

Municipality/Organization: Town of Eastham

EPA NPDES Permit Number: MAR041110

MaDEP Transmittal Number: W-040891

**Annual Reporting Number
& Reporting Period:** No. 4: April, 2006 - March 2007

NPDES PII Small MS4 General Permit Annual Report

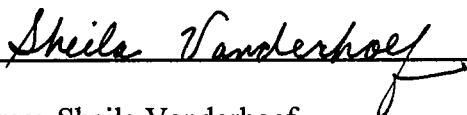
Part I. General Information

Contact Person: Michael Ferreira **Title:** Assistant Town Administrator

Telephone #: 508-240-5900 **Email:** mferreira@eastham-ma.gov

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: Sheila Vanderhoef

Title: Town Administrator

Date: October 25, 2007

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 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities - Permit Year 5
1.1 Revised	Educational Brochures	DPW, Health	Development of Brochures	Updated Brochures; disseminated brochures concerning hazardous waste disposal days. Continued to coordinate with Local Regional Planning Agency on Informational Campaign	Continue to update educational brochures as new information arises; provide information on hazardous waste disposal days.
1.3 Revised	Storm Water Video	Planning	Airing on Cable TV	Program discontinued due to lack of funding.	Obtain Funding to resurrect this project. Push for Comcast studio to provide airing.
1.4 Revised	Coastal/Pond Cleanup	ConCom, DPW	Conducting Cleanup	Private owners clean pond areas. DPW cleans as necessary. Muttmitt project has been implemented.	DPW continues to cleanup as necessary. Possible expansion of Muttmitt program.
1.5 Revised	Office Brochure	NR, DPW, Planning	Availability of Brochures	Brochures with local contact info corresponding with 1.1 displayed in NR/DPW Building and Building Dept. at Town Hall. Posters were added to the informational campaign.	Continue to update brochures and Informational Educational Brochures in Year 5, including information on fertilizers and other potential contaminants.
Revised					

1a. Additions

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) - Permit Year 4 (Reliance on non-municipal partners if any, working in conjunction with Natural Resources Conservation Services (USFDA))	Planned Activities - Permit Year 5
2.1 Revised	Storm Water Management Program	NR, DPW, ConCom, Planning, Health, WRAB	Development of Program, including the identification of high priority sites.	Program has been developed and sites have been identified.	GPS Mapping of all point source discharges/water ways.
2.2 Revised	Pollution Reporting	NR, DPW, Pond Stewards	Visual Monitoring/Recording	Routine monitoring of marine areas conducted by NR staff five times per week, daily monitoring of drainage system/road network by DPW, and monitoring of fresh surface waters by Eastham Pond Stewards. Monitoring capabilities augmented for summer months in Rock Harbor (marina) by seasonal employee.	Continue with monitoring as described for Permit year 4; receive report from Cape Cod Commission's monitoring efforts which will have recommendations for action.
Revised					
Revised					
Revised					
Revised					

2a. Additions

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) - Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities - Permit Year 5
3.1 Revised	Map Outfalls	NR, DPW	Comprehensive Map GIS/GPS	Program has been developed and sites have been identified.	GPS mapping of all source point discharges/waterways.
3.2 Revised	Detection of Non-Stormwater Discharge	NR-Health	Correction of Discharges	Continue to identify non-stormwater discharges and remedy the situation depending on source of discharge.	Continue project indefinitely.
3.3 Revised	Dry Weather Flow Screening	NR, Health	Screening Testing; Correction of Discharges	Incorporate dry weather flow screening into the routine monitoring of marine areas conducted by NR staff five times per week starting in spring and ending in the fall.	Continue project indefinitely.
3.4 Revised	Reporting Line	NR, DPW, Fire Fire has been established as first responder	Establishment of Line	Line established and maintained for NR and DPW to report any inappropriate inputs to the MS4. Reports involving oil or hazardous waste is referred to the Fire Dept. and MA DEP	Continue project indefinitely.
3.5 Revised	Hazardous Product Collection	Health, DPW, Recycling	Conducting Collection Day	Hazardous collection days were held on July 15, 2006 and September 16, 2006.	Continue conducting collection days. Tentatively scheduled for July 15, 2007 and September 15, 2007.
Revised					

3a. Additions

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) - Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities - Permit Year 5
4.1 Revised	Draft Construction Site Runoff Control Bylaw	ConCom, Planning	Develop Bylaw	Continued to discuss the creation of a Bylaw to be created and incorporated into Local Wetland Control Bylaw and Local Subdivision Control Bylaw	Continue to work on the development and implementation of a Bylaw.
4.2 Revised	Enact Construction Site Runoff Control Bylaw	ConCom, Planning, Town Meeting	Implement Bylaw	Continued to discuss the creation of a Bylaw to be created and incorporated into Local Wetland Control Bylaw and Local Subdivision Control Bylaw	Continue to work on the development and implementation of a Bylaw.
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 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities - Permit Year 5
5.1	Draft Construction Site Runoff Control Bylaw	ConCom, Planning	Develop Bylaw	Continue to discuss the creation of a proposed Bylaw to be created and incorporated into Eastham Wetland Bylaw and Local Subdivision Control Bylaw.	Continue to work on the development and implementation of Bylaw changes in Permit Year 5.
Revised					
5.2	Amend Site Plan Review	ConCom, Planning	Develop Bylaw	Continue to discuss the creation of a proposed Bylaw to be created and incorporated into Eastham Wetland Bylaw and Local Subdivision Control Bylaw.	Continue to work on the development and implementation of Bylaw changes in Permit Year 5.
Revised					
5.3	Enact Construction Site Runoff Control Bylaw	ConCom, Planning, Town Meeting, Bd. Of Highway Surveyors	Implement Bylaw	Programmed Start Permit year 4	Implement/enforce Construction/Post construction Site Runoff Control Bylaw
Revised					
Revised					
Revised					
Revised					
Revised					

Sa. 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 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities - Permit Year 5
6.1	Annual Training	NR, DPW, Planning, Fire, Health	Training Session	Annual training on best practices for pollution prevention and mitigation.	Annual training on Worker Safety.
Revised					
6.2	Review of Town Properties	DPW, Bldg. Maintenance	Monitor and Correct Problems	Determined monitoring areas	Continue monitoring.
Revised					
6.3	Review of Town Operations	DPW, Facilities Manager	Monitor and Correct Problems	Pollution Prevention Control	Ongoing project.
Revised					
6.4	Catch Basin Cleaning	DPW	Updated Log	Cleaned all Town owned Catch Basins in Spring and Fall of 2006.	Clean all Town owned Catch Basins in Spring and Fall of 2007 and update log.
Revised					
6.5	Street Sweeping	DPW	Record of Areas Swept	Swept all Town owned Roadways and parking lots in April and September of 2006.	Sweep all Town owned Roadways and Parking Lots in April and September of 2007.
Revised					
Revised					

6a. Additions

6.6	Remediation of Existing Outfall	DPW	Elimination of Stormwater discharge	Three discharge sites identified: Steele Road, Cooks Brook Road and Thumpertown Road were eliminated - Herring Pond was identified	Herring Pond site eliminated
6.7	Drainage Alterations	DPW	Catch Basin Replacement	25 Catch Basins identified for replacement or closure. Herringbrook replaced.	Continue to replace or close as necessary through Permit Year 5.
6.8	Fuel Tanks	Fire	Fuel Tank	Removal of underground tank - was replaced with above ground double wall tank	Removal of two tanks.

7. BMP's 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 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities - Permit Year 5
Revised	-----	-----	-----		
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Revised	-----	-----	-----		
Revised	-----	-----	-----		
Revised	-----	-----	-----		

7a. Additions

7b. WLA Assessment

NOT APPLICABLE

Part IV. Summary of Information Collected and Analyzed

FRESHWATER SAMPLING: The Cape Cod Pond and Lake Stewardship (PALS) are continually sampling the Eastham ponds in an effort to identify possible pollutants and recommend the best management practices for containing and eliminating possible pollutants. Two ponds were added bringing the total number of ponds sampled to 11.

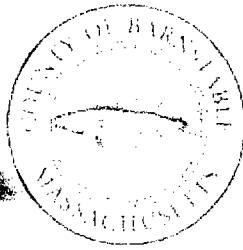
BEACH SAMPLING: Sixteen Eastham beaches (eleven salt water and five freshwater) were sampled in the summer of 2006 by the Barnstable County's Department of Health and Environment. Four beaches had samples above the sampling limit (see attached summary data). However, those samples exceeding the limits only resulted in the posting of swimming advisory notices. While a definitive cause was never determined for the need to post the swimming advisory, speculation was that it was related to natural geological conditions (peat deposits) and not related to a direct stormwater discharge (No outfall pipe exists).

GROUNDWATER SAMPLING: The Town continued its voluntary sampling project to evaluate levels of nitrate in residential wells. Each year 1/3 of the Town is sampled. The sampling has rotated back to the second 1/3 sample area and continually sample the town allowing for a three year sampling rotation schedule. We have experienced a return of approximately 65% of the vials mailed.

SHELLFISH SAMPLING: The Natural Resources Office continued to test for Red Tide and participate in shellfish sampling in coordination with Massachusetts Division of Marine Fisheries on a weekly basis through the Spring, Summer and Fall.

Part II. Self-Assessment

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



Cape Cod Summer 2007: Directory of Beach Location and Water Quality

Directory of Beach
Water Quality
by Town

Water Quality
Laboratory

Barnstable County
Department of
Health Home Page

Environmental
Health

Useful Links

Eastham Public Bathing Beach Water Quality Report

Beaches are tested weekly for bacterial indicator organisms during the summer bathing season (June through August). In the event of a beach failure, the beach in question will be resampled daily thereafter until results permit re-opening. The most recent weeks of sample results will be included in this chart. Green indicates good water quality and red indicates bacteria levels above the acceptable standard.

Pass

Marine (salt) Beaches:	6/6/07	6/13/07	6/19/07	6/26/07	7/5/07 (rain)	7/10/07 (rain)	7/17/07	7/24/07	7/31/07	8/7/07 (rain)	8/14/07
S. Sunken Meadow											
Cook's Brook											
Campground Beach											
Thumpertown											
Kingsbury											
Cole Road Beach											
First Encounter Beach											
First Encounter Spit											
Boat Meadow											
Dyer Prince											
Town Cove											

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Freshwater Beaches:	6/6/07	6/13/07	6/19/07	6/26/07	7/5/07 (rain)	7/10/07 (rain)	7/17/07	7/24/07	7/31/07	8/7/07 (rain)	8/14/07
Great Pond											
Herring Pond											
Long Pond (Depot Street)											
Minister Pond											
Wiley Park											

Town by Town Beach
Directory

Top of
Page

Eastham Public Beaches - 2006

Date of Last Rain: 6/4 6/11 6/15 6/20 6/25 7/5 7/9 7/17 7/17 7/17 7/24 7/24 7/27 8/7 8/7 8/15 8/21 8/28 8/29
 Amount of Last Rain: 0.25 0.01 0.56 0.22 0.48 0.38 0.02 0.01 0.01 0.01 0.19 0.19 0.01 0.01 0.01 0.11 0.47 0.36 0.5
 Storm Event: yes no no no yes yes yes no yes no yes no yes no yes yes yes yes

Marine Beaches	6/5	6/12	6/19	6/20	6/26	7/5	7/10	7/17	7/18	7/24	7/25	7/31	8/7	8/14	8/15	8/21	8/28	8/29	# Samples	# Fail
Boat Meadow	6	62	8		2	4	2	4	10	10		<2	6	214	16	18	<2		14	1
Campground Beach	4	2	260	32	2	4	48	10	10	10		2	52	2		4	4		14	1
Cole Road Beach	<2	<2	<2		2	2	<2	<2	4	4		<2	2	<2		4	<2		13	
Cook's Brook	2	48	52		<2	2	2	<2	4	4		4	30	<2		<2	<2		13	
Dyer Prince	12	26	<2		<2	<2	<2	4	>400	2		2	2	2		66	2		14	1
First Encounter Beach	<2	10	10		2	2	6	4	6			14	<2	<2		<2	2		13	
First Encounter River	<2	4	16		10	<2	2	32	<2	<2		<2	2	2		2	<2		13	
Kingsbury	2	14	46		6	4	14	<2	2	2		<2	6	<2		6	4		13	
S. Sunken Meadow	2	4	50		<2	<2	4	<2	2	2		<2	10	2		4	<2		13	
Thumpertown	4	12	28		<2	<2	2	<2	2	2		<2	74	<2		4	<2		13	
Town Cove	<2	<2	<2		12	2	2	106	16	2		2	6	2		14	<2		14	1

Fresh Water	6/5	6/12	6/19	6/26	7/5	7/10	7/17	7/24	7/31	8/7	8/14	8/21	8/28	# Samples	# Fail
Great Pond	<4	<2	<4	12	8	4	12	4	8	<4	<4	4	<4	13	
Herring Pond	<4	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	8	16	13	
Long Pond (Depot St)	<4	12	<4	<4	8	8	4	<4	8	16	4	20	28	13	
Minister Pond	16	20	8	32	8	12	24	20	8	24	24	36	8	13	
Wiley Park	8	<4	4	<4	4	<4	8	<4	12	<4	<4	4	<4	13	

# Marine Beach Samples	147
# Marine Beach Failures	4
% Marine Failures	2.72%
# Fresh Water Samples	65
# Fresh Water Failures	0
% Fresh Water Failures	0.00%

Eastham Semi-Public Beaches - 2006

Date of Last Rain: 6/4/06 6/11/06 6/15/06 6/25/06 7/5/06 7/9/06 7/17/06 7/24/06 7/27/06 8/7/06 8/7/06 8/21/06
 Amount Last Rain: 0.25 0.01 0.56 0.48 0.38 0.02 0.01 0.19 0.01 0.01 0.01 0.47
 Storm Event: yes no no yes yes no yes yes no yes no yes no yes

Marine Beach Organizations:	6/5/06	6/12/06	6/19/06	6/25/06	7/5/06	7/10/06	7/17/06	7/24/06	7/31/06	8/7/06	8/14/06	8/21/06	# Samples
Silver Springs Assoc.	2	2	46	<2	<2	2	<2	4	2	16	<2	6	12

Fresh Water Organizations:	6/5/06	6/12/06	6/19/06	6/25/06	7/5/06	7/10/06	7/17/06	7/24/06	7/31/06	8/7/06	8/14/06	8/21/06	# Samples
Nauset Haven Lakeside Condo (Ministers Pond)	12	<4	16	28	<4	4	20	4	<4	8	4	32	12
Whispering Pines Condo (Muddy Pond)	<4	44	16	8	<4	12	<4	4	8	8	<4	4	12

# Semi-Public Marine Beach Samples	12
# Semi-Public Marine Beach Failures	0
% Semi-Public Marine Beach Failures	0.00%
# Semi-Public Fresh Water Samples	24
# Semi-Public Fresh Water Failures	0
% Semi-Public Fresh Water Failures	0.00%

2006 File

Eastham • Orleans Collections Summary of Waste Collected 2006

Waste Collected	Unit Gallons	Unit Pounds	Unit Cost	Eastham Health Dept July 15			Orleans DPW September 16			Annual Totals							
				Number Units	Total Gallons	Total Pounds	Total Cost	Number Units	Total Gallons	Total Pounds	Total Cost	% Total Cost	% Total Volume				
Outdrzer Lab Pack	55	200	\$245	1	55	200	\$245.00	1	55	200	\$245.00	2	110	400	\$490.00	3.76%	3.08%
Alkaline Lab Pack	55	200	\$240	2	110	400	\$480.00	1	55	200	\$240.00	3	165	600	\$720.00	5.53%	4.62%
Acid Lab Pack	55	200	\$240	1	55	200	\$240.00	1	55	200	\$240.00	2	110	400	\$480.00	3.68%	3.08%
Pesticides Lab Pack	55	200	\$245	5	275	1000	\$1,225.00	6	275	1000	\$1,225.00	10	550	2000	\$2,450.00	18.80%	15.41%
Organic Liquid Low E	55	400	\$100	0	0	0	\$0.00	0	0	0	\$0.00	0	0	0	\$0.00	0.00%	0.00%
Resins & Adhesives	55	300	\$245	6	330	1800	\$1,470.00	4	220	1200	\$960.00	10	550	3000	\$2,450.00	18.80%	15.41%
Paint Liquid	55	600	\$135	7	385	4200	\$945.00	7	385	4200	\$945.00	14	770	8400	\$1,890.00	14.50%	21.57%
Paint Sludge	55	700	\$195	1	55	700	\$195.00	1	55	700	\$195.00	2	110	1400	\$390.00	2.99%	3.08%
Aerosols	55	150	\$235	3	165	450	\$705.00	3	165	450	\$705.00	6	330	900	\$1,410.00	10.82%	9.24%
Paint Recycled	150	800	\$415	3	450	2400	\$1,245.00	2	300	1800	\$830.00	5	750	4000	\$2,075.00	15.92%	21.01%
Solvent	30	250	\$90	2	60	500	\$180.00	0	0	0	\$0.00	2	60	500	\$180.00	1.38%	1.68%
Asbestos, non-fibrous	55	100	\$195	0	0	0	\$0.00	1	55	100	\$185.00	1	55	100	\$185.00	1.42%	1.54%
Mercury	5	50	\$185	1	5	50	\$185.00	0	0	0	\$0.00	1	5	50	\$185.00	1.42%	0.14%
Cyanide	5	10	\$125	1	5	10	\$125.00	0	0	0	\$0.00	1	5	10	\$125.00	0.98%	0.14%
Totals for Waste Disposal				33	1850	11,910	\$7,240	26	1,620	9,850	\$5,790	59	3,570	21,760	\$13,030	100%	100%
Set-up Fee Paid by Barnstable County							\$700				\$700				\$1,400		
VSQG Credit							-\$214.50				-\$32.50				-\$247.00		
Total Cost of Collection							\$7,725.50				\$6,457.50				\$14,183.00		

#Cars-#Households
 W/C#Household
 Cost#Household
 2005=138 cars/213 households
 2004=143 cars/222 households
 2003=152 cars/188 households
 Eastham July 16 Collection
 240 285
 50 40
 \$29.27 \$23.82
 cost/household=\$24.38
 cost/household=\$23.74

Orleans September 16 Collection
 171 242
 58 41
 \$33.67 \$23.79
 2005=224 cars/358 household
 2004=153 cars/193 household
 2003=147 cars/184 household
 cost/household=\$28.15
 cost/household=\$31.76

2006 Mercury Collect
 58 thermometers
 32 thermostats and switches
 8 pounds elemental mercury
 0 blood pressure gauges
 48 digital thermometers given
 3 digital thermostats given
 20 beverage coupons given
 Average Gallons Per Car 9
 Average Gallons Per Household 7
 Average Cost Per Collection \$6,392

* FULL CAR count based on 25 lbs HHV Vehicle
 Eastham 505
 Orleans 368
 Use for DEP Municipal Recycling Data Sheet

Summary of pond studies conducted by volunteers 2001-2007

Generally, 10 ponds were sampled during the growing season: Great, Herring, Depot, Muddy, Minister, Schoolhouse, Widow Harding, Moll's, Jemima, and Bridge. They were sampled in 2002-2007 for: Nitrogen, phosphorus, clarity, chlorophyll-a, pH, oxygen and temperature at depths determined by the protocol of the Cape Cod Commission. Samples are analyzed by the Seashore's North Atlantic Lab and by the School of Marine Technology at UMASS Dartmouth.

Approximately 20 samplers were trained originally by the Cape Cod Commission and the Seashore staff; training has continued in house. Access is provided by homeowners where there is no public access. Boats are provided by samplers or by abutting homeowners. Necessary GPS work was done by Senior Americorp volunteer Carolyn Kennedy of Orleans.

In 2007, we added one new pond, Little Depot, and resumed work on Bridge Pond. Because we had acquired 5 years of data, we were instructed in 2007 to cut back the monthly sampling to a "maintenance schedule" of 2 or 3 sampling dates.

Samplers have gathered over 5,000 individual samples. The pond sampling program has been adopted by the Eastham Water Resources Advisory Board and reports to that board..

The Cape Cod Commission's water quality department is currently reviewing the data, and will provide Eastham with a report presented at a public event, some time in 2007 or early 2008. The report will detail the condition of all 10 ponds previously sampled, and will give more detailed findings concerning Great, Herring, Depot, Schoolhouse, Minister, and Muddy. In addition to the sample results provided to the CCC, Pond Stewards have reviewed Health Department records and researched the history of uses around the ponds to a distance of 300 feet from their shores. The report will also make recommendations for mitigation and education programs.

The Stewards have made significant progress in accomplishing the goals set for themselves in 2003.

Equipment was originally supplied by the Seashore and the CCC. Analysis was originally paid for by a grant acquired by the Seashore lab (2002-2003). There was no funding for 2004 sample analysis. The Assembly of Delegates has provided funds for two years of analysis (2005-2006). For 2007, Eastham Town Meeting voted money to provide sampling analysis at the Seashore lab, and for renewal of elderly equipment.

UMASS-Dartmouth has provided free analysis of one sample set per pond per year.

Educational projects, formation of pond associations, and continued maintenance sampling are the major future goals.

Sandy Bayne, coordinator Eastham Pond Stewards

10/15/07