Municipality/Organization: **Town of Sandown**

EPA NPDES Permit Number: **NHR041032**

MaDEP Transmittal Number: **W-**

Annual Report Number & Reporting Period: **No. 1: March 2015-March 2016**

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: Arthur Genualdo Title: DPW Director

Telephone #: (603) 887-3484 Email: Townofsandown@sandown.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: Arthur Genualdo

Title: Public Works Director

Date: 5/3/16

Part II. Self-Assessment

The Town of Sandown, NH has completed the self assessment and determined that our municipality is in compliance with all permit conditions except the following provisions:

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 13 (Reliance on non-municipal partners indicated, if any)	Enter any revised info here
PE-1	Public Awareness – Video	Health Officer/ Ed Mencis	12 showings/yr	Will Show "After the Storm" video on a regular basis. New DVD received from EPA and the Weather Channel.	2 DVD's (Reduce runoff and After the Storm) showing regularly on local cable TV channel. Link to view videos on town website.
Revised					
PE-2	Educational Flyer	DPW Director/ Arthur Genualdo	# Flyers Distributed (2600/yr)	Safe Drinking Water Flyer distributed by transfer station attendants – flyer attached which outlines safe handling and disposal of gasoline .	Keep Gasoline from your Drinking Water and Homeowner Septic System Checklist flyers distributed to residents by transfer station attendants.
Revised					
PE-3	Web Page Linked to Main Page	Town Administrator/ Lynne Blaisdell	10% of main page visitors	Updated website with Angle Pond, Seeley Beach/Phillips Pond water sampling information – attached.	Continue to update website with Angle Pond, Seeley Beach/Philips Pond water sampling information – attached.
Revised					
PE-4	Town Library Information Kiosk	Selectman Tom Tombarello	1 project/yr	Sample Flyers on display at the Sandown Public Library. Copies attached Library hosted a workshop presented by UNH Coop Extension on Storm Proof Your Home – 2/12/14 attended by 6 residents	Sample flyers on display at the Sandown Public Library Copies attached
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 12 (Reliance on non-municipal partners indicated, if any)	Enter any revised info here
PP-1	Town Board Coordination	Selectman Tom Tombarello	# Participants/ # Meetings	Wells Village Road culvert completed in 2014. This will significantly help stormwater control and solve flooding in that area.	Meetings with Julie Labranche from RPC to prepare for new MS4 permit. Planning, Conservation, Building, Health, Public Works, Town Administrator all represented at meetings. 3-4 meetings held during 2015
Revised					
PP-2	Town Deliberative Session	DPW Director/ Arthur Genualdo	Discuss & Pass Warrant Article	Warrant article for Road Improvements for 2015 passed - Fremont Rd segment will be reconstructed and drainage issues addressed and corrected	Voters passed a Bridge Capital Reserve Fund for repair and maintenance of local bridges. Voters passed Road Improvements for 2016 which will address rest of Fremont Road and drainage issues.
Revised			Costs allocated via the yearly budget		
PP-3	Coordinate w/State Hwy Dept.	DPW Director/ Arthur Genualdo	# Participants/ # Meetings	No scheduled projects that include the State Highway Dept	Paving scheduled for Route 121A in north end of town near Chester line.
Revised			Routine meetings		
PP-4	Coordinate w/Adjacent Towns	DPW Director/ Arthur Genualdo		Investigate working with Rockingham Planning Commission and the Town of Hampstead regarding the water quality of Showell Pond. Investigate the possibility of a 319 grant.	Applied for 319 grant but it was not accepted.
Revised					
PP-5	Waste Oil Disposal	DPW Director/ Arthur Genualdo	Annual Volume – 5%/yr. incr.	Continued use of waste oil heater Continue to collect used waste oil	Continued use of waste oil heater Continue to collect used waste oil
Revised					

Revised					

2a. Additions

PP-6	Exotic Species Program	Selectman Hans Nicolaisen/ Selectman Tom Tombarello	# Participants/ # Monitorings Control of Fanwort and milfoil at Phillips Pond	**Progress on Goal(s) Permit Year 12** Phillips Pond Assoc awarded 2 NHDES grants: volunteer monitoring equipment grant and chemical treatment and manual harvesting of exotic weeds grant.	**Enter any revised info here** Phillips Pond Lake Association will cover the cost above a grant to perform 6 days of manual harvesting on the pond and summer testing.
PP-7	Local Water Quality Monitoring for Showell Pond and Phillips Pond	Selectman Hans Nicolaisen/ Selectman Tom Tombarello	# Participants to monitor pond's cyanobacteria levels # months of absence of Blooms at Showell Pond & Phillips Pond	Phillips Pond Association water quality report attached.	Current Phillips Pond Association water quality report attached.

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Enter any revised info here
ID-1	Update MS4 Plan	DPW Director/ Arthur Genualdo	Confirm Outfalls/ Update plan	All catch basins cleaned on 4/20 & 4/21and will receive updated GPS information on new basins from subdivisions in 2014	All catch basins cleaned at the end of March and will receive updated GPS information from new subdivisions in 2015 Ditching done in 3 areas to help with runoff and drainage
Revised					
ID-2	Identify Illicit Connections/Discharge	DPW Director/Arthur Genualdo Health Officer /Ed Mencis	# inspections & repairs/ yr	No illicit connections or discharges found during 2014	No illicit connections or discharges found during 2015
Revised					
ID-3	Failing Septic Systems	Health Officer/ Ed Mencis	# inspections & repairs/yr	12 Failed systems recorded in 2014 Continued inspection of all repairs and replacements	10 failed systems recorded in 2015 Continued inspection of all repairs and replacements
Revised					
ID-4	Illegal Dumping	DPW Director/ Arthur Genualdo	# Dumps reported & cleaned	6 violations of illegal dumping - Police investigations and fines if proven	7 violations of illegal dumping – Police investigations and fines if proven
Revised					
ID-5	Community Outreach	DPW Director/ Arthur Genualdo	# pamphlets distributed	Continue to provide brochures at Town Hall and Town Library on what homeowners can do to mitigate stormwater damage.	Continue to provide brochures at Town Hall and Town Library on what homeowners can do to mitigate stormwater damage.
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 12 (Reliance on non-municipal partners indicated, if any)	Enter any revised info here
CS-1	Sediment Control	Conservation Comm/ Paul Carey	# Sites/Methods implemented	Conservation Commission works with the Planning Board to enforce the erosion control ordinance	Conservation Commission works with the Planning Board to enforce the erosion control ordinance
Revised					
CS-2	Erosion Control	Conservation Comm/ Paul Carey	# Sites/Methods implemented	Conservation Commission works with the Planning Board to enforce the erosion control ordinance	Conservation Commission works with the Planning Board to enforce the erosion control ordinance
Revised					
CS-3	SWPP Review	Planning Board/ Mark Traeger	# Plans Reviewed	No plans reviewed in 2014. Town still requires submission of SWPP at preconstruction conference, together with proof of notice of intent filing	Town still requires submission of SWPP at preconstruction conference, together with proof of notice of intent filing
Revised		Planning Board/Ernie Brown			
CS-4	Construction Runoff Regs for Runoff Control	Planning Board/ Mark Traeger	Subdivision Regulations Updated	No new actions were taken in 2014	No new actions were taken in 2015
Revised		Planning Board/Ernie Brown			
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 12 (Reliance on non-municipal partners indicated, if any)	Enter any revised info here
PC-1	Runoff Control in Site Plan Regs.	Planning Board/ Mark Traeger	Annual Review/Reduction in loopholes	No new actions were taken in 2014	No new actions were taken in 2015
Revised		Planning Board/Ernie Brown			
PC-2	Buffer Zone	Conservation Commission/ Paul Carey	Establish new BMPs	No new actions taken in 2014	No new actions were taken in 2015
Revised					
PC-3	Inspection Program in Site Plan	Planning Board/ Mark Traeger	# inspections/problems fixed	The Planning Board is working with the town's building inspector and health officer to enforce the erosion control ordinance.	The Planning Board is working with the town's building inspector and health officer to enforce the erosion control ordinance.
Revised		Planning Board/Ernie Brown			
PC-4	Catch Basins	DPW Director/ Arthur Genualdo	Inventory & clean out Basins	All catch basins cleaned, 100% tracking and identification with GPS	All catch basins cleaned, 100% tracking and identification with GPS
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 12 (Reliance on non-municipal partners indicated, if any)	Enter any revised info here
MG-1	Road Salt Reduction	DPW Director/ Arthur Genualdo	Total Salt volume/yr	Continued use of molasses as an additive to reduce salt & sand amounts during plowing	Continued use of molasses as an additive to reduce salt & sand amounts during plowing
Revised					
MG-2	Spill Control & Reduction	Fire Dept/ Chief Wilfred Tapley	# Vehicle & non-vehicle releases	Continue to review procedures for spill control & reduction; update if necessary	Continue to review procedures for spill control & reduction; update if necessary
Revised					
MG-3	Fertilizer/Pesticide Reduction	Conservation Commission/ Paul Carey	Lawn care Specialist Training	Town Hall used environmentally safe fertilizer on the town grounds	Town Hall used environmentally safe fertilizer on the town grounds
Revised					
MG-4	Employee Training	DPW Director/ Arthur Genualdo	Workshops Attended	Employees attend 2 day NRRA conference yearly which covers hazardous waste, recycling and BMP's of waste management	Employees attend 2 day NRRA conference yearly which covers hazardous waste, recycling and BMP's of waste management
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 12 (Reliance on non-municipal partners indicated, if any)	Enter any revised info here
QI-1	E.Coli Monitoring	Health Officer/ Ed Mencis	Tracking Philips Lake Outfall	Continue monitoring State testing of Phillips Pond bathing waters – results attached	Continue monitoring State testing of Phillips Pond bathing waters – results attached
Revised					
Revised					
Revised					
Revised					
Revised					

Revised					

7a. Additions

7b. WLA Assessment

N/A

Part IV. Summary of Information Collected and Analyzed

Town beach monitoring is in place and baseline data collected to determine 'normal' & 'worst-case' (e.g., immediately after heavy rains) *e. coli* levels.

Part V. Program Outputs & Accomplishments (OPTIONAL)

Programmatic

Stormwater management position identified (Road Agent)	Yes	Yes

Education, Involvement, and Training

Estimated number of residents reached by education program(s)	2600	2600
Stormwater management committee established	Haz Mit Adopted	Haz Mit Adopted
Stream teams established or supported	yes	yes
Shoreline clean-up participation or quantity of shoreline miles cleaned	yes	yes
Household Hazardous Waste Collection Days		
▪ days sponsored	2	2
▪ community participation	Regional – Sandown included	Regional – Sandown included
▪ material collected	Not known (regional)	Not known (regional)
School curricula implemented		

Legal/Regulatory

	In Place Prior to Phase II	Under Review	Drafted	Adopted
Regulatory Mechanism Status (indicate with "**X**")				
▪ Illicit Discharge Detection & Elimination		X		
▪ Erosion & Sediment Control				X
▪ Post-Development Stormwater Management				X
Accompanying Regulation Status (indicate with "**X**")				
▪ Illicit Discharge Detection & Elimination			X	
▪ Erosion & Sediment Control				X
▪ Post-Development Stormwater Management				X

Mapping and Illicit Discharges

Outfall mapping complete	100%	100%
Estimated or actual number of outfalls		
System-Wide mapping complete	100%	100%
Mapping method(s)		
▪ Paper/Mylar	100%	100%
▪ CADD		
▪ GIS	100%	100%
Outfalls inspected/screened	100%	100%
Illicit discharges identified	0	0
Illicit connections removed	N/A	N/A
% of population on sewer	0	0
% of population on septic systems	100	100

Construction

Number of construction starts (>1-acre)	Approx.124	8 SFD 2015
Estimated percentage of construction starts adequately regulated for erosion and sediment control	95%	95%
Site inspections completed (estimated between Planning Board, Engineer, Bldg Insp., Conservation)	100%	100%
Tickets/Stop work orders issued	0	0
Fines collected	0	0
Complaints/concerns received from public	1	0

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	30%	0 *
Site inspections completed		0 *
Estimated volume of stormwater recharged	Not known	Not known
* We do not have post-construction Stormwater control regulations		

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	Twice/year	Twice/year
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	Twice/year	Twice/year
Total number of structures cleaned	162	Update not yet available
Storm drain cleaned	Regularly	Same
Qty. of screenings/debris removed from storm sewer infrastructure	Not known	Not known
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)	Compost	Compost
Cost of screenings disposal	No cost	No cost

Average frequency of street sweeping (non-commercial/non-arterial streets)	N/A	N/A

Average frequency of street sweeping (commercial/arterial or other critical streets)	Once/year	Once/year
Qty. of sand/debris collected by sweeping	3 tons	3 tons
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	Landfill	Landfill
Cost of sweepings disposal	No cost	No cost
Vacuum street sweepers purchased/leased	N/A	N/A
Vacuum street sweepers specified in contracts	N/A	N/A

Reduction in application on public land of: ("N/A" = never used; "100%" = elimination)		
▪ Fertilizers	N/A	
▪ Herbicides	N/A	
▪ Pesticides	N/A	

Anti-/De-Icing products and ratios	% NaCl % $CaCl_2$ % $MgCl_2$ % CMA % Kac % KCl % Sand	
Pre-wetting techniques utilized	N/A	N/A
Manual control spreaders used	Yes	Yes
Automatic or Zero-velocity spreaders used	No	NO
Estimated net reduction in typical year salt application	5-10%	5-10%
Salt pile(s) covered in storage shed(s)	Yes	Yes
Storage shed(s) in design or under construction	No	No

Keep Gasoline From Your Drinking Water

Gasoline is one of the most dangerous products commonly found around the home, yet people sometimes use it and store it with little care. Some of the more toxic chemicals in gasoline that have been found in drinking water include benzene, toluene, and MtBE. Even very small gasoline spills can contaminate your drinking water wells or a public water supply.

How to Protect Your Drinking Water from Gasoline

Avoid spilling gasoline on the ground, especially near wells

- Don't top off your fuel tank when filling your lawn mower, snow blower, etc.
- Keep refueling and engine work away from water supply wells. Do the work over a concrete floor or similar barrier, and immediately clean up any gas or oil spills.
- Don't drain gasoline from these machines onto the ground.
- Don't ever use gasoline to burn brush.

Avoid spilling gasoline in lakes, ponds, and rivers

- Fill portable tanks from outboard boat engines on shore, not near water. If you own a larger boat, make sure it has no-spill tank vents.
- Keep special gasoline-absorbing pads on your gas-powered boat; know how to use them.
- Refuel snowmobiles and ice augers onshore; do not take gasoline storage tanks onto ice-covered ponds.

Store gasoline properly

- Use a clearly-labelled container made for gasoline, with a spout to avoid spills.
- Keep gasoline containers in a dry, well-ventilated shed or detached garage away from water supply wells. Don't keep metal gasoline cans on a dirt floor for extended periods.

Dispose of waste gasoline properly

- Handle old or dirty gasoline as hazardous waste. Bring it to a household hazardous waste collection site in a proper gasoline container.

What To Do If A Petroleum Spill Occurs

First, stop the discharge and prevent any further spillage. Then contact your local fire department. If the spill impacts any surface or groundwater, or if the spill is greater than 25 gallons, you must also notify the N.H. Department of Environmental Services at 271-3644, or the N.H. State Police at 1-800-346-4009.

NHDES

Homeowner Septic System Checklist

Septic System Description

Contact your local authority if you don't have this information.

Date system installed _____

Installer _____

Phone _____

Tank size _____ gallons

Capacity _____ bedrooms

Type ☐ conventional

☐ alternative (type) _____

For more information about septic systems, contact:

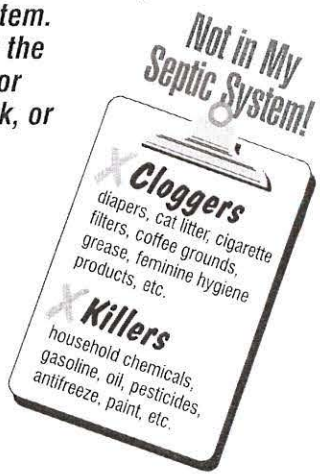
Clean Water starts at Home

U.S. Environmental Protection Agency

Www.epa.gov/owm/septic

Things to keep in mind:

- ✓ *Regularly inspect your system and pump your tank as necessary.*
- ✓ *Use water efficiently.*
- ✓ *Don't dispose of household hazardous wastes in sinks and toilets.*
- ✓ *Plant only grass over and near your septic system. Roots from nearby trees or shrubs might clog and damage the drainfield.*
- ✓ *Don't drive or park vehicles on any part of your septic system. Doing so can compact the soil in your drainfield or damage the pipes, tank, or other septic system components.*



Septic System Maintenance Record

Next Service	Scheduled Activity	Pumping Co./ Phone	Activities Completed	Comments
Jan. 2003	inspection	Joe Pumper 555-1234	inspection	sludge layer okay-may need pumping next year

Place on electrical box (fuse box) or other convenient location.

BOS

NH DIVISION OF
Public Health Services
Improving health, preventing disease, reducing costs for all

RECEIVED

SEP 17 2015

SELECTMEN'S OFFICE
TOWN OF SANDOWN NH

Tuesday, September 01, 2015

PARKS AND REC DEPARTMENT
TOWN OF SANDOWN
PO BOX 644
SANDOWN NH 03873

RE: Workorder: A507382 - EPABEACH
Project ID: 8857000 - PHILLIPS POND SEELEY TB - SANDOWN

Dear PARKS AND REC DEPARTMENT:

Enclosed are the analytical results for the sample(s) received by the laboratory on Wednesday, Aug 26, 2015. Unless indicated as exceptions, the sample(s) met EPA requirements for hold times, preservation techniques, container types and other receipt conditions. Please contact us if you need measurement uncertainty values associated with radiological parameters. Results reported conform to the most current NELAC standard, where applicable, unless otherwise narrated in the body of the report. Any results reported for samples subcontracted to another laboratory are indicated on the report. Please refer to http://www2.des.nh.gov/CertifiedLabs/Certified-Method.aspx for a copy of our current NELAP certificate and accredited parameters.

We appreciate the opportunity to provide this analytical service for you. If you have any questions regarding this report or your results, please feel free to contact us.

The following signature indicates technical review and acceptance of the data.

Sincerely,

Mona Freese

Authorized Signature

Enclosures

REPORT OF LABORATORY ANALYSIS

nelac

NH DIVISION OF
Public Health Services
Improving health, preventing disease, reducing costs for all

New Hampshire Public Health Laboratories
Department of Health and Human Services
29 Hazen Dr., Concord NH 03301
Phone: (603) 271-3445
Fax: (603) 271-2997

DATA QUALIFIER DESCRIPTIONS

Workorder: A507382 - EPABEACH

Project ID: 8857000 - PHILLIPS POND SEELEY TB - SANDOWN

The following are a list of some column headers and abbreviations with their meanings as used throughout the analysis report. Referring to them will assist you in interpreting your report.

RDL= The lowest value the laboratory calibrates its instrumentation for this parameter. Any instrumental estimate of results below the Report Limit is reported as Not Detected (ND).

DF= For some heavily contaminated samples, the laboratory must dilute samples to keep the final number within its calibration scale. This is referred to as the Dilution Factor. Final results and reporting limits are adjusted relative to the DF used.

QUAL= Indicates that the result has been qualified. Refer to the Analytical Report Comments and Qualifiers page for details.

LIMIT= Reflects the Maximum Contamination Level (MCL), if one exists, a secondary or recommended level or another State or Federal action level.

Surrogates = For some analyses, the laboratory adds a number of compounds to monitor analytical performance. These results are provided for your information.

> = Greater than	< = Less than
mg/L = milligrams per Liter	ug/L = micrograms per Liter
mg/kg = milligrams per kilogram	ug/kg = micrograms per kilogram
P-A = Present/Absent	CTS/100 mL = Counts per 100 milliliters
CFU = Colony forming unit	MPN = Most Probable Number
pCi/L = picoCuries per Liter	

J = Estimated value; analyte detected at less than the Reporting Limit but greater than the laboratory's Method Detection Limit.

B = Analyte detected in the method blank for the batch of samples. Its presence in the sample may be suspect.

E = Estimated value; result exceeded the upper calibration level for the parameter.

Radiological results are expressed as a number + an uncertainty factor. Uncertainty is a calculated measure of the precision around the reported value.

All results for pH and residual chlorine samples analyzed more than 15 minutes after time of collection shall be considered QUALIFIED.

NH DIVISION OF
Public Health Services
Improving health, preventing disease, reducing costs for all

New Hampshire Public Health Laboratories
Department of Health and Human Services
29 Hazen Dr., Concord NH 03301
Phone: (603) 271-3445
Fax: (603) 271-2997

SAMPLE SUMMARY

Workorder: A507382 - EPABEACH

Project ID: 8857000 - PHILLIPS POND SEELEY TB - SANDOWN

Lab ID	Sample ID	Ref ID	Matrix	Date Collected	Date Received	Misc Info
A507382001	BCHSELSDNLF		WATER	8/26/2015 12:06	8/26/2015	
A507382002	BCHSELSDNRT		WATER	8/26/2015 12:06	8/26/2015	

NH DIVISION OF
Public Health Services
Improving health, preventing disease, reducing costs for all

New Hampshire Public Health Laboratories
Department of Health and Human Services
29 Hazen Dr., Concord NH 03301
Phone: (603) 271-3445
Fax: (603) 271-2997

ANALYTICAL RESULTS

Workorder: A507382 - EPABEACH
Project ID: 8857000 - PHILLIPS POND SEELEY TB - SANDOWN

Lab ID: A507382001
Sample ID: BCHSELSDNLF
Description:

Matrix: WATER
Sample Type: SAMPLE
Collector : K KELLY

Parameters	Results	Units	RDL	DF	Prepared	Analyzed	Limit	Qual
Microbiology								
Preparation Method: EPA 1603 Modified mTec								
Analytical Method: EPA 1603 Modified mTec								
E.Coli, CTS	2	CTS/100mL		1	8/26/2015 15:34	8/27/2015 14:56		

NH DIVISION OF
Public Health Services
Improving health, preventing disease, reducing costs for all

New Hampshire Public Health Laboratories
Department of Health and Human Services
29 Hazen Dr., Concord NH 03301
Phone: (603) 271-3445
Fax: (603) 271-2997

ANALYTICAL RESULTS

Workorder: A507382 - EPABEACH
Project ID: 8857000 - PHILLIPS POND SEELEY TB - SANDOWN

Lab ID: A507382002
Sample ID: BCHSELSDNRT
Description:

Matrix: WATER
Sample Type: SAMPLE
Collector : K KELLY

Parameters	Results	Units	RDL	DF	Prepared	Analyzed	Limit	Qual
Microbiology								
Preparation Method: EPA 1603 Modified mTec								
Analytical Method: EPA 1603 Modified mTec								
E.Coli, CTS	2	CTS/100mL		1	8/26/2015 15:42	8/27/2015 14:56		

NH DIVISION OF
Public Health Services
Improving health, preventing disease, reducing costs for all

RECEIVED

AUG 10 2015

SELECTMEN'S OFFICE
TOWN OF SANDOWN NH

Monday, August 03, 2015

PARKS AND REC DEPARTMENT
TOWN OF SANDOWN
PO BOX 644
SANDOWN NH 03873

RE: Workorder: A505859 - EPABEACH
Project ID: 8857000 - PHILLIPS POND SEELEY TB - SANDOWN

Dear PARKS AND REC DEPARTMENT:

Enclosed are the analytical results for the sample(s) received by the laboratory on Tuesday, Jul 28, 2015. Unless indicated as exceptions, the sample(s) met EPA requirements for hold times, preservation techniques, container types and other receipt conditions. Please contact us if you need measurement uncertainty values associated with radiological parameters. Results reported conform to the most current NELAC standard, where applicable, unless otherwise narrated in the body of the report. Any results reported for samples subcontracted to another laboratory are indicated on the report. Please refer to http://www2.des.nh.gov/CertifiedLabs/Certified-Method.aspx for a copy of our current NELAP certificate and accredited parameters.

We appreciate the opportunity to provide this analytical service for you. If you have any questions regarding this report or your results, please feel free to contact us.

The following signature indicates technical review and acceptance of the data.

Sincerely,

Mona Freese

Authorized Signature

Enclosures

REPORT OF LABORATORY ANALYSIS

ACCREDITED IN ACCORDANCE WITH nelac

NH DIVISION OF
Public Health Services
Improving health, preventing disease, reducing costs for all

New Hampshire Public Health Laboratories
Department of Health and Human Services
29 Hazen Dr., Concord NH 03301
Phone: (603) 271-3445
Fax: (603) 271-2997

DATA QUALIFIER DESCRIPTIONS

Workorder: A505859 - EPABEACH

Project ID: 8857000 - PHILLIPS POND SEELEY TB - SANDOWN

The following are a list of some column headers and abbreviations with their meanings as used throughout the analysis report. Referring to them will assist you in interpreting your report.

RDL= The lowest value the laboratory calibrates its instrumentation for this parameter. Any instrumental estimate of results below the Report Limit is reported as Not Detected (ND).

DF= For some heavily contaminated samples, the laboratory must dilute samples to keep the final number within its calibration scale. This is referred to as the Dilution Factor. Final results and reporting limits are adjusted relative to the DF used.

QUAL= Indicates that the result has been qualified. Refer to the Analytical Report Comments and Qualifiers page for details.

LIMIT= Reflects the Maximum Contamination Level (MCL), if one exists, a secondary or recommended level or another State or Federal action level.

Surrogates = For some analyses, the laboratory adds a number of compounds to monitor analytical performance. These results are provided for your information.

> = Greater than	< = Less than
mg/L = milligrams per Liter	ug/L = micrograms per Liter
mg/kg = milligrams per kilogram	ug/kg = micrograms per kilogram
P-A = Present/Absent	CTS/100 mL = Counts per 100 milliliters
CFU = Colony forming unit	MPN = Most Probable Number

pCi/L = picoCuries per Liter

J = Estimated value; analyte detected at less than the Reporting Limit but greater than the laboratory's Method Detection Limit.

B = Analyte detected in the method blank for the batch of samples. Its presence in the sample may be suspect.

E = Estimated value; result exceeded the upper calibration level for the parameter.

Radiological results are expressed as a number + an uncertainty factor. Uncertainty is a calculated measure of the precision around the reported value.

All results for pH and residual chlorine samples analyzed more than 15 minutes after time of collection shall be considered QUALIFIED.

NH DIVISION OF
Public Health Services
Improving health, preventing disease, reducing costs for all

New Hampshire Public Health Laboratories
Department of Health and Human Services
29 Hazen Dr., Concord NH 03301
Phone: (603) 271-3445
Fax: (603) 271-2997

SAMPLE SUMMARY

Workorder: A505859 - EPABEACH

Project ID: 8857000 - PHILLIPS POND SEELEY TB - SANDOWN

Lab ID	Sample ID	Ref ID	Matrix	Date Collected	Date Received	Misc Info
A505859001	BCHSELSDNLF		WATER	7/28/2015 09:42	7/28/2015	
A505859002	BCHSELSDNRT		WATER	7/28/2015 09:42	7/28/2015	

NH DIVISION OF
Public Health Services
Improving health, preventing disease, reducing costs for all

New Hampshire Public Health Laboratories
Department of Health and Human Services
29 Hazen Dr., Concord NH 03301
Phone: (603) 271-3445
Fax: (603) 271-2997

ANALYTICAL RESULTS

Workorder: A505859 - EPABEACH
Project ID: 8857000 - PHILLIPS POND SEELEY TB - SANDOWN

Lab ID: A505859001
Sample ID: BCHSELSDNLF
Description:

Matrix: WATER
Sample Type: SAMPLE
Collector : C ANDY

Parameters	Results	Units	RDL	DF	Prepared	Analyzed	Limit	Qual
Microbiology								
Preparation Method: EPA 1603 Modified mTec								
Analytical Method: EPA 1603 Modified mTec								
E.Coli, CTS	4	CTS/100mL		1	7/28/2015 14:24	7/29/2015 14:45		

NH DIVISION OF
Public Health Services
Improving health, preventing disease, reducing costs for all

New Hampshire Public Health Laboratories
Department of Health and Human Services
29 Hazen Dr., Concord NH 03301
Phone: (603) 271-3445
Fax: (603) 271-2997

ANALYTICAL RESULTS

Workorder: A505859 - EPABEACH
Project ID: 8857000 - PHILLIPS POND SEELEY TB - SANDOWN

Lab ID: A505859002
Sample ID: BCHSELSDNRT
Description:
Matrix: WATER
Sample Type: SAMPLE
Collector : C ANDY

Parameters	Results	Units	RDL	DF	Prepared	Analyzed	Limit	Qual
Microbiology								
Preparation Method: EPA 1603 Modified mTec								
Analytical Method: EPA 1603 Modified mTec								
E.Coli, CTS	2	CTS/100mL		1	7/28/2015 14:24	7/29/2015 15:02		

Volunteer Lake Assessment Program Individual Lake Reports

PHILLIPS POND, SANDOWN, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	2,006	Max. Depth (m):	5.8	Flushing Rate (yr^{-1}):	3.7
Surface Area (Ac.):	85	Mean Depth (m):	3.1	P Retention Coef:	0.54
Shore Length (m):	2,600	Volume (m^3):	1,058,500	Elevation (ft):	212

TROPHIC CLASSIFICATION

Year	Trophic class
1977	MESOTROPHIC
1990	MESOTROPHIC

KNOWN EXOTIC SPECIES

Fanwort

The Waterbody Report Card tables are generated from the DRAFT 2014 305(b) report on the status of N.H. waters, and are based on data collected from 2004-2013. Detailed waterbody assessment and report card information can be found at www.des.nh.gov/organizations/divisions/water/wmb/swqa/index.htm

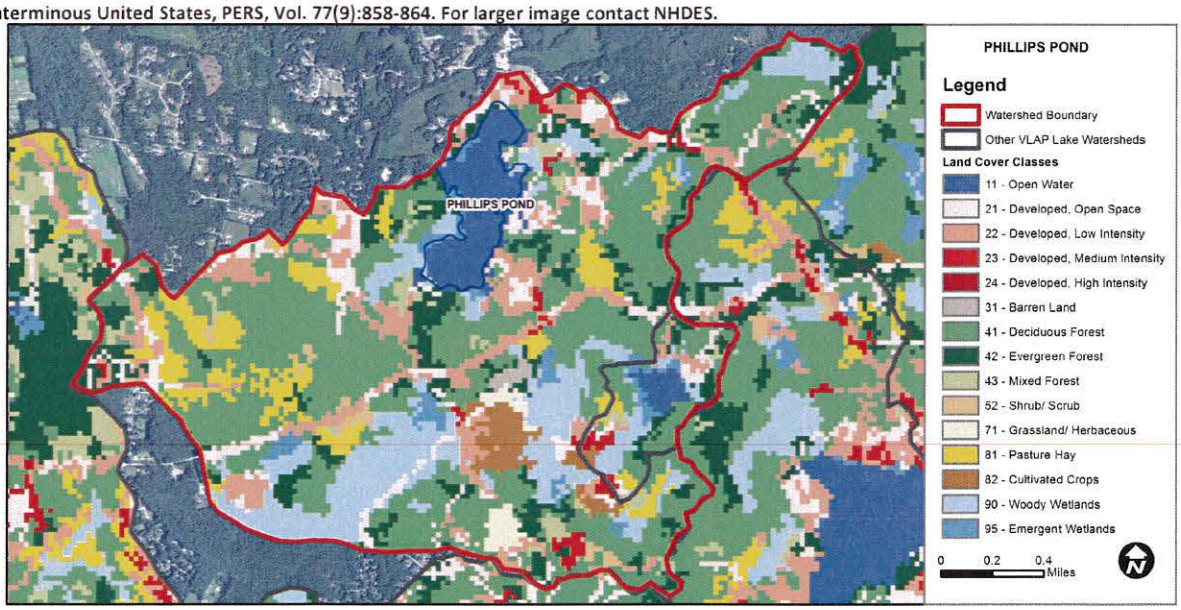
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	The calculated median is from 5 or more samples and is > indicator and the chlorophyll a indicator is exceeded.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Oxygen, Dissolved	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Dissolved oxygen satura	Cautionary	There are < 10 samples with 1 exceedance of criteria. More data needed.
	Chlorophyll-a	Slightly Bad	The calculated median is from 5 or more samples and is > indicator.
Primary Contact Recreation	Escherichia coli	Very Good	Where there are no geometric means, all bacteria samples are < 75% of the geometric mean. Where there are geometric means all single bacteria samples are < the SSMC and all geometric means are < geometric mean criteria.
	Cyanobacteria hepatoto	Slightly Bad	Cyanobacteria bloom(s).
	Chlorophyll-a	Good	There are at least 10 samples with one, but < 10% of samples, exceeding indicator.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

PHILLIPS POND - SEELEY TOWN BEACH	Escherichia coli	Good	There are geometric means and all geometric means are < geometric mean criteria, and there has been a single sample exceedance.
PHILLIPS POND - SEELEY TOWN BEACH	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



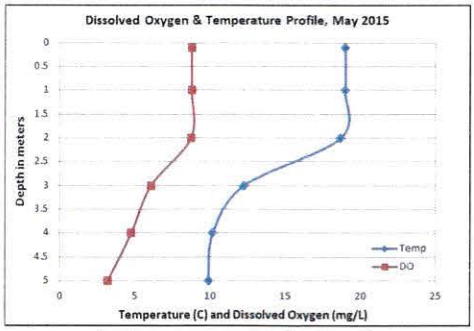
Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	5.42	Barren Land	0.36	Grassland/Herbaceous	0.98
Developed-Open Space	7.18	Deciduous Forest	38.38	Pasture Hay	6.56
Developed-Low Intensity	9.29	Evergreen Forest	9.97	Cultivated Crops	1.91
Developed-Medium Intensity	1.39	Mixed Forest	1.97	Woody Wetlands	13.57
Developed-High Intensity	0	Shrub-Scrub	0.97	Emergent Wetlands	2.13

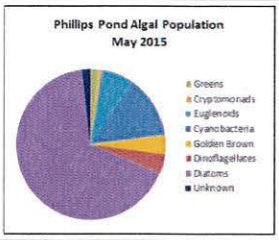
VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
PHILLIPS POND, SANDOWN
2015 DATA SUMMARY

RECOMMENDED ACTIONS: Pond and tributary conductivity levels have increased, although not significantly, since monitoring began. Educate and encourage local road agents and winter maintenance companies to obtain a Voluntary N.H. Salt Applicator license through UNH Technology Transfer Center's Green SnowPro Certification program. Turbidity and phosphorus were elevated in the Inlet following significant storm events. Identify potential areas of erosion and stormwater runoff in the sub-watershed and implement stormwater best practices to try and reduce stormwater runoff to the tributary. Educate lake and watershed residents on ways to reduce stormwater runoff from their properties utilizing DES' "N.H. Homeowner's Guide to Stormwater Management". Continue milfoil management activities but keep an eye on how this may impact pond water quality. Keep up the great work!

OBSERVATIONS *(Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **CHLOROPHYLL-A:** Chlorophyll levels were slightly elevated in May and June, decreased to moderate levels in July and August, and then increased to elevated levels in September. The 2015 average chlorophyll level increased from 2014 and was greater than the state median. Visual inspection of historical data indicates relatively stable chlorophyll levels since monitoring began.
- **CONDUCTIVITY/CHLORIDE:** Deep spot and tributary conductivity and chloride levels remained elevated and much greater than the state medians. Visual inspection of historical data indicates increasing (worsening) epilimnetic (upper water layer) conductivity since monitoring began.
- **TOTAL PHOSPHORUS:** Epilimnetic phosphorus levels were moderate in May and June, increased in July and August, and then decreased back to moderate levels in September. Average epilimnetic phosphorus remained stable with 2014 and was slightly greater than the state median. Visual inspection of historical data indicates decreasing (improving) epilimnetic phosphorus since monitoring began. Hypolimnetic (lower water layer) phosphorus was moderate in May and increased to elevated levels as the summer progressed potentially due to phosphorus release from bottom sediments as dissolved oxygen levels are depleted, a process called internal loading. Inlet phosphorus was elevated in August following a significant storm event. Metacomet Inlet and Outlet phosphorus levels were slightly elevated in June and elevated in July as tributary flows decreased.
- **TRANSPARENCY:** Transparency was low in May and June when algal growth was higher, increased (improved) in July and then decreased slightly in September as algal growth increased. Average transparency decreased slightly from 2014 and was less than (worse than) the state median. Visual inspection of historical data indicates relatively stable transparency since monitoring began. Transparency measured with the viewscope (VS) was much better than that measured without and likely a better representation of conditions.
- **TURBIDITY:** Epilimnetic turbidity was within an average range from May through August and was elevated in September when algal growth was elevated. Hypolimnetic turbidity was elevated from June through September and laboratory noted cloudy water with organic matter in some samples indicating the formation and accumulation of organic compounds in hypolimnetic water as summer progressed and dissolved oxygen levels were depleted. Inlet turbidity was slightly elevated in June and August following significant storm events and Outlet turbidity was also elevated in June.
- **PH:** Epilimnetic pH fluctuated below the desirable range 6.5-8.0 units and hypolimnetic pH was less than desirable on each sampling event. Metacomet Inlet and Outlet pH were also less than desirable and slightly acidic. Inlet pH was generally within the desirable range. Visual inspection of historical data indicates relatively stable epilimnetic pH since monitoring began.





NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: > 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: between 6.5-8.0 (unless naturally occurring)

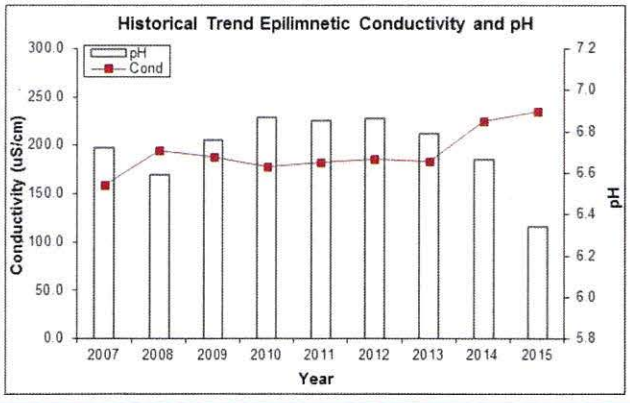
NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

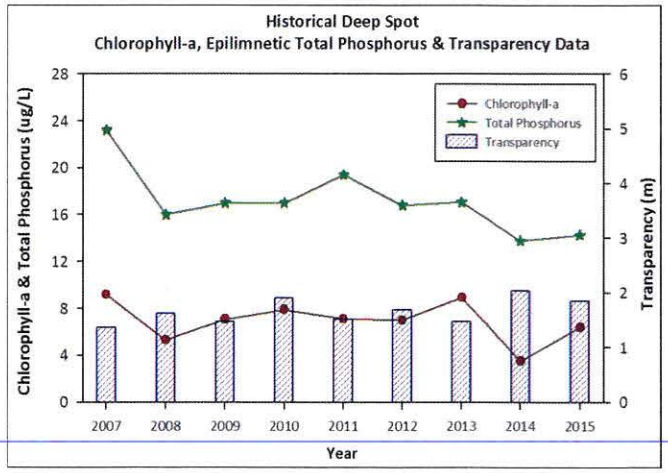
Table 1. 2015 Average Water Quality Data for PHILLIPS POND

Station Name	Alk. mg/l	Chlor-a ug/l	Chloride mg/l	Cond. uS/cm	Total P ug/l	Trans. m		Turb. ntu	pH
						NVS	VS		
Epilimnion	16.2	6.40	53	235.2	14	1.85	2.51	1.85	6.34
Hypolimnion				225.8	26			8.95	6.21
Inlet			43	230.0	43			1.84	6.68
Metacomet Inlet			69	290.8	34			1.16	6.22
Outlet			62	286.0	32			4.83	6.38

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
Conductivity	N/A	Ten consecutive years of data necessary for analysis.	Chlorophyll-a	N/A	Ten consecutive years of data necessary for analysis.
pH (epilimnion)	N/A	Ten consecutive years of data necessary for analysis.	Transparency	N/A	Ten consecutive years of data necessary for analysis.
			Phosphorus (epilimnion)	N/A	Ten consecutive years of data necessary for analysis.





Volunteer Lake Assessment Program Individual Lake Reports

PHILLIPS POND, SANDOWN, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	2,006	Max. Depth (m):	5.8	Flushing Rate (yr^{-1})	3.7
Surface Area (Ac.):	85	Mean Depth (m):	3.1	P Retention Coef:	0.54
Shore Length (m):	2,600	Volume (m^3):	1,058,500	Elevation (ft):	212

TROPHIC CLASSIFICATION

Year	Trophic class
1977	MESOTROPHIC
1990	MESOTROPHIC

KNOWN EXOTIC SPECIES

Fanwort

The Waterbody Report Card tables are generated from the DRAFT 2014 305(b) report on the status of N.H. waters, and are based on data collected from 2004-2013. Detailed waterbody assessment and report card information can be found at www.des.nh.gov/organizations/divisions/water/wmb/swqa/index.htm

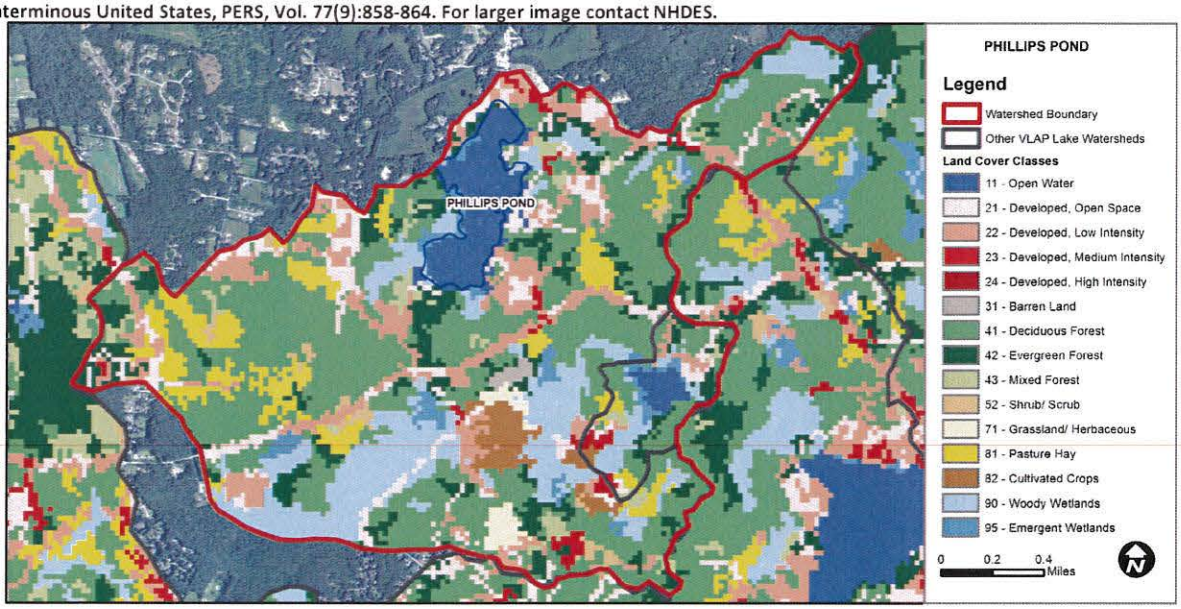
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	The calculated median is from 5 or more samples and is > indicator and the chlorophyll a indicator is exceeded.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Oxygen, Dissolved	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Dissolved oxygen satura	Cautionary	There are < 10 samples with 1 exceedance of criteria. More data needed.
	Chlorophyll-a	Slightly Bad	The calculated median is from 5 or more samples and is > indicator.
Primary Contact Recreation	Escherichia coli	Very Good	Where there are no geometric means, all bacteria samples are < 75% of the geometric mean. Where there are geometric means all single bacteria samples are < the SSMC and all geometric means are < geometric mean criteria.
	Cyanobacteria hepatoto	Slightly Bad	Cyanobacteria bloom(s).
	Chlorophyll-a	Good	There are at least 10 samples with one, but < 10% of samples, exceeding indicator.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

PHILLIPS POND - SEELEY TOWN BEACH	Escherichia coli	Good	There are geometric means and all geometric means are < geometric mean criteria; and there has been a single sample exceedance.
PHILLIPS POND - SEELEY TOWN BEACH	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



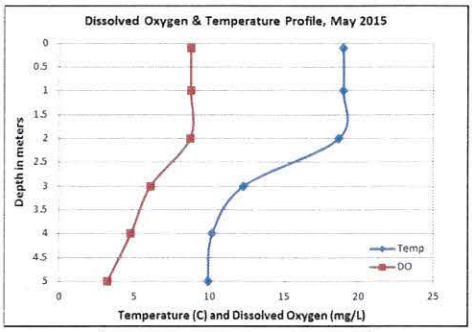
Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	5.42	Barren Land	0.36	Grassland/Herbaceous	0.98
Developed-Open Space	7.18	Deciduous Forest	38.38	Pasture Hay	6.56
Developed-Low Intensity	9.29	Evergreen Forest	9.97	Cultivated Crops	1.91
Developed-Medium Intensity	1.39	Mixed Forest	1.97	Woody Wetlands	13.57
Developed-High Intensity	0	Shrub-Scrub	0.97	Emergent Wetlands	2.13

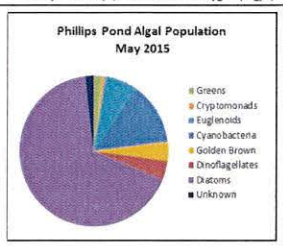
Volunteer Lake Assessment Program Individual Lake Reports
Phillips Pond, Sandown
2015 Data Summary

Recommended Actions: Pond and tributary conductivity levels have increased, although not significantly, since monitoring began. Educate and encourage local road agents and winter maintenance companies to obtain a Voluntary N.H. Salt Applicator license through UNH Technology Transfer Center's Green SnowPro Certification program. Turbidity and phosphorus were elevated in the Inlet following significant storm events. Identify potential areas of erosion and stormwater runoff in the sub-watershed and implement stormwater best practices to try and reduce stormwater runoff to the tributary. Educate lake and watershed residents on ways to reduce stormwater runoff from their properties utilizing DES' "N.H. Homeowner's Guide to Stormwater Management". Continue milfoil management activities but keep an eye on how this may impact pond water quality. Keep up the great work!

Observations *(Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **Chlorophyll-a:** Chlorophyll levels were slightly elevated in May and June, decreased to moderate levels in July and August, and then increased to elevated levels in September. The 2015 average chlorophyll level increased from 2014 and was greater than the state median. Visual inspection of historical data indicates relatively stable chlorophyll levels since monitoring began.
- **Conductivity/Chloride:** Deep spot and tributary conductivity and chloride levels remained elevated and much greater than the state medians. Visual inspection of historical data indicates increasing (worsening) epilimnetic (upper water layer) conductivity since monitoring began.
- **Total Phosphorus:** Epilimnetic phosphorus levels were moderate in May and June, increased in July and August, and then decreased back to moderate levels in September. Average epilimnetic phosphorus remained stable with 2014 and was slightly greater than the state median. Visual inspection of historical data indicates decreasing (improving) epilimnetic phosphorus since monitoring began. Hypolimnetic (lower water layer) phosphorus was moderate in May and increased to elevated levels as the summer progressed potentially due to phosphorus release from bottom sediments as dissolved oxygen levels are depleted, a process called internal loading. Inlet phosphorus was elevated in August following a significant storm event. Metacomet Inlet and Outlet phosphorus levels were slightly elevated in June and elevated in July as tributary flows decreased.
- **Transparency:** Transparency was low in May and June when algal growth was higher, increased (improved) in July and then decreased slightly in September as algal growth increased. Average transparency decreased slightly from 2014 and was less than (worse than) the state median. Visual inspection of historical data indicates relatively stable transparency since monitoring began. Transparency measured with the viewscope (VS) was much better than that measured without and likely a better representation of conditions.
- **Turbidity:** Epilimnetic turbidity was within an average range from May through August and was elevated in September when algal growth was elevated. Hypolimnetic turbidity was elevated from June through September and laboratory noted cloudy water with organic matter in some samples indicating the formation and accumulation of organic compounds in hypolimnetic water as summer progressed and dissolved oxygen levels were depleted. Inlet turbidity was slightly elevated in June and August following significant storm events and Outlet turbidity was also elevated in June.
- **pH:** Epilimnetic pH fluctuated below the desirable range 6.5-8.0 units and hypolimnetic pH was less than desirable on each sampling event. Metacomet Inlet and Outlet pH were also less than desirable and slightly acidic. Inlet pH was generally within the desirable range. Visual inspection of historical data indicates relatively stable epilimnetic pH since monitoring began.





NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: > 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: between 6.5-8.0 (unless naturally occurring)

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

Station Name	Table 1. 2015 Average Water Quality Data for PHILLIPS POND								
	Alk. mg/l	Chlor-a ug/l	Chloride mg/l	Cond. uS/cm	Total P ug/l	Trans. m		Turb. ntu	pH
						NVS	VS		
Epilimnion	16.2	6.40	53	235.2	14	1.85	2.51	1.85	6.34
Hypolimnion				225.8	26			8.95	6.21
Inlet			43	230.0	43			1.84	6.68
Metacomet Inlet			69	290.8	34			1.16	6.22
Outlet			62	286.0	32			4.83	6.38

Historical Water Quality Trend Analysis

Parameter	Trend	Explanation	Parameter	Trend	Explanation
Conductivity	N/A	Ten consecutive years of data necessary for analysis.	Chlorophyll-a	N/A	Ten consecutive years of data necessary for analysis.
pH (epilimnion)	N/A	Ten consecutive years of data necessary for analysis.	Transparency	N/A	Ten consecutive years of data necessary for analysis.
			Phosphorus (epilimnion)	N/A	Ten consecutive years of data necessary for analysis.