

The Monoshone Watershed

Quarterly Water Quality Update

Issue No. 4

July 2010

Introduction

Welcome to PWD's Fourth Quarterly Water Quality Update for the Monoshone Creek.

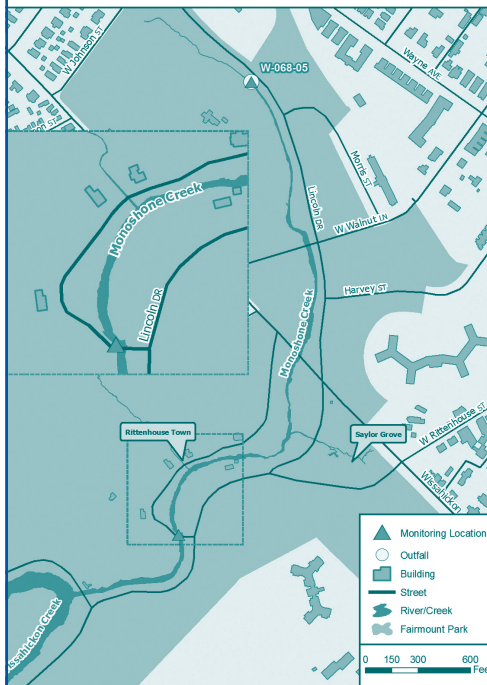
As you may remember, we initiated a pilot sampling program in May 2009, geared to collect samples at Outfall 5 and a location downstream of RittenhouseTown, above the confluence of the Monoshone and Wissahickon creeks.

Samples are collected on a weekly basis, three times a month, during dry weather (no rainfall within a 72 hour period) as the sampling goal is to determine the quality of the stream flow within Outfall 5 untainted by polluted stormwater runoff.

During some months, we did not collect as many samples as we had hoped due to lots of rain. However, in this report, we have a full year of data to share, which reflects the water quality of the Monoshone Creek during all four seasons.

Pilot Monitoring Program Results

We still believe that the news on water quality is generally good for an urban stream like the Monoshone, and sampling results prove consistently better in the creek itself by the time the stream travels past RittenhouseTown. These results are comparable to fecal counts found in all of the streams in the built out, Southeast PA Region. But we still find some outliers in this data, and our goal has been to track down and resolve the sources of this bacteria.



Overview of the Monoshone Watershed:

This map shows the Monoshone Creek and the locations of the Water Department's stormwater outfalls along the creek. Outfall Number 5, which receives the largest volume of stormwater runoff due to the size of the drainage area, is the location where PWD takes its quarterly fecal coliform sample. At the same time, a sample is taken just south of Historic RittenhouseTown.

Summary of Fecal Coliform Results Stormwater Outfall Monitoring Program Data from project initiation (May '09) to present.

MONOSHONE CREEK -- Downstream Site (MON0250) RITTENHOUSETOWN SITE

Sample Date	Fecal Coliform (# per 100 milliliters)
05/12/09	400
05/19/09	300
05/26/09	1,000
06/02/09	180
07/06/09	900
07/15/09	200
08/17/09	700
08/26/09	540
09/02/09	500
09/08/09	800
09/21/09	1,100
10/06/09	800
10/14/09	200
11/09/09	100
11/18/09	100
11/30/09	300
12/30/09	150
01/05/10	10
01/12/10	45
01/26/10	no sampling
03/02/10	no sampling
03/10/10	209
04/06/10	100
04/20/10	10
05/11/10	60
06/08/10	200

(Pilot Monitoring *continued from page 1*)

MONOSHONE CREEK Outfall #5 (ST068050)	
Sample Date	Fecal Coliform (# per 100 milliliters)
05/12/09	720
05/19/09	4,000
05/26/09	1,700
05/26/09	4,900
06/02/09	3,000
06/22/09	3,000
06/24/09	4,800
07/06/09	11,000
07/15/09	1,100
07/27/09	78,000
08/17/09	26,000
08/26/09	560,000*
09/02/09	9,400
09/08/09	5,100
09/21/09	7,600
09/21/09	1,100
10/06/09	4,900
10/14/09	7,270
10/27/09	12,300
11/09/09	5,000
11/18/09	7,545
11/30/09	45,000
12/29/09	200
12/29/09	210
12/30/09	280
01/05/10	964
01/12/10	4,600
03/10/10	5,500
04/06/10	11,000
04/20/10	3,600
05/11/10	2,200
06/08/10	2,400

*As the sampling above illustrates, fecal coliform numbers are often in the low thousands, which means we all still have work to do. But, at the same time, we have witnessed a marked improvement from sampling results taken a decade ago. Often, a high result – such as the one obtained on 8/26/09 – is an indicator that there is a problem within the City’s sewer or a property lateral(s), resulting in sewage entering the creek. PWD inspects the sewers in this area to track down and repair potential problems. We did not find a problem in our system and therefore believe it was related to a private property problem.

Defective Laterals and Private Sewers

We shared in the past that identifying the sources of sewage in our stormwater sewer pipes may begin at the outfall – the end of the stormwater sewer that empties into the Monoshone Creek – but that is only the beginning of the journey.

We have been focusing on Outfall 5, which receives the stormwater flow from homes, businesses and streets spread over a 630-acre area. We know that sewage from properties enters the city’s storm sewers from two chronic sources: leaking property sewer and storm laterals and from property laterals that are connected to the wrong sewer.

As we noted in past updates, the Monoshone Creek Watershed is a separate sewer area, which means there is a sanitary sewer pipe and a stormwater sewer pipe in every block. Every property has a lateral pipe connection to the sanitary sewer which drains your household plumbing fixtures (sinks, showers, toilets, washers) and a stormwater lateral pipe which captures your roof and yard runoff for delivery to the storm sewer. The laterals pipes are often installed side by side. Over the years they age and deteriorate and sometimes allow the flow from the one pipe into the other.

But our efforts now are targeted at identifying the lateral pipes that are “crossed” or connected to the wrong sewer. Even though these are the property owner’s responsibility, PWD will pay for the correction of these crossed laterals as a component of its program.

Since 1999, PWD has inspected approximately 2,400 properties out of the 4,100 homes in the Monoshone Creek Watershed in its quest to find the crossed lateral connections that result in a continuous sewage contribution to the Monoshone Creek. Properties are investigated only after evidence has determined that they may have defective laterals. As a result of these inspections, 92 properties were found to have crossed lateral connections.

Most recently, we are now working on 14 blocks in the outfall 5 drainage area that are blocks with private sewers – sewers that are not owned or maintained by PWD but connect into our system. These sewers are “combined” sewers – sewers that collect both household sanitary wastes and stormwater into one sewer. Our testing over the next month will determine whether or not the entire block sewer is connected to the appropriate city sewer.



The ARAMARK Tower
1101 Market Street
Philadelphia, Pennsylvania 19107-2994

BERNARD BRUNWASSER
Commissioner

June 3, 2010

Dear Resident:

Within the next week or two, the Water Department will be inspecting the sewer system in your neighborhood. These inspections are aimed at insuring proper configuration of your drainage system. Due to State and Federal regulatory requirements, the Water Department is required to investigate these conditions.

The Water Department personnel will be performing these tests from the street. However, there may be situations where we need to access your property in order to complete these tests. If such situations arise, we will send you a follow-up letter.

Thank you for your attention and cooperation in this matter. Should you have any questions, please feel free to contact me at 215-685-6255.

Very truly yours,

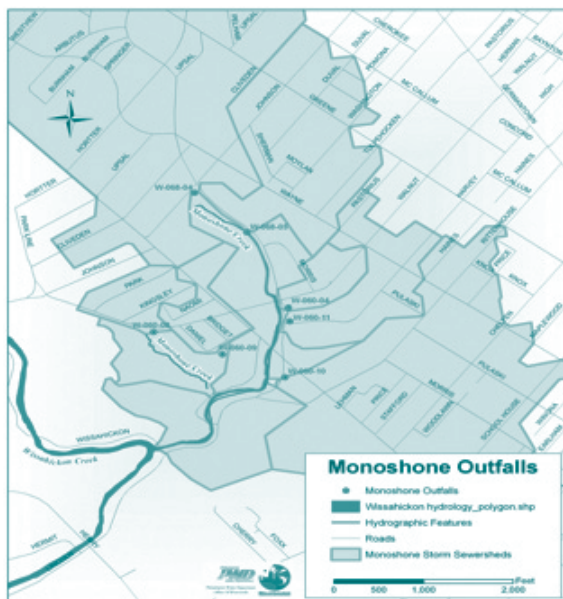
Project Manager

An Equal Opportunity Employer

This letter (right) will go out to residents on the private sewer blocks in the area to let them know about the inspections PWD will be performing to determine if there are crossed laterals in the neighborhood. The majority of the Monoshone drainage area has already completed defective lateral testing at the block level.

The map (below) shows the outfalls in the Monoshone Creek area.

The PWD worker (below left) is placing a CCTV (Closed Circuit Television) video camera into the sewer in order to see if there are crossed laterals in the system.



What are the Challenges of the Defective Lateral Program?

It is like looking for a needle in a haystack because:

- A block may not appear “wet” if no one is using their plumbing
- Once a block is established as wet, extremely time consuming to test every property on block (often 40 – 60 houses)
- If tests results are not clear, must get into property to dye test plumbing fixtures on all floors – letters to customers and appointments. Can result in an average of 4 – 5 internal tests per day
- Vast majority of sewage infiltration is from broken, leaking laterals

Update on Saylor Grove

Recently we found a plant that we hadn't discovered before at the Saylor Grove Stormwater Treatment Wetland. The plant was identified as an American bur reed, and there are a cluster of them on the pond banks. It is a native stalk like plant that has a lithe beauty and attracts birds and insects such as butterflies. The best habitat for these plants is shallow waters and mud banks. In addition, Fairmount Park and PWD have recently completed a seeding of the area that was disturbed during the dredging of the forebay section of the pond. The area was planted with 19 pounds of native seeds. Birds spotted at the wetland during a recent stroll included red-winged blackbirds and goldfinches.



Next Issue:

Our next issue will include the results of the defective lateral testing completed on the 14 private sewer blocks.

For More Information:

PWD's Annual Stormwater and Combined Sewer Overflow (CSO) Annual Report and other watershed management and comprehensive characterization reports can be found at: www.phillywatersheds.org.

For up to date information on the recreational water quality of the Schuylkill River, go to <http://www.phillyrivercast.org/>.

Here's What You Can Do:

Join a watershed partnership. For information, go to: www.phillyriverinfo.org.

Visit the Fairmount Water Works Interpretive Center, both online at www.fairmountwaterworks.org, or in person at 640 Water Works Drive in Philadelphia.

Schuylkill Soundings at the Fairmount Water Works Interpretive Center Presents:

July 21 at 5:30 p.m.: Joan Blaustein and Tom Witmer, Parks and Rec, present "Models of Ecological Restoration in Philadelphia"

August 18 at 5:30 p.m.: Adam Levine presents "The City's Hidden Streams"

To reserve, contact emilie.hickerson@phila.gov. Visit us at 640 Water Works Drive, Phila PA 19130 or online at www.fairmountwaterworks.org. On Twitter: @FWWIC.

What is a WATERSHED?

A watershed is the land surrounding a system of rivers (or streams or creeks), or a particular river, that, when it rains, sheds the runoff into that waterway. Everything you do impacts your watershed. Runoff from garden fertilizers, hazardous substances like used motor oil, and trash dumped into one area of a river bank can pollute water many miles downstream. Protecting and preserving our watersheds helps protect our water resources.