68		4.0		mg/L			09/20/16 11:45	1
Phosphorus	0.45		0.010		mg/L			09/21/16 09:30	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	9.7		1.0		NTU			09/20/16 15:30	1
Specific Conductance	280		1.0		umhos/cm			09/20/16 14:03	1
Total Suspended Solids	12		4.0		mg/L			09/21/16 10:39	1
pH	7.1	HF	0.1		SU			09/20/16 15:21	1

TestAmerica Buffalo

Lab Chronicle

Client: Tighe & Bond
Project/Site: NPDES Wilton MS4

TestAmerica Job ID: 480-106183-1

Client Sample ID: C-1

Lab Sample ID: 480-106183-1

Date Collected: 09/19/16 10:50

Matrix: Water

Date Received: 09/20/16 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1664A			321414	09/21/16 06:15	LAW	TAL BUF
Total/NA	Analysis	1664A		1	321451	09/21/16 07:43	LAW	TAL BUF
Total/NA	Analysis	180.1		1	321319	09/20/16 15:30	MDL	TAL BUF
Total/NA	Analysis	350.1		1	321298	09/20/16 13:33	CEA	TAL BUF
Total/NA	Prep	351.2			321377	09/21/16 03:10	DCB	TAL BUF
Total/NA	Analysis	351.2		1	321506	09/21/16 10:50	CLT	TAL BUF
Total/NA	Analysis	353.2		1	321350	09/20/16 17:50	ELR	TAL BUF
Total/NA	Analysis	353.2		1	321360	09/20/16 17:50	ELR	TAL BUF
Total/NA	Analysis	410.4		1	321345	09/20/16 17:03	CDC	TAL BUF
Total/NA	Analysis	SM 2340C		1	321299	09/20/16 11:45	MDL	TAL BUF
Total/NA	Analysis	SM 2510B		1	321308	09/20/16 13:51	KMF	TAL BUF
Total/NA	Analysis	SM 2540D		1	321489	09/21/16 10:39	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	321314	09/20/16 15:03	KMF	TAL BUF
Total/NA	Analysis	SM 4500 P E		1	321475	09/21/16 09:30	RP	TAL BUF

Client Sample ID: C-2

Lab Sample ID: 480-106183-2

Date Collected: 09/19/16 11:00

Matrix: Water

Date Received: 09/20/16 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1664A			321414	09/21/16 06:15	LAW	TAL BUF
Total/NA	Analysis	1664A		1	321451	09/21/16 07:43	LAW	TAL BUF
Total/NA	Analysis	180.1		1	321319	09/20/16 15:30	MDL	TAL BUF
Total/NA	Analysis	350.1		1	321298	09/20/16 13:34	CEA	TAL BUF
Total/NA	Prep	351.2			321377	09/21/16 03:10	DCB	TAL BUF
Total/NA	Analysis	351.2		1	321506	09/21/16 10:50	CLT	TAL BUF
Total/NA	Analysis	353.2		1	321360	09/20/16 17:52	ELR	TAL BUF
Total/NA	Analysis	353.2		1	321350	09/20/16 17:52	ELR	TAL BUF
Total/NA	Analysis	410.4		1	321345	09/20/16 17:03	CDC	TAL BUF
Total/NA	Analysis	SM 2340C		1	321299	09/20/16 11:45	MDL	TAL BUF
Total/NA	Analysis	SM 2510B		1	321308	09/20/16 13:53	KMF	TAL BUF
Total/NA	Analysis	SM 2540D		1	321489	09/21/16 10:39	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	321314	09/20/16 15:05	KMF	TAL BUF
Total/NA	Analysis	SM 4500 P E		1	321475	09/21/16 09:30	RP	TAL BUF

Client Sample ID: C-3

Lab Sample ID: 480-106183-3

Date Collected: 09/19/16 11:12

Matrix: Water

Date Received: 09/20/16 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1664A			321414	09/21/16 06:15	LAW	TAL BUF

TestAmerica Buffalo

Lab Chronicle

Client: Tighe & Bond
Project/Site: NPDES Wilton MS4

TestAmerica Job ID: 480-106183-1

Client Sample ID: C-3

Lab Sample ID: 480-106183-3

Date Collected: 09/19/16 11:12

Matrix: Water

Date Received: 09/20/16 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	1664A		1	321451	09/21/16 07:43	LAW	TAL BUF
Total/NA	Analysis	180.1		1	321319	09/20/16 15:30	MDL	TAL BUF
Total/NA	Analysis	350.1		1	321298	09/20/16 13:35	CEA	TAL BUF
Total/NA	Prep	351.2			321377	09/21/16 03:10	DCB	TAL BUF
Total/NA	Analysis	351.2		1	321506	09/21/16 10:50	CLT	TAL BUF
Total/NA	Analysis	353.2		1	321360	09/20/16 17:53	ELR	TAL BUF
Total/NA	Analysis	353.2		1	321350	09/20/16 17:53	ELR	TAL BUF
Total/NA	Analysis	410.4		1	321345	09/20/16 17:03	CDC	TAL BUF
Total/NA	Analysis	SM 2340C		1	321299	09/20/16 11:45	MDL	TAL BUF
Total/NA	Analysis	SM 2510B		1	321339	09/20/16 15:32	KMF	TAL BUF
Total/NA	Analysis	SM 2540D		1	321589	09/21/16 17:38	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	321569	09/21/16 15:18	KMF	TAL BUF
Total/NA	Analysis	SM 4500 P E		1	321475	09/21/16 09:30	RP	TAL BUF

Client Sample ID: R-1

Lab Sample ID: 480-106183-4

Date Collected: 09/19/16 11:25

Matrix: Water

Date Received: 09/20/16 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1664A			321414	09/21/16 06:15	LAW	TAL BUF
Total/NA	Analysis	1664A		1	321451	09/21/16 07:43	LAW	TAL BUF
Total/NA	Analysis	180.1		1	321319	09/20/16 15:30	MDL	TAL BUF
Total/NA	Analysis	350.1		1	321298	09/20/16 13:36	CEA	TAL BUF
Total/NA	Prep	351.2			321377	09/21/16 03:10	DCB	TAL BUF
Total/NA	Analysis	351.2		1	321506	09/21/16 10:50	CLT	TAL BUF
Total/NA	Analysis	353.2		1	321360	09/20/16 17:54	ELR	TAL BUF
Total/NA	Analysis	353.2		1	321350	09/20/16 17:54	ELR	TAL BUF
Total/NA	Analysis	410.4		1	321345	09/20/16 17:03	CDC	TAL BUF
Total/NA	Analysis	SM 2340C		1	321299	09/20/16 11:45	MDL	TAL BUF
Total/NA	Analysis	SM 2510B		1	321308	09/20/16 13:57	KMF	TAL BUF
Total/NA	Analysis	SM 2540D		1	321489	09/21/16 10:39	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	321314	09/20/16 15:11	KMF	TAL BUF
Total/NA	Analysis	SM 4500 P E		1	321475	09/21/16 09:30	RP	TAL BUF

Client Sample ID: R-2

Lab Sample ID: 480-106183-5

Date Collected: 09/19/16 11:50

Matrix: Water

Date Received: 09/20/16 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1664A			321414	09/21/16 06:15	LAW	TAL BUF
Total/NA	Analysis	1664A		1	321451	09/21/16 07:43	LAW	TAL BUF

TestAmerica Buffalo

Lab Chronicle

Client: Tighe & Bond
Project/Site: NPDES Wilton MS4

TestAmerica Job ID: 480-106183-1

Client Sample ID: R-2

Lab Sample ID: 480-106183-5

Date Collected: 09/19/16 11:50

Matrix: Water

Date Received: 09/20/16 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	180.1		1	321319	09/20/16 15:30	MDL	TAL BUF
Total/NA	Analysis	350.1		1	321298	09/20/16 13:36	CEA	TAL BUF
Total/NA	Prep	351.2			321377	09/21/16 03:10	DCB	TAL BUF
Total/NA	Analysis	351.2		1	321506	09/21/16 10:50	CLT	TAL BUF
Total/NA	Analysis	353.2		1	321360	09/20/16 17:55	ELR	TAL BUF
Total/NA	Analysis	353.2		1	321350	09/20/16 17:55	ELR	TAL BUF
Total/NA	Analysis	410.4		1	321345	09/20/16 17:03	CDC	TAL BUF
Total/NA	Analysis	SM 2340C		1	321299	09/20/16 11:45	MDL	TAL BUF
Total/NA	Analysis	SM 2510B		1	321308	09/20/16 13:59	KMF	TAL BUF
Total/NA	Analysis	SM 2540D		1	321489	09/21/16 10:39	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	321314	09/20/16 15:14	KMF	TAL BUF
Total/NA	Analysis	SM 4500 P E		1	321475	09/21/16 09:30	RP	TAL BUF

Client Sample ID: R-3

Lab Sample ID: 480-106183-6

Date Collected: 09/19/16 12:00

Matrix: Water

Date Received: 09/20/16 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1664A			321414	09/21/16 06:15	LAW	TAL BUF
Total/NA	Analysis	1664A		1	321451	09/21/16 07:43	LAW	TAL BUF
Total/NA	Analysis	180.1		1	321319	09/20/16 15:30	MDL	TAL BUF
Total/NA	Analysis	350.1		1	321298	09/20/16 13:37	CEA	TAL BUF
Total/NA	Prep	351.2			321377	09/21/16 03:10	DCB	TAL BUF
Total/NA	Analysis	351.2		1	321506	09/21/16 10:50	CLT	TAL BUF
Total/NA	Analysis	353.2		1	321350	09/20/16 17:57	ELR	TAL BUF
Total/NA	Analysis	353.2		1	321360	09/20/16 17:57	ELR	TAL BUF
Total/NA	Analysis	410.4		1	321345	09/20/16 17:03	CDC	TAL BUF
Total/NA	Analysis	SM 2340C		1	321299	09/20/16 11:45	MDL	TAL BUF
Total/NA	Analysis	SM 2510B		1	321308	09/20/16 14:03	KMF	TAL BUF
Total/NA	Analysis	SM 2540D		1	321489	09/21/16 10:39	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	321314	09/20/16 15:21	KMF	TAL BUF
Total/NA	Analysis	SM 4500 P E		1	321475	09/21/16 09:30	RP	TAL BUF

Laboratory References:

SC0086 = Environmental Monitoring Laboratory, Inc, 59 N. Plains Industrial Road, Wallingford, CT 06492

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TestAmerica Buffalo

Certification Summary

Client: Tighe & Bond
Project/Site: NPDES Wilton MS4

TestAmerica Job ID: 480-106183-1

Laboratory: TestAmerica Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Connecticut	State Program	1	PH-0568	09-30-16 *

The following analytes are included in this report, but are not certified under this certification:

Analysis Method	Prep Method	Matrix	Analyte
353.2		Water	Nitrate as N

* Certification renewal pending - certification considered valid.

TestAmerica Buffalo

Method Summary

Client: Tighe & Bond
Project/Site: NPDES Wilton MS4

TestAmerica Job ID: 480-106183-1

Method	Method Description	Protocol	Laboratory
1664A	HEM and SGT-HEM	1664A	TAL BUF
180.1	Turbidity, Nephelometric	MCAWW	TAL BUF
350.1	Nitrogen, Ammonia	MCAWW	TAL BUF
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL BUF
353.2	Nitrogen, Nitrite	MCAWW	TAL BUF
353.2	Nitrate	EPA	TAL BUF
410.4	COD	MCAWW	TAL BUF
SM 2340C	Hardness, Total (mg/l as CaCO ₃)	SM	TAL BUF
SM 2510B	Conductivity, Specific Conductance	SM	TAL BUF
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL BUF
SM 4500 H+ B	pH	SM	TAL BUF
SM 4500 P E	Phosphorus	SM	TAL BUF
Local Method	General Sub Contract Method	NONE	SC0086

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

NONE = NONE

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

SC0086 = Environmental Monitoring Laboratory, Inc, 59 N. Plains Industrial Road, Wallingford, CT 06492

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TestAmerica Buffalo

Sample Summary

Client: Tighe & Bond
Project/Site: NPDES Wilton MS4

TestAmerica Job ID: 480-106183-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-106183-1	C-1	Water	09/19/16 10:50	09/20/16 09:45
480-106183-2	C-2	Water	09/19/16 11:00	09/20/16 09:45
480-106183-3	C-3	Water	09/19/16 11:12	09/20/16 09:45
480-106183-4	R-1	Water	09/19/16 11:25	09/20/16 09:45
480-106183-5	R-2	Water	09/19/16 11:50	09/20/16 09:45
480-106183-6	R-3	Water	09/19/16 12:00	09/20/16 09:45

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**SUBCONTRACTED
DATA**

#1407591

Report Date..... 21-Sep-16
EML Project ID..... 160919-STL-B
Your Project ID..... Stormwater
Your Project..... Tighe & Bond
Wilton
Date Sampled..... 19-Sep-16
Date Submitted..... 19-Sep-16

TEST AMERICA
501 Southampton Road, Suite C
Westfield, MA 01085

Attn: Mr. Steven Hartmann

Results in cfu/100mL unless otherwise noted.
ND = Not Detected. NR = Not Required.

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		Completed:
		Analyst: JC
		Date: 20-Sep-16
		Time: 1420
E.coli		

C-1	1011
C-2	130
C-3	2420
R-1	2420
R-2	1733
R-3	1986

Tab: STLJs

Technical Reviewer: _____

Title _____

Transcript Reviewer: _____

Title _____



ENVIRONMENTAL MONITORING LABORATORY, INC.

Login Sample Receipt Checklist

Client: Tighe & Bond

Job Number: 480-106183-1

Login Number: 106183

List Source: TestAmerica Buffalo

List Number: 1


Creator: Williams, Christopher S

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	Sample times not listed
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	T AND B
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	



CHAIN OF CUSTODY / ANALYSIS REQUEST

Page 1 of 1

Name (for report and invoice) Lori Carriero 32-1997		Samplers Name (Printed)		Site/Project Identification Wilton MS4	
Company Tighe & Bond		P.O. #		State (Location of site): NJ: <input type="checkbox"/> NY: <input type="checkbox"/> Other: CT	
Address 1000 Bridgeport Ave		Analysis Turnaround Time Standard <input checked="" type="checkbox"/> Rush Charges Authorized For: 2 Week <input type="checkbox"/> 1 Week <input type="checkbox"/> Other <input type="checkbox"/>		Regulatory Program: MS4	
City Shelton		State CT		LAB USE ONLY Project No:	
Phone 203 712 1100		Fax		Job No:	
Sample Identification		Date	No. of Cont.	Sar Nut	
C-1	9-19-16	7	PH		 480-106183 COC
C-2	9-19-16		Hardness	Conductivity	
C-3	9-19-16		O+G	COD	
R-1	9-19-16		Turbidity	TSS, TKN	
R-2	9-19-16		TP, Nitrate, N	Ammonia, H	
R-3	9-19-16		E. coli		
Preservation Used: 1 = ICE, 2 = HCl, 3 = H ₂ SO ₄ , 4 = HNO ₃ , 5 = NaOH, 6 = Other, 7 = Other		Soil: Water:			

Special Instructions		Water Metals Filtered (Yes/No)?	
Relinquished by Chris Dubuque	Company Tighe & Bond	Date / Time 9/19/16 1:50	Received by [Signature]
Relinquished by [Signature]	Company [Signature]	Date / Time 9/19/16 17:11	Received by [Signature]
Relinquished by	Company	Date / Time	Received by
Relinquished by	Company	Date / Time	Received by
Relinquished by	Company	Date / Time	Received by

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132), Massachusetts (M-NJ312), North Carolina (No. 578)

TAL - 0016 (0408)

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APPENDIX E



Connecticut Department of
Energy & Environmental Protection
Bureau of Materials Management & Compliance Assurance
Water Permitting & Enforcement Division

MS4 Annual Report Transmittal Form

For the General Permit to Discharge Stormwater
from Small Municipal Separate Storm Sewer
Systems (MS4)

Print or type unless otherwise noted. You must submit the Annual
Report and the fee along with this completed form.

CPPU USE ONLY	
App #:	_____
Doc #:	_____
Check #:	_____
Program: Stormwater Permits	

Part I: Annual Report General Information

1. Reporting Period (Calendar Year): <u>2016</u>	
2. Provide the registration number for the existing general permit registration: <u>GSM000040</u>	
3. Registrant Type (check one):	Fees
<input type="checkbox"/> state institution/agency	\$375.00 [713]
<input type="checkbox"/> federal institution/agency	\$375.00 [713]
<input checked="" type="checkbox"/> municipality	\$187.50 [713]
4. Municipality name or Municipality name where institution is located: <u>Town of Wilton</u>	
The annual report will not be processed without the fee. The fee shall be non-refundable and shall be paid by check or money order to the Department of Energy and Environmental Protection or by such other method as the commissioner may allow.	

Part II: Registrant Information

1. Registrant (Name of Municipality or State or Federal Institution/Agency): <u>Town of Wilton</u>	
Mailing Address: <u>238 Danbury Road</u>	
City/Town: <u>Wilton</u>	State: <u>CT</u> Zip Code: <u>06897</u>
Business Phone: <u>203-563-0100</u>	ext.: _____
Contact Person: <u>Lynn Vanderslice, First Selectman</u>	Phone: <u>203-563-0100</u> ext. _____
*E-mail: _____	
*By providing this e-mail address you are agreeing to receive official correspondence from DEEP, at this electronic address, concerning the subject registration. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify DEEP if your e-mail address changes.	

Part II: Registrant Information (continued)

2. Billing contact, if different than the registrant.

Name: Wilton DPW
Mailing Address: 238 Danbury Road
City/Town: Wilton State: CT Zip Code: 06897
Business Phone: 203-563-0152 ext.:
Contact Person: Thomas W. Thurkettle, P.E. Phone: 206-563-0152 ext.
E-mail: dpw@wiltonct.org

3. Primary contact for departmental correspondence and inquiries, if different than the registrant.

Name: Wilton DPW
Mailing Address: 238 Danbury Road
City/Town: Wilton State: CT Zip Code: 06897
Business Phone: 203-563-0152 ext.:
Contact Person: Thomas W. Thurkettle, P.E. Phone: 206-563-0152 ext.
*E-mail: dpw@wiltonct.org

*By providing this e-mail address you are agreeing to receive official correspondence from DEEP, at this electronic address, concerning the subject registration. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify DEEP if your e-mail address changes.

4. Engineer(s) or other consultant(s) employed or retained to assist in preparing the annual report.

☐ Check here if additional sheets are necessary, and label and attach them to this sheet.

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:
Service Provided:

5. ☐ Check here if there are adjacent towns or other entities with which implementation of the Stormwater Management Plan is coordinated for a portion of the subject MS4. If so, provide the names of such towns or entities: _____

Part III: Annual Report Checklist

The Annual Report must be submitted in hard copy format with this transmittal form and also must be submitted electronically to the address indicated at the end of this form.

Check the boxes confirming that, at a minimum, the following are included in the Annual Report submitted with this transmittal form.

1. A written discussion of the status of compliance with each of the six Minimum Control Measures required by the MS4 General Permit, including, but not limited to:
 - ☒ a listing and brief description of all BMPs that were implemented during the reporting year either as one-time events or ongoing activities, including as appropriate, the location of each BMP (address and latitude/longitude), and the party responsible for implementation;
 - ☒ a listing of BMPs that were not completed as scheduled or that were discontinued, a discussion of the circumstances and reasons for non-implementation, a modified implementation schedule and, if necessary, a modified or alternate BMP to replace the BMP not implemented including the rationale for such modified or alternate BMP;
 - ☐ *This will be addressed in the new SMP.* a discussion of any new or modified BMPs to be implemented in the coming year, including a description of the BMP, the reason or rationale for adding or modifying the BMP, the timeline for implementation, the measurable goal for the BMP, the party responsible for implementation and, where appropriate, the location of each BMP (address and latitude/longitude);
 - ☒ a discussion of the progress and status of the MS4's IDDE program (see Section 6(a)(3) of the MS4 General Permit) including, mapping, implementation of an ordinance or other regulatory mechanism to prohibit non-stormwater discharges, illicit discharge tracking activities, IDDE field monitoring results, number and type of illicit discharges detected, and number of illicit discharges eliminated;
 - ☐ *This will be addressed in the new SMP.* a discussion of measures in the Stormwater Management Plan (Plan) for the control of discharges to impaired waters (see Section 6(k) of the MS4 General Permit) including a list of BMPs that are targeted for such discharges, progress in implementing these measures, any evaluation of the effectiveness of these measures in meeting the goals of the Plan's impaired waters program, and any new or modified BMPs to be added to the Plan to improve its effectiveness;
 - ☒ a discussion of the MS4's stormwater monitoring program describing the status of monitoring for the reporting period with a summary of the findings, any significant observations regarding the results, any actions taken in response to the monitoring results and any modifications to the Plan made as a result of the monitoring results, and;
 - ☐ a discussion of any changes to personnel responsible for the Plan or BMP implementation.
2. ☒ All monitoring data collected and analyzed pursuant to Section 6(h) of the MS4 General Permit.
3. ☒ **Annual Report Availability:** ~~At least thirty (30) days prior to submission of the Annual Report to the DEEP, pursuant to Section 4(d) of the MS4 General Permit, each permittee shall make available for public review and comment a draft copy of the complete Annual Report. Comments on the Annual Report may be made to the permittee and are not submitted to the DEEP. Reasonable efforts to inform the public of this document shall be undertaken by the permittee. Such draft copies shall be made available electronically on the permittee's website for public inspection and copying, consistent with the federal and state Freedom of Information Acts, and shall be made available, at a minimum, at one of the following locations: the permittee's main office or other designated municipal or institution office, a local library or other central publicly available location. Following submission of the Annual Report to the DEEP, a copy of the final report shall be made available for public inspection during regular business hours.~~

Note for Item 3: Per DEEP Inspection Team on March 28, 2017, annual report needed to be submitted as soon as possible. The 2016 Annual Report will be posted on the Town website shortly after submittal to DEEP.

Part IV: Registrant Certification

The registrant *and* the individual(s) responsible for actually preparing the annual report must sign this part. [If the registrant is the preparer, please mark N/A in the spaces provided for the preparer.]

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief.

I certify that this annual report transmittal is on complete and accurate forms as prescribed by the commissioner without alteration of the text.

I understand that a false statement in the submitted information may be punishable as a criminal offense, in accordance with section 22a-6 of the General Statutes, pursuant to section 53a-157b of the General Statutes, and in accordance with any other applicable statute."

I also certify that the signature of the registrant, or a duly authorized representative, being submitted herewith complies with section 22a-430-3(b)(2)(B) of the Regulations of Connecticut State Agencies.



Signature of Chief Elected official or Principal Executive Officer

3/29/17

Date

Lynne Vanderslice

Printed Name of Chief Elected official or Principal Executive Officer

First Selectman

Title (if applicable)



Signature of Preparer (if different than above)

3/29/17

Date

Michael S. Ahern, P.E.

Name of Preparer (print or type)

Field Engineer

Title (if applicable)

Note: Please submit this completed Transmittal Form, Fee, and the **Annual Report** to:

CENTRAL PERMIT PROCESSING UNIT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Please *also* submit the Annual Report electronically to the following address: DEEP.StormwaterStaff@ct.gov