Municipality/Organization:	**Shrewsbury, Massachusetts**
EPA NPDES Permit Number:	**MAR041158**
MaDEP Transmittal Number:	**W-036325**
Annual Report Number & Reporting Period:	**No. 2: March 04-Mar 05**

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: Jack Perreault Title: Town Engineer

Telephone #: (508) 841-8502 Email: jperreau@th.ci.shrewsbury.ma.us

Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature:

Printed Name: Daniel J. Morgardo

Title: Town Manager

Date: April 26, 2005

Part II. Self-Assessment

The Town has completed the required self-assessment and has determined that our municipality is in compliance with all permit conditions.

Current State of the Phase II Program in Shrewsbury:

Shrewsbury is currently faced with a severe town-wide budget deficit for Fiscal Year 2006 (FY 06). Town departments are expected to see a reduction of up to 28% of FY 05 funds budgeted for FY 06. Job layoffs are expected as part of these budget cuts. The Engineering Department is responsible for overseeing the Phase II compliance, and also depends on cooperation with other departments within the Town. Final impacts of the budget cuts will not be determined until some time in June 2005. The Town anticipates that compliance with the Phase II Permit will become increasingly difficult with less funding available and a reduction of supporting staff.

The Town currently budgets $5,000 per year for the Phase II Program. This cost does not include money used for catch basin cleaning and street sweeping, which is currently budgeted separately with the Town Highway Department. Occasionally funds have been made available for the Phase II Program from other sources within town budget areas as well.

The budget constraints are expected to have an impact on the Town's ability to complete the required GIS Storm Water Outfall Map. In the past the Town has rented GPS equipment for outfall mapping, and we have located approximately 57 outfalls at Lake Quinsigamond and Flint Pond. Not all of these outfalls may be part of Shrewsbury's MS4 but were located anyway, as they discharge into TMDL designated water bodies. As GPS equipment improves it is also becoming less expensive to own and operate. The Town hopes to purchase a GPS unit as soon as funding is available to assist in completing the required outfall map.

The current budget crisis will also impact the Town's ability to create and enforce a bylaw required for BMP's #5, 8, 9, and 13 as described in the Town's Notice of Intent for Discharges from Small MS4s. It is anticipated that cooperation between the Engineering Department and other departments will be necessary for bylaw enforcement. Once the budget-cut impacts have been determined, the Town will evaluate how each department can contribute to the bylaw creation and enforcement.

Part III. Summary of Minimum Control Measures

1. Public Education and Outreach

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
01	Pamphlet Mailings	Board of Health & Engineering	# Pamphlets Mailed	330 pamphlets mailed to residential dwellings.	
Revised					
Revised					
Revised					
Revised					
Revised					
Revised					

1a. Additions

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
03	Catch Basin Stenciling	Engineering Dept.	# Catch Basins Stenciled	25 Crystal Cap markers were installed at catch basin inlets and will be evaluated for durability.	Volunteers to install markers at catch basins near Lake Quinsigamond, Flint Pond, and Jordan Pond.
Revised					
04	Water Monitoring & Sampling	Health Dept.	Sample Data	Samples for E Coli and Total Coliform bacteria were taken on a weekly basis during the bathing season in Lake Quinsigamond.	Same as Permit Year 2.
Revised					
Revised					
Revised					
Revised					
Revised					

2a. Additions

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
05	Local Ordinance	Engineering Dept.	Town Warrant Article	Research of available information for the creation of a Town Bylaw.	Continue Town Bylaw development.
Revised					
06	Storm Sewer Map	Engineering Dept.	GIS Map	GIS Map currently under production for entire town. Outfalls at Lake Quinsigamond and Flint Pond are attached.	Continue GIS mapping.
Revised					
07				Highway Department continued to monitor drainage utilities during annual maintenance.	Training as needed.
Revised	Public Employee Education	Engineering Dept.	Training implemented prior to Phase II program		
07	Public Employee Education	Engineering Dept.	Training Sessions	Highway Superintendent and Water & Sewer Superintendent were trained on preventing problems discovered during garage facility inspections.	Training as needed.
Revised					
Revised					
Revised					

3a. Additions

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
05	Local Ordinance	Engineering Dept.	Town Warrant Article	Research of available information for the creation of a Town Bylaw.	Continue Town Bylaw development.
Revised					
08	Mass. Stormwater Policy	Engineering Dept.	# Projects Reviewed	12 Projects submitted to the Conservation and/or Planning Board.	Continue reviewing projects to comply with Mass. Stormwater Management Policy.
Revised					
09	Site Plan Reviews	Engineering Dept.	# Projects Reviewed	Research of available information for the creation of a Town Bylaw.	Continue Town Bylaw development.
Revised					
Revised					
Revised					
Revised					

4a. Additions

5. Post-Construction Stormwater Management in New Development and Redevelopment

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
05	Local Ordinance	Engineering Dept.	Town Warrant Article	Research of available information for the creation of a Town Bylaw.	Continue Town Bylaw development.
Revised					
08	Mass. Stormwater Policy	Engineering Dept.	# Projects reviewed	12 projects submitted to the Conservation Commission and/or Planning Board.	Continue reviewing projects to comply with Mass. Stormwater Management Policy.
Revised					
Revised					
Revised					
Revised					
Revised					

5a. Additions

6. Pollution Prevention and Good Housekeeping in Municipal Operations

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
10	Catch Basin Cleaning	Highway Dept.	Catch Basins Cleaned	Catch Basins were cleaned.	Continue catch basin cleaning.
Revised					
11	Highway and Light Dept. Garage	Engineering Dept.	# Inspections	Two inspections were done at the Light Dept., Highway Dept., and Water/Sewer Dept. garage facilities.	Continue inspections.
Revised					
12	Street Sweeping	Highway Dept.	Streets Swept	All municipal streets were swept.	Continue street sweeping.
Revised					
Revised					
Revised					
Revised					

6a. Additions

7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA) *<<if applicable>>*

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
05	Local Ordinance	Engineering Dept.	Town Warrant Article	Research of available information for the creation of a Town Bylaw.	Continue Town Bylaw Development.
Revised					
08	Mass. Stormwater Policy	Engineering Dept.	# Projects reviewed	12 Projects submitted to the Conservation Commission and/or Planning Board.	Continue reviewing projects to comply with Mass. Stormwater Management Policy
Revised					
13	Stormwater Treatment Units	Engineering	Town Warrant Article	Research of available information for the creation of a Town Bylaw.	Continue Town Bylaw Development.
Revised					
Revised					
Revised					
Revised					

7a. Additions

Revised	Water Monitoring & Sampling	Health Dept.	Sample Data	Discontinued due to loss of 319 Grant Funding.	

7b. WLA Assessment

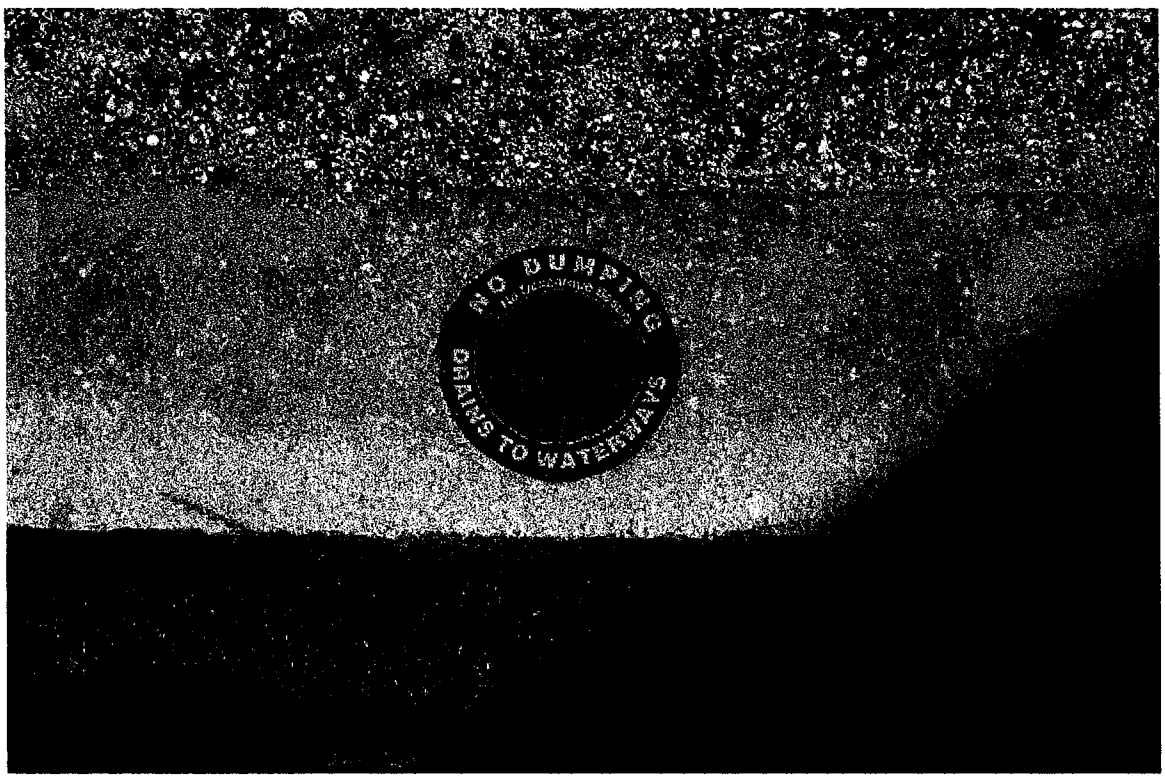
The Town has distributed educational pamphlets to residents in the Jordan Pond watershed area. Jordan Pond is a close tributary to Lake Quinsigamond. The pamphlets included information asking residents not to over-fertilize their lawns and to use phosphorous free fertilizers.

During Year 3 the Town and public participants will install catch basin markers near Flint Pond, Lake Quinsigamond, and Jordan Pond.

Part IV. Summary of Information Collected and Analyzed

Water samples were tested weekly during the bathing season at Sunset Beach for E. Coli and Total Coliform Levels. The Town Health Department has reported that no violations of the water quality standards for bathing beaches were detected at Sunset Beach during 2004.

Installed Catch Basin Markers



Town of Shrewsbury

Highway Department and Water & Sewer
Department Garage Facility

Inspection Report
for
NPDES Phase II Storm Water General Permit
Prepared by the Town Engineering Department

March 2005

Purpose

The purpose of this inspection is to monitor municipal separate storm sewer systems (MS4s) located at the Town Highway and Water & Sewer Departments' garage facility for compliance with the Environmental Protection Agency (EPA) National Pollution Discharge Elimination System (NPDES) Phase II general permit.

Introduction

The Town of Shrewsbury, Massachusetts has two municipally owned and operated garage facility buildings on approximately 14 acres of land located at 205-211 South Street. One garage building is used by the Town Highway Department, the other operated by the Water & Sewer Department. In addition, the Highway Department has a salt storage shed on-site to store road deicing materials. There are gasoline pumps used to fuel Town vehicles on the property as well. The site is used for daily operations of both departments, including vehicle maintenance which is primarily done inside the garage buildings. Some areas on-site are used by each department for equipment and materials storage.

In general vehicle maintenance sites pose a greater risk for storm water pollution than other municipal properties, such as school or office buildings. The Town of Shrewsbury has committed to performing two site inspections per year at this facility location, as detailed under BMP #11 in the Notice of Intent filed for permit coverage. This report highlights existing site conditions and makes recommendations for improvements.

Inspections

Two inspections were performed at the garage facility in 2004. One inspection was done in June, the other in October. The inspection conducted in June was done primarily get a sense of the day-to-day activities that occur at the facility, to determine the location of storm water utilities, and to explore resource areas that may be affected by storm water discharges. The October inspection was performed to further explore the resource areas, and to assess the area for improvements or good housekeeping improvements that may be necessary.

June Inspection

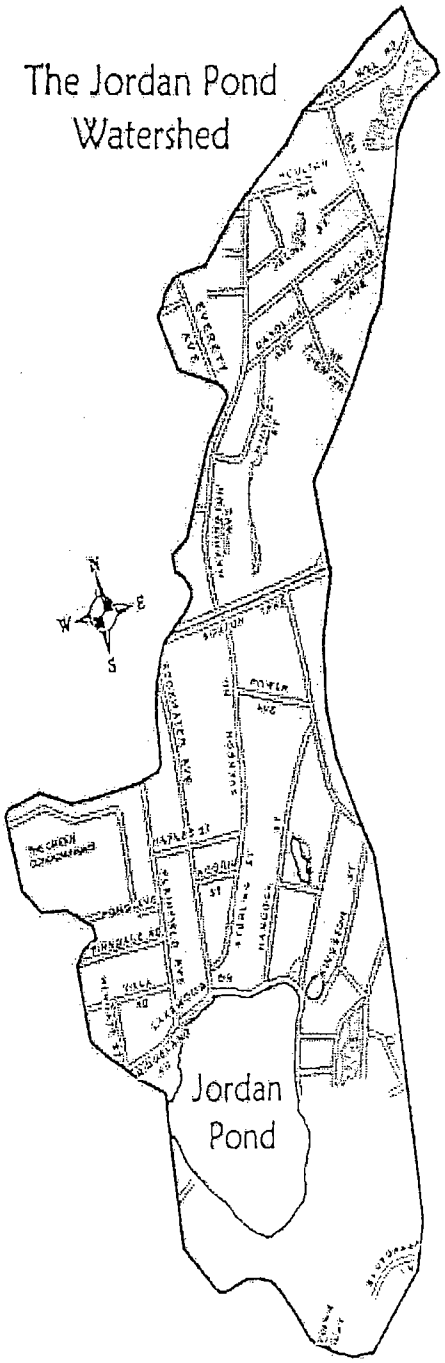
Prior to inspection, a search for plan records of the garage facility was conducted in the Engineering Department office located in the municipal office building. An as-built plan for the facility was found and shows the location of the buildings, pavement, and storm water utilities. GIS data was also obtained and that information shows some additional utility information, as well as the location of the salt storage shed. Wetland resource maps were also reviewed, as well as the Natural Heritage & Endangered Species Program map for estimated habitats of rare wildlife. The entire 14-acre site appears to be within an estimated habitat area, and records from other projects indicate that the creature of special concern is the Spotted Turtle.

The site inspection showed that there is potential for stockpiled roadway sand & gravel materials used for deicing to discharge into a drain inlet located off the edge of a paved area. It should be noted that salt used for deicing is stored in a covered shed area. The inspection also showed that there is some accumulation of solid waste items located outside of both buildings.

The wetland resource areas were heavily vegetated and difficult to observe in some spots. There does appear to be some sedimentation deposited near a drain pipe outlet that could be coming from the stockpiled sand on-site, or sand spread onto the paved areas during winter conditions. There is also some rubbish in the area that most likely is coming from the Route 9 area upstream of the storm water discharge pipe.

Conclusion

Overall the site poses a low risk to storm water quality, as most vehicle maintenance activities are performed indoors. Suspended solids from exposed dirt and stockpile areas are the primary threat to the MS4 at the facility.



What are the principal pollutants responsible for algal blooms in Jordan Pond?
Lawn fertilizers with phosphorus and animal wastes left on the ground are probably the most responsible for algae blooms. Nitrogen and phosphorus are essential plant nutrients. An excess of either one may cause over-fertilization of a lake, resulting in undesirable growths of aquatic vegetation, and algae. Algal blooms can alter wildlife habitat, reduce recreational appeal, cause the pond to have a stagnant appearance and lower property values

How serious is bacterial pollution?
The state health department sets the standard for bathing beach water quality. The standard is based on testing the concentration of coliform bacteria at bathing beaches. Test results that exceed the state standard are considered indicative of unhealthy swimming conditions. The Health Department has determined through testing that due to the bacteria counts in storm water entering Jordan Pond, the pond is not suitable for swimming.

Do ducks and geese contribute to the pollution in Jordan Pond?
Yes. Ducks and geese add nitrogen, phosphorus and bacteria. Do not feed the ducks and geese.

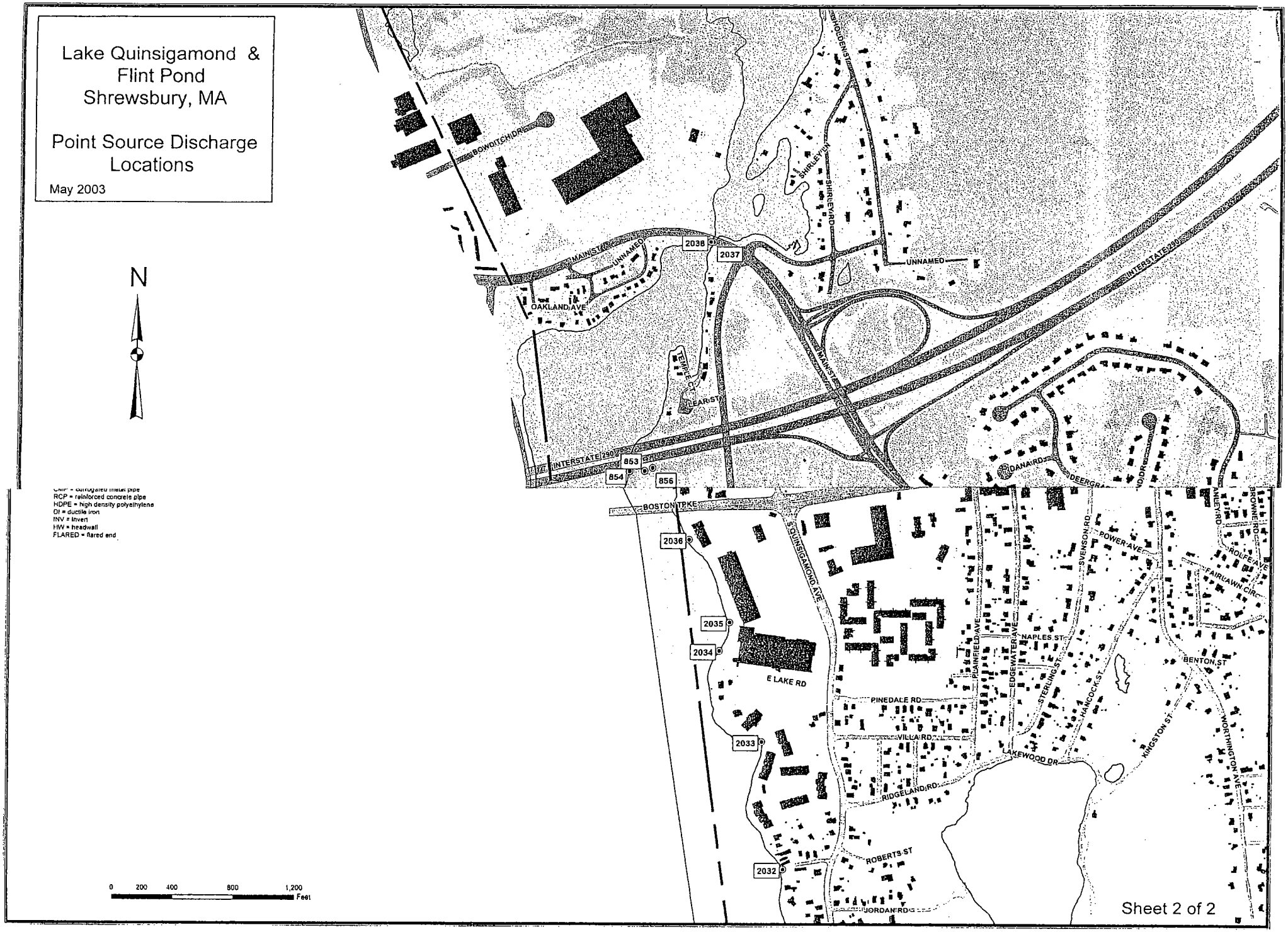
How serious is contamination by waste oil?
The hydrocarbons in waste oil may kill fish and other aquatic life at elevated concentrations and cause objectionable flavor in fish at lower concentrations. Waste oil can also degrade habitat and interfere with the reproductive success of aquatic organisms. Additionally, a small amount of oil can create an unappealing surface film over a large area of the pond. The most recent studies of Jordan Pond show that hydrocarbons are present in the pond sediment. Fish stocking activities that have not resulted in the fish reproducing in the pond in recent years may be related to the presence of hydrocarbons.

Lake Quinsigamond & Flint Pond Shrewsbury, MA

Point Source Discharge Locations

May 2003

Lake Quinsigamond &
Flint Pond
Shrewsbury, MA

Point Source Discharge
Locations

May 2003