TOWN OF CORTLANDT
DEPARTMENT OF TECHNICAL SERVICES
ENGINEERING DIVISION

Michael Preziosi, P.E.
Director – D.O.T.S

Arthur D'Angelo, Jr., P.E.
Deputy Director
D.O.T.S – Engineering

Town Hall, 1 Heady Street
Cortlandt Manor, NY 10567
Main #: 914-734-1060
Fax #: 914-734-1066

MEMORANDUM

To: NYSDEC – MS4 Permit Coordinator

From: Michael Preziosi, P.E., Director, DOTS

Date: May 13, 2021

Re: **ANNUAL STORMWATER REPORT / TOWN OF CORTLANDT**

Attached please find the Stormwater Phase II Annual Report for the period 3/3/20-3/9/21 with appendices and attachments.

Thank you.

3258632975

MS4 Annual Report Cover Page

MCC form for period ending March 9, 2021

This cover page must be completed by the report preparer.
Joint reports require only one cover page.

SPDES ID: NYR20A181

Choose one:

● **This report is being submitted on behalf of an individual MS4.**

Fill in SPDES ID in upper right hand corner.

Name of MS4: TOWN OF CORTLANDT

OR

○ **This report is being submitted on behalf of a Single Entity**

(Per Part II.E of GP-0-10-002)

Name of Single Entity:

OR

○ **This is a joint report being submitted on behalf of a coalition.**

Provide SPDES ID of each permitted MS4 included in this report. Use page 2 if needed.

Name of Coalition:

SPDES ID: NYR20A	SPDES ID: NYR20A	SPDES ID: NYR20A
SPDES ID: NYR20A	SPDES ID: NYR20A	SPDES ID: NYR20A
SPDES ID: NYR20A	SPDES ID: NYR20A	SPDES ID: NYR20A
SPDES ID: NYR20A	SPDES ID: NYR20A	SPDES ID: NYR20A
SPDES ID: NYR20A	SPDES ID: NYR20A	SPDES ID: NYR20A
SPDES ID: NYR20A	SPDES ID: NYR20A	SPDES ID: NYR20A

9714632978

MS4 Annual Report Cover Page

MCC form for period ending March 9, 2021

Provide SPDES ID of each permitted MS4 included in this report.

SPDES ID	SPDES ID	SPDES ID
NYR20A	NYR20A	NYR20A
NYR20A	NYR20A	NYR20A
NYR20A	NYR20A	NYR20A
NYR20A	NYR20A	NYR20A
NYR20A	NYR20A	NYR20A
NYR20A	NYR20A	NYR20A
NYR20A	NYR20A	NYR20A
NYR20A	NYR20A	NYR20A
NYR20A	NYR20A	NYR20A
NYR20A	NYR20A	NYR20A
NYR20A	NYR20A	NYR20A
NYR20A	NYR20A	NYR20A
NYR20A	NYR20A	NYR20A
NYR20A	NYR20A	NYR20A
NYR20A	NYR20A	NYR20A
NYR20A	NYR20A	NYR20A
NYR20A	NYR20A	NYR20A
NYR20A	NYR20A	NYR20A

3855151783

MS4 Municipal Compliance Certification(MCC) Form

MCC form for period ending March 9, 2021

Name of MS4: TOWN OF CORTLANDT

SPDES ID: NYR20A181

Each MS4 must submit an MCC form.

Section 1 - MCC Identification Page

Indicate whether this MCC form is being submitted to certify endorsement or acceptance of:

- ● An Annual Report for a single MS4
- ○ A Single Entity (Per Part II.E of GP-0-10-002)
- ○ A Joint Report

Joint reports may be submitted by permittees with legally binding agreements.

If Joint Report, enter coalition name:

5690581587

MS4 Municipal Compliance Certification(MCC) Form

MCC form for period ending March 9, 2021

Name of MS4: TOWN OF CORTLANDT

SPDES ID: NYR20A181

Section 2 - Contact Information

Important Instructions - Please Read

Contact information must be provided for ***each*** of the following positions as indicated below:

1. Principal Executive Officer, Chief Elected Official or other qualified individual (per GP-0-08-002 Part VI.J).
2. Duly Authorized Representative (Information for this contact must only be submitted if a Duly Authorized Representative is signing this form)
3. The Local Stormwater Public Contact (required per GP-0-08-002 Part VII.A.2.c & Part VIII.A.2.c).
4. The Stormwater Management Program (SWMP) Coordinator (Individual responsible for coordination/implementation of SWMP).
5. Report Preparer (Consultants may provide company name in the space provided).

A separate sheet must be submitted for each position listed above unless more than one position is filled by the same individual. If one individual fills multiple roles, provide the contact information once and check all positions that apply to that individual.

If a new Duly Authorized Representative is signing this report, their contact information must be provided and a signature authorization form, signed by the Principal Executive Officer or Chief Elected Official must be attached.

For each contact, select all that apply:

- ● Principal Executive Officer/Chief Elected Official
- ○ Duly Authorized Representative
- ○ Local Stormwater Public Contact
- ○ Stormwater Management Program (SWMP) Coordinator
- ○ Report Preparer

First Name: LINDA | MI: D | Last Name: PUGLISI

Title: TOWN SUPERVISOR

Address: 1 HEADY STREET

City: CORTLANDT MANOR | State: NY | Zip: 10567-

eMail: LINDAP@TOWNOFCORTLANDT.COM

Phone: (914) 734-1002 | County: WESTCHESTER

5690581587

MS4 Municipal Compliance Certification(MCC) Form

MCC form for period ending March 9, 2021

Name of MS4: TOWN OF CORTLANDT

SPDES ID: NYR20A181

Section 2 - Contact Information

Important Instructions - Please Read

Contact information must be provided for ***each*** of the following positions as indicated below:

1. Principal Executive Officer, Chief Elected Official or other qualified individual (per GP-0-08-002 Part VI.J).
2. Duly Authorized Representative (Information for this contact must only be submitted if a Duly Authorized Representative is signing this form)
3. The Local Stormwater Public Contact (required per GP-0-08-002 Part VII.A.2.c & Part VIII.A.2.c).
4. The Stormwater Management Program (SWMP) Coordinator (Individual responsible for coordination/implementation of SWMP).
5. Report Preparer (Consultants may provide company name in the space provided).

A separate sheet must be submitted for each position listed above unless more than one position is filled by the same individual. If one individual fills multiple roles, provide the contact information once and check all positions that apply to that individual.

If a new Duly Authorized Representative is signing this report, their contact information must be provided and a signature authorization form, signed by the Principal Executive Officer or Chief Elected Official must be attached.

For each contact, select all that apply:

- ○ Principal Executive Officer/Chief Elected Official
- ○ Duly Authorized Representative
- ● Local Stormwater Public Contact
- ● Stormwater Management Program (SWMP) Coordinator
- ● Report Preparer

First Name: MICHAEL

MI:

Last Name: PREZIOSI

Title: DIRECTOR OF TECHNICAL SERVICES

Address: TOWN HALL - 1 HEADY ST

City: CORTLANDT MANOR

State: NY

Zip: 10567-

eMail: MICHAELP@TOWNOFCORTLANDT.COM

Phone: (914) 734-1060

County: WESTCHESTER

3165331518

MS4 Municipal Compliance Certification(MCC) Form

MCC form for period ending March 9, 2021

Name of MS4: TOWN OF CORTLANDT

SPDES ID: NYR20A181

Section 4 - Certification Statement

"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 gathered and evaluated 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, 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."

This form must be signed by either a principal executive officer or ranking elected official, or duly authorized representative of that person as described in GP-0-08-002 Part VI.J.

First Name: LINDA

MI: D

Last Name: PUGLISI

Title (Clearly print title of individual signing report): TOWN SUPERVISOR

Signature: Linda D. Puglisi

Date: 05/12/2021

Send completed form and any attachments to the DEC Central Office at:

MS4 Permit Coordinator
Division of Water
4th Floor
625 Broadway
Albany, New York 12233-3505

APPROVED
TOWN ATTORNEY
Date: 4/30/21

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

Water Quality Trends

The information in this section is being reported (check one):

- ● On behalf of an individual MS4
- ○ On behalf of a coalition

How many MS4s are contributed to this report? ___

1. Has this MS4/Coalition produced any reports documenting water quality trends related to stormwater? If not, answer No and proceed to Minimum Control Measure One.

○ Yes ● No

If Yes, choose one of the following

- ○ Report(s) attached to the annual report
- ○ Web Page(s) where report(s) is/are provided below

Please provide specific address of page where report(s) can be accessed - not home page.

URL

URL

URL

URL

4286299954

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

Minimum Control Measure 1. Public Education and Outreach

The information in this section is being reported (check one):

- ● On behalf of an individual MS4
- ○ On behalf of a coalition

How many MS4s contributed to this report?

1. Targeted Public Education and Outreach Best Management Practices

Check all topics that were included in Education and Outreach during this reporting period:

- ● Construction Sites
- ● General Stormwater Management Information
- ● Household Hazardous Waste Disposal
- ● Illicit Discharge Detection and Elimination
- ● Infrastructure Maintenance
- ● Smart Growth
- ● Storm Drain Marking
- ● Green Infrastructure/Better Site Design/Low Impact Development
- ○ Other:
- ● Pesticide and Fertilizer Application
- ● Pet Waste Management
- ● Recycling
- ○ Riparian Corridor Protection/Restoration
- ● Trash Management
- ● Vehicle Washing
- ● Water Conservation
- ● Wetland Protection
- ○ None

Other

2. Specific audiences targeted during this reporting period:

- ● Public Employees
- ● Residential
- ● Businesses
- ● Restaurants
- ● Other:
- ● Contractors
- ● Developers
- ● General Public
- ● Industries
- ○ Agricultural

CAC / OPEN SPACE COMMITTEE

Other

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

3. What strategies did your MS4/Coalition use to achieve education and outreach goals during this reporting period? Check all that apply:

○ Construction Site Operators Trained	# Trained	
● Direct Mailings	# Mailings	2
● Kiosks or Other Displays	# Locations	2
○ List-Serves	# In List	
● Mailing List	# In List	15000
○ Newspaper Ads or Articles	# Days Run	
○ Public Events/Presentations	# Attendees	
○ School Program	# Attendees	
○ TV Spot/Program	# Days Run	
● Printed Materials:	Total # Distributed	15000

Locations (e.g. libraries, town offices, kiosks)

TOWN HALL

○ Other:

● Web Page: Provide specific web addresses - not home page. Continue on next page if additional space is needed.

URL

http://www.townofcortlandt.com/stormwater

URL

0704299955

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR201811

3. Web Page con't.: Provide specific web addresses - not home page.

URL

URL

URL

URL

URL

URL

URL

6932504403

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

4. Evaluating Progress Toward Measurable Goals MCM 1

Use this page to report on your progress and project plans toward achieving measurable goals identified in your Stormwater Management Program Plan (SWMPP), including requirements in Part III.C.1. Submit additional pages as needed.

A. Briefly summarize the Measurable Goal identified in the SWMPP in this reporting period.

Storm water educational material is made available on the Town's Website along with the annual MS4 report. Public notices to upcoming Town events such as Community Day are also posted. Literature is distributed at these events. Storm water information is included in the recreational brochures which were mailed twice this year to all 15,000 plus parcels.

B. Briefly summarize the observations that indicated the overall effectiveness of this Measurable Goal.

Staff believes the mailings and public outreach has helped to reduce the use of fertilizers and limit pollutants entering storm water conveyance, streams and wetlands.

C. How many times was this observation measured or evaluated in this reporting period?

02

(ex.: samples/participants/events)

D. Has your MS4 made progress toward this Measurable Goal during this reporting period? ● Yes ○ No

E. Is your MS4 on schedule to meet the deadline set forth in the SWMPP? ● Yes ○ No

F. Briefly summarize the stormwater activities planned to meet the goals of this MCM during the next reporting cycle (including an implementation schedule).

Continue to utilize all public forums including Town Board, Planning Board, Zoning Board and related environmental committees - as well as events like Family Fun Day, Summer Concert Series as opportunities for public outreach and education. Targeted mailings are sent annually to the two watersheds of impaired water bodies. Grants are being sought to continue water quality monitoring of impaired water bodies.

4961183103

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

Minimum Control Measure 2. Public Involvement/Participation

The information in this section is being reported (check one):

- ● On behalf of an individual MS4
- ○ On behalf of a coalition

How many MS4s contributed to this report?

1. What opportunities were provided for public participation in implementation, development, evaluation and improvement of the Stormwater Management Program (SWMP) Plan during this reporting period? Check all that apply:

- ● Cleanup Events — # Events: 00
- ○ Comments on SWMP Received — # Comments: 0
- ● Community Hotlines
  - Phone # (914) 293-0900
  - Phone # (914) 734-1060
  - Phone # (914) 734-1010
  - Phone # (914) 737-0047
  - Phone #
  - Phone #
  - Phone #
  - Phone #
  - Phone #
  - Phone #
- ● Community Meetings — # Attendees: 100
- ○ Plantings — Sq. Ft.
- ○ Storm Drain Markings — # Drains
- ○ Stakeholder Meetings — # Attendees
- ● Volunteer Monitoring — # Events: 1
- ● Other: Riverkeeper Monitoring

2. Was public notice of availability of this annual report and Stormwater Management Program (SWMP) Plan provided? ● Yes ○ No

- ○ List-Serve — # In List
- ○ Newspaper Advertising — # Days Run
- ○ TV/Radio Notices — # Days Run: 0
- ● Other: Towns Website
- ● Web Page URL: Enter URL(s) on the following two pages.

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

2. URL(s) con't.:

Please provide specific address(es) where notice(s) can be accessed - not home page.

URL
http://www.townofcortlandt.com/stormwater

URL

URL

URL

URL

URL

URL

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

2. URL(s) con't.:

Please provide specific address(es) where notices can be accessed - not home page.

URL

URL

URL

URL

URL

URL

URL

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

3. Where can the public access copies of this annual report, Stormwater Management Program SWMP) Plan and submit comments on those documents?

Enter address/contact info and select radio button to indicate which document is available and whether comments may be submitted at that location. Submit additional pages as needed.

● MS4/Coalition Office — ● Annual Report ● SWMP Plan ● Comments

Department: DEPARTMENT TECHNICAL SERVICES

Address: 1 HEADY STREET

City: CORTLANDT MANOR NY Zip: 10567-

Phone: (914) 734-1060

○ Library — ○ Annual Report ○ SWMP Plan ○ Comments

Address:

City: Zip: -

Phone: ( ) -

○ Other — ○ Annual Report ○ SWMP Plan ○ Comments

Address:

City: Zip: -

Phone: ( ) -

● Web Page URL: — ● Annual Report ● SWMP Plan ○ Comments

http://www.townofcortlandt.com/stormwater

Please provide specific address of page where report can be accessed - not home page.

○ eMail — ○ Comments

0614183104

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

4.a. If this report was made available on the internet, what date was it posted?
Leave blank if this report was not posted on the internet. 05 / 12 / 2021

4.b. For how many days was/will this report be posted? 365

If submitting a report for single MS4, answer 5.a.. If submitting a joint report, answer 5.b..

5.a. Was an Annual Report public meeting held in this reporting period? ○ Yes ● No
If Yes, what was the date of the meeting? 05 / 11 / 2021

If No, is one planned? ○ Yes ○ No

5.b. Was an Annual Report public meeting held for all MS4s contributing to this report during this reporting period? ● Yes ○ No

If No, is one planned for each? ○ Yes ○ No

6. Were comments received during this reporting period? ○ Yes ● No
If Yes, attach comments, responses and changes made to SWMP in response to comments to this report.

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

7. Evaluating Progress Toward Measurable Goals MCM 2

Use this page to report on your progress and project plans toward achieving measurable goals identified in your Stormwater Management Program Plan (SWMPP), including requirements in Part III.C.1. Submit additional pages as needed.

A. Briefly summarize the Measurable Goal identified in the SWMPP in this reporting period.

Continue to solicit public input to all proposed development in Town with a focus on stormwater management with enforcement of applicable Town Code. Continue to educate on best management practices in general and provide literature online and at community events. Town applied for numerous NYSDEC Water Quality grants

B. Briefly summarize the observations that indicated the overall effectiveness of this Measurable Goal.

Solicitations regarding development applications occur throughout the year. Developers / Contractors are filing more environmental permit applications. We have seen greater public involvement at Planning Board meetings regarding drainage/stormwater erosion. We have also seen more interest from targeted audiences like home owners and real estate agents in making sure prospective purchasers understand the importance of storm water management.

C. How many times was this observation measured or evaluated in this reporting period?

12

(ex.: samples/participants/events)

D. Has your MS4 made progress toward this measurable goal during this reporting period?

● Yes ○ No

E. Is your MS4 on schedule to meet the deadline set forth in the SWMPP?

● Yes ○ No

F. Briefly summarize the stormwater activities planned to meet the goals of this MCM during the next reporting cycle (including an implementation schedule).

Utilizing a direct mailing, we plan to target specific audiences living in the watershed areas around our two 303d/TMDL impaired waters (Lake Meahagh / Wallace Pond)and alert them to storm water awareness - particularly phosphorus use. In addition we continue to have 2 pages of our Recreation Brochure (which is mailed to every household) dedicated to storm water awareness and best practices.

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORLANDT

SPDES ID: NYR20A181

Minimum Control Measure 3. Illicit Discharge Detection and Elimination

The information in this section is being reported (check one):

- ● On behalf of an individual MS4
- ○ On behalf of a coalition

How many MS4s contributed to this report? ___

1. Enter the number and approx. percent of outfalls mapped: 627 # 100 %

2. How many of these outfalls have been screened for dry weather discharges during this reporting period (outfall reconnaissance inventory)? 17

3.a. What types of generating sites/sewersheds were targeted for inspection during this reporting period?

- ○ Auto Recyclers
- ● Building Maintenance
- ○ Churches
- ● Commercial Carwashes
- ● Commercial Laundry/Dry Cleaners
- ● Construction Vehicle Washouts
- ● Cross-Connections
- ● Distribution Centers
- ○ Food Processing Facilities
- ○ Garbage Truck Washouts
- ● Hospitals
- ○ Improper RV Waste Disposal
- ● Industrial Process Water
- ● Landscaping (Irrigation)
- ○ Marinas
- ○ Metal Plateing Operations
- ● Outdoor Fluid Storage
- ● Parking Lot Maintenance
- ● Printing
- ● Residential Carwashing
- ● Restaurants
- ○ Schools and Universities
- ● Septic Maintenance
- ● Swimming Pools
- ● Vehicle Fueling
- ● Vehicle Maint./Repair Shops
- ● Other: NYC Watershed
- ○ None

- ● Sewersheds: Peekskill Sanitary Sewer Dist.

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

3.b.What types of illicit discharges have been found during this reporting period?

- ○ Broken Lines From Sanitary Sewer
- ○ Cross Connections
- ● Failing Septic Systems
- ○ Floor Drains Connected To Storm Sewers
- ● Illegal Dumping
- ○ Other:
- ● Industrial Connections
- ○ Inflow/Infiltration
- ● Pump Station Failure
- ● Sanitary Sewer Overflows
- ● Straight Pipe Sewer Discharges
- ○ None

4. **How many illicit discharges/potential illegal connections have been detected during this reporting period?** 9

5. **How many illicit discharges have been confirmed during this reporting period?** 9

6. **How many illicit discharges/illegal connections have been eliminated during this reporting period?** 3

7. **Has the storm sewershed mapping been completed in this reporting period?** ● Yes ○ No
   If No, approximately what percent was completed in this reporting period? 100 %

8. **Is the above information available in GIS?** ● Yes ○ No
   Is this information available on the web? ● Yes ○ No
   If Yes, provide URL(s):

Please provide specific address of page where map(s) can be accessed - not home page.

URL: www.townofcortlandt.com/gis

URL:

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

8. URL(s) con't.:

Please provide specific address of page where map(s) can be accessed - not home page

URL

URL

URL

URL

URL

9. Has an IDDE law been adopted for each traditional MS4 and/or have IDDE procedures been approved for all non-traditional MS4s contributing to this report? ● Yes ○ No

10. If Yes, has every traditional MS4 contributing to this report certified that this law is equivalent to the NYS Model IDDE Law? ● Yes ○ No ○ NT

11. What percent of staff in relevant positions and departments has received IDDE training?

100 %

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORLANDT

SPDES ID: NYR20A181

12. Evaluating Progress Toward Measurable Goals MCM 3

Use this page to report on your progress and project plans toward achieving measurable goals identified in your Stormwater Management Program Plan (SWMPP), including requirements in Part III.C.1. Submit additional pages as needed.

A. Briefly summarize the Measurable Goal identified in the SWMPP in this reporting period.

Staff responsiveness to illicit discharge have improved by coordinating inspections between various departments. Individuals who have been cited for an illicit discharge are provided guidance on remediation methods.

B. Briefly summarize the observations that indicated the overall effectiveness of this Measurable Goal.

Improved reporting and inspection by Town staff have led to illicit discharges being corrected swiftly. A majority of complaints are due to rain water runoff improperly being directed to right-of-ways or catch basins without proper approval. Continued outreach has educated the public and contractors to avoid these issues.

C. How many times was this observation measured or evaluated in this reporting period?

12

(ex.: samples/participants/events)

D. Has your MS4 made progress toward this measurable goal during this reporting period?

● Yes ○ No

E. Is your MS4 on schedule to meet the deadline set forth in the SWMPP?

● Yes ○ No

F. Briefly summarize the stormwater activities planned to meet the goals of this MCM during the next reporting cycle (including an implementation schedule).

Continued public outreach and direct mailings to the Town's impaired water bodies. Continued staff training, coordination with field crews (highway) and improved response to complaints. Increase inspection of active sites to pro-actively address potential concerns. A renewed emphasis is being placed on outfall inspection and mapping. Treatment of Lake Meahagh to eliminate invasive species.

5624056356

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

Minimum Control Measures 4 and 5.
Construction Site and Post-Construction Control

The information in this section is being reported (check one):

- ● On behalf of an individual MS4
- ○ On behalf of a coalition

How many MS4s contributed to this report? ___

1a. Has each MS4 contributing to this report adopted a law, ordinance or other regulatory mechanism that provides equivalent protection to the NYS SPDES General Permit for Stormwater Discharges from Construction Activities? ● Yes ○ No

1b. Has each Town, City and/or Village contributing to this report documented that the law is equivalent to a NYSDEC Sample Local Law for Stormwater Management and Erosion and Sediment Control through either an attorney cerfification or using the NYSDEC Gap Analysis Workbook? ● Yes ○ No ○ NT

If Yes, Towns, Cities and Villages provide date of equivalent NYS Sample Local Law.

○ 09/2004 ● 03/2006 ○ NT

2. Does your MS4/Coalition have a SWPPP review procedure in place? ● Yes ○ No

3. How many Construction Stormwater Pollution Prevention Plans (SWPPPs) have been reviewed in this reporting period? 04

4. Does your MS4/Coalition have a mechanism for receipt and consideration of public comments related to construction SWPPPs? ● Yes ○ No ○ NT

If Yes, how many public comments were received during this reporting period? 0

5. Does your MS4/Coalition provide education and training for contractors about the local SWPPP process? ● Yes ○ No

6. **Identify which of the following types of enforcement actions you used during the reporting period for construction activities, indicate the number of actions, or note those for which you do not have authority:**

● Notices of Violation	#	2	○ No Authority
○ Stop Work Orders	#		○ No Authority
○ Criminal Actions	#		○ No Authority
○ Termination of Contracts	#		○ No Authority
○ Administrative Fines	#		○ No Authority
○ Civil Penalties	#		○ No Authority
○ Administrative Orders	#		○ No Authority
● Enforcement Actions or Sanctions	#	0	
● Other	#	11	○ No Authority

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

Minimum Control Measure 4. Construction Site Stormwater Runoff Control

The information in this section is being reported (check one):

- ● On behalf of an individual MS4
- ○ On behalf of a coalition

How many MS4s contributed to this report? ___

1. **How many construction projects have been authorized for disturbances of one acre or more during this reporting period?** 1

2. **How many construction projects disturbing at least one acre were active in your jurisdiction during this reporting period?** 5

3. **What percent of active construction sites were inspected during this reporting period?** ○ NT
   100 %

4. **What percent of active construction sites were inspected more than once?** ○ NT
   100 %

5. **Do all inspectors working on behalf of the MS4s contributing to this report use the NYS Construction Stormwater Inspection Manual?** ● Yes ○ No ○ NT

6. **Does your MS4/Coalition provide public access to Stormwater Pollution Prevention Plans (SWPPPs) of construction projects that are subject to MS4 review and approval?** ● Yes ○ No ○ NT

   If your MS4 is Non-Traditional, are SWPPPs of construction projects made available for public review? ○ Yes ○ No

   If Yes, use the following page to identify location(s) where SWPPPs can be accessed.

7482169883

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

6. con't.:

Submit additional pages as needed.

● MS4/Coalition Office

Department: TOWN OF CORTLANDT ENGINEERING

Address: 1 HEADY STREET

City: CORTLANDT MANOR NY Zip: 10567-

Phone: (914) 734-1060

○ Library

Address:

City: Zip: -

Phone: ( ) -

○ Other

Address:

City: Zip: -

Phone: ( ) -

○ Web Page URL(s): Please provide specific address where SWPPPs can be accessed - not home page.

URL

URL

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

7. Evaluating Progress Toward Measurable Goals MCM 4

Use this page to report on your progress and project plans toward achieving measurable goals identified in your Stormwater Management Program Plan (SWMPP), including requirements in Part III.C.1. Submit additional pages as needed.

A. Briefly summarize the Measurable Goal identified in the SWMPP in this reporting period.

Routine construction site inspections are required for all projects which require a SPDES Stormwater Permit for Construction Activities. At minimum active sites are inspected weekly.

Staff regularly monitors all active construction sites. Depending on activity levels daily inspections are performed.

B. Briefly summarize the observations that indicated the overall effectiveness of this Measurable Goal.

Over time we have seen improved erosion control measures. More timely inspections by contractors and project managers & overall improved site conditions.

Multiple SWPPPS were approved in accordance with the SPDES Storm Water Permit for Construction Activity in this reporting period.

C. How many times was this observation measured or evaluated in this reporting period?

44

(ex.: samples/participants/events)

D. Has your MS4 made progress toward this measurable goal during this reporting period?

● Yes ○ No

E. Is your MS4 on schedule to meet the deadline set forth in the SWMPP?

● Yes ○ No

F. Briefly summarize the stormwater activities planned to meet the goals of this MCM during the next reporting cycle (including an implementation schedule).

Pre construction meeting with contractors on all projects requiring the implementation of SWPPP. Review active projects during weekly, monthly staff meetings. Contractors are required to follow SPDES regulations for erosion control inspections. In addition the Town supplements inspections on active construction sites requiring SWPPPS.

1048119251

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

Minimum Control Measure 5. Post-Construction Stormwater Management

The information in this section is being reported (check one):

- ● On behalf of an individual MS4
- ○ On behalf of a coalition

How many MS4s contributed to this report?

1. How many and what type of post-construction stormwater management practices has your MS4/Coalition inventoried, inspected and maintained in this reporting period?

	# Inventoried	# Inspections	# Times Maintained
○ Alternative Practices			
● Filter Systems	03	03	03
● Infiltration Basins	02	02	02
○ Open Channels			
○ Ponds			
● Wetlands	01	01	01
○ Other			

2. Do you use an electronic tool (e.g. GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintanance?

● Yes ○ No

3. What types of non-structural practices have been used to implement Low Impact Development/Better Site Design/Green Infrastructure principles?

- ● Building Codes
- ● Municipal Comprehensive Plans
- ● Overlay Districts
- ● Open Space Preservation Program
- ● Zoning
- ● Local Law or Ordinance
- ○ None
- ● Land Use Regulation/Zoning
- ● Watershed Plans
- ● Other Comprehensive Plan
- ○ Other:

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

4a. Are the MS4s contributing to this report involved in a regional/watershed wide planning effort?

● Yes ○ No

4b. Does the MS4 have a banking and credit system for stormwater management practices?

○ Yes ● No

4c. Do the SWMP Plans for each MS4 contributing to this report include a protocol for evaluation and approval of banking and credit of alternative siting of a stormwater management practice?

○ Yes ● No

4d. How many stormwater management practices have been implemented as part of this system in this reporting period?

0

5. What percent of municipal officials/MS4 staff responsible for program implementation attended training on Low Impace Development (LID), Better Site Design (BSD) and other Green Infrastructure principles in this reporting period?

0 %

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

6. Evaluating Progress Toward Measurable Goals MCM 5

Use this page to report on your progress and project plans toward achieving measurable goals identified in your Stormwater Management Program Plan (SWMPP), including requirements in Part III.C.1. Submit additional pages as needed.

A. Briefly summarize the Measurable Goal identified in the SWMPP in this reporting period.

The Town is continuing to re-inventory all storm water best management practices. Inspection efforts have increased. The Town is proceeding with a digital construct maintenance program that links to our Town GIS database. Town has implemented a Work Order Management System in which BMP inspections are included.

B. Briefly summarize the observations that indicated the overall effectiveness of this Measurable Goal.

Reduction in the number of erosion complaints to various departments including Code Enforcement, Highway, Engineering. Proactive inspection of BMPs to ensure they are functioning as intended.

C. How many times was this observation measured or evaluated in this reporting period?

12

(ex.: samples/participants/events)

D. Has your MS4 made progress toward this measurable goal during this reporting period?

● Yes ○ No

E. Is your MS4 on schedule to meet the deadline set forth in the SWMPP?

● Yes ○ No

F. Briefly summarize the stormwater activities planned to meet the goals of this MCM during the next reporting cycle (including an implementation schedule).

Town holds security until all post-construction measures are completed for a period of 2 years from final acceptance. Update BMP inspection protocol and continue scheduling annual inspections Continue Inter Departmental coordination between Highway and Engineering with respect to MS4 compliance.

6894134836

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

Minimum Control Measure 6. Stormwater Management for Municipal Operations

The information in this section is being reported (check one):

- ● On behalf of an individual MS4
- ○ On behalf of a coalition

How many MS4s contributed to this report? ___

1. **Choose/list each municipal operation/facility that contributes or may potentially contribute Pollutants of Concern to the MS4 system. For each operation/facility indicate whether the operation/facility has been addressed in the MS4's/Coalition's Stormwater Management Program(SWMP) Plan and whether a self-assessment has been performed during the reporting period. A self-assessment is performed to: 1) determine the sources of pollutants potentially generated by the permittee's operations and facilities; 2) evaluate the effectiveness of existing programs and 3) identify the municipal operations and facilities that will be addressed by the pollution prevention and good housekeeping program, if it's not done already.**

Operation/Activity/Facility	Addressed in SWMP?		Self-Assessment Operation/Activity/Facility performed within the past 3 years?	
Street Maintenance	● Yes	○ No	● Yes	○ No
Bridge Maintenance	● Yes	○ No	● Yes	○ No
Winter Road Maintenance	● Yes	○ No	● Yes	○ No
Salt Storage	● Yes	○ No	● Yes	○ No
Solid Waste Management	● Yes	○ No	● Yes	○ No
New Municipal Construction and Land Disturbance	● Yes	○ No	● Yes	○ No
Right of Way Maintenance	● Yes	○ No	● Yes	○ No
Marine Operations	○ Yes	● No	○ Yes	● No
Hydrologic Habitat Modification	○ Yes	● No	● Yes	○ No
Parks and Open Space	● Yes	○ No	● Yes	○ No
Municipal Building	● Yes	○ No	● Yes	○ No
Stormwater System Maintenance	● Yes	○ No	● Yes	○ No
Vehicle and Fleet Maintenance	● Yes	○ No	● Yes	○ No
Other	○ Yes	● No	○ Yes	● No

6445134838

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

2. Provide the following information about municipal operations good housekeeping programs:

● Parking Lots Swept (Number of acres X Number of times swept)	# Acres	3
● Streets Swept (Number of miles X Number of times swept)	# Miles	112
● Catch Basins Inspected and Cleaned Where Necessary	#	179
● Post Construction Control Stormwater Management Practices Inspected and Cleaned Where Necessary	#	0
○ Phosphorus Applied In Chemical Fertilizer	# Lbs.	0
○ Nitrogen Applied In Chemical Fertilizer	# Lbs.	0
○ Pesticide/Herbicide Applied (Number of acres to which pesticide/herbicide was applied X Number of times applied to the nearest tenth.)	# Acres	0.

3. How many stormwater management trainings have been provided to municipal employees during this reporting period? 01

4. What was the date of the last training? 02 / 26 / 2021

5. How many municipal employees have been trained in this reporting period? 26

6. What percent of municipal employees in relevant positions and departments receive stormwater management training? 100 %

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

7. Evaluating Progress Toward Measurable Goals MCM 6

Use this page to report on your progress and project plans toward achieving measurable goals identified in your Stormwater Management Program Plan (SWMPP), including requirements in Part III.C.1. Submit additional pages as needed.

A. Briefly summarize the Measurable Goal identified in the SWMPP in this reporting period.

Basins are cleaned annually along with repair. Sumps are vacuumed cleaned and sidewalls and tops repaired. Staff is focusing town wide but with emphasis on basins within EOH watershed.

B. Briefly summarize the observations that indicated the overall effectiveness of this Measurable Goal.

Less cleaning required. Vactor truck is significantly reducing time spent on clean out which allows for catch basins to be cleaned more frequently.

C. How many times was this observation measured or evaluated in this reporting period?

15

(ex.: samples/participants/events)

D. Has your MS4 made progress toward this measurable goal during this reporting period?

● Yes ○ No

E. Is your MS4 on schedule to meet the deadline set forth in the SWMPP?

● Yes ○ No

F. Briefly summarize the stormwater activities planned to meet the goals of this MCM during the next reporting cycle (including an implementation schedule).

Continue catch basin and road sweeping protocols. Add an additional training event. Update WebGIS storm water conveyance.

6327042251

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

Additional Watershed Improvement Strategy Best Management Practices

The information in this section is being reported (check one):

● On behalf of an individual MS4
○ On behalf of a coalition

How many MS4s contributed to this report? ___

MS4s must answer the questions or check NA as indicated in the table below.

MS4 Description	Answer	Check NA	(POC)
NYC EOH Watershed	-	-	-
Traditional Land Use	1,2,3,4,5,6,7a-d,8a,8b,9	10,11,12	Phosphorus
Traditional Non-Land Use	1,2,3,4,7a-d,8a,8b,9	5,10,11,12	Phosphorus
Non-Traditional	1,2,77a-d,8a,8b,9	3,4,5,10,11,12	Phosphorus
Onondaga Lake Watershed	-	-	-
Traditional Land Use	1,6,7a-d,8a,9	2,3,4,5,8b,10,11,12	Phosphorus
Traditional Non-Land Use	1,6,7a-d,8a,9	2,3,4,5,8b,10,11,12	Phosphorus
Non-Traditional	1,6,7a-d,8a,9	2,3,4,5,8b,10,11,12	Phosphorus
Greenwood Lake Watershed	-	-	-
Traditional Land Use	1,4,6,7a-d,8a,9	2,3,5,8b,10,11,12	Phosphorus
Traditional Non-Land Use	1,4,6,7a-d,8a,9	2,3,5,8b,10,11,12	Phosphorus
Non-Traditional	1,4,6,7a-d,8a,9	2,3,5,8b,10,11,12	Phosphorus
Oyster Bay	-	-	-
Traditional Land Use	1,4,7a-d,9,10,11,12	2,3,5,6,8a,8b	Pathogens
Traditional Non-Land Use	1,4,7a-d,9,10,11,12	2,3,5,6,8a,8b	Pathogens
Non-Traditional	1,4,7a-d,9	2,3,4,5,8a,8b,10,11,12	Pathogens
Peconic Estuary	-	-	-
Traditional Land Use	1,4,7a-d,8a,9,10,11,12	2,3,5,6,8b	Pathogens and Nitrogen
Traditional Non-Land Use	1,4,7a-d,8a,9,10,11,12	2,3,5,6,8b	Pathogens and Nitrogen
Non-Traditional	1,4,7a-d,8a,9	2,3,4,5,8b,10,11,12	Pathogens and Nitrogen
Oscawana Lake Watershed	-	-	-
Traditional Land Use	1,4,6,7a-d,8a,9	2,3,5,8b,10,11,12	Phosphorus
Traditional Non-Land Use	1,4,6,7a-d,8a,9	2,3,5,8b,10,11,12	Phosphorus
Non-Traditional	1,4,6,7a-d,8a,9	2,3,5,8b,10,11,12	Phosphorus
LI 27 Embayments	-	-	-
Traditional Land Use	1,2,3,4,7a-d,9,10,11,12	5,6,8a,8b	Pathogens
Traditional Non-Land Use	1,2,3,4,7a-d,9,10,11,12	5,6,8a,8b	Pathogens
Non-Traditional	1,2,3,4,7a-d,9	5,6,8a,8b,10,11,12	Pathogens

1. **Does your MS4/Coalition have an education program addressing impacts of phosphorus/nitrogen/pathogens on waterbodies?** ● Yes ○ No ○ N/A

2. **Has 100% of the MS4/Coalition conveyance system been mapped in GIS?** ● Yes ○ No ○ N/A

   If N/A, go to question 3.

   If No, estimate what percentage of the conveyance system has been mapped so far. ___ %

   Estimate what percentage was mapped in this reporting period. ___ %

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

3. **Does your MS4/Coalition have a Stormwater Conveyance System (infrastructure) Inspection and Maintenance Plan Program?** ● Yes ○ No ○ N/A

4. **Estimate the percentage of on-site wastewater treatment systems that have been inspected and maintained or rehabilitated as necessary in this reporting period?** 100 %

5. **Has your MS4/Coalition developed a program that provides protection equivalent to the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activities (GP-0-08-001) to reduce pollutants in stormwater runoff from construction activities that disturb five thousand square feet or more?** ● Yes ○ No ○ N/A

6. **Has your MS4/Coalition developed a program to address post-construction stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre that provides equivalent protection to the NYS DEC SPDES General Permit for Stormwater Discharges from Construction Activities (GP-0-08-001), including the New York State Stormwater Design Manual Enhanced Phosphorus Removal Standards?** ● Yes ○ No ○ N/A

7a. **Does your MS4/Coalition have a retrofitting program to reduce erosion or phosphorus/nitrogen/pathogen loading?** ● Yes ○ No ○ N/A

7b. **How many projects have been sited in this reporting period?** 00

7c. **What percent of the projects included in 7b have been completed in this reporting period?** 0 %

7d. **What percent of projects planned in previous years have been completed?** 100 %

● No Projects Planned

8a. **Has your MS4/Coalition developed and implemented a turf management practices and procedures policy that addresses proper fertilizer application on municipally owned lands?** ● Yes ○ No ○ N/A

8b. **Has your MS4/Coalition developed and implemented a turf management practices and procedures policy that addresses proper disposal of grass clippings and leaves from municipally owned lands?** ● Yes ○ No ○ N/A

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2021

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition: TOWN OF CORTLANDT

SPDES ID: NYR20A181

9. Has your MS4/Coalition developed and implemented a program of native planting?

● Yes ○ No ○ N/A

10. Has your MS4/Coalition enacted a local law prohibiting pet waste on municipal properties and prohibiting goose feeding?

● Yes ○ No ○ N/A

11. Does your MS4/Coalition have a pet waste bag program?

○ Yes ● No ○ N/A

12. Does your MS4/Coalition have a program to manage goose populations?

○ Yes ● No ○ N/A

Town of Cortlandt

2020 Sanitation/Recycling Guide

www.townofcortlandt.com

New garbage can regulations
(see page 10 for details)

SUPERVISOR
LINDA D. PUGLISI
TOWN BOARD MEMBERS
RICHARD H. BECKER
DEBRA A. COSTELLO
JAMES F. CREIGHTON
FRANCIS X. FARRELL

REMEMBER TO RECYCLE

Department of Environmental Services
(914) 737–0100
Email: Sanitation@townofcortlandt.com
Stephen J. Ferreira, P.E., Director
Brent W. VanZandt, P.E., Deputy Director
Christina Edwards, Deputy Director - DES/Admin.

Stormwater

Solutions to the Pollution

Easy things you can do every day to protection our water

Stormwater is water from rain or melting snow that flows from rooftops, paved areas and lawns that doesn't soak into the ground but runs off into waterways.

As it flows, stormwater runoff collects and transports soil, animal waste, salt, fertilizers, oil and grease, pesticides, litter and other potential pollutants. This pollution can enter groundwater, streams, lakes, ponds and river and can even affect the quality of our drinking water.

Increases in impervious surfaces cause more stormwater runoff. Because less water is soaking in, flooding can become more frequent and more destructive.

The Town of Cortlandt is a regulated Storm system community and has enacted updated Town ordinances governing stormwater.

Lawn Care

Most lawns tested in Westchester County did NOT need more phosphorus. If you must fertilize, use phosphorus-free fertilizer (where the middle number on the bag is zero). Excess fertilizer flows into streams, lakes, rivers and reservoirs, where it can degrade drinking water, lead to algae and plant growth and contribute to fish kills. Don't fertilize when rain is expected. Leave grass clippings on the laws to recycle nutrients. More information on lawn care is available in the Town of Cortlandt Sanitation Website.

Septic System Maintenance

Failing septic systems can contaminate groundwater, drinking water and surface flows. Most of the Town of Cortlandt is serviced by individual septic systems. These septic systems should be pumped and inspected regularly. Do not pour chemicals, paints, fats, or excess medications down your pipes. Driving on or parking on septic fields may damage them.

Scoop the Poop

Please pick up after your dog or cat. It doesn't matter the size of the animal – all animal waste has an impact. Animal waste is easily carried by runoff, washing off roads and lawns. Pet waste contains harmful bacteria and phosphorus that can promote the growth of weeds, and algae. Scoop the poop and dispose of pet waste in the garbage.

Only Rain down the Drain

All our storm drains lead eventually to someone's drinking water. Don't dispose of waste down the drain or into any of the ditches, swales, street drains or stormwater outfalls that convey stormwater.

Landscaping Helps

Keep vegetation and organic material on the soil, especially on slopes. Landscape to limit the steepness or length of slopes. Build a buffer of vegetation by watercourses to help filter sediment. Replace the lawn at water's edge with shrubs, hedges or trees. Anything that slows the flow of water will help give time for the pollution to be removed.

Care for your Car

Little drops of oil and gas add up. One pint of oil can cause an oil slick the size of a football field. Take used motor oil to gas stations. NEVER pour it down the drain. Take other fluids to approved recycling locations. More information about this is in the Town of Cortlandt Sanitation Website. Use saw dust or kitty litter to clean up leaks and spills in your driveway. Wash your car on your lawn if possible to capture runoff.

Reporting Stormwater Polluters

Your actions or the action of your neighbor can affect water resources. We are all downstream of someone. No polluted water should be allowed to go into our stormwater system. If you notice pollution of Stormwater you can report the details to the Town of Cortlandt Stormwater Hotline at (914) 734-1060.

Cortlandt's Stormwater Hotline (914) 734-1060

Town of Cortlandt
Department of Recreation & Conservation
1 Heady Street
Cortlandt Manor, NY 10567-1254

914-734-1050
Website: www.townofcortlandt.com
Email: tocrec@townofcortlandt.com
Facebook: facebook/townofcortlandt
Instagram: @townofcortlandt
Community Pass: www.townofcortlandt.com/reconline

Presorted Standard
U.S. POSTAGE
PAID
Shirley, NY
Permit No. 130

Dated Material
Please Deliver Promptly

Postal Patron

Town of Cortlandt
Fall 2020 Recreation Program Brochure

Town Supervisor
Linda D. Puglisi

Town Board
Richard H. Becker Debra A. Carter James F. Creighton Francis X. Farrell

TABLE OF CONTENTS

General Program Information

911- The Call that Counts 24
Adopt-an-Island and Application 18
Amanda's Law 24
Code Red 11
Community Garden 19
Cortlandt - Where Life Works 8
Cortlandt Waterfront Survery ..... 21 & 22
Take The Survey Today
Electric Vehicle Outlet Station 17

Facility Rentals

Cortlandt Town Center (C.U.E.) 53
Cortlandt Youth & Recreation Center .. 53
Financial Record and Tax Warrants 53

Forms

5K Road Race Registration 83
Adult Activity Registration 67
Basketball League, Boys 73
Basketball League, Girls 75
Dog Park Rgistration 69
First Responders Golf Tournament 81
Travel Basketball Team, Boys 77
Travel Basketball Team, Girls 79
Pre-School Activity Registration 65
Seasonal Empoyment 71
Youth Activity Registration 65

How to Register for Recreation Programs Online 12
Indian Point Update 7
Letter from the Supervisor 5
Map & Index of Park Facilities ..... 84 & 85
Medical Drop Box 19
Military Order of the Purple Heart 9
Otocast App 11
Recreation Photo ID Cards 14
Refund/Credit Policy 15
Storm Preparedness 16
Storm Water Pollution 20
Sustainable Cortlandt 19
Telephone Listing - Town Hall & Other Locations ..... **INSIDE FRONT COVER**
Town of Cortlandt Social Media 13
Vietnam Memorial 9
Volunteers Needed (Fire and Ambulance) .. 24

Nor-West

Part - Time Employment 32
Regional Special Services 32

Adult Programs

Badminton 29
Basketball - 30 & Over 29
Basketball - 18 & Over 29
Cortlandt Stamp Club 29
Cortlandt Waterfront Yoga 29
Forever Fit 29
Guitar Lessons 30
Intermediate Yoga 30
Karate & Advanced Karate 31
Lightsaber Training 31
Mahjong 31
Meditation Seminar 32
Piano Instruction 32
Pilates On the Mat 32
Tai Chi & Chi Kung 33
Tennis 33
Volleyball 33
Yoga Anyone 34

Pre-School Programs

Cooking Classes 42
Junior Ballers 41
Parent and Me Soccer Squirts 43
Soccer Clinic 43
Sport Squirts 43

Senior Citizens Programs and Services

Bereavement 26
Bus Transportation 25
Clubs 26
Computer Lab 26
Medical Transportation 26
Nutrition 26
Operation Snowflake 26
Prescription Pickup & Delivery Service 26
Senior Program Information 25
Shopping 26
Special Events for Town of Cortlandt Senior Citizens 27-28

Special Events and Activities

5K Road Race 54
First Responders Golf Outing 54
Halloween Dog Parade 55
Halloween Party 55
Hobgoblin Parade 54
Santa's Mailbox 55
Van Cortlandtville Historical Society 54

Special Park Facilities

Bicentennial Garden 56
Charles J. Cook Park Mini Golf 58
Cortlandt Boat Lunch 56
Cortlandt Dog Park 57
Cortlandt Hockey Rink 58
Cortlandt Playgrounds 61
Cortlandt Waterfront Park 60
Furnace Dock Lake 56
Hollow Brook Golf Course 57
Historic Toll House 60
Hudson Highland Gateway Park 59
Oscawana Island Boat Launch 60
Sprout Brook Park 60
Steven Hebert Skate Park 60
Tennis Courts 60

Sports Leagues & Teams

League Youth Basketball, Boys & Girls 44
Little League Information 45
Travel Youth Basketball Team, Boys & Girls ... 45

Youth Programs

After School Bowling 36
Art Explorers 35
Art Quest 35
Baller Sports 37
Basketball Clinic 37
Basketball, Free Play 38
Broadway All Stars 54
Bumper Bowling 36
Co-Ed Flag Football Clinic 38
Creative Cooking 38
Environmental Programs 40
Guitar Lessons 30
Karate & Advanced Karate ..... 38 & 39
Piano Instruction (8 years & over) 32
Swimming Instruction 39
Tennis Instruction 39

Youth Center

Cortlandt Community Coalition 46
Game Café at the C.U.E. 51
Hours of Operation 46
Operation Snowflake 50
Programs for Grades 1st - 5th 57
Programs for Grades 6th - 12th ..... 48 & 49
Youth Employment Services Y.E.S. 50

TOWN OF CORTLANDT RECREATION & CONSERVATION DEPARTMENT

CORTLANDT TOWN HALL
1 HEADY STREET
CORTLANDT MANOR, NY 10567-1241
914-734-1050

Website: www.townofcortlandt.com
Email: tocrec@townofcortlandt.com
Facebook: facebook/townofcortlandt
Instagram: @townofcortlandt

Sponsored by the

TOWN OF CORTLANDT

TOWN SUPERVISOR
LINDA D. PUGLISI

TOWN BOARD

Richard H. Becker **James F. Creighton**
Debra A. Carter **Francis X. Farrell**

PARKS, RECREATION, & CONSERVATION ADVISORY BOARD

Michael J. Huvane, Chairman

Tino Martin, Vice Chairman

Jeffrey Boudin

Daniela Decca

Pamela Bush Denenberg

Jennifer Corrado

Adam Decker

Paul DiRoma

Michael Fleming

Pete Ruvolo

RECREATION & CONSERVATION DEPARTMENT

John Palmiotto, Director	**914-734-1051**
Kenneth Sherman, Deputy Director	**914-734-1058**
Lesley Popkin, Recreation Supervisor II	**914-734-1057**
Tim Fisher, Recreation Supervisor	**914-734-1056**
Jamie Bucci, Senior Recreation Leader	**914-734-1055**
Dawn Mahoney, Director of Senior Services	**914-528-1572**
Rebecca Ferguson, Assistant Director of Senior Services	**914-528-8377**
Katherine Sclafani, Youth Center Director	**914-736-0498**
Lindsey Luposello, Youth Center Assistant Director	**914-736-0498**
Colleen Anderson, M.S., Ed, CPP, Coalition Coordinator	**914-734-1052**

OFFICE STAFF

Emma Giovinco **Janice LaFave**

The Town of Cortlandt gratefully acknowledges the cooperation extended by the Hendrick Hudson School District, Lakeland Central School District, Village of Buchanan, Village of Croton-on-Hudson, Cortlandt Town Center and to all other groups regarding the use of their facilities and to our business community for supporting our programs and teams.

SUSTAINABLE CORTLANDT
OUR MISSION

To protect and enhance the quality of life of our residents and the unique environment of our area by establishing programs and policies which integrate sustainability into Town governance and planning, at the same time we want to encourage and enable Town residents and businesses to adopt sustainable practices.

TO THE CORTLANDT COMMUNITY

Sustainability is the promise to our children and grandchildren that they will inherit a tomorrow that is at least as good as today and hopefully better. Achieving this promise will call for the participation of each and every one of us. Our Town has a long standing record of environmental stewardship exemplified by our leadership in protecting open space, natural resources, and smart growth practices. Visit www.townofcortlandt.com Sustainable Cortlandt to learn more. The Town Board and I are fully committed to this important effort and we look forward to your participation in becoming a sustainable community.

Town Supervisor

This guide is printed on *RECYCLED PAPER*; As a result, approximately five (5) trees were preserved. To schedule and appointment and for more information about chemical clean up and H-MRF (Household Material Recovery Facility) contact Westchester County at 914-813-5425 or visit www.westchester.gov.

The Town has established regular pick up routes for organic yard waste. Yard waste will be picked up town wide on these dates. Yard waste must be placed in Brown Biodegradable Bags or loosely in garbage cans. Plastic bags cannot be composted. Organic waste in plastic bags will not be picked up. Please visit the website for further details www.townofcortlandt.com/sanitation

The Town of Cortlandt Town Hall will host a **Permanent Medical Drop Box** to offer our Town residents the opportunity to safely discard unwanted prescription drugs. The box is located in the Purchasing Building at the Town of Cortlandt Town Hall Campus at 1 Heady Street Cortlandt Manor, NY 10567

The hours of operation will be

Monday– Friday • 9:00 AM-3:30 PM

The drop box is monitored by the Westchester County State Police.

Join us to Volunteer at our Town of Cortlandt Community Garden!

Special Thanks To:

Cortlandt Farm Market, Stuarts Fruit Farm, Curts Homestead Farm and Floral Design.

- We have a very interested resident of Cortlandt with tremendous knowledge in gardening who has volunteered to coordinate this effort.
- Located Lake Meahagh, Westchester Avenue, Verplanck, NY 10596
- Cortlandt residents and groups (Scouts, Civic organizations, etc.) will take care of their defined areas with the coordinator's guidance.

We are very excited about this project and are looking forward to your participation!

Contact the Town of Cortlandt Recreation Department at tocrec@townofcortlandt.com or 914-734-1050.

SOLUTIONS TO STORMWATER POLLUTION

Easy Things You Can Do Every Day To Protect Our Water

Stormwater is water from rain or melting snow that flows from rooftops, paved areas and lawns that doesn't soak into the ground but runs off into waterways, like streams, ponds, lakes, and rivers.

As it flows, stormwater runoff collects and transports soil, animal waste, salt, fertilizers, oil and grease, pesticides, litter and other potential pollutants. This pollution can enter groundwater, streams, lakes, ponds, and rivers and can even affect the quality of our drinking water.

Increase in impervious surfaces cause more stormwater runoff. Because less water is soaking in, flooding can become more frequent and more destructive.

The Town of Cortlandt is a regulated community and has enacted updated Town ordinances governing stormwater. To learn more, visit our website at: www.townofcortlandt.com/stormwater

What can you do to help with Stormwater Issues?

Lawn Care

Most lawns tested in Westchester County DO NOT need more phosphorus. If you must fertilize, use phosphorus-free fertilizer (where the middle number on the bag is zero). Excess fertilizer flows into streams, lakes, rivers, and reservoirs, where it can degrade drinking water, lead to algae and plant growth and contribute to fish kills. Don't fertilize when rain is expected. Leave grass clippings on the lawn to recycle nutrients. More information on lawn care is available in the Town of Cortlandt Recycling brochure.

Septic System Maintenance

Failing septic systems can contaminate groundwater, drinking water and surface flows. Most of the Town of Cortlandt is serviced by individual septic systems. Your septic system should be pumped and inspected regularly. Generally, septic tanks should be cleaned out every 3-5 years, depending on the size of the tank. Do not pour chemicals, paints, fats, or excess medications down your pipes. Driving on or parking on septic field may damage them.

Scoop the Poop

Please pick up after your dog or cat. It doesn't matter the size of the animal– all animal waste has an impact. Animal waste is easily carried by runoff, washing off roads and lawns. Pet waste contains harmful bacteria and phosphorus that can promote the growth of weeds and algae.

Landscaping Helps

Keep vegetation and organic material on the soil, especially on slopes. Landscape to limit the steepness or length of slopes. Build a buffer of vegetation by watercourses to help filter sediment. Replace the lawn at water's edge with shrubs, hedges or trees. Anything that slows the flow of water will help us give time for the pollution to be removed.

Care for your Car

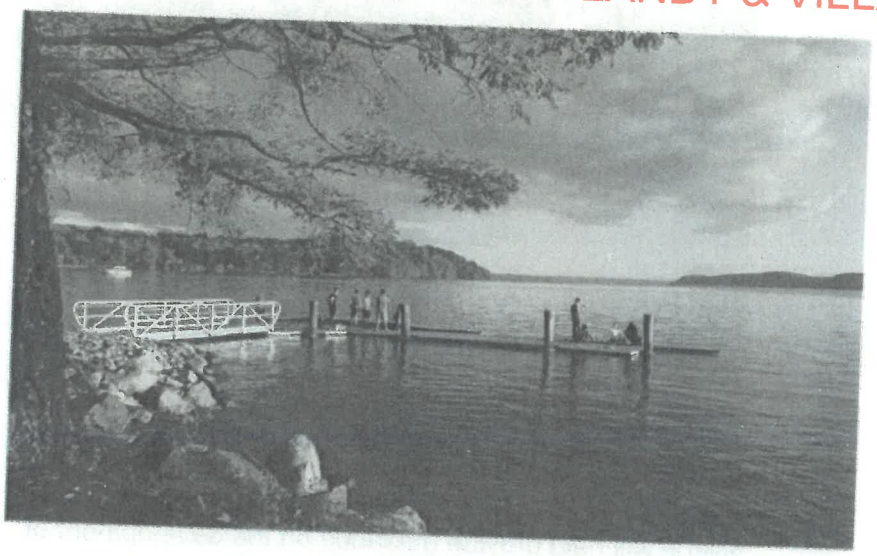
Little drops of oil and gas add up. One pint of oil can cause an oil slick the size of a football field. Take used motor oil to gas stations. NEVER pour it down the drain. Take other fluids to approved recycling locations. Use saw dust or kitty litter to clean up leaks and spills in your driveway. Wash your car on your lawn if possible to capture runoff.

Reporting Stormwater Polluters

Your actions or the action of your neighbor can affect water resources. We are all downstream of someone. No polluted water should be allowed to go into our stormwater system. If you notice pollution of Stormwater you can report the details to the Town of Cortlandt Stormwater Hotline at 914-293-0900 or Town Code Enforcement at 914-734-1010.

ON THE WATERFRONT
SHARE YOUR THOUGHTS
TAKE THE SURVEY!

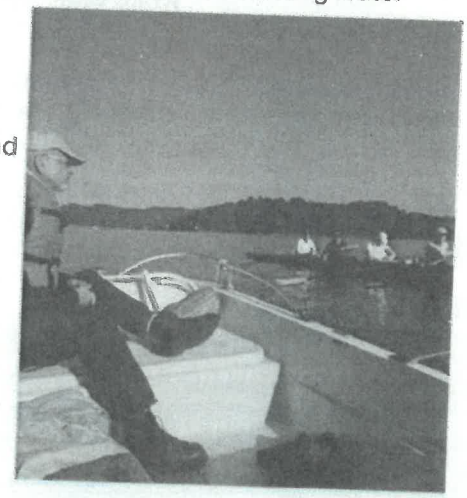
THE JOINT LOCAL WATERFRONT REVITALIZATION PROGRAM OF THE TOWN OF CORTLANDT & VILLAGE OF BUCHANAN



CONTINUING THE PROGRESS

Imagine a revitalized Hudson River waterfront from the Bear Mountain Bridge through Indian Point and Buchanan to Croton - alive with recreational, educational, environmental, economic, historical, and commemorative possibilities. That's the goal of a new collaboration between the Town of Cortlandt and the Village of Buchanan.

This NY State-backed Local Waterfront Revitalization Program (LWRP) is designed to forge a formal plan for the long-term use of this extensive and idyllic waterfront focused on maintaining water quality; protecting the natural environment; enhancing public access to the river, its history and its ecology; providing new recreational opportunities; reclaiming formerly industrial land on the water including Indian Point; and stimulating economic development in both the town and village. We are just getting started putting this plan together and are seeking the input and engagement of residents in the communities to reach a consensus that can serve as the catalyst for a creative waterfront blueprint.



WORKING TOGTHER

The Town of Cortlandt and the Village of Buchanan are collaborating on a waterfront revitalization program to enhance recreational, economic, environmental and educational opportuities.

OUR GOAL

To revitalize the waterfront from the Bear Mountain Bridge through Buchanan, Verplanck and Montrose, strengthening the economic and environmental health of our communities.

GET INVOLVED

Take the online survey and learn more at:

www.townofcortlandt.com/lwrp
www.villageofbuchanan.com/lwrp

BEHAN PLANNING AND DESIGN

SHARE YOUR THOUGHTS

TAKE THE SURVEY!

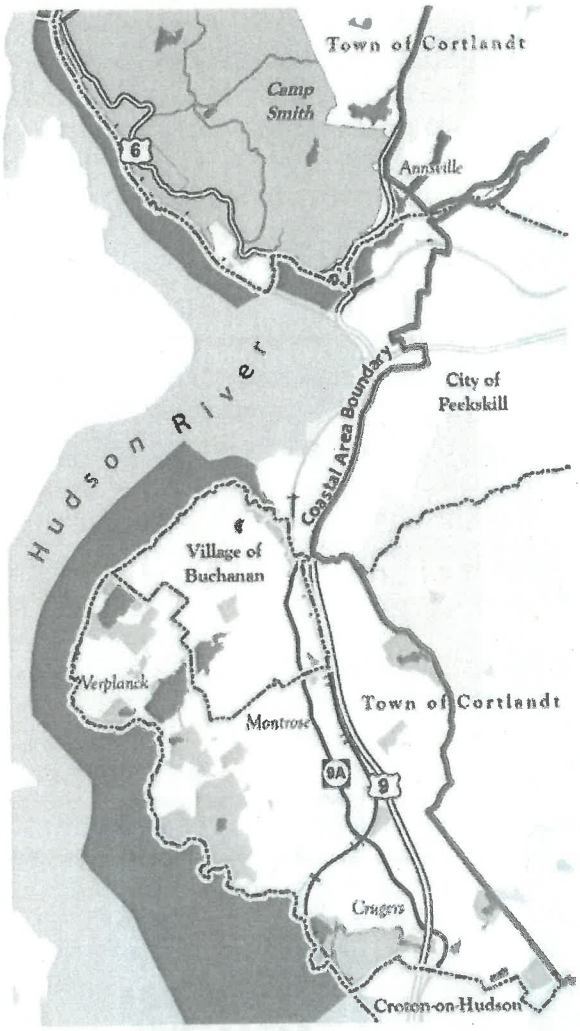
"Sustainability is the promise to our children and grandchildren that they will inherit a tomorrow that is at least as good as today and hopefully better."

~ Linda D. Puglisi in the Town of Cortlandt 2016 Sustainable Comprehensive Plan

JOIN US IN THE PLANNING PROCESS!

Future public engagement activities to be announced.

Check Town and Village websites for information.



Map showing the boundaries of the LWRP.

A project advisory committee appointed by the town and village will help provide guidance on the development of the waterfront revitalization project throughout the planning process which is expected to occur over the next 12 months.

Steering Committee Members:
Frank Farrell, Cortlandt Town Board
Amy Rosenberg, Town of Cortlandt
Naomi Woodard, Town of Cortlandt
Jeff Rothfeder, Town of Cortlandt
Nick Zachary, Buchanan Village Board
Mary Funchion, Village of Buchanan
Michelle O'Neill, Village of Buchanan
Kelly Wall, Village of Buchanan
Linda Willey, Village of Buchanan

Project Managers:
Chris Kehoe, Town of Cortlandt
Marcus Serrano, Village of Buchanan

"Our waterfront has been key to our history and it will be the key to our village's future as well."
~ Theresa Knickerbocker, Mayor

THE JOINT LOCAL WATERFRONT REVITALIZATION PROGRAM OF THE TOWN OF CORTLANDT & VILLAGE OF BUCHANAN

NEW YORK STATE OF OPPORTUNITY. Department of State

This document was prepared with funding provided by the New York State Department of State under Title 11 of the Environmental Protection Fund.

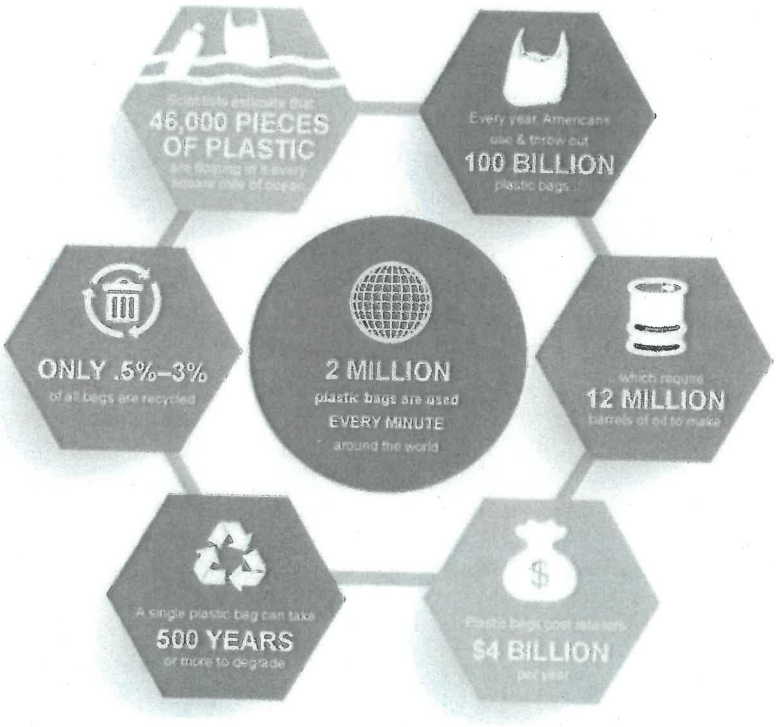
The Town of Cortlandt and its all-volunteer Conservation Advisory Council are deeply committed to the environment and to making sure that our Town and our residents are doing their part to reduce harm to our planet. For Earth Day 2021, the Town would like to draw attention to the impact that single-use plastic shopping bags have on our waterways, our wildlife and our own health. It is our hope that through these education efforts we can encourage more Cortlandt residents to carry reusable bags when they do their shopping, thereby reducing their use of single-use plastic bags!

CONSERVATION ADVISORY COUNCIL
TOWN OF CORTLANDT

5 TIPS FOR REDUCING PLASTIC BAG WASTE

Be part of shift away from the use-and-toss culture!

1. **Bring reusable bags each time you go shopping.** Each reusable bag can eliminate hundreds (if not thousands) of plastic bags. You can reduce the earth's landfills and prevent harm from being done to our precious wildlife by choosing reusable over paper or plastic.
2. **Keep reusable bags in your car** so they are available when you go shopping.
3. **Reuse the plastic bags you have.** Take them with you on future shopping trips, use them to pick up after your dog, or line your small trash cans with them.
4. **Don't automatically take a plastic bag.** Only buying small items that are easy to carry? Tell the cashier that you don't need or want a plastic bag.
5. **Encourage your friends, family, and community to do all of the above!**



AND DID YOU KNOW...?

Plastic bags don't biodegrade: they photodegrade. This means that sunlight breaks down the bags into smaller fragments which readily soak up toxins. They then contaminate soil, waterways, and animal and marine life, which mistake them for food. Humansm who consumer these animals and fish may also ingest these toxins.

Paper bags are not an eco-friendly alternative to plastic. According to the Environmental Protection Agency, paper manufacturing is a highly energy intensive process. Converting hard wood into paper requires a resource heavy pulping process. The entire process from beginning to end requires large amounts of water, energy, and chemicals, and can emit toxic and hazardous chemicals in the air and water.

Sources:

Earth Policy Institute • Natural Resources Defense Council • The Wall Street Journal BBC, CNN • "Measuring Biodegradability" ScienceLearn.org • United Nations Environmental Programs • Earth911

The Conservation Advisory Council was formed to ensure the preservation and improvement of the quality of the natural and man-made environment in the Town in the face of urbanization and the accompanying demands on natural resources.
To learn more, you can visit us as at **www.townofcortlandt.com**

Town of Cortlandt
Department of Recreation & Conservation
1 Heady Street
Cortlandt Manor, NY 10567-1254

914-734-1050
Website: www.townofcortlandt.com
Email: tocrec@townofcortlandt.com
Facebook: facebook/townofcortlandt
Instagram: @townofcortlandt
Community Pass: www.townofcortlandt.com/reconline

Presorted Standard
U.S. POSTAGE
PAID
Shirley, NY
Permit No. 130

Dated Material
Please Deliver Promptly

Postal Patron

Town of Cortlandt
Winter/ Spring 2021 Recreation Program Brochure

Town Supervisor
Linda D. Puglisi

Town Board
Richard H. Becker Debra A. Carter James F. Creighton Francis X. Farrell

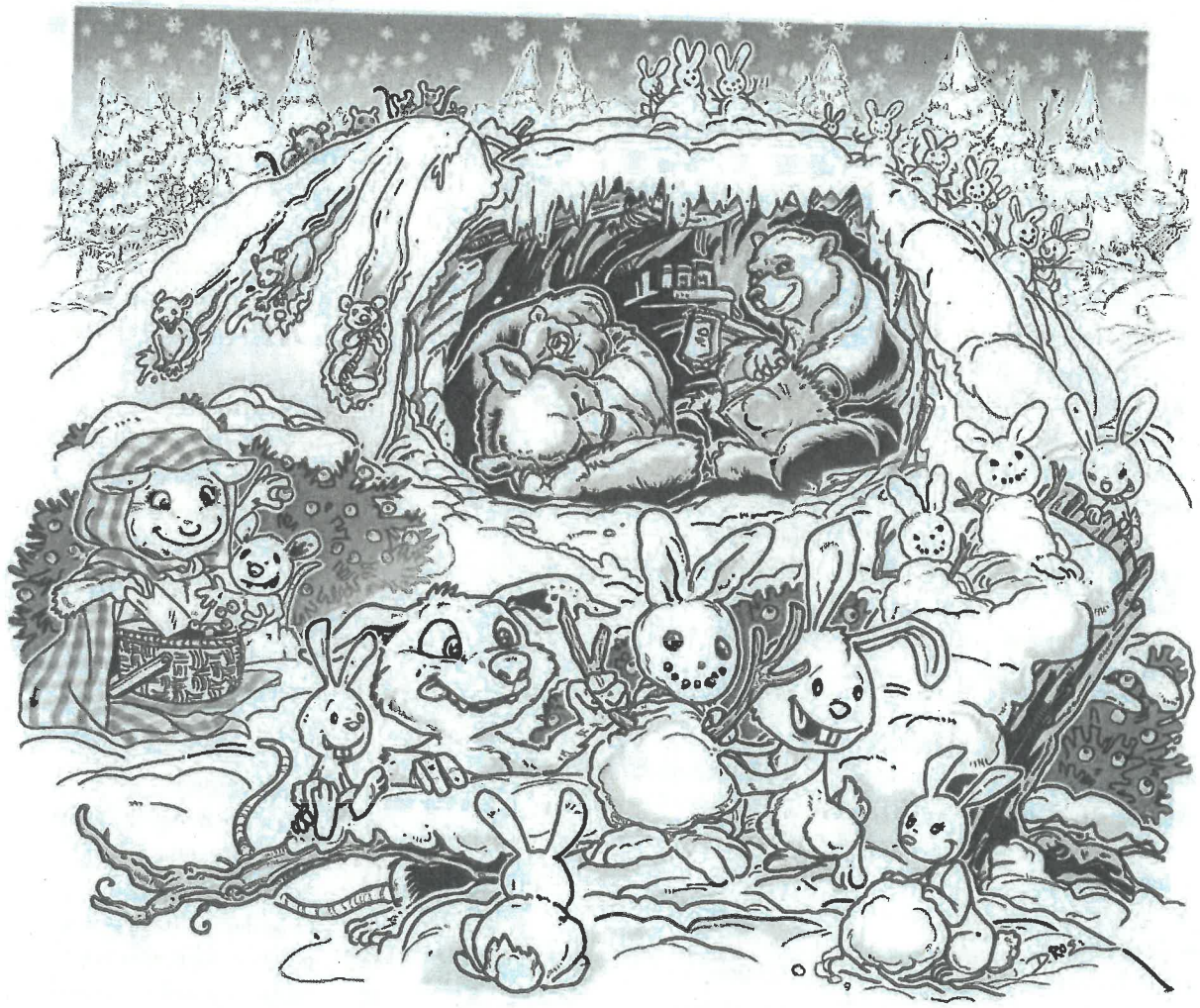


TABLE OF CONTENTS

General Program Information

2021 Goals 6
911- The Call that Counts 21
Adopt-an-Island and Application 17
Amanda's Law 21
Code Red 13
Electric Vehicle Outlet Station 18

Facility Rentals

Cortlandt Town Center (C.U.E.) 61
Cortlandt Youth & Recreation Center .. 61
Financial Record and Tax Warrants 61

Forms

Adult Activity Registration 75
Dog Park Rgistration 73
Seasonal Empoyment 71
Lacrosse League 85
Pre-School/Youth Activity Registration ... 77
Soccer League ..... 79 & 81
Travel Soccer 83

How to Register for Recreation Program .. 14
Indian Point Update 7
Letter from the Supervisor 5
Medical Drop Box 18
Military Order of the Purple Heart 8
Military Tribute Banners 8
Nor-West 29
Otocast App 12
Recreation Photo ID Cards 15
Recreation Programs and Covid-19 16
Refund/Credit Policy 16
Sliding Fee Scale 16
Storm Water Pollution 19
Sustainable Cortlandt 18
Telephone Listing - Town Hall &
Other Locations ..... **INSIDE FRONT COVER**
Vietnam Memorial 8
Volunteers Needed (Fire and Ambulance) .. 21
Waste and Recycling App 12

Senior Citizens Programs and Services

Bus Transportation 23
Clubs 22
Computer Lab 23
Medical Transportation 23
Nutrition 23
Operation Snowflake 23
Shopping 23
Special Events 25

Winter Adult Program

Badminton 26
Basketball-Men-Saturday (30 & Over) 26
Basketball-Men-Tuesday (18 & Over) 26
Cortlant Stamp Club 27
Defensive Driving 27
Guitar Lessons 27
Intermediate Yoga 28
Introduction To Swordsmanship 28
Karate 28
Mahjongg 29
Meditation Seminar 29
Pilates on the Mat 30
Volleyball 30
Yoga Anyone 31
Yoga and More 31

Winter Youth Programs

After School Bowling 32
Baller Sports 32
Bumper Bowling 34
Guitar Lessons 34
Karate 34
Swimming Instruction 35

Winter Pre-School Programs

Jr. Baller Sports 36
Pre-K Cooking Classes 37

Spring Adult Programs

Badminton 38
Defensive Driving 38
Guitar Lessons 38
Intermediate Yoga 39
Introduction to Learning Japanese 39
Mahjongg 39
Meditation Seminar 40
Piano Lessons 40
Pilates on the Mat 40
Yoga Anyone 41
Yoga & More 41

Spring Youth Programs

After School Bowling 42
Art Explores 42
Art Quest 42
Baller Sports ..... 42 & 43
Bumper Bowling 43
Environmental Programs 44
Guitar Lessons 44

Spring Pre-School Programs

Jr. Baller Sports 45
Pre-K Cooking Classes 46
SoccerTots 47

Sports Leagues and Teams-Adult/Youth

Lacrosse League 48
Little League Information 48
Soccer League 48
Softball League-Girls 48
Softball League-Men 48
Tennis League-Men & Women 48
Travel Soccer 49

Special Activities and Events

Community Garden 62
Cortlandt Community Rowing Association .. 63
Earth Day Hike 62
Hudson River Eaglefest 62
Town of Cortlandt Egg Hunt 62
Van Cortlandtville Historical Society 63

Special Park Facilities

Bicentennial Garden 64
Charles J. Cook Park Fitness Trail 66
Charles J. Cook Park Mini Golf 66
Cortlandt Boat Launch 64
Cortland Dog Park 65
Cortlandt Hockey Rink 66
Cortlandt Waterfront Parrk 68
Croton Arboretum 64
Furnace Dock Lake 64
Hollow Brook Golf Course 65
Hollow Brook Trail 66
Hudson Highlands Gateway Park 67
Oscawana Island Boat Launch 68
Playgrounds 69
Steve Herbert Memorial Skate Park 68
Tennis Courts 68
Sprout Brook Park 68
Toll House 68

Youth Center

Cortlandt Community Coaliton 50
Game Café at the C.U.E. 58
Hours of Operation 50
Programs for Grades 1st-5th ..... 59 & 60
Programs for Grades 6th-12th 51-57
Youth Employment Services Y.E.S 57

TOWN OF CORTLANDT
ADOPT-AN-ISLAND PROGRAM & APPLICATION

The Town of Cortlandt Adopt-an-Island Program offers companies, civic groups, institutions and individuals the opportunity to adopt a traffic island or other neighborhood space and help us beautify the Town of Cortlandt.

GUIDELINES AND PROGRAM SPECIFICATIONS

- Identify a traffic island or roadside area that you wish to enhance and contact **Fred Pardee** at fredp@townofcortlandt.com 914-737-0047 in our DES/ Parks Division.
- You or your group will be responsible for purchasing all items, including plants, mulch, etc., planting/ installing, and maintaining your island (including weeding, trimming, garbage removal and watering) throughout the season.
- All material must be natural and plants must be kept under 30" as to not interfere with traffic safety.
- A sign with your name will be provided by the Town of Cortlandt and will be placed on the island. Please give your information to our DES office by emailing fredp@townofcortlandt.com.
- Most of all, the Town asks that you stay safe while working on your island and always use common sense, especially in high traffic areas and always wear bright clothing for safety purposes. Your organization is solely responsible to follow all safety precautions and guidelines while working on your project.
- The Town has the right to remove any planting that is deemed necessary.
- The Town has the right to terminate the Adopt-an-Island Program at any time and in doing so will remove signage for the island.

Name of Sponsor/ Business: _____

Contact Person: _____

Contact Telephone #: _____

Contact Email: _____

Island Location: _____

HELP US BEAUTIFY CORTLANDT!

Contact Information:

Fred Pardee Of the TOC Department of DES.

914-737-0047

Email: Fredp@townofcortlandt.com

SUSTAINABLE CORTLANDT
OUR MISSION

To protect and enhance the quality of life of our residents and the unique environment of our area by establishing programs and policies which integrate sustainability into Town governance and planning, at the same time we want to encourage and enable Town residents and businesses to adopt sustainable practices.

TO THE CORTLANDT COMMUNITY

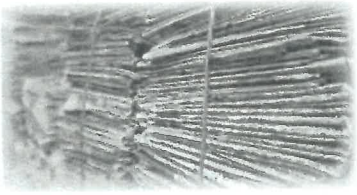
Sustainability is the promise to our children and grandchildren that they will inherit a tomorrow that is at least as good as today and hopefully better. Achieving this promise will call for the participation of each and every one of us. Our Town has a long standing record of environmental stewardship exemplified by our leadership in protecting open space, natural resources, and smart growth practices. Visit www.townofcortlandt.com Sustainable Cortlandt to learn more. The Town Board and I are fully committed to this important effort and we look forward to your participation in becoming a sustainable community.

Town Supervisor

ELECTRIC VEHICLE (EV) OUTLET STATION

Through a grant provided by the New York Power Authority in 2014, The Town of Cortlandt was able to install two electric vehicle charging stations at Town Hall. Please download the free EV Connect mobile app which is available in the Apple App Store and Google Play Store or at http://www.evconnect.com/charging-app/ and register for an account. Once registered, you will receive a confirmation link through email. You may also register at **http://network.evconnect.com**. If you would like to do a one-time charge,please call **EV Connect** driver support line at **866.816.PLUG (7584)**. ***Please note:*** Public drivers will need to setup a PayPal account and have it associated to their EVC account prior to using the stations.

Remember to **RECYCLE** to save our **ENVIRONMENT!**



This guide is printed on ***RECYCLED PAPER;*** As a result, approximately five (5) trees were preserved. To schedule and appointment and for more information about chemical clean up and H-MRF (Household Material Recovery Facility) contact Westchester County at **914-813-5425** or visit **www.westchester.gov**.

The Town has established regular pick up routes for organic yard waste. Yard waste will be picked up town wide on these dates. Yard waste must be placed in **Brown Biodegradable Bags** or loosely in garbage cans. Plastic bags cannot be composted. Organic waste in plastic bags will not be picked up. Please visit the website for further details **www.townofcortlandt.com/sanitation**

The Town of Cortlandt Town Hall will host a **Permanent Medical Drop Box** to offer our Town residents the opportunity to safely discard unwanted prescription drugs. The box is located in the Purchasing Building at the **Town of Cortlandt Town Hall Campus at 1 Heady Street Cortlandt Manor, NY 10567**

The hours of operation will be

Monday– Friday • 9:00 AM-3:30 PM

The drop box is monitored by the Westchester County State Police.

SOLUTIONS TO STORMWATER POLLUTION

Easy Things You Can Do Every Day To Protect Our Water

Stormwater is water from rain or melting snow that flows from rooftops, paved areas and lawns that doesn't soak into the ground but runs off into waterways, like streams, ponds, lakes, and rivers.

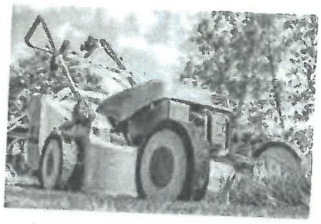
As it flows, stormwater runoff collects and transports soil, animal waste, salt, fertilizers, oil and grease, pesticides, litter and other potential pollutants. This pollution can enter groundwater, streams, lakes, ponds, and rivers and can even affect the quality of our drinking water.

Increase in impervious surfaces cause more stormwater runoff. Because less water is soaking in, flooding can become more frequent and more destructive.

The Town of Cortlandt is a regulated community and has enacted updated Town ordinances governing stormwater. To learn more, visit our website at: **www.townofcortlandt.com/stormwater**

What can you do to help with Stormwater Issues?

Lawn Care



Most lawns tested in Westchester County DO NOT need more phosphorus. If you must fertilize, use phosphorus-free fertilizer (where the middle number on the bag is zero). Excess fertilizer flows into streams, lakes, rivers, and reservoirs, where it can degrade drinking water, lead to algae and plant growth and contribute to fish kills. Don't fertilize when rain is expected. Leave grass clippings on the lawn to recycle nutrients. More information on lawn care is available in the Town of Cortlandt Recycling brochure.

Septic System Maintenance

Failing septic systems can contaminate groundwater, drinking water and surface flows. Most of the Town of Cortlandt is serviced by individual septic systems. **Your septic system should be pumped and inspected regularly.** Generally, septic tanks should be cleaned out every 3-5 years, depending on the size of the tank. Do not pour chemicals, paints, fats, or excess medications down your pipes. Driving on or parking on septic field may damage them.

Scoop the Poop

Please pick up after your dog or cat. It doesn't matter the size of the animal– all animal waste has an impact. Animal waste is easily carried by runoff, washing off roads and lawns. Pet waste contains harmful bacteria and phosphorus that can promote the growth of weeds and algae.

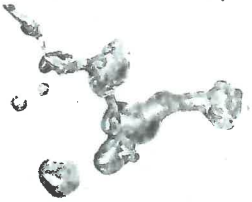
Landscaping Helps

Keep vegetation and organic material on the soil, especially on slopes. Landscape to limit the steepness or length of slopes. Build a buffer of vegetation by watercourses to help filter sediment. Replace the lawn at water's edge with shrubs, hedges or trees. Anything that slows the flow of water will help us give time for the pollution to be removed.

Care for your Car

Little drops of oil and gas add up. One pint of oil can cause an oil slick the size of a football field. Take used motor oil to gas stations. NEVER pour it down the drain. Take other fluids to approved recycling locations. Use saw dust or kitty litter to clean up leaks and spills in your driveway. Wash your car on your lawn if possible to capture runoff.

Reporting Stormwater Polluters



Your actions or the action of your neighbor can affect water resources. We are all downstream of someone. No polluted water should be allowed to go into our stormwater system. If you notice pollution of Stormwater you can report the details to the **Town of Cortlandt Stormwater Hotline** at **Town Code Enforcement** at **914-734-1010**.

Lisa Walsh

From: Rosemary Boyle Lasher
Sent: Friday, April 9, 2021 1:25 PM
To: Brent Van Zandt; Stephen Ferreira; Michael Preziosi; Lisa Walsh
Subject: RE: Question. MS4 MM6 Training Sign in Sheet for Annual Report

Brent

Thank you. I copied MP on this. Have a good weekend

Rosemary

From: Brent Van Zandt <bvanzandt@townofcortlandt.com>
Sent: Friday, April 9, 2021 11:43 AM
To: Rosemary Boyle Lasher <RosemaryB@townofcortlandt.com>; Stephen Ferreira <StephenF@townofcortlandt.com>
Subject: RE: Question. MS4 MM6 Training Sign in Sheet for Annual Report

In MS4 Training with staff we discussed any illegal discharges into the Town catch basins such as an illegal sewer connection from a residence or business.
Stockpiled materials without silt fence that may be washing into catch basins, contractors working on roadways, saw cutting pavement and allowing slurry to wash
Into catch basins etc..... staff was told if they see anything above or similar to contact their Foreman immediately.

Brent

From: Rosemary Boyle Lasher
Sent: Friday, April 9, 2021 10:58 AM
To: Stephen Ferreira <StephenF@townofcortlandt.com>; Brent Van Zandt <bvanzandt@townofcortlandt.com>
Subject: FW: Question. MS4 MM6 Training Sign in Sheet for Annual Report

Steve and Brent

MP is asking for a "blurb" in an email from one of you to him detailing what is covered in the MS4 stormwater training with the men.

Thanks.
Rosemary

From: Lisa Walsh <LWalsh@townofcortlandt.com>
Sent: Thursday, April 8, 2021 12:38 PM
To: Rosemary Boyle Lasher <RosemaryB@townofcortlandt.com>
Subject: RE: MS4 MM6 Training Sign in Sheet for Annual Report

Hi, Ro,

Michael asked if you can please forward a blurb of whatever specific topic the training covered.

Regards,
Lisa Walsh

Senior Administrator/Office Manager –
Dept. of Technical Services
Town of Cortlandt
1 Heady St.
Cortlandt Manor, NY 10567
(914) 734-1063

From: Rosemary Boyle Lasher <RosemaryB@townofcortlandt.com>
Sent: Thursday, April 8, 2021 12:22 PM
To: Michael Preziosi <MichaelP@townofcortlandt.com>; Lisa Walsh <LWalsh@townofcortlandt.com>
Cc: Stephen Ferreira <StephenF@townofcortlandt.com>; Brent Van Zandt <bvanzandt@townofcortlandt.com>
Subject: MS4 MM6 Training Sign in Sheet for Annual Report

Michael & Lisa

Attached is the Annual training sign-in sheet for DES staff for the Annual MS4 report which BVZ dropped off to me today along with MM6 section of the report. DOTS staff is meeting tomorrow to hopefully finalize. Lisa – this is one of the attachments we usually add.

Thanks.
Rosemary

From: adminstrator@townofcortlandt.com <adminstrator@townofcortlandt.com>
Sent: Thursday, April 8, 2021 11:56 AM
To: Rosemary Boyle Lasher <RosemaryB@townofcortlandt.com>
Subject: Message from KM_308e

MS4 Annual Stormwater Training

Date: 2/26/21

Print	Sign
Christopher J Pritchard	[signature]
DAVID Perez	[signature]
ED Logan	[signature]
John R. [illegible]	[signature]
JOSH D Mauk	[signature]
Kevin Bell	[signature]
Thomas Parish	[signature]
DEVIN K	[signature]
Mike Nilbury	[signature]
John Gilbert	[signature]
Fred Park	[signature]
[illegible] Vaarle	[signature]
Steve Stein	[signature]
PATRICK SCANLON	[signature]
William Sensoldt	[signature]
Mike Weise	[signature]
Ralph Blasett	[signature]
Oliver Cooper	[signature]
Dudley Sayre	[signature]
Russell [illegible]	[signature]
Kenny Cell	[signature]
Peter Reyes Jr	[signature]
Michael Heting Jr	[signature]
James Kelly	[signature]
CLAVSON	[signature]
[illegible]	[signature]

RESOLUTION

NUMBER 75-20

RE: (AWARD THE LAKE MEAHAGH INVASIVE SPECIES MANAGEMENT SERVICE CONTRACT)

WHEREAS, a Request for Proposals "RFP" was released by the Department of Technical Services for Lake Meahagh Invasive Species Management; and

WHEREAS, two sealed proposal were received from the following companies:

The Pond and Lake Connection
1112 Federal Road
Brookfield CT, 06804

Solitude Lake Management
310 East Washington Avenue - Suite C
Washington, NJ 07882

; and

WHEREAS, the Director of Technical Services has reviewed each proposal and compared each companies response against the requirements of the RFP, recommending the award of the service contract to the Pond and Lake Connection.

NOW THEREFORE BE IT RESOLVED, that the Supervisor and Director of Technical Services are hereby authorized to execute the contract documents with the Pond and Lake Connection at a cost not to exceed Fifty Thousand Dollars ($50,000.00) including contingencies.

BE IT FURTHER RESOLVED, that the Town Supervisor and Director of Technical Services are hereby authorized to make application and sign all permits as required by the New York State Department of Environmental Conservation.

BE IT FURTHER RESOLVED, that the Comptroller is hereby authorized to amend the budget with respect to the above.

BY ORDER OF THE TOWN BOARD
OF THE TOWN OF CORTLANDT
LAROUE SHATZKIN
TOWN CLERK

Adopted on February 11, 2020
At a Regular Meeting
Held at the Town Hall

TOWN OF CORTLANDT
DEPARTMENT OF TECHNICAL SERVICES
ENGINEERING DIVISION

Michael Preziosi, P.E.
Director – D.O.T.S.

Arthur D'Angelo, Jr., P.E.
Deputy Director
D.O.T.S. – Engineering

Town Hall, 1 Heady Street
Cortlandt Manor, NY 10567
Main #: 914-734-1060
Fax #: 914-734-1066

Town Supervisor
Linda D. Puglisi

Town Board
Richard H. Becker
James F. Creighton
Debra A. Costello
Francis X. Farrell

February 27, 2020

RE: Lake Meahagh – Invasive Species Management

Dear Current Resident,

The Town of Cortlandt has contracted with the Pond Connection to make application to the New York State Department of Environmental Conservation "DEC" to apply for permits to combat various invasive species within Lake Meahagh.

Observed invasive species include eurasion watermilfoil, curly-leaf pondweed, brittle naiad, all non-native, exotic and invasive submersed plants. The DEC does not recommend pulling or raking the eurasion watermilfoil (EWM) as by doing so causes "fragmentation" which leads to the spread of the invasive.

Prior to the release of a permit, the DEC requires certain notices and mailings be forwarded to riparian owners (those properties adjacent and contiguous with the waterbody and having rights). Attached to this introductory letter is a Notice of Consent prepared by the Pond Connection. They are proposing to utilize a combination of three herbicides to treat the invasive species. Application of herbicides is expecting to commence in late May and early June of this year.

In addition to the Town obtaining the services of the Pond Connection, staff has:

- Performed preventative maintenance of the aeration devices currently installed in the lakebed as well as evaluated the need for additional units.
- Performed preventative maintenance to the outlet control structure located at Kings Ferry Road. This will allow staff to continue winter drawdown lowering the lake to 50% of its volume, thereby exposing plants roots, naturally eliminating invasive plants along the shore.
- Developed and a long-term treatment protocol, consisting of natural methods, chemical, and biological controls for the lake.

The Town is also committed to continuing public outreach and education. Attached find a mailing which was circulated to the properties in the Lake Meahagh watershed in August 2019. Additional information pertaining to Lake Meahagh, general storm water management and latest news updates is

available at the Town's website www.townofcortlandt.com/stormwater and Westchester County's website http://planning.westchestergov.com/print-materials .

In closing I want to thank you for your cooperation. Together we can maintain and even further improve the visual beauty and health of Lake Meahagh.

Very truly yours,

Michael Preziosi, P.E.

Michael Preziosi, P.E.
Director - Dept. of Technical Services

Cc: Town Supervisor Puglisi
Director – DES
DOTS – Engineering
MS4 File
Pond Connection

THANK YOU FOR YOUR COOPERATION!!!

Together we can maintain and even further improve the visual beauty and health of Lake Meahagh.

Contacts....

Town of Cortlandt

Michael Preziosi, P.E.

Director

Dept. of Technical Services

Artie D'Angelo, Jr., P.E.

Dep. Director DOTS — Eng.

914-734-1060

Town of Cortlandt

1 Heady Street

Cortlandt Manor, NY 10567

Additional Information Available

Town of Cortlandt

www.townofcortlandt.com/stormwater

www.townofcortlandt.com

Westchester County

https://planning.westchestergov.com/environment/stormwater-management

http://planning.westchestergov.com/print-materials

https://health.westchestergov.com/septic-systems

NYS Dept. of Environmental Conservation

https://www.dec.ny.gov animals/50272.html

Lake Meahagh

Annual Watershed Mailing

Aug. 2019

Lake Meahagh has been classified by the NYSDEC as an impaired waterbody due to excessive phosphorus.

Over the past few years the Town has enacted various measures to help the Lake, such as:

- Public Outreach
- Installing Aeration
- Winter draw down of the lake.

However, this summer the lake is impacted by various invasive species; most notably the Eurasian water milfoil.

For more information visit the Department of Environmental Conservation's "Diet for a Small Lake"

https://www.dec.ny.gov/chemical/82123.html

HOW YOU CAN HELP

Fertilizers

- Only apply phosphorus free fertilizers or else excess phosphorus will be washed away into storm drains and streams
- Avoid applying fertilizer if rain is in the upcoming forecast
- Sweep excess fertilizer back onto your lawn and off of the street
- Test your soil to determine what your lawn really needs

http://www.dec.ny.gov/docs/water_pdf/fertedcolor.pdf

Lawn Mowing

Consider mowing your grass at a high setting (over 2.5 inches). When you mow your lawn, direct the clippings away from the street, driveways, sidewalks, and other paved areas. Sweep to your lawn, as grass clippings are a great source of natural fertilizer.

Pet Waste

- Pick up waste and dispose of in the trash
- Do not let the waste wash away into streams and catch basins.

Pet waste has a high concentration of phosphorus. Be considerate not only to your neighbors when walking pets, but also the environment.

Onsite Septic Systems

Did you know you are required by Code to regularly pump and inspect your onsite sanitary system.

https://www.epa.gov/septic/septicsmart-homeowners

Failing septic systems are harmful to the environment and adversely effect receiving waters.

THE POND AND LAKE
CONNECTION

2020 Long Term Management for Lake Meahagh

1112 Federal Road, Brookfield, Ct 06804
Telephone (203) 885-0184 Fax (203) 885-0873
www.ThePondConnection.com
NY 15201 / CT 2764 / NJ 99972A

THE POND AND LAKE
CONNECTION

Table of Contents

1. Year End Report
2. Aeration Estimates and Information
3. New York State Department of Environmental Conservation Permits
4. Pre-Post Treatment Evaluation Surveys
5. SeScript Water Chemistry/Algae Identification Laboratory Reports
6. 2021-2023 Lake Meahagh Management Contract Estimate
7. Information on Blue/Green Algae, Milfoil

1112 Federal Road, Brookfield, Ct 06804
Telephone (203) 885-0184 Fax (203) 885-0873
www.ThePondConnection.com
NY 15201 / CT 2764 / NJ 99972A

THE POND AND LAKE
CONNECTION

Lake Meahagh is a 79-acre lake located in the Town of Cortlandt, NY. Lake Meahagh has been plagued with the invasive species Eurasian Milfoil. The Town of Cortlandt requested control of Eurasian Milfoil due to its aggressive displacement of native vegetation and alteration of fish and wildlife habitat. The rapid growth rate of this species allows it to cover water surfaces and displace native vegetation in a few growing seasons.

The Town of Cortlandt awarded The Pond and Lake Connection with a bid to treat the lake with ProcellaCor Herbicide to control the Eurasian Milfoil, evaluate their current aeration system, preform pre and post treatment surveys of the vegetation as well as provide a long-term management plan.

As with any successful long-term management strategy of aquatic vegetation integrated pest management (IPM) is required. Using IPM allows for a mix of biological, chemical, physical and cultural process to control a pest problem. IPM reduces environmental risks associated with pesticides, while improving quality, health and welfare of the environment.

A biological method of vegetation control is Aeration. Aeration benefits the fish, reduces the organic matter in a pond or lake and circulates the water keeping it from being stagnant. Lake Meahagh currently has an Aqua Master diffuser system. This 6-diffuser system was serviced (air filter, diffuser head adjustments) by The Pond and Lake Connection in May of 2020. At that time, the system was running as expected and the system seemed to be working properly. As noted in the "Evaluation of Town's Current Aeration System" document sent to the Town of Cortlandt, the system is undersized for the size lake.

Two options were suggested to the town to upgrade the aeration system. The first would be to continue the Aqua Master diffuser aeration system. The installation of a new 12-diffuser system, leaving the 6-diffuser system in place would add adequate aeration to the lake. A second system, a nano bubble generator is a new technology that would increase the oxygen level in the lake without having hoses and potential in-water service/repairs that may come with a more traditional diffuser system. This system, although more expensive, would not have any of the nuisance trouble (cut hoses, fishing lines tangled, broken heads) that the traditional units have. Estimates for both systems were provided and are attached.

Another biological control is Triploid Grass Carp. Triploid Grass Carp are fish, that are "vegetarians", and will eat plants growing in a pond or lake. Unfortunately, The Pond and Lake Connection does not recommend Grass Carp for the lake at this time. Triploid Grass Carp are not "programed" to eat only invasive species. The lake is trying to change from being dominated by invasive species to a lake with diverse native species. The Triploid Grass Carp

1112 Federal Road, Brookfield, Ct 06804
Telephone (203) 885-0184 Fax (203) 885-0873
www.ThePondConnection.com
NY 15201 / CT 2764 / NJ 99972A

THE POND AND LAKE
CONNECTION

would interfere with the rebounding and spread of the native species. In the future, Triploid Grass Carp may be stocked to prevent native species from becoming a nuisance.

Other biological products are focused on reducing nutrients, like Phosphorus, in the lake. Currently, the NYSDEC will not allow for the use of these products in lakes for the "reduction of Phosphorus or other nutrients". These products are being reviewed by the NYSDEC for the use in the future. If these products are approved, they would be very effective in lowering the Phosphorus which in turn would reduce the risk of algae blooms.

Due to the shallow nature of the lake, nutrient load and watershed, herbicide and algaecide management tools were needed to control the invasive species and potentially for native species. The Pond and Lake Connection filed for permits with the New York State Department of Environmental Conservation (NYSDEC) for the use of ProcellaCor (selective herbicide), Nautique (selective herbicide) and Cutrine Ultra (algaecide).

After, The Pond and Lake Connection received approved permits from the NYSDEC, the first treatment was made to the lake on May 27th. The treatment was made using our gps guided air boat. ProcellaCor was chosen to control the Milfoil Species because it is very effective on Milfoil Species and is not very effective on many native Pondweed Species.

This treatment targeted the northern half of the lake. The Pond and Lake Connection treated the lake in ½ lake sections to reduce the risk of a rapid oxygen loss throughout the lake as the vegetation was dying. On June 16th the second half of the lake was treated using ProcellaCor.

A survey was done prior to the treatments then following the treatments to see how effective the treatments were. These surveys (attached) show a virtual 100% control of the milfoil species while leaving behind the native species.

Future treatments should follow this model. Use of ProcellaCor or similar product will allow for the control of the invasive milfoil species control while allowing for re-growth and expansion of native species. The herbicide Nautique was chosen as a potential "spot" treatment product. Nautique does work on some of the pondweed species allowing for contact, small area, control of vegetation if it gets to a nuisance level. A selective herbicide similar to Nautique should also be permitted in the future. The Pond and Lake Connection recommends that water bodies in the size range of Lake Meahagh maintain at least a 25-30% coverage of native vegetation. This coverage will allow for habitat, erosion control and the plants will use the nutrients that would otherwise lead to an algae bloom.

1112 Federal Road, Brookfield, Ct 06804
Telephone (203) 885-0184 Fax (203) 885-0873
www.ThePondConnection.com
NY 15201 / CT 2764 / NJ 99972A

THE POND AND LAKE
CONNECTION

Following sites inspections of Lake Meahagh on August 10, 2020, two water quality samples were taken from the lake. These samples provided us with the current nutrient levels of the lake, other water quality parameters and algae identification. The algae identification results show very high levels of Cyanobacteria. A second algae identification sample was tested (August 27, 2020) to confirm that there was no contamination. The level was elevated again. This type of algae could potential become harmful if left unchecked. The Pond and Lake Connection disused the results with Town of Cortlandt. Due to the timing (end of season), historical data as well as treatment results at other lakes in the area, The Pond and Lake Connection did not recommend treating for the algae. However, it is recommended that any herbicide program include an algaecide that would be effective on Cyanobacteria type algae. Additional information about Cyanobacteria can be found as an attachment.

Physical controls, like harvesting, of Eurasian Milfoil in Lake Meahagh would not be recommended. Eurasian Milfoil can spread by fragmentation. Each broken piece has the ability to re-establish itself in a new section of the lake. Due to the size of the lake it would be nearly impossible to collect all of the fragments that would occur from the harvesting process. Further, harvesting is non-selective which would be counter to the goal of having native species re-establish themselves. In the future, if native species become a nuisance or there is vegetation that does not spread through fragmentation, harvesting may be possible. Suction harvesting in particular could be used on a small scale to harvest vegetation.

Cultural control techniques include prevention, assessment, evaluation monitoring and education. Prevention and education go hand in hand. Educating users about vegetation "hitch hikers" on kayaks, canoes and boats will help keep invasive or unwanted natives from entering the system. Posters, fliers, websites and YouTube videos of proper equipment cleaning are easy ways to show the public the effective ways they can help. Evaluation and monitoring also go hand in hand. Monitoring of target and non-target species will allow for quantitative evaluation of the plans that are in place.

As part of IPM program that needs to be in place for the foreseeable future, a combination of the control techniques will need to be implemented for the lake to return a balance of native vegetation.

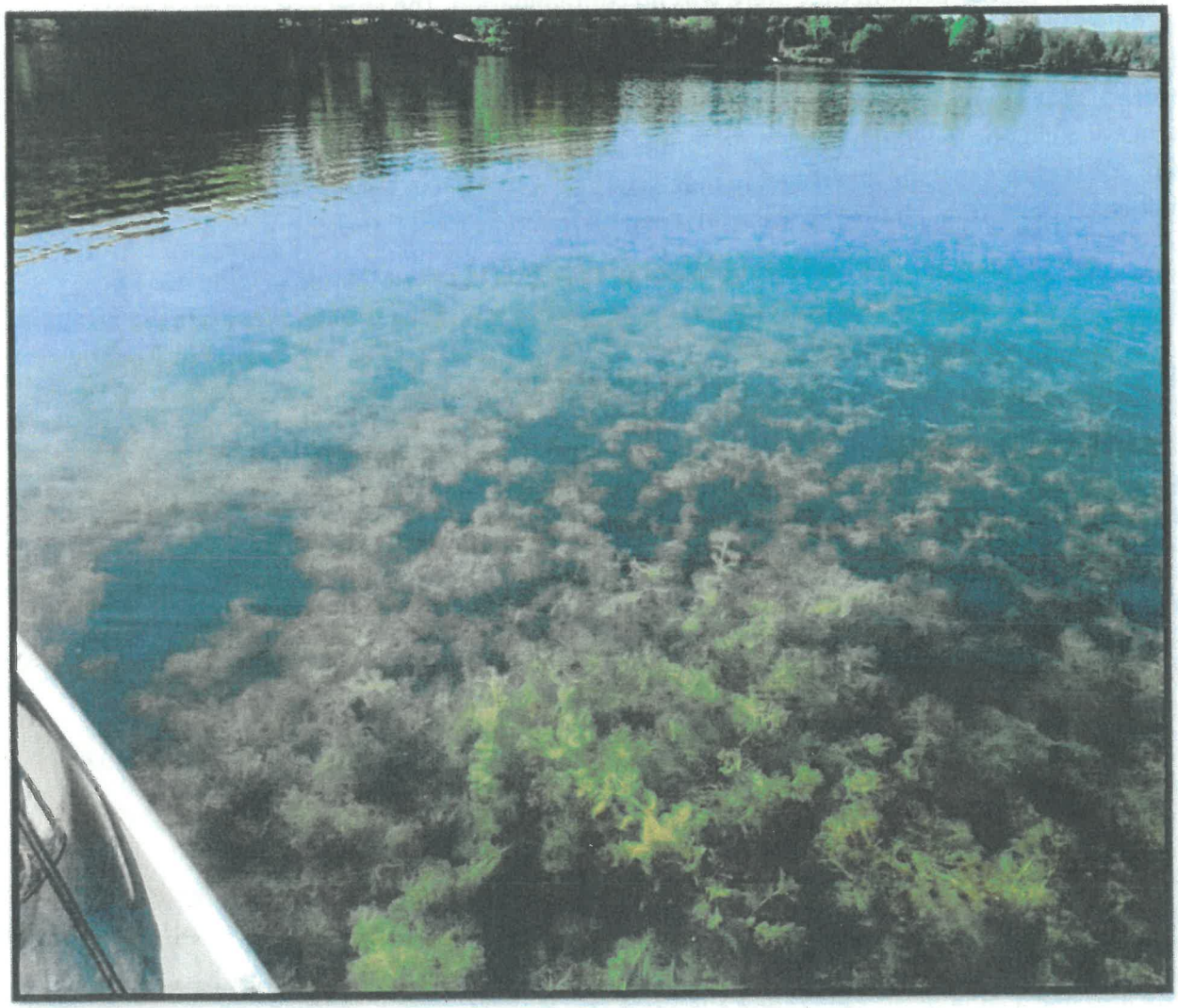
Attached to this report please find enclosed the approved NYSDEC permits from 2020. Please also find a copy of the vegetation survey, water sample results, aeration estimates, pictures as well as the estimate for recommended treatment of Lake Meahagh in 2021. As noted earlier in the report, The Pond and Lake Connection recommends the use of ProcellaCor for the 2021 season, while also filing for permits for Nautique Herbicide, for any spot treatments and Cutrine Ultra in case there is an algae bloom.

1112 Federal Road, Brookfield, Ct 06804
Telephone (203) 885-0184 Fax (203) 885-0873
www.ThePondConnection.com
NY 15201 / CT 2764 / NJ 99972A

THE POND AND LAKE
CONNECTION

Lake Meahagh

May 14, 2020



1112 Federal Road, Brookfield, Ct 06804
Telephone (203) 885-0184 Fax (203) 885-0873
www.ThePondConnection.com
NY 15201 / CT 2764 / NJ 99972A

THE POND AND LAKE
CONNECTION

Lake Meahagh

June 16, 2020

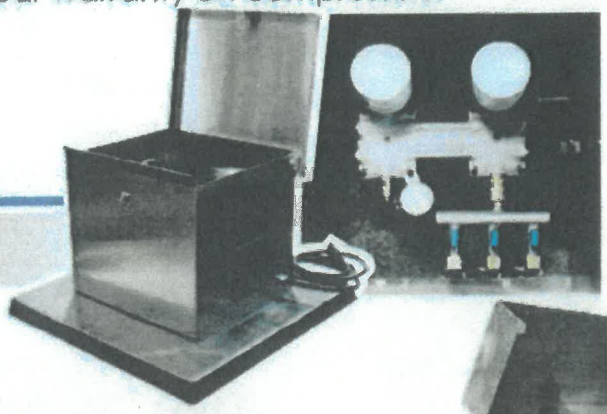
1112 Federal Road, Brookfield, Ct 06804
Telephone (203) 885-0184 Fax (203) 885-0873
www.ThePondConnection.com
NY 15201 / CT 2764 / NJ 99972A

Aqua Master
FOUNDATIONS AND AERATORS
A DIVISION OF ENQUATICS INC.

AQUAAIR® ULTRA

MASTER THE **POWER** AND **BEAUTY** OF WATER

AquaAir® Ultra provides ponds and lakes with superior aeration, circulation, and de-stratification. A stainless steel, base mounted enclosure containing up to four compressors delivers the highest air flow rates available. Service is made easy by "tool-less" compressor removal. Weighted Super Sink air tubing supplies air flow to the diffusers while remaining unseen and un-obstructive on the pond bottom. Coated, anti-fouling diffuser membranes utilize micro-bubble technology to synergistically lift water from the pond bottom to the surface where atmospheric oxygen transfer occurs and a subsequent, oxygen enhanced, beneficial circulation is created. ***AquaAir® Ultra*** is backed by a 3 year warranty on compressors.



LAKE AND POND BENEFITS

- Entire water column circulation - up to 4000 gallons per minute depending on diffuser depth
- Elimination of thermal stratification
- Increased dissolved oxygen levels that stimulate the natural aerobic digestion process thus reducing nutrient levels and associated algal growth
- Elimination of oxygen related fish kills and expansion of the oxygenated habitat and ecosystem
- Reduction of mosquito and aquatic midge infestations
- Elimination of foul odors from undesirable gases
- Reduction of organic bottom sediment
- Preservation of a healthy aquatic ecosystem and an aesthetically pleasing aquascape to view and enjoy through improved water quality

Distributed By:

16024 COUNTY ROAD X | KIEL, WI 53042
920.693.3121 | 800.693.3144 | FAX: 920.693.3634
WWW.AQUAMASTERFOUNTAINS.COM

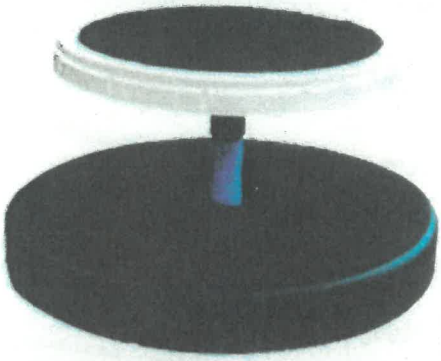
Aqua Master®
FOUNDATIONS AND AERATORS

AQUAAIR® ULTRA

MASTER THE POWER AND BEAUTY OF WATER

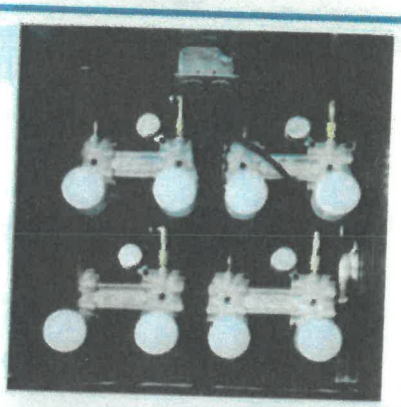
HIGH PERFORMANCE MEMBRANE DIFFUSER TECHNOLOGY

- Hollow base design for sand or gravel weighting
- Large base area for soft bottom sediment
- Self-cleaning, low maintenance construction
- Ultra low back pressure check valve
- Micro-bubble technology
- Five year warranty (Diffusers)
- Single membrane features flexible 12" disc
- Dual membrane features two flexible 12" membrane discs
- Quad membrane features four flexible 12" membrane discs
- All membranes feature a non-stick coating to prevent biofilm and calcium build-up



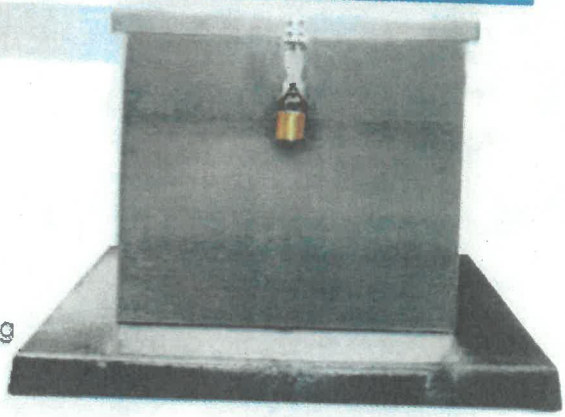
COMPRESSORS

- ⅓ HP Single Piston Compressor, 120V & 240V Single Phase
- ½ HP Dual Piston Compressor, 120V & 240V Single Phase
- ¾ HP & 1 HP Rotary Vane Compressors, 120V & 240V Single Phase
- Thermal overload motor protection
- 3 Year Warranty on Compressors



COMPRESSOR ENCLOSURES

- Heavy-duty cooling fan circulates air around compressor
- Stainless steel hasp latch with Padlock included
- Stainless steel cover and hardware
- Ease of internal accessibility
- Limited lifetime warranty (cooling fan 3 year warranty)
- Outside Dimensions including overhang of cover
  - ***AAU 1-3 – 17 L x 15 W x 16.25 H***
  - ***AAU 4-6 – 21 L x 17 W x 16.25 H***
- Outside Dimensions including overhang of cover & external manifold housing
  - ***AAU 7-12 – 28.75 L x 24.13 W x 18 H***



SUPER SINK AIR TUBING

- Flexible, will not crack or kink even in cold temperatures
- Self-weighted for easy installation and quick sinking
- 2 sizes available, in 100' coils; ½" and ⅝", ½": .52" ID x 1.06" OD, ⅝": .63" ID x 1.15" OD
- Utilizes PVC insert fittings for quick connections
- Tubing is available in 500 ft. spools
- 15 year warranty

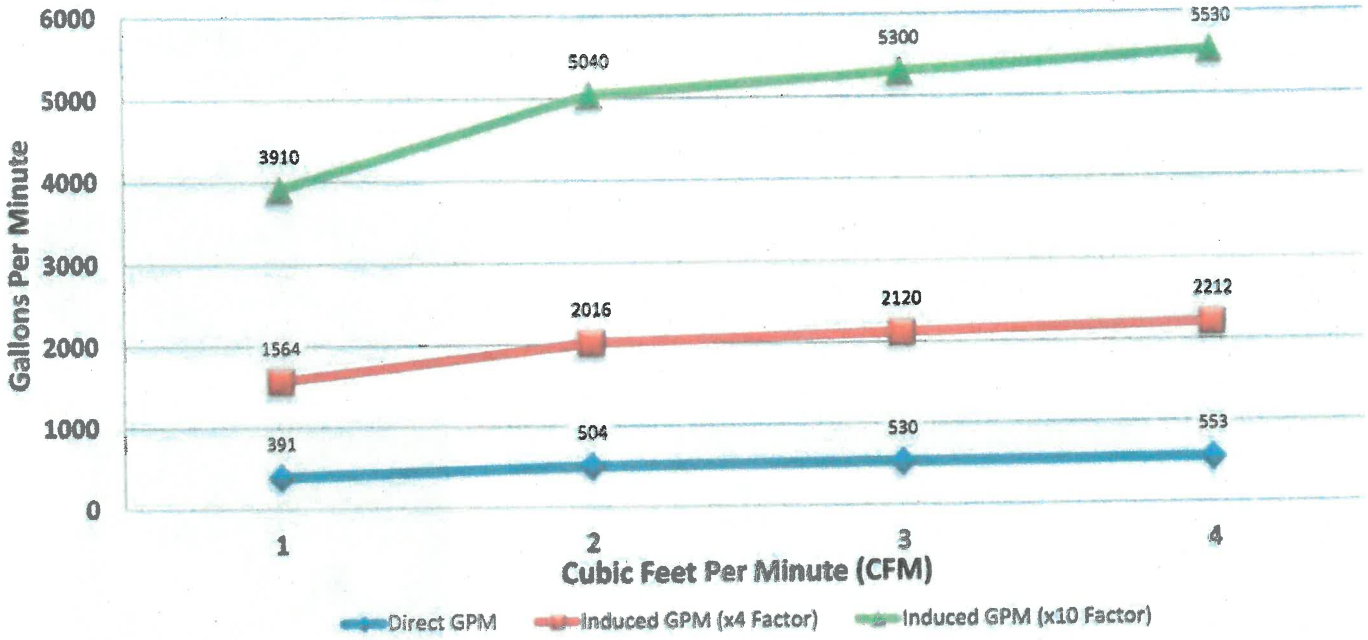
16024 COUNTY ROAD X | KIEL, WI 53042
920.693.3121 | 800.693.3144 | FAX: 920.693.3634
WWW.AQUAMASTERFOUNTAINS.COM

Aqua Master®
FOUNDTAINS AND AERATORS

AQUAAIR® ULTRA

MASTER THE **POWER** AND **BEAUTY** OF WATER

Pumpage vs Air Flow for One Single 12" Membrane Diffuser



AquaMaster recommends utilization of Red Induced GPM line (Actual/Direct gpm x factor of 4), minimum industry standard, for conservative sizing

Distributed By:

16024 COUNTY ROAD X | KIEL, WI 53042
920.693.3121 | 800.693.3144 | FAX: 920.693.3634
WWW.AQUAMASTERFOUNTAINS.COM

Aqua Master®
FOUNDATIONS AND AERATORS

AQUAAIR® ULTRA

MASTER THE POWER AND BEAUTY OF WATER

PERFORMANCE SPECIFICATIONS

System	# of Diffusers	Cabinet Size	Compressor(s)	Total Amp Draw	Total Air Flow	Air Flow per Diffuser
AquaAir® Ultra 1	1	Small	(1)⅓ HP	3 - 3.8A @ 120V* 1.1 – 1.5A @ 240V**	2.4 CFM	2.4 CFM
AquaAir® Ultra 2s	2	Small	(1)⅓ HP	3 - 3.8A @ 120V* 1.1 – 1.5A @ 240V**	2.4 CFM	1.2 CFM
AquaAir® Ultra 2	2	Small	(1)½ HP	3.5 - 5A @ 120V* 1.7 – 2.5A @ 240V**	5 CFM	2.5 CFM
AquaAir® Ultra 3	3	Small	(1)½ HP	3.5 - 5A @ 120V* 1.7 – 2.5A @ 240V**	5 CFM	1.7 CFM
AquaAir® Ultra 3 High Flow	3	Medium	(2)½ HP	7 - 10A @ 120V* 3.4 – 5A @ 240V**	10 CFM	3.3 CFM
AquaAir® Ultra 4	4	Medium	(2)½ HP	7 - 10A @ 120V* 3.4 – 5A @ 240V**	10 CFM	2.5 CFM
AquaAir® Ultra 5	5	Medium	(2)½ HP	7 - 10A @ 120V* 3.4 – 5A @ 240V**	10 CFM	2 CFM
AquaAir® Ultra 6	6	Medium	(2)½ HP	7 - 10A @ 120V* 3.4 – 5A @ 240V**	10 CFM	1.7 CFM
AquaAir® Ultra 6 High Flow	6	Large	(3)½ HP	10.5 - 15A @ 120V*** 5.1 – 7.5A @ 240V**	15 CFM	2.5 CFM
AquaAir® Ultra 7	7	Large	(3)½ HP	10.5 - 15A @ 120V*** 5.1 – 7.5A @ 240V**	15 CFM	2.1 CFM
AquaAir® Ultra 8	8	Large	(3)½ HP	10.5 - 15A @ 120V*** 5.1 – 7.5A @ 240V**	15 CFM	1.9 CFM
AquaAir® Ultra 8 High Flow	8	Large	(4)½ HP	14 - 20A @ 120V**** 6.8 – 10A @ 240V**	20 CFM	2.5 CFM
AquaAir® Ultra 9	9	Large	(3)½ HP	10.5 - 15A @ 120V*** 5.1 – 7.5A @ 240V**	15 CFM	1.7 CFM
AquaAir® Ultra 9 High Flow	9	Large	(4)½ HP	14 - 20A @ 120V**** 6.8 – 10A @ 240V**	20 CFM	2.2 CFM
AquaAir® Ultra 10	10	Large	(4)½ HP	14 - 20A @ 120V**** 6.8 – 10A @ 240V**	20 CFM	2 CFM
AquaAir® Ultra 11	11	Large	(4)½ HP	14 - 20A @ 120V**** 6.8 – 10A @ 240V**	20 CFM	1.8 CFM
AquaAir® Ultra 12	12	Large	(4)½ HP	14 - 20A @ 120V**** 6.8 – 10A @ 240V**	20 CFM	1.7 CFM
AquaAir® Ultra 3 Rotary Vane	3	Medium	(1)¾ HP	7.4 – 8.8A @ 120V* 3.7 – 4.4A @ 240V**	9.4 CFM	3.1 CFM
AquaAir® Ultra 4 Rotary Vane	4	Medium	(1)¾ HP	7.4 – 8.8A @ 120V* 3.7 – 4.4A @ 240V**	9.4 CFM	2.4 CFM
AquaAir® Ultra 5 Rotary Vane	5	Medium	(1)1 HP	9.6 – 11.3A @ 120V* 4.8 – 5.7A @ 240V**	11.8 CFM	2.4 CFM
AquaAir® Ultra 6 Rotary Vane	6	Medium	(1)1 HP	9.6 – 11.3A @ 120V* 4.8 – 5.7A @ 240V**	11.8 CFM	2 CFM

CFM = Cubic Feet per Minute (Air Flow)

*15 Amp Service, NEMA 5-15 Plug **15 Amp Service, NEMA 6-15 Plug ***20 Amp Service, NEMA 5-20 Plug ****30 Amp Service, NEMA 5-30 Plug

SYSTEM SIZING

System	Suggested Pond Size (surface acreage*)	Operating Depths
AquaAir® Ultra 1	Up to ½ Up to 1	4' – 12' 13' – 35'
AquaAir® Ultra 2s	Up to ½	4' – 12'
AquaAir® Ultra 2	Up to 1 Up to 2	4' – 12' 13' – 35'
AquaAir® Ultra 3	Up to 1½ Up to 3	4' – 12' 13' – 35'
AquaAir® Ultra 3 High Flow	Up to 2 Up to 4	4' – 12' 13' – 35'
AquaAir® Ultra 4	Up to 2 Up to 4	4' – 12' 13' – 35'
AquaAir® Ultra 5	Up to 2½ Up to 5	4' – 12' 13' – 35'
AquaAir® Ultra 6	Up to 3 Up to 6	4' – 12' 13' – 35'
AquaAir® Ultra 6 High Flow	Up to 3½ Up to 7	4' – 12' 13' – 35'
AquaAir® Ultra 7	Up to 3½ Up to 7	4' – 12' 13' – 35'
AquaAir® Ultra 8	Up to 4 Up to 8	4' – 12' 13' – 35'

System	Suggested Pond Size (surface acreage*)	Operating Depths
AquaAir® Ultra 8 High Flow	Up to 4½ Up to 9	4' – 12' 13' – 35'
AquaAir® Ultra 9	Up to 4½ Up to 9	4' – 12' 13' – 35'
AquaAir® Ultra 9 High Flow	Up to 5 Up to 10	4' – 12' 13' – 35'
AquaAir® Ultra 10	Up to 5 Up to 10	4' – 12' 13' – 35'
AquaAir® Ultra 11	Up to 5½ Up to 11	4' – 12' 13' – 35'
AquaAir® Ultra 12	Up to 6 Up to 12	4' – 12' 13' – 35'
AquaAir® Ultra 3 Rotary Vane	Up to 1½ Up to 3	4' – 12' 13' – 16'
AquaAir® Ultra 4 Rotary Vane	Up to 2 Up to 4	4' – 12' 13' – 16'
AquaAir® Ultra 5 Rotary Vane	Up to 2½ Up to 5	4' – 12' 13' – 16'
AquaAir® Ultra 6 Rotary Vane	Up to 3 Up to 6	4' – 12' 13' – 16'

*A pond's surface acreage is determined by multiplying its length in feet by its width in feet then dividing that total by 43,560

A pond's actual shape and depth should be considered when selecting a system.

16024 COUNTY ROAD X | KIEL, WI 53042
920.693.3121 | 800.693.3144 | FAX: 920.693.3634
WWW.AQUAMASTERFOUNTAINS.COM

MOLEAER

ADVANCING NANOBUBBLE TECHNOLOGY

CLEAR™ Nanobubble Generator

APPLICATIONS

- Pond/Lake Aeration
- Aquatic Management
- Odor Control
- Turf Irrigation
- Iron & Manganese Control
- Chlorophyll a Reduction
- Improve Water Clarity

Moleaer's patented Clear™ is an all-natural, chemical-free solution for improving water quality and clarity in lakes and ponds. The Clear nanobubble generator is a hyper-efficient gas-injection technology that converts air into nanobubbles. Moleaer's technology produces trillions of negatively charged, neutrally buoyant nanobubbles that remain suspended in a water body to provide a reserve of oxygen throughout the water column. As aquatic life consumes oxygen from the water, the reserve of nanobubbles transfers oxygen throughout the water body to maintain DO levels. Maintaining dissolved oxygen (DO) levels at the muck layer reduces nutrient cycling from the sediment. The nanobubbles also produce a mild and effective oxidant to improve clarity and overall water quality.

The Clear is available in 50 and 150 gpm flow rates and includes a pump and air compressor or the option to transfer twice as much oxygen to the water body using an oxygen enrichment package. The Clear nanobubble generator was specifically designed for aquatic management and is easy to install, operate, and maintain.

FEATURES & BENEFITS

- 90% standard oxygen transfer efficiency
- <65 dB
- Improved water quality and clarity
- 100 nm-sized bubbles
- >1 billion nanobubbles / mL
- Oxygenates entire water column
- Easy to install
- Compact & lightweight
- Reduced nutrient recycling rate
- Enriched oxygen option available

www.moleaer.com

MOLEAER

ADVANCING NANOBUBBLE TECHNOLOGY

MODELS	Clear 50	Clear 50 (230V)	Clear 150	Clear 150 Enriched
LIQUID FLOW CAPACITY				
Flow Rate, GPM (m³/hr)	50 (11)	50 (11)	150 (34)	150 (34)
Indicated Gas Flow Range Maximum, CFH (m³/hr)		20 (0.6)		
Indicated Gas Flow Range Recommended, CFH (m³/hr)	5 (0.1)	5 (0.1)	15 (0.4)	15 (0.4)
OPERATING PARAMETERS				
Temperature Tolerance, PVC, °F (°C)		41 - 140 (5 - 60)		
Standard Oxygen Transfer Efficiency		> 90%		
Solids, inches (mm)		Up to 3/8 (10)		
GAS FEED				
Feed Gas Pressure Range Minimum, PSIG (bar)		60 (4.1)		
Feed Gas Pressure Range Maximum, PSIG (bar)		100 (6.9)		
PUMP				
Pump Model		Pentair Sparus 160		
Wetted Parts Materials		Polypropylene/316 SS/Buna		
Voltage	115	230	230	230
Phase		1		
Hz		60		
HP	3/4	3/4	3	3
COMPRESSOR				
Compressor Model		Gast 86R Single Cylinder		
Voltage	115	230	230	230
RPM	1725	1735	1725	1725
HZ		50/60		
Total Draw, Amperage (including Pump/Comp)	12	6.8	15	18.2
Total Draw, Horsepower (kW)	0.875 (0.652)		3.125 (2.32)	3.37 (2.51)
CONTROLS				
Pressure Gauges (bar)		Wika 2.5" (60/160) (4-11)		
Rotameter, CFH (KNOBLESS)	0 - 20	0 - 20	0 - 20	0 - 20
MOTOR STARTER SWITCH				
Model		Enclosed Motor Starter with OL reset button		
Resistance Rating		9-45A rating with 24 VDC input		
		Watertight / NEMA 4 X		
UNIT CONNECTIONS - FEMALE SOCKET CONNECT				
Inlet, inches	2 (50)	2 (50)	3 (75)	3 (75)
Discharge, inches	2 (50)	2 (50)	3 (75)	3 (75)
DIMENSIONS & WEIGHT				
Height, Inches (cm)		26 (66)		
Width, inches (cm)		34 (86)		
Length, inches (cm)		38 (96.5)		
Weight, lb (kg)	164 (74)		198 (90)	202 (92)

General Note

3" inlet and outlet Customer piping is recommended for the Clear 150 and Clear 150 Enriched

Nitrogen Separator Details (Enriched Option Only)

Nitrogen Separator Model Prism PA3010

Max Pressure PSIG(BAR) 385 (26.5)

Max Temp °F (°C) 150 (65.6)

EPA Establishment Number 94231-CA-1

www.moleaer.com

Rev 042220

New York State Department of Environmental Conservation
Division of Materials Management / Region 3 / Bureau of Pesticides Management
21 South Putt Corners Rd., New Paltz, NY 12561
(845) 256-3097

TITLE 6 NEW YORK CODE OF RULES AND REGULATIONS PART 327 PERMIT TO USE A PESTICIDE FOR THE CONTROL OR ELIMINATION OF AQUATIC VEGETATION

PERMIT NUMBER: AV-3-20-332

PERMITTEE: TOWN OF CORTLANDT
ADDRESS OF PERMITTEE: 1 HEADY STREET , CORTLANDT MANOR, NY 10567

WATERBODY: LAKE MEAHAGH
TARGET SPECIES: EURASIAN WATERMILFOIL

TOWN: CORTLANDT COUNTY: WESTCHESTER NYCDEP: N

Pursuant to the Rules and Regulations governing the use of pesticides for controlling or eliminating aquatic vegetation adopted by the New York State Department of Environmental Conservation, permission is granted to the permittee or his/her agent(s) pursuant to the provisions of Article 15 of the Environmental Conservation Law to apply the listed pesticide(s) to the waters identified above located in the town and county identified above in conformance with all statements and agreements set forth in the application.

I. THIS AQUATIC PESTICIDE PERMIT IS ISSUED SUBJECT TO THE FOLLOWING CONDITIONS:

1. DATE(S) OF TREATMENT: May through September, 2020
2. AUTHORIZED CHEMICAL (Product & EPA Reg. No.): PROCELLACOR EC SLN NY-190001 (EPA # 67690-80)
3. % OR WEIGHT OF ACTIVE INGREDIENT: 2.7
4. MAXIMUM AMOUNT OF CHEMICAL AUTHORIZED: 16.4 GALLONS
5. MAXIMUM NUMBER OF ACRES TO BE TREATED: 79.38
6. NOT TO EXCEED PERMISSIBLE DOSAGE: 1.93 PPB
7. METHOD OF APPLICATION: SPRAY ON SURFACE
8. AREAS TO BE TREATED WILL BE ONLY THOSE DESIGNATED ON MAPS PROVIDED AS PART OF THE APPLICATION.
9. NAME OF REGISTERED BUSINESS/AGENCY: STAHL HOLDINGS LLC (POND AND LAKE CONNECTION)
10. BUSINESS/AGENCY REGISTRATION NO.: 15201
11. NAME OF CERTIFIED APPLICATOR: JAMES GORMAN
12. CERTIFIED APPLICATOR ID NO.: C3830488

II. **USE OF THE TREATED WATERS AND THOSE WATERS AFFECTED BY THE TREATMENT WILL BE PROHIBITED OR RESTRICTED AS FOLLOWS:**

1. Applicant and Applicator must ensure that all applicable water use restrictions as stated on the EPA and/or SLN label, in 6 NYCRR 327.6, and the NYS Department of Health Water Quality Standards (specified or unspecified MCL's) be adhered to.

2. Do not swim or bathe until day after treatment.

3. In order to protect the foraging areas for shortnose sturgeon, little to no water will be allowed to leave lake outlet for 2 days following a treatment.

III. **SAMPLING REQUIREMENTS:** Sampling must occur as described in current application submitted by applicant/applicator. Samples must be below the most restrictive water use concentration and must be immediately reported upon receipt to NYSDEC, Region 3, Bureau of Pesticides Management in order to remove the water use restrictions and take down notification signs.

IV. **NOTIFICATION AND POSTING REQUIREMENTS:**

1. **Riparian Owner and User Notification:** Prior notice of the actual date(s) of treatment and water use restrictions must be given to any party likely to be adversely affected.

2. **Posting of Warning Signs Prior to Treatment:** All public access sites, including public boat launch sites, within and adjoining the treatment area shall be posted with warnings at a distance of no more than 100 feet per sign; shall be posted at a minimum height of thirty inches (30") above the ground to the top of the sign; and shall be $\geq$ 6" x 8" in size with a minimum of 2 signs per site. These signs shall be approved by the Department and must be posted as described herein. The signs must list all water use restrictions and be posted prior to treatment and remain posted for the duration of water use restrictions following the treatment.

3. **This sign shall also include:** "WARNING" This waterbody has been treated with a pesticide (Name of pesticide shall be included here) for aquatic weed control. Do not bathe or swim in treated water until day after treatment. Do not enter treatment area during pesticide application.

   DATE AND TIME OF TREATMENT: _____

   For more information contact: _____ Phone: _____

4. **Agency Notifications:** The following must be notified in writing seven to fourteen (7-14) days before the time of the pesticide treatment, and within twenty-four (24) hours after treatment:

   -NYS DEC Bureau of Pesticides Management, 21 South Putt Corners Rd., New Paltz, NY 12561.

   -Department of Health in county of treatment.

   -D.E.P. if waterbody is within NYC Watershed.

   ***The notification must include:** the waterbody name, the product name, and the current permit number.

   a) Representatives of the NYSDEC (Pesticide Control Specialist) maintain the right to be present before, during, and after all pesticide treatments.

   b) In the event of a postponement, then a new 7 – 14 (seven to fourteen) day written notice is required.

If the postponement is weather related, this requirement may be waived. Notification will be required of rescheduled date and must indicate what the specific reason was in each instance that forced the postponement.

c) Any waiver must be explicitly granted by the Department in writing and may not be implied by the absence of the communication with Department's representative. Any waiver granted by the Department will only be effective for the specific application and treatment date/time for which it was granted.

d) If no treatment is made, and the permit is not used, the following must be notified in writing: Catherine Ahlers, Pesticide Control Specialist 2, NYS DEC, 21 South Putt Corners Rd., New Paltz, NY 12561.

V. REPORTING

1. **Final Report Required:** The permittee shall submit a Final Report to the Department no later than December 1, 2020. The Final Report shall contain the following information for each application site: product name; active ingredient; EPA registration number; the total quantity of each pesticide used; number of acres or acre feet treated; targeted concentration; dosage rate; target organism; and date of application(s). The Final Report shall be submitted to Catherine Ahlers, Pesticide Control Specialist 2, NYS DEC, 21 South Putt Corners Rd., New Paltz, NY 12561.

This permit requirement does not preclude the statutory obligation of the permittee, or other pesticide applicator registered agency or registered business to comply with Annual Reporting requirements expressed at Section 33-1205 of the ECL.

VI. ADDITIONAL CONDITIONS OR RESTRICTIONS:

1. **No Right to Treat Lands and Waters under Department Control** This permit grants no right to treatment of lands under control of the Department nor relieves the permittee of the responsibility to obtain permission from the Department for any treatment of waters lying under their control, unless a specific signed authorization appears on this permit.

2. **No Right to Treat Non-Target Areas** Issuance of the permit does not authorize the treatment or the drift of pesticides to non-target water or water lying on or passing through the property of others without their consent, nor relieve the permittee/applicator of any legal necessity to obtain such consent before treatment, nor relieve them of responsibility for damages to riparian owners or others.

3. **Follow Product Label Directions** The applicator must follow all product label directions. A copy of the product labeling, including any applicable Special Local Need (SLN) or supplemental labeling, must be on site during all treatments. The applicator, and all others handling the product, must wear appropriate personal protective clothing as required by label directions.

4. **Possession of a Valid Commercial Pesticide Applicator Certification** The applicator must possess valid Commercial Pesticide Applicator Certification in Category 5A with the permit issuing agency. The certified applicator must be on site during all treatments. The use of individuals now referred to as "Pesticide Technician" and/or "Pesticide Apprentice" in current regulation, is permitted as described in Title 6 NYCRR Part 325.7. In addition, the applicator must possess valid registration as a Pesticide Application Business with the Bureau of Pesticides Management.

5. **State Not Liable for Damage** The State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the State for the conservation or improvement of navigation, or for other

purposes, and no claim or right to compensation shall accrue from any such damage.

6. **Precautions Against Contamination of Waters** All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project. Spill recovery materials shall be maintained at the temporary pesticide storage area.

7. **No Interference with Navigation** There shall be no unreasonable interference with navigation by the work herein authorized.

VII. GENERAL CONDITIONS – APPLY TO ALL AUTHORIZED PERMITS:

1. **Facility Inspection by the Department** The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

   The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

   A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

2. **Relationship of this Permit to Other Department Orders and Determinations** Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. **Applications for Permit Modifications** The permittee must submit a separate written application to the Department for permit modification. Such application must include any forms or supplemental information the Department requires.

4. **Permit Modifications, Suspensions and Revocation by the Department** The Department reserves the right to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

   a) materially false or inaccurate statements in the permit application or supporting papers;

   b) failure by the permittee to comply with any terms or conditions of the permit;

   c) exceeding the scope of the project as described in the permit application;

   d) newly discovered material information or a material change in environmental conditions relevant technology or applicable law or regulations since the issuance of the existing permit; and

   e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

VIII. NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

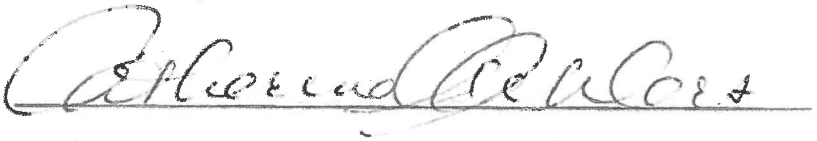
Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification
The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suites, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit
The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits
The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights
This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

By acceptance of this permit, the permittees (Applicant and Applicator) agrees that failure to comply with the permit terms and all New York State Department of Environmental Laws, Rules and Regulations subjects the permittee to prosecution under these laws and will be deemed sufficient reason for denial of future permit applications.

Issuing Officer's Signature: 

Issue Date: 5/4/20

Expiration Date: 3/15/2021

Catherine Ahlers, PCS 2
Bureau of Pesticides Management
NYSDEC, Region 3

New York State Department of Environmental Conservation
Division of Materials Management / Region 3 / Bureau of Pesticides Management
21 South Putt Corners Rd., New Paltz, NY 12561
(845) 256-3097

TITLE 6 NEW YORK CODE OF RULES AND REGULATIONS PART 327
PERMIT TO USE A PESTICIDE FOR THE CONTROL OR ELIMINATION OF AQUATIC VEGETATION

PERMIT NUMBER: AV-3-20-328

PERMITTEE: TOWN OF CORTLANDT
ADDRESS OF PERMITTEE: 1 HEADY STREET, CORTLANDT MANOR, NY 10567

WATERBODY: LAKE MEAHAGH
TARGET SPECIES: EURASIAN WATERMILFOIL, CURLY LEAF PONDWEED

TOWN: CORTLANDT COUNTY: WESTCHESTER NYCDEP: N

Pursuant to the Rules and Regulations governing the use of pesticides for controlling or eliminating aquatic vegetation adopted by the New York State Department of Environmental Conservation, permission is granted to the permittee or his/her agent(s) pursuant to the provisions of Article 15 of the Environmental Conservation Law to apply the listed pesticide(s) to the waters identified above located in the town and county identified above in conformance with all statements and agreements set forth in the application.

I. **THIS AQUATIC PESTICIDE PERMIT IS ISSUED SUBJECT TO THE FOLLOWING CONDITIONS:**

1. DATE(S) OF TREATMENT: May through September, 2020
2. AUTHORIZED CHEMICAL (Product & EPA Reg. No.): NAUTIQUE AQUATIC HERBICIDE 67690-10
3. % OR WEIGHT OF ACTIVE INGREDIENT: 13.2; 14.9
4. MAXIMUM AMOUNT OF CHEMICAL AUTHORIZED: 793.2 GALLONS
5. MAXIMUM NUMBER OF ACRES TO BE TREATED: 79.08
6. NOT TO EXCEED PERMISSIBLE DOSAGE: 0.4 PPM
7. METHOD OF APPLICATION: SPRAY TO SURFACE
8. AREAS TO BE TREATED WILL BE ONLY THOSE DESIGNATED ON MAPS PROVIDED AS PART OF THE APPLICATION.
9. NAME OF REGISTERED BUSINESS/AGENCY: STAHL HOLDINGS LLC (POND AND LAKE CONNECTION)
10. BUSINESS/AGENCY REGISTRATION NO.: 15201
11. NAME OF CERTIFIED APPLICATOR: JAMES GORMAN
12. CERTIFIED APPLICATOR ID NO.: C3830488

II. USE OF THE TREATED WATERS AND THOSE WATERS AFFECTED BY THE TREATMENT WILL BE PROHIBITED OR RESTRICTED AS FOLLOWS:

1. Applicant and Applicator must ensure that all applicable water use restrictions as stated on the EPA and/or SLN label, in 6 NYCRR 327.6, and the NYS Department of Health Water Quality Standards (specified or unspecified MCL's) be adhered to.

2. Do not swim or bathe until day after treatment.

3. In order to protect the foraging areas for shortnose sturgeon, little to no water will be allowed to leave lake outlet for 2 days following a treatment.

III. NOTIFICATION AND POSTING REQUIREMENTS:

1. **Riparian Owner and User Notification:** Prior notice of the actual date(s) of treatment and water use restrictions must be given to any party likely to be adversely affected.

2. **Posting of Warning Signs Prior to Treatment:** All public access sites, including public boat launch sites, within and adjoining the treatment area shall be posted with warnings at a distance of no more than 100 feet per sign; shall be posted at a minimum height of thirty inches (30") above the ground to the top of the sign; and shall be $\geq$ 6" x 8" in size with a minimum of 2 signs per site. These signs shall be approved by the Department and must be posted as described herein. The signs must list all water use restrictions and be posted prior to treatment and remain posted for the duration of water use restrictions following the treatment.

3. **This sign shall also include:** "WARNING" This waterbody has been treated with a pesticide (Name of pesticide shall be included here) for aquatic weed control. Do not bathe or swim in treated water until day after treatment. Do not enter treatment area during pesticide application.

   DATE AND TIME OF TREATMENT: _____

   For more information contact: _____ Phone: _____

4. **Agency Notifications:** The following must be notified in writing seven to fourteen (7-14) days before the time of the pesticide treatment, and within twenty-four (24) hours after treatment:

   -NYS DEC Bureau of Pesticides Management, 21 South Putt Corners Rd., New Paltz, NY 12561.

   -Department of Health in county of treatment.

   -D.E.P. if waterbody is within NYC Watershed.

   ***The notification must include:** the waterbody name, the product name, and the current permit number.

   a) Representatives of the NYSDEC (Pesticide Control Specialist) maintain the right to be present before, during, and after all pesticide treatments.

   b) In the event of a postponement, then a new 7 – 14 (seven to fourteen) day written notice is required. If the postponement is weather related, this requirement may be waived. Notification will be required of rescheduled date and must indicate what the specific reason was in each instance that forced the postponement.

   c) Any waiver must be explicitly granted by the Department in writing and may not be implied by the absence of the communication with Department's representative. Any waiver granted by the Department will only be effective for the specific application and treatment date/time for which it

was granted.

d) If no treatment is made, and the permit is not used, the following must be notified in writing: Catherine Ahlers, Pesticide Control Specialist 2, NYS DEC, 21 South Putt Corners Rd., New Paltz, NY 12561.

IV. REPORTING

1. **Final Report Required:** The permittee shall submit a Final Report to the Department no later than December 1, 2020. The Final Report shall contain the following information for each application site: product name; active ingredient; EPA registration number; the total quantity of each pesticide used; number of acres or acre feet treated; targeted concentration; dosage rate; target organism; and date of application(s). The Final Report shall be submitted to Catherine Ahlers, Pesticide Control Specialist 2, NYS DEC, 21 South Putt Corners Rd., New Paltz, NY 12561.

This permit requirement does not preclude the statutory obligation of the permittee, or other pesticide applicator registered agency or registered business to comply with Annual Reporting requirements expressed at Section 33-1205 of the ECL.

V. ADDITIONAL CONDITIONS OR RESTRICTIONS:

1. **No Right to Treat Lands and Waters under Department Control** This permit grants no right to treatment of lands under control of the Department nor relieves the permittee of the responsibility to obtain permission from the Department for any treatment of waters lying under their control, unless a specific signed authorization appears on this permit.

2. **No Right to Treat Non-Target Areas** Issuance of the permit does not authorize the treatment or the drift of pesticides to non-target water or water lying on or passing through the property of others without their consent, nor relieve the permittee/applicator of any legal necessity to obtain such consent before treatment, nor relieve them of responsibility for damages to riparian owners or others.

3. **Follow Product Label Directions** The applicator must follow all product label directions. A copy of the product labeling, including any applicable Special Local Need (SLN) or supplemental labeling, must be on site during all treatments. The applicator, and all others handling the product, must wear appropriate personal protective clothing as required by label directions.

4. **Possession of a Valid Commercial Pesticide Applicator Certification** The applicator must possess valid Commercial Pesticide Applicator Certification in Category 5A with the permit issuing agency. The certified applicator must be on site during all treatments. The use of individuals now referred to as "Pesticide Technician" and/or "Pesticide Apprentice" in current regulation, is permitted as described in Title 6 NYCRR Part 325.7. In addition, the applicator must possess valid registration as a Pesticide Application Business with the Bureau of Pesticides Management.

5. **State Not Liable for Damage** The State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the State for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.

6. **Precautions Against Contamination of Waters** All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project. Spill recovery materials shall be maintained at the temporary pesticide storage area.

7. **No Interference with Navigation** There shall be no unreasonable interference with navigation by the work herein authorized.

VI. GENERAL CONDITIONS – APPLY TO ALL AUTHORIZED PERMITS:

1. **Facility Inspection by the Department** The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

   The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

   A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

2. **Relationship of this Permit to Other Department Orders and Determinations** Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. **Applications for Permit Modifications** The permittee must submit a separate written application to the Department for permit modification. Such application must include any forms or supplemental information the Department requires.

4. **Permit Modifications, Suspensions and Revocation by the Department** The Department reserves the right to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

   a) materially false or inaccurate statements in the permit application or supporting papers;

   b) failure by the permittee to comply with any terms or conditions of the permit;

   c) exceeding the scope of the project as described in the permit application;

   d) newly discovered material information or a material change in environmental conditions relevant technology or applicable law or regulations since the issuance of the existing permit: and

   e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

VII. NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

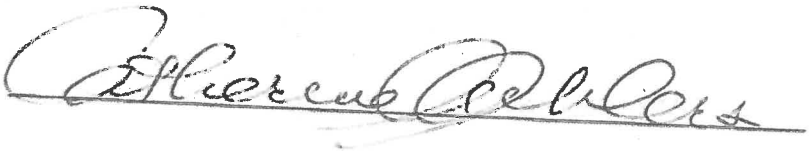
Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification
The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suites, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit
The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits
The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights
This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

By acceptance of this permit, the permittees (Applicant and Applicator) agrees that failure to comply with the permit terms and all New York State Department of Environmental Laws, Rules and Regulations subjects the permittee to prosecution under these laws and will be deemed sufficient reason for denial of future permit applications.

Issuing Officer's Signature: 

Issue Date: 5/4/20

Expiration Date: 3/15/2021

Catherine Ahlers, PCS 2
Bureau of Pesticides Management
NYSDEC. Region 3

New York State Department of Environmental Conservation
Division of Materials Management / Region 3 / Bureau of Pesticides Management
21 South Putt Corners Rd., New Paltz, NY 12561
(845) 256-3097

TITLE 6 NEW YORK CODE OF RULES AND REGULATIONS PART 327 PERMIT TO USE A PESTICIDE FOR THE CONTROL OR ELIMINATION OF AQUATIC VEGETATION

PERMIT NUMBER: AV-3-20-313

PERMITTEE: TOWN OF CORTLANDT
ADDRESS OF PERMITTEE: 1 HEADY STREET, CORTLANDT MANOR, NY 10567

WATERBODY: LAKE MEAHAGH
TARGET SPECIES: PLANKTONIC AND/OR FILAMENTOUS ALGAE

TOWN: CORTLANDT COUNTY: WESTCHESTER NYCDEP: N

Pursuant to the Rules and Regulations governing the use of pesticides for controlling or eliminating aquatic vegetation adopted by the New York State Department of Environmental Conservation, permission is granted to the permittee or his/her agent(s) pursuant to the provisions of Article 15 of the Environmental Conservation Law to apply the listed pesticide(s) to the waters identified above located in the town and county identified above in conformance with all statements and agreements set forth in the application.

I. THIS AQUATIC PESTICIDE PERMIT IS ISSUED SUBJECT TO THE FOLLOWING CONDITIONS:

1. DATE(S) OF TREATMENT: May through September, 2020
2. AUTHORIZED CHEMICAL (Product & EPA Reg. No.): CUTRINE-ULTRA #8959-53
3. % OR WEIGHT OF ACTIVE INGREDIENT: 27.8
4. MAXIMUM AMOUNT OF CHEMICAL AUTHORIZED: 397.2 GALLONS
5. MAXIMUM NUMBER OF ACRES TO BE TREATED: 79.38
6. NOT TO EXCEED PERMISSIBLE DOSAGE: 0.2 PPM
7. METHOD OF APPLICATION: SPRAY ON SURFACE
8. AREAS TO BE TREATED WILL BE ONLY THOSE DESIGNATED ON MAPS PROVIDED AS PART OF THE APPLICATION.
9. NAME OF REGISTERED BUSINESS/AGENCY: STAHL HOLDINGS LLC (POND AND LAKE CONNECTION)
10. BUSINESS/AGENCY REGISTRATION NO.: 15201
11. NAME OF CERTIFIED APPLICATOR: JAMES GORMAN
12. CERTIFIED APPLICATOR ID NO.: C3830488

II. USE OF THE TREATED WATERS AND THOSE WATERS AFFECTED BY THE TREATMENT WILL BE PROHIBITED OR RESTRICTED AS FOLLOWS:

1. Applicant and Applicator must ensure that all applicable water use restrictions as stated on the EPA and/or SLN label, in 6 NYCRR 327.6, and the NYS Department of Health Water Quality Standards (specified or unspecified MCL's) be adhered to.

2. Do not swim or bathe until day after treatment.

III. NOTIFICATION AND POSTING REQUIREMENTS:

1. **Riparian Owner and User Notification:** Prior notice of the actual date(s) of treatment and water use restrictions must be given to any party likely to be adversely affected.

2. **Posting of Warning Signs Prior to Treatment:** All public access sites, including public boat launch sites, within and adjoining the treatment area shall be posted with warnings at a distance of no more than 100 feet per sign; shall be posted at a minimum height of thirty inches (30") above the ground to the top of the sign; and shall be $\geq$ 6" x 8" in size with a minimum of 2 signs per site. These signs shall be approved by the Department and must be posted as described herein. The signs must list all water use restrictions and be posted prior to treatment and remain posted for the duration of water use restrictions following the treatment.

3. **This sign shall also include:** "WARNING" This waterbody has been treated with a pesticide (Name of pesticide shall be included here) for aquatic weed control. Do not bathe or swim in treated water until day after treatment. Do not enter treatment area during pesticide application.

   DATE AND TIME OF TREATMENT: _____

   For more information contact: _____ Phone: _____

4. **Agency Notifications:** The following must be notified in writing seven to fourteen (7-14) days before the time of the pesticide treatment, and within twenty-four (24) hours after treatment:

   -NYS DEC Bureau of Pesticides Management, 21 South Putt Corners Rd., New Paltz, NY 12561.

   -Department of Health in county of treatment.

   -D.E.P. if waterbody is within NYC Watershed.

   ***The notification must include:** the waterbody name, the product name, and the current permit number.

   a) Representatives of the NYSDEC (Pesticide Control Specialist) maintain the right to be present before, during, and after all pesticide treatments.

   b) In the event of a postponement, then a new 7 – 14 (seven to fourteen) day written notice is required. If the postponement is weather related, this requirement may be waived. Notification will be required of rescheduled date and must indicate what the specific reason was in each instance that forced the postponement.

   c) Any waiver must be explicitly granted by the Department in writing and may not be implied by the absence of the communication with Department's representative. Any waiver granted by the Department will only be effective for the specific application and treatment date/time for which it was granted.

d) If no treatment is made, and the permit is not used, the following must be notified in writing: Catherine Ahlers, Pesticide Control Specialist 2, NYS DEC, 21 South Putt Corners Rd., New Paltz, NY 12561.

IV. REPORTING

1. **Final Report Required:** The permittee shall submit a Final Report to the Department no later than December 1, 2020. The Final Report shall contain the following information for each application site: product name; active ingredient; EPA registration number; the total quantity of each pesticide used; number of acres or acre feet treated; targeted concentration; dosage rate; target organism; and date of application(s). The Final Report shall be submitted to Catherine Ahlers, Pesticide Control Specialist 2, NYS DEC, 21 South Putt Corners Rd., New Paltz, NY 12561.

This permit requirement does not preclude the statutory obligation of the permittee, or other pesticide applicator registered agency or registered business to comply with Annual Reporting requirements expressed at Section 33-1205 of the ECL.

V. ADDITIONAL CONDITIONS OR RESTRICTIONS:

1. **No Right to Treat Lands and Waters under Department Control** This permit grants no right to treatment of lands under control of the Department nor relieves the permittee of the responsibility to obtain permission from the Department for any treatment of waters lying under their control, unless a specific signed authorization appears on this permit.

2. **No Right to Treat Non-Target Areas** Issuance of the permit does not authorize the treatment or the drift of pesticides to non-target water or water lying on or passing through the property of others without their consent, nor relieve the permittee/applicator of any legal necessity to obtain such consent before treatment, nor relieve them of responsibility for damages to riparian owners or others.

3. **Follow Product Label Directions** The applicator must follow all product label directions. A copy of the product labeling, including any applicable Special Local Need (SLN) or supplemental labeling, must be on site during all treatments. The applicator, and all others handling the product, must wear appropriate personal protective clothing as required by label directions.

4. **Possession of a Valid Commercial Pesticide Applicator Certification** The applicator must possess valid Commercial Pesticide Applicator Certification in Category 5A with the permit issuing agency. The certified applicator must be on site during all treatments. The use of individuals now referred to as "Pesticide Technician" and/or "Pesticide Apprentice" in current regulation, is permitted as described in Title 6 NYCRR Part 325.7. In addition, the applicator must possess valid registration as a Pesticide Application Business with the Bureau of Pesticides Management.

5. **State Not Liable for Damage** The State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the State for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.

6. **Precautions Against Contamination of Waters** All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project. Spill recovery materials shall be maintained at the temporary pesticide storage area.

7. **No Interference with Navigation** There shall be no unreasonable interference with navigation by the work herein authorized.

VI. GENERAL CONDITIONS – APPLY TO ALL AUTHORIZED PERMITS:

1. **Facility Inspection by the Department** The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

   The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

   A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

2. **Relationship of this Permit to Other Department Orders and Determinations** Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. **Applications for Permit Modifications** The permittee must submit a separate written application to the Department for permit modification. Such application must include any forms or supplemental information the Department requires.

4. **Permit Modifications, Suspensions and Revocation by the Department** The Department reserves the right to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

   a) materially false or inaccurate statements in the permit application or supporting papers;

   b) failure by the permittee to comply with any terms or conditions of the permit;

   c) exceeding the scope of the project as described in the permit application;

   d) newly discovered material information or a material change in environmental conditions relevant technology or applicable law or regulations since the issuance of the existing permit; and

   e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

VII. NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

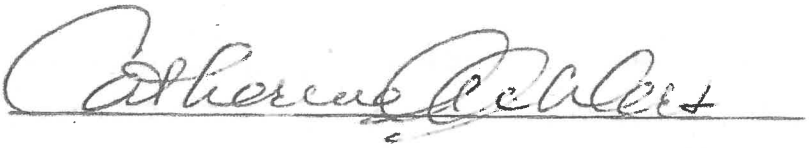
Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification
The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suites, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit
The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits
The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights
This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

By acceptance of this permit, the permittees (Applicant and Applicator) agrees that failure to comply with the permit terms and all New York State Department of Environmental Laws, Rules and Regulations subjects the permittee to prosecution under these laws and will be deemed sufficient reason for denial of future permit applications.

Issuing Officer's Signature: 

Issue Date: 5/1/20

Expiration Date: 3/15/2021

Catherine Ahlers, PCS 2
Bureau of Pesticides Management
NYSDEC, Region 3

Northeast Aquatic Research

Alejandro Reyes, CLM and Project Lead
www.northeastaquaticresearch.net
November 12th, 2020

To: Pond and Lake Connection
Attn: James Gorman
RE: Pre-Post Herbicide Treatment Evaluation

Please see the following information from the pre- and post-ProcellaCOR treatment surveys conducted on May 14th, 2020, and July 20th, 2020.

Survey Methodology

On May 14th (Pre-treatment) and July 20th (Post-treatment), Lake Meahagh was surveyed for invasive and native plants to assess the impacts of the ProcellaCOR treatment. During the two surveys, NEAR staff sampled 82 and 85 sites, respectively, throughout the entire lake. At each waypoint, two double-sided rakes were tossed off opposite sides of the canoe, allowed to settle to the bottom, and slowly dragged back to the boat to allow for maximum capture of aquatic plants. All plant species were identified on the rake and given an individual density rating based on the following scale:

Rake Rating	Description
Zero (0)	Nothing on rake
Trace (1)	1-2 tines covered
Sparse (2)	Most tines covered, but still open space
Medium (3)	All tines covered; parts of rake still visible
Dense (4)	All tines covered; rake not visible

During the May visit, extra waypoints were made in-between the pre-established sites to gain a greater understanding of Eurasian watermilfoil (*Myriophyllum spicatum*) and Curly-leaf pondweed (*Potamogeton crispus*). For comparison between the May and July surveys, only the pre-established points will be examined. Individual rake toss ratings were averaged to get a mean density rating per site.

Results

The ProcellaCOR treatment effectively reduced the Eurasian watermilfoil from occurring at 83% of the waypoints in May to only occurring at 2% of the waypoints in July. The 2 plants found in July were only a few inches long and did not look healthy. With the milfoil gone, there was an

increase in the benthic cyanobacteria *Lyngbya wolleii* lakewide. It is not uncommon after large-scale herbicide treatments for this cyanobacteria species to increase in frequency of occurrence.

Table 1. Results from pre-post survey. Only locations where two rake tosses were taken were included in this table.

Species	Number of plant observations		Frequency of Occurrence		Average Density Rating	
	5/14/2020	7/20/2020	5/14/2020	7/20/2020	5/14/2020	7/20/2020
Ceratophyllum demersum	0	8	0%	10%	0.0	0.7
Chara sp.	1	0	1%	0%	0.5	0.0
Filamentous algae	1	2	1%	2%	1.0	0.5
Fontinalis sp.	1	0	1%	0%	1.0	0.0
Lyngbya wolleii	1	26	1%	31%	4.0	0.9
Myriophyllum spicatum	70	2	83%	2%	2.7	1.0
Najas minor	0	3	0%	4%	0.0	1.2
No Plants	2	35	2%	42%	NA	NA
Pontedaria cordata	0	1	0%	1%	0.0	4.0
Potamogeton crispus	3	2	4%	2%	1.5	0.8
Potamogeton pusillus	0	3	0%	4%	0.0	0.8
Potamogeton sp.	3	3	4%	4%	1.3	0.0

Figure 1. Distribution and mean rake toss rating of Eurasian watermilfoil pre- and post-treatment.

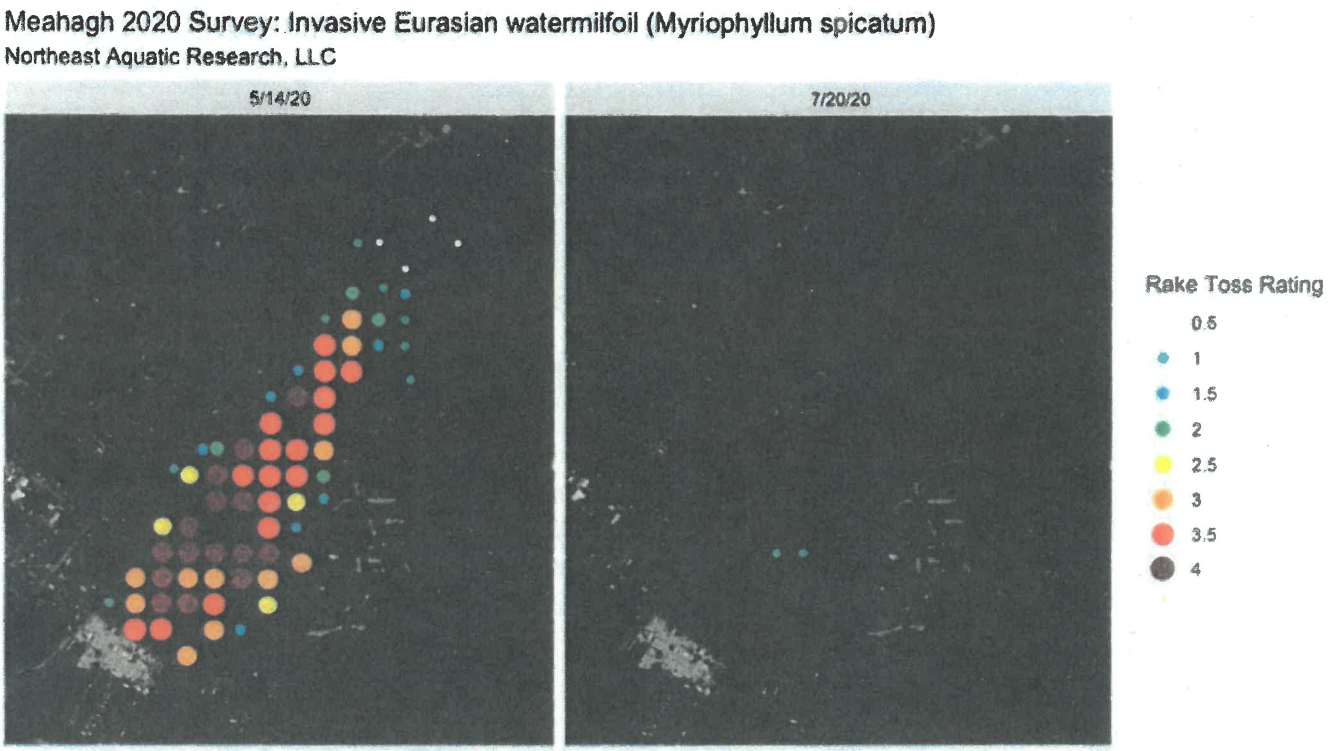


Figure 2. Dense Eurasian watermilfoil growth on May 14th, 2020

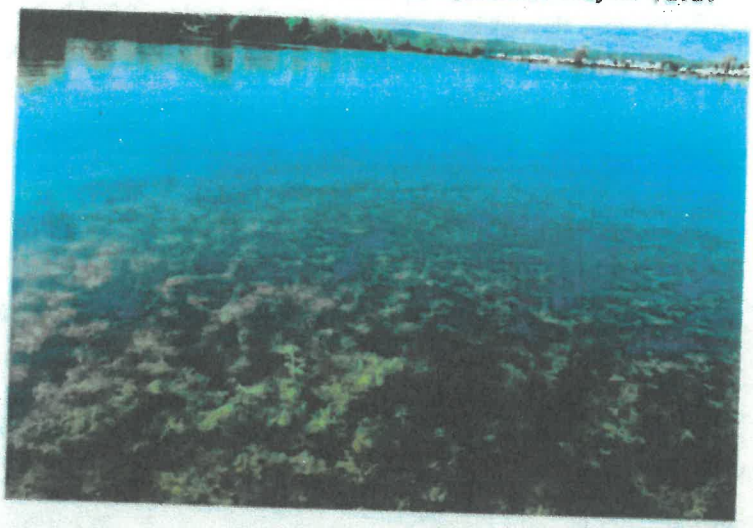
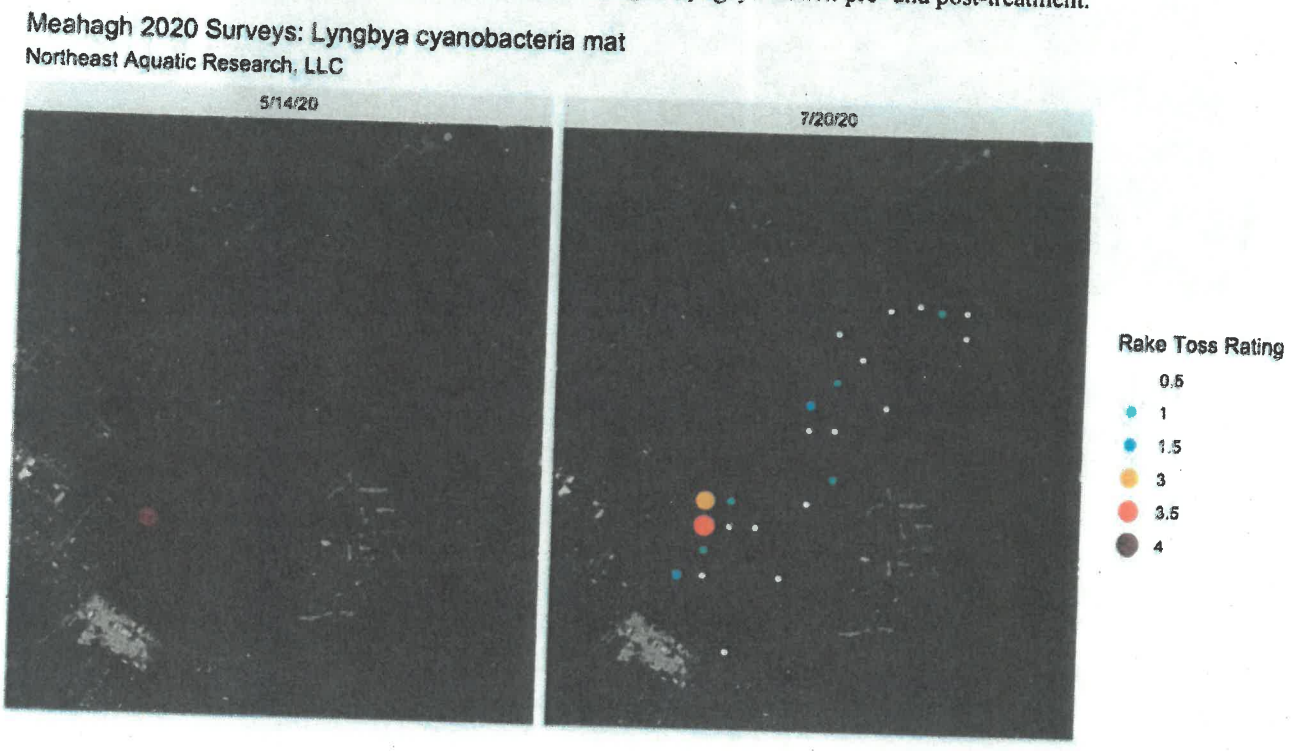


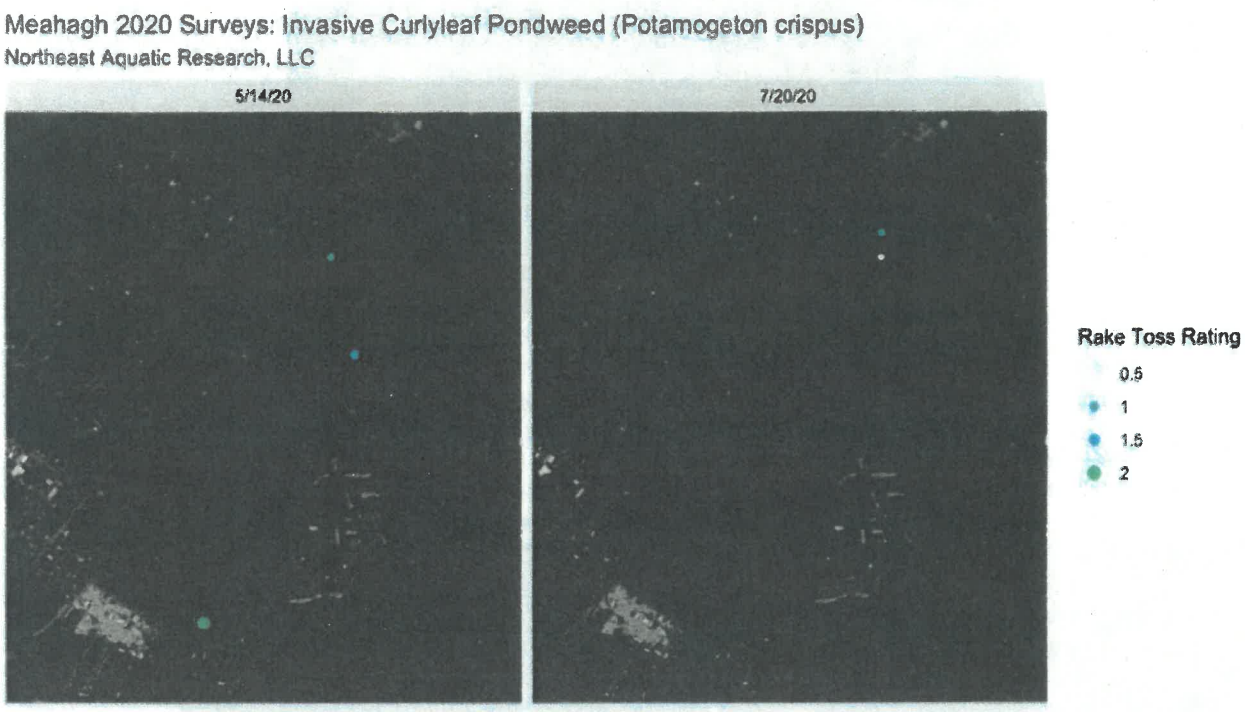
Figure 3. Distribution and mean rake toss rating of *Lyngbya wolleii* pre- and post-treatment.



Two other invasive species (*Potamogeton crispus* and *Najas minor*) were found during the two surveys. During the May survey, *Potamogeton crispus* was observed at locations in between the pre-established waypoints (see map in appendix for all Potamogeton crispus locations). This species typically grows early in the season and usually dies back by the middle of July, which explains why the species was found at fewer locations in July. Additionally, ProcellaCOR is not

labeled for *Potamogeton crispus* control, indicating that the observed decline was not related to the treatment. Both invasive species should be monitored in the future for potential expansion. *Najas minor* is typically grows later in the season, so a July survey would not likely capture the maximum distribution and density of this species.

Figure 4. Distribution and mean rake toss rating of *Potamogeton crispus* pre and post-treatment.



Close attention should be paid to the aquatic plant community in subsequent years. shallow lakes have a high propensity for rapid and significant aquatic plant growth. Future annual aquatic plant surveys can identify potential Milfoil regrowth or other plant species that may become dominant in the future.

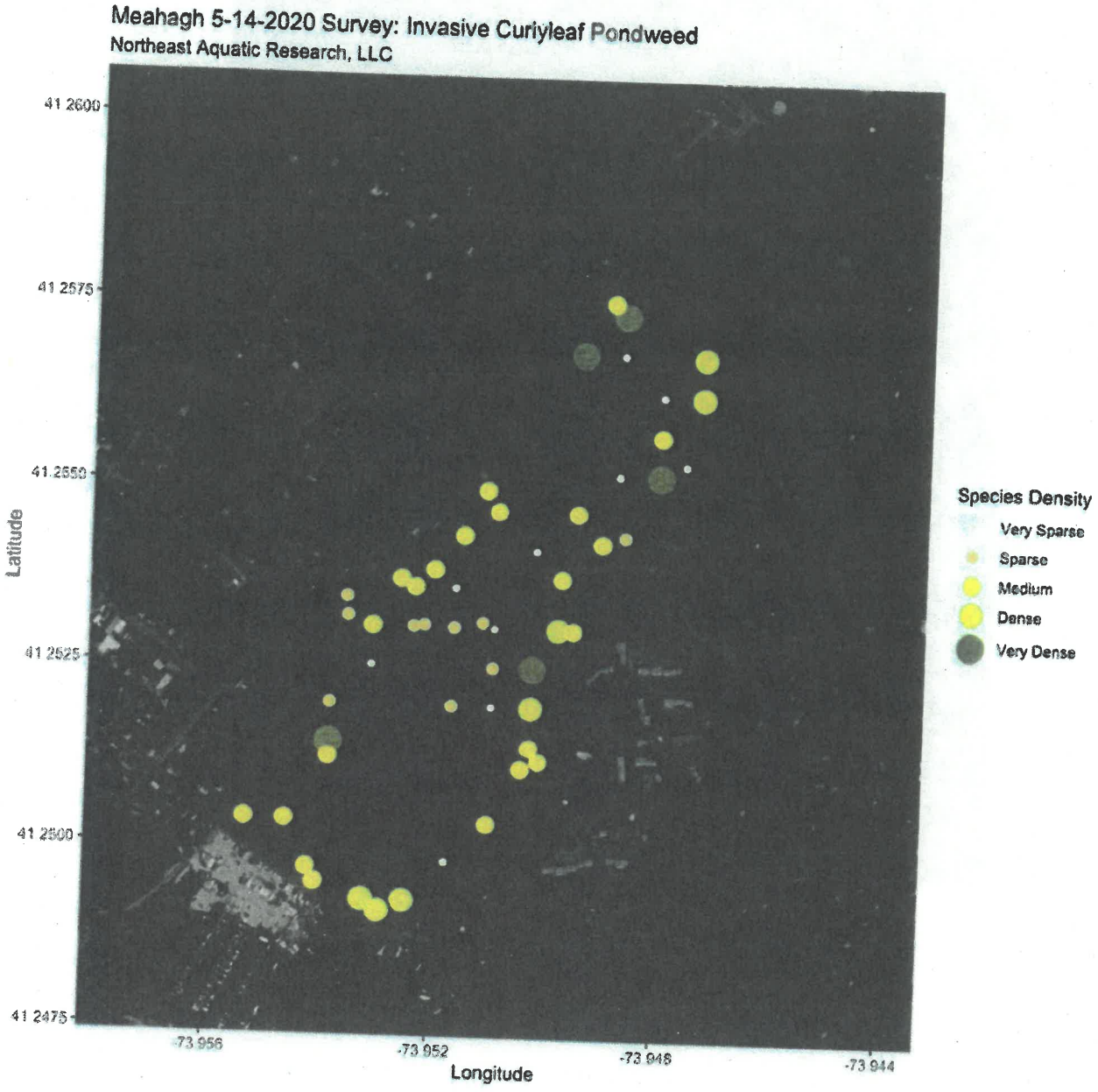
Thank you

Alejandro Reyes, CLM

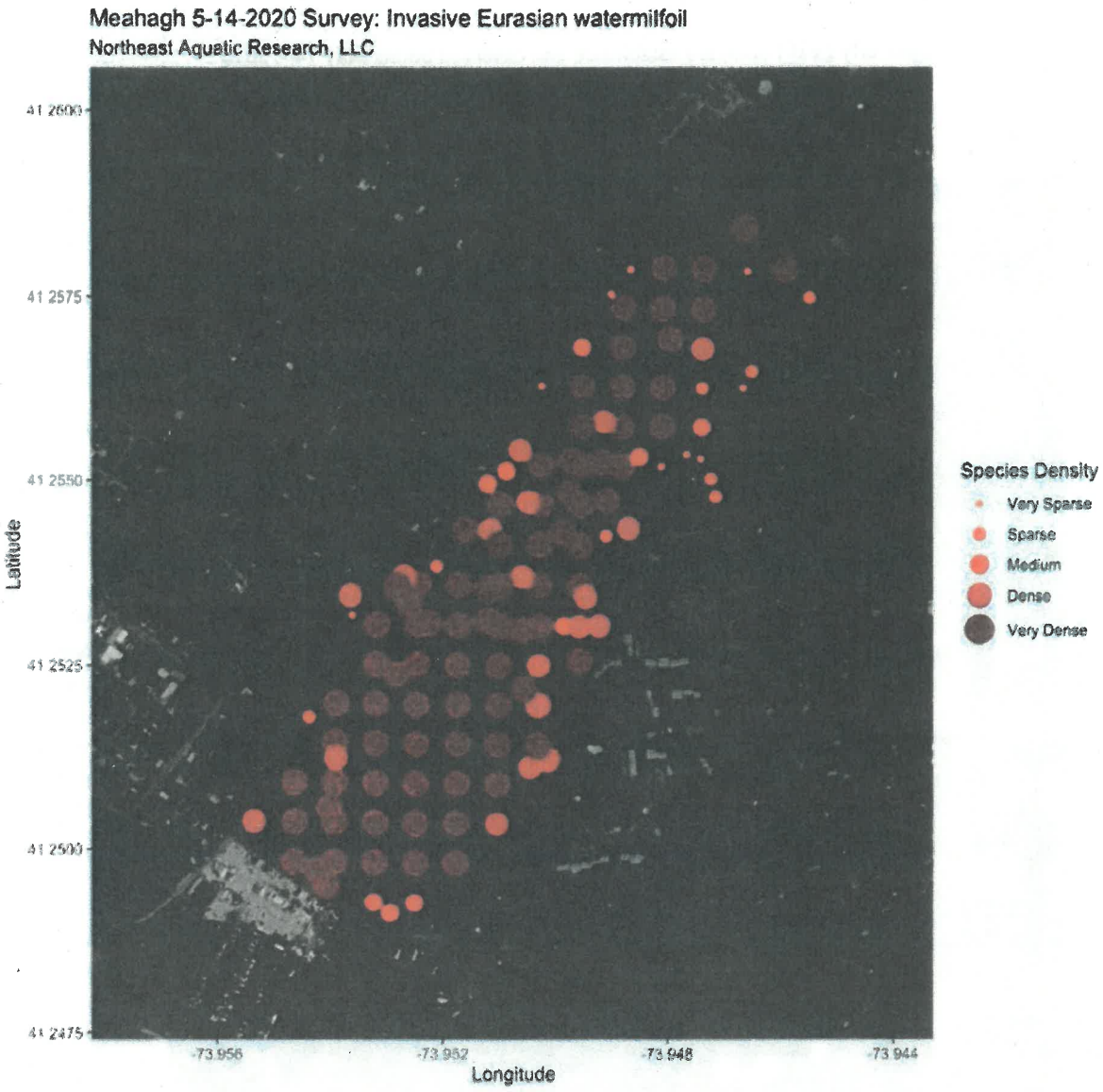
Northeast Aquatic Research

Appendix: Additional distribution maps

Meahagh Curly Leaf Pondweed established and observed points May 14th, 2020



Meahagh Eurasian Watermilfoil established and observed points May 14th, 2020



SePRO Research & Technology Campus SeSCRIPT

16013 Watson Seed Farm Road, Whitakers, NC 27891

Chain of Custody: COC8042 LABORATORY REPORT

Customer Company **Customer Contact**

Company Name: The Pond and Lake Connection	Contact Person: Lisa Mariakakis
Address: 1112 Federal Rd. Brookfield, CT 06804	E-mail Address: lisa@thepondandlake.com
	Phone: 203-885-0184

Waterbody Information

Waterbody:	Lake Meahagh - NY
Waterbody size:	97
Depth Average:	

Sample ID	Sample Location	Test	Method	Results	Sampling Date / Time
CTM23489-1	North	Turbidity (NTU)	EPA 180.1	10.9	08/10/2020
		Conductivity (uS/cm)	EPA 120.1	835.0	
		Free Reactive Phosphorus (ug/L)	EPA 365.3	<5	
		Dissolved Oxygen (mg/L)	EPA 360.1	8.3	
		Chlorophyll a (ug/L)	EPA 445	64.3	
		Total Phosphorus (ug/L)	EPA 365.3	36.3	
		Alkalinity (mg/L as CaCO3)	EPA 310.2	50.2	
		Total Hardness (mg/L as CaCO3)	EPA 130.2	24.1	
		Total Nitrate (mg/L) and Nitrite (mg/L)	Campbell et al 2004	<0.02	
		Nitrite (mg/L)	Campbell et al 2004	<0.02	
		Nitrate (mg/L)	calculated	<0.02	
		Total Kjeldahl Nitrogen (mg/L)	EPA 351.2	2.9	
		Total Nitrogen (mg/L)	calculated	2.9	
		pH	EPA 150.1	8.3	
CTM23490-1	South	Turbidity (NTU)	EPA 180.1	8.6	08/10/2020
		Conductivity (uS/cm)	EPA 120.1	776.0	
		Free Reactive Phosphorus (ug/L)	EPA 365.3	15	
		Dissolved Oxygen (mg/L)	EPA 360.1	8.3	
		Chlorophyll a (ug/L)	EPA 445	38.4	
		Total Phosphorus (ug/L)	EPA 365.3	41.1	
		Alkalinity (mg/L as CaCO3)	EPA 310.2	60.8	
		Total Hardness (mg/L as CaCO3)	EPA 130.2	28.1	
		Total Nitrate (mg/L) and Nitrite (mg/L)	Campbell et al 2004	<0.02	
		Nitrite (mg/L)	Campbell et al 2004	<0.02	
		Nitrate (mg/L)	calculated	<0.02	
		Total Kjeldahl Nitrogen (mg/L)	EPA 351.2	2	
		Total Nitrogen (mg/L)	calculated	2	

pH	EPA 150.1	7.9	

ANALYSIS STATEMENTS:
SAMPLE RECEIPT /HOLDING TIMES: All samples arrived in an acceptable condition and were analyzed within prescribed holding times in accordance with the SRTC Laboratory Sample Receipt Policy unless otherwise noted in the report.
PRESERVATION: Samples requiring preservation were verified prior to sample analysis and any qualifiers will be noted
in the report.
QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.
COMMENTS: No significant observations were made unless noted in the report.
MEASUREMENT UNCERTAINTY: Uncertainty of measurement has been determined and is available upon request.

Laboratory Information
Date / Time Received: 08/11/20 11:00 AM
Date Results Sent: Friday, August 14, 2020

This entire report was reviewed and approved for release.

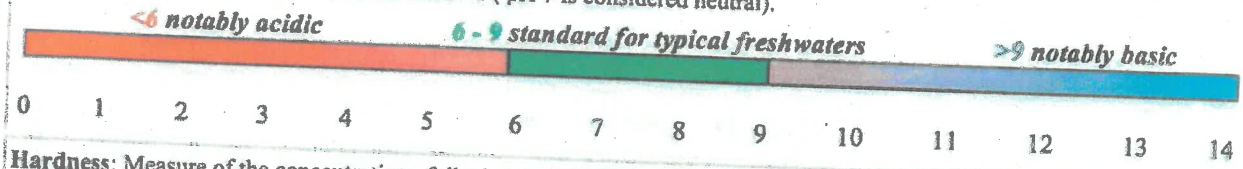
Reviewed By: Laboratory Supervisor

SRTC SePRO Research & Technology Campus

Water Quality Analysis Explanation

These water quality parameters are essential to document the condition of a water body and design custom treatment prescriptions to achieve desired management objective

pH: Measure of how acidic or basic the water is (pH 7 is considered neutral).



Hardness: Measure of the concentration of divalent cations, primarily consisting of calcium and magnesium in typical freshwaters. *0-60 mg/L as CaCO3 soft; 61-120 moderately hard; 121-180 hard; > 181 very hard*

Alkalinity- Measure of the buffering capacity of water, primarily consisting of carbonate, bicarbonate and hydroxide in typical freshwaters. Waters with lower levels are more susceptible to pH shifts.
<= 50 mg/L as CaCO3 low buffered; 51-100 moderately buffered; 101-200 buffered; > 200 high buffered

Conductivity- Measure of the waters ability to transfer an electrical current, increases with more dissolved ions.
< 50 uS/cm relatively low concentration may not provide sufficient dissolved ions for ecosystem health; 50-1500 typical freshwaters; > 1500 may be stressful to some freshwater organisms, though not uncommon in many areas

Dissolved Oxygen- amount of diatomic oxygen dissolved in the water.
< 2 mg/L likely toxicity with sufficient exposure duration; < 5 stressful to many aquatic organisms; >= 5 able to support most fish and invertebrates

Phosphorus: Essential nutrient often correlating to growth of algae in freshwaters.

Total Phosphorus (TP) is the measure of all phosphorus in a sample as measured by persulfate strong digestion and includes: inorganic, oxidizable organic and polyphosphates. This includes what is readily available, potential to become available and stable forms. *<12 µg/L oligotrophic; 12-24 µg/L mesotrophic; 25-96 µg/L eutrophic; > 96 µg/L hypereutrophic*

Free Reactive Phosphorus (FRP) is the measure of inorganic dissolved reactive phosphorus (PO4-3, HPO4-2, etc). This
form is readily available in the water column for algae growth.

Nitrogen: Essential nutrient that can enhance growth of algae.

Total N is all nitrogen in the sample (organic N+ and Ammonia) determined by the sum of the measurements for Total Kjeldahl Nitrogen (TKN) and ionic forms.
Nitrites and Nitrates are the sum of total oxidized nitrogen, often readily free for algae uptake.
< 1 mg/L typical freshwater; 1-10 potentially harmful; >10 possible toxicity, above many regulated guidelines

Chlorophyll a: primary light-harvesting pigment found in algae and a measure of the algal productivity and water quality in a system.
0-2.6µg/L oligotrophic; 2.7-20 µg/L mesotrophic; 21-56 µg/L eutrophic; > 56 µg/L hypereutrophic

Turbidity- Measurement of water clarity. Suspended particulates (algae, clay, silt, dead organic matter) are the common constituents impacting turbidity.
< 10 NTU drinking water standards and typical trout waters; 10-50 NTU moderate; > 50 NTU potential impact to aquatic life.

SRTC SePRO Research & Technology Campus

SeSCRIPT Analysis Report: *Lake Meahagh*

Company: The Pond and Lake Connection

Address: 1112 Federal Rd, Brookfield, CT 06804

Contact Person: Lisa Mariakakis

Phone: 203-885-0184

Email: lisa@thepondandlake.com

Project Name: Lake Meahagh

Surface Area: 79 acres

Average depth: 4 feet

Date Sample Received: 08/11/2020

SeSCRIPT Analysis Performed: Algae & Water Quality Baseline Plus

Algae ID Results
Lake Meahagh

Identification	Classification	Description	Density/Biomass (cells/mL)
Meahagh North			
Planktolyngbya sp.	Cyanophyta-Blue-green algae	Filamentous, planktonic, potential toxin producer	4,260,000 ★★★
Cylindrospermopsis sp.	Cyanophyta-Blue-green algae	Filamentous, planktonic, potential toxin and taste/odor producer	420,000
Microcystis sp.	Cyanophyta-Blue-green algae	Colonial, scum-former, planktonic, potential toxin and taste/odor producer	120,000

Other algae in the sample at densities below 100 cells/mL, include: *Aulacoseira, Cyclotella, Melosira* (Bacillariophyta); *Actinastrum, Coelastrum, Dictyosphaerium, Didymocystis, Oocystis, Pediastrum, Scenedesmus* (Chlorophyta); *Cryptomonas* (Cryptophyta); *Anabaenopsis, Aphanizomenon, Aphanocapsa, Gomphosphaeria, Merismopedia, Raphidiopsis* (Cyanophyta); *Gymnodinium* (Dinophyta); *Euglena, Phacotus, Trachelomonas* (Euglenophyta)

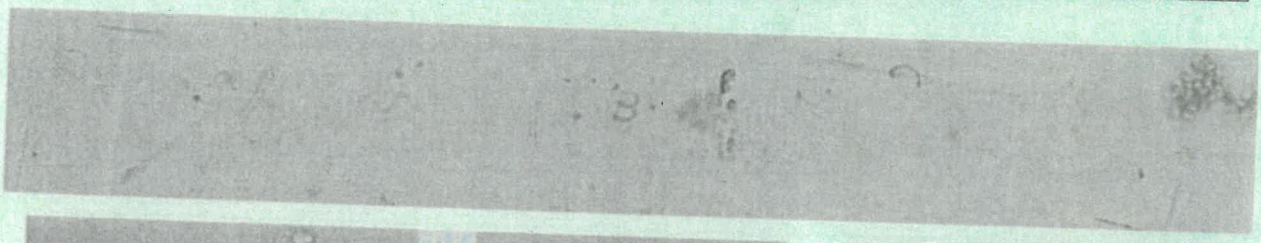
SeSCRIPT* ALERT INDEX	EXPOSURE RISK	CYANOBACTERIA LEVELS (cells/mL)
★	Low	<20,000
★★	Moderate	20,000 to 100,000
★★★	High	>100,000
★★★★	Extreme	>100,000 with scums/mats

See the following Cyanobacteria Alert Guide for additional information

Algae ID Results
Lake Meahagh

Identification	Classification	Description	Density/Biomass (cells/mL)
Meahagh South			
Planktolyngbya sp.	Cyanophyta-Blue-green algae	Filamentous, planktonic, potential toxin producer	3,488,000 ★★★
Cylindrospermopsis sp.	Cyanophyta-Blue-green algae	Filamentous, planktonic, potential toxin and taste/odor producer	672,000
Microcystis sp.	Cyanophyta-Blue-green algae	Colonial, scum-former, planktonic, potential toxin and taste/odor producer	30,800

Other algae in the sample at densities below 100 cells/mL, include: *Aulacoseira, Cyclotella, Eunotia, Melosira* (Bacillariophyta); *Didymocystis, Pediastrum, Scenedesmus, Selenastrum, Tetrastrum* (Chlorophyta); *Cryptomonas* (Cryptophyta); *Anabaenopsis, Aphanocapsa, Gomphosphaeria, Merismopedia, Planktothrix, Raphidiopsis* (Cyanophyta); *Euglena, Phacotus, Trachelomonas* (Euglenophyta)



Water Quality Results
Lake Meahagh

Analysis	Measurements	Description
Meahagh North		
pH (SU)	8.3	Near neutral
Dissolved Oxygen (mg/L)	8.3	Acceptable for freshwaters
Conductivity (µS/cm)	835.0	Acceptable for freshwaters
Alkalinity (mg/L as $CaCO_3$)	50.2	Moderately buffered
Hardness (mg/L as $CaCO_3$)	24.1	Soft
Turbidity (NTU)	10.9	Moderate

Nutrient Results
Lake Meahagh

Analysis	Measurements	Description
Meahagh North		
Total Phosphorus (µg/L)	36.3	High amount: Eutrophic
Free Reactive Phosphorus (µg/L)	< 5	Low
Total Kjeldahl Nitrogen (mg/L)	2.9	High
Nitrates & Nitrites (mg/L)	< 0.02	Low
Total Nitrogen (mg/L)	2.9	Moderate
Chlorophyll a (µg/L)	64.3	High

Water Quality Results
Lake Meahagh

Analysis	Measurements	Description
Meahagh South		
pH (SU)	7.9	Near neutral
Dissolved Oxygen (mg/L)	8.3	Acceptable for freshwaters
Conductivity (µS/cm)	776.0	Acceptable for freshwaters
Alkalinity (mg/L as $CaCO_3$)	60.8	Moderately buffered
Hardness (mg/L as $CaCO_3$)	28.1	Soft
Turbidity (NTU)	8.6	Low

Nutrient Results
Lake Meahagh

Analysis	Measurements	Description
Meahagh South		
Total Phosphorus (µg/L)	41.1	High amount: Eutrophic
Free Reactive Phosphorus (µg/L)	15	Moderate
Total Kjeldahl Nitrogen (mg/L)	2	Moderate
Nitrates & Nitrites (mg/L)	< 0.02	Low
Total Nitrogen (mg/L)	2	Moderate
Chlorophyll a (µg/L)	38.4	High

SeSCRIPT Discussion

The algae and water sample collected from **Lake Meahagh** was received on **08/11/2020**. Based on results from the water quality and algae analyses, proposed treatment recommendations for algae and nutrient management at **Lake Meahagh** were determined (see below).

Follow all product label instructions. Check with local and state agencies for product restrictions and permit regulations prior to use.

SeSCRIPT Treatment Guidance **Lake Meahagh**

ALGAE MANAGEMENT

In order to control the targeted algae at this site, apply:

Captain XTR algaecide at 0.3-0.6 gallons/AF (0.1-0.2 mg Cu/L).

Contact your SePRO Aquatic Specialist for further guidance on final application rate selection, technique and frequency based on project objectives, site conditions, algae location and density at treatment time.

PHOSPHORUS MANAGEMENT

Analysis of the water quality parameters in this pond revealed this system is **eutrophic**. Based on these site-specific water parameters, consider implementing one of the following Phoslock phosphorus removal solutions to restore water quality in your water body.

Recovery Solution: Improve water quality by incorporating strategic applications of Phoslock to remove free reactive phosphorus from the water column. Integrate with SePRO algaecide applications as needed to control algae and achieve desired water quality objectives.

Reset Solution: A more comprehensive solution to water quality restoration. Reset the ecological clock and restore water quality in your pond by implementing a Reset application strategy customized by water body. This Phoslock solution targets and permanently removes free reactive phosphorus in the water column and accumulated in water body sediments over time. A sediment sample is ideal for this prescription.

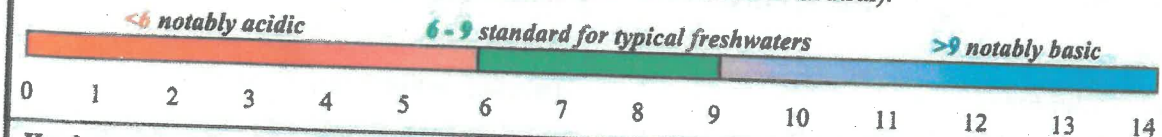
Contact your SePRO Aquatic Specialist for additional guidance on development of a custom Phoslock prescription based on site conditions and water quality management objectives.

Jon Gosselin, SePRO Technical Specialist
Phone: 603-494-5966 Email: jong@sepro.com

Water Quality Analysis Explanation

These water quality parameters are essential to document the condition of a water body and design custom treatment prescriptions to achieve desired management objectives.

pH: Measure of how acidic or basic the water is (pH 7 is considered neutral).



Hardness: Measure of the concentration of divalent cations, primarily consisting of calcium and magnesium in typical freshwaters. *0-60 mg/L as $CaCO_3$ soft; 61-120 moderately hard; 121-180 hard; > 181 very hard*

Alkalinity- Measure of the buffering capacity of water, primarily consisting of carbonate, bicarbonate and hydroxide in typical freshwaters. Waters with lower levels are more susceptible to pH shifts.
≤ 50 mg/L as $CaCO_3$ low buffered; 51-100 moderately buffered; 101-200 buffered; > 200 high buffered

Conductivity- Measure of the waters ability to transfer an electrical current, increases with more dissolved ions.
< 50 uS/cm relatively low concentration may not provide sufficient dissolved ions for ecosystem health; 50-1500 typical freshwaters; > 1500 may be stressful to some freshwater organisms, though not uncommon in many areas

Dissolved Oxygen- amount of diatomic oxygen dissolved in the water.
< 2 mg/L likely toxicity with sufficient exposure duration; < 5 stressful to many aquatic organisms; ≥ 5 able to support most fish and invertebrates

Phosphorus: Essential nutrient often correlating to growth of algae in freshwaters.

Total Phosphorus (TP) is the measure of all phosphorus in a sample as measured by persulfate strong digestion and includes: inorganic, oxidizable organic and polyphosphates. This includes what is readily available, potential to become available and stable forms.
<12 µg/L oligotrophic; 12-24 µg/L mesotrophic; 25-96 µg/L eutrophic; > 96 µg/L hypereutrophic

Free Reactive Phosphorus (FRP) is the measure of inorganic dissolved reactive phosphorus (PO_4^{-3}, HPO_4^{-2}, etc.). This form is readily available in the water column for algae growth.

Nitrogen: Essential nutrient that can enhance growth of algae.

Total N is all nitrogen in the sample (organic N^+ and Ammonia) determined by the sum of the measurements for Total Kjeldahl Nitrogen (TKN) and ionic forms.

Nitrites and Nitrates are the sum of total oxidized nitrogen, often readily free for algae uptake.
< 1 mg/L typical freshwater; 1-10 potentially harmful; >10 possible toxicity, above many regulated guidelines

Chlorophyll *a*: primary light-harvesting pigment found in algae and a measure of the algal productivity and water quality in a system.
0-2.6µg/L oligotrophic; 2.7-20 µg/L mesotrophic; 21-56 µg/L eutrophic; > 56 µg/L hypereutrophic

Turbidity- Measurement of water clarity. Suspended particulates (algae, clay, silt, dead organic matter) are the common constituents impacting turbidity.
< 10 NTU drinking water standards and typical trout waters; 10-50 NTU moderate; > 50 NTU potential impact to aquatic life.

SeSCRIPT Analysis Report: *Lake Meahagh*

Company: The Pond and Lake Connection
Address: 1112 Federal Rd, Brookfield, CT 06804
Contact Person: Lisa Mariakakis
Phone: 203-885-0184
Email: lisa@thepondandlake.com

Project Name: Lake Meahagh
Surface Area: 79 acres
Average depth: 4 feet
Date Sample Received: 08/11/2020
SeSCRIPT Analysis Performed: Algae & Water Quality Baseline Plus

Algae ID Results
Lake Meahagh

Identification	Classification	Description	Density/Biomass (cells/mL)
Meahagh North			
Planktolyngbya sp.	Cyanophyta-Blue-green algae	Filamentous, planktonic, potential toxin producer	4,260,000 ★★★
Cylindrospermopsis sp.	Cyanophyta-Blue-green algae	Filamentous, planktonic, potential toxin and taste/odor producer	420,000
Microcystis sp.	Cyanophyta-Blue-green algae	Colonial, scum-former, planktonic, potential toxin and taste/odor producer	120,000

Other algae in the sample at densities below 100 cells/mL, include: *Aulacoseira, Cyclotella, Melosira* (Bacillariophyta); *Actinastrum, Coelastrum, Dictyosphaerium, Didymocystis, Oocystis, Pediastrum, Scenedesmus* (Chlorophyta); *Cryptomonas* (Cryptophyta); *Anabaenopsis, Aphanizomenon, Aphanocapsa, Gomphosphaeria, Merismopedia, Raphidiopsis* (Cyanophyta); *Gymnodinium* (Dinophyta); *Euglena, Phacotus, Trachelomonas* (Euglenophyta)

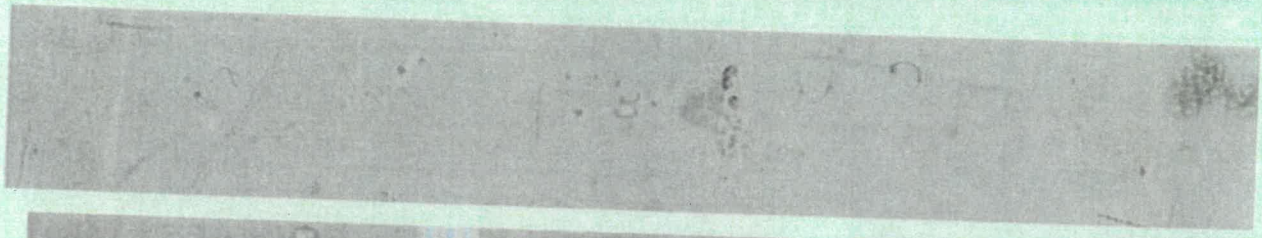
SeSCRIPT* ALERT INDEX	EXPOSURE RISK	CYANOBACTERIA LEVELS (cells/mL)
★	Low	<20,000
★★	Moderate	20,000 to 100,000
★★★	High	>100,000
★★★★	Extreme	>100,000 with scums/mats

See the following Cyanobacteria Alert Guide for additional information

Algae ID Results
Lake Meahagh

Identification	Classification	Description	Density/Biomass (cells/mL)
Meahagh South			
Planktolyngbya sp.	Cyanophyta-Blue-green algae	Filamentous, planktonic, potential toxin producer	3,488,000 ★★★
Cylindrospermopsis sp.	Cyanophyta-Blue-green algae	Filamentous, planktonic, potential toxin and taste/odor producer	672,000
Microcystis sp.	Cyanophyta-Blue-green algae	Colonial, scum-former, planktonic, potential toxin and taste/odor producer	30,800

Other algae in the sample at densities below 100 cells/mL, include: *Aulacoseira, Cyclotella, Eunotia, Melosira* (Bacillariophyta); *Didymocystis, Pediastrum, Scenedesmus, Selenastrum, Tetrastrum* (Chlorophyta); *Cryptomonas* (Cryptophyta); *Anabaenopsis, Aphanocapsa, Gomphosphaeria, Merismopedia, Planktothrix, Raphidiopsis* (Cyanophyta); *Euglena, Phacotus, Trachelomonas* (Euglenophyta)



Water Quality Results
Lake Meahagh

Analysis	Measurements	Description
Meahagh North		
pH (SU)	8.3	Near neutral
Dissolved Oxygen (mg/L)	8.3	Acceptable for freshwaters
Conductivity (µS/cm)	835.0	Acceptable for freshwaters
Alkalinity (mg/L as $CaCO_3$)	50.2	Moderately buffered
Hardness (mg/L as $CaCO_3$)	24.1	Soft
Turbidity (NTU)	10.9	Moderate

Nutrient Results
Lake Meahagh

Analysis	Measurements	Description
Meahagh North		
Total Phosphorus (µg/L)	36.3	High amount: Eutrophic
Free Reactive Phosphorus (µg/L)	< 5	Low
Total Kjeldahl Nitrogen (mg/L)	2.9	High
Nitrates & Nitrites (mg/L)	< 0.02	Low
Total Nitrogen (mg/L)	2.9	Moderate
Chlorophyll a (µg/L)	64.3	High

Water Quality Results
Lake Meahagh

Analysis	Measurements	Description
Meahagh South		
pH (SU)	7.9	Near neutral
Dissolved Oxygen (mg/L)	8.3	Acceptable for freshwaters
Conductivity (µS/cm)	776.0	Acceptable for freshwaters
Alkalinity (mg/L as $CaCO_3$)	60.8	Moderately buffered
Hardness (mg/L as $CaCO_3$)	28.1	Soft
Turbidity (NTU)	8.6	Low

Nutrient Results
Lake Meahagh

Analysis	Measurements	Description
Meahagh South		
Total Phosphorus (µg/L)	41.1	High amount: Eutrophic
Free Reactive Phosphorus (µg/L)	15	Moderate
Total Kjeldahl Nitrogen (mg/L)	2	Moderate
Nitrates & Nitrites (mg/L)	< 0.02	Low
Total Nitrogen (mg/L)	2	Moderate
Chlorophyll a (µg/L)	38.4	High

SeSCRIPT Discussion

The algae and water sample collected from **Lake Meahagh** was received on **08/11/2020**. Based on results from the water quality and algae analyses, proposed treatment recommendations for algae and nutrient management at **Lake Meahagh** were determined (see below).

Follow all product label instructions. Check with local and state agencies for product restrictions and permit regulations prior to use.

SeSCRIPT Treatment Guidance **Lake Meahagh**

ALGAE MANAGEMENT

In order to control the targeted algae at this site, apply:

Captain XTR algaecide at 0.3-0.6 gallons/AF (0.1-0.2 mg Cu/L).

Contact your SePRO Aquatic Specialist for further guidance on final application rate selection, technique and frequency based on project objectives, site conditions, algae location and density at treatment time.

PHOSPHORUS MANAGEMENT

Analysis of the water quality parameters in this pond revealed this system is **eutrophic**. Based on these site-specific water parameters, consider implementing one of the following Phoslock phosphorus removal solutions to restore water quality in your water body.

Recovery Solution: Improve water quality by incorporating strategic applications of Phoslock to remove free reactive phosphorus from the water column. Integrate with SePRO algaecide applications as needed to control algae and achieve desired water quality objectives.

Reset Solution: A more comprehensive solution to water quality restoration. Reset the ecological clock and restore water quality in your pond by implementing a Reset application strategy customized by water body. This Phoslock solution targets and permanently removes free reactive phosphorus in the water column and accumulated in water body sediments over time. A sediment sample is ideal for this prescription.

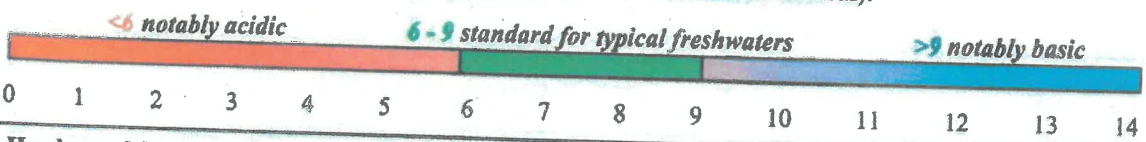
Contact your SePRO Aquatic Specialist for additional guidance on development of a custom Phoslock prescription based on site conditions and water quality management objectives.

Jon Gosselin, SePRO Technical Specialist
Phone: 603-494-5966 Email: jong@sepro.com

Water Quality Analysis Explanation

These water quality parameters are essential to document the condition of a water body and design custom treatment prescriptions to achieve desired management objectives.

pH: Measure of how acidic or basic the water is (pH 7 is considered neutral).



Hardness: Measure of the concentration of divalent cations, primarily consisting of calcium and magnesium in typical freshwaters. *0-60 mg/L as $CaCO_3$ soft; 61-120 moderately hard; 121-180 hard; > 181 very hard*

Alkalinity- Measure of the buffering capacity of water, primarily consisting of carbonate, bicarbonate and hydroxide in typical freshwaters. Waters with lower levels are more susceptible to pH shifts.
≤ 50 mg/L as $CaCO_3$ low buffered; 51-100 moderately buffered; 101-200 buffered; > 200 high buffered

Conductivity- Measure of the waters ability to transfer an electrical current, increases with more dissolved ions.
< 50 uS/cm relatively low concentration may not provide sufficient dissolved ions for ecosystem health; 50-1500 typical freshwaters; > 1500 may be stressful to some freshwater organisms, though not uncommon in many areas

Dissolved Oxygen- amount of diatomic oxygen dissolved in the water.
< 2 mg/L likely toxicity with sufficient exposure duration; < 5 stressful to many aquatic organisms; ≥ 5 able to support most fish and invertebrates

Phosphorus: Essential nutrient often correlating to growth of algae in freshwaters.

Total Phosphorus (TP) is the measure of all phosphorus in a sample as measured by persulfate strong digestion and includes: inorganic, oxidizable organic and polyphosphates. This includes what is readily available, potential to become available and stable forms.
<12 µg/L oligotrophic; 12-24 µg/L mesotrophic; 25-96 µg/L eutrophic; > 96 µg/L hypereutrophic

Free Reactive Phosphorus (FRP) is the measure of inorganic dissolved reactive phosphorus (PO_4^{-3}, HPO_4^{-2}, etc.). This form is readily available in the water column for algae growth.

Nitrogen: Essential nutrient that can enhance growth of algae.

Total N is all nitrogen in the sample (organic N^+ and Ammonia) determined by the sum of the measurements for Total Kjeldahl Nitrogen (TKN) and ionic forms.

Nitrites and Nitrates are the sum of total oxidized nitrogen, often readily free for algae uptake.
< 1 mg/L typical freshwater; 1-10 potentially harmful; >10 possible toxicity, above many regulated guidelines

Chlorophyll *a*: primary light-harvesting pigment found in algae and a measure of the algal productivity and water quality in a system.
0-2.6µg/L oligotrophic; 2.7-20 µg/L mesotrophic; 21-56 µg/L eutrophic; > 56 µg/L hypereutrophic

Turbidity- Measurement of water clarity. Suspended particulates (algae, clay, silt, dead organic matter) are the common constituents impacting turbidity.
< 10 NTU drinking water standards and typical trout waters; 10-50 NTU moderate; > 50 NTU potential impact to aquatic life.

SRTC SePRO Research & Technology Campus

SeSCRIPT Analysis Report: *Lake Meahagh*

Company: The Pond and Lake Connection
Address: 1112 Federal Rd, Brookfield, CT 06804
Contact Person: Lisa Marlakakis
Phone: 203-885-0184
Email: lisa@thepondandlake.com

Project Name: Lake Meahagh
Surface Area: 79 acres
Average depth: 4 feet
Date Sample Received: 08/27/2020
SeSCRIPT Analysis Performed: Algae ID

Algae ID Results
Lake Meahagh

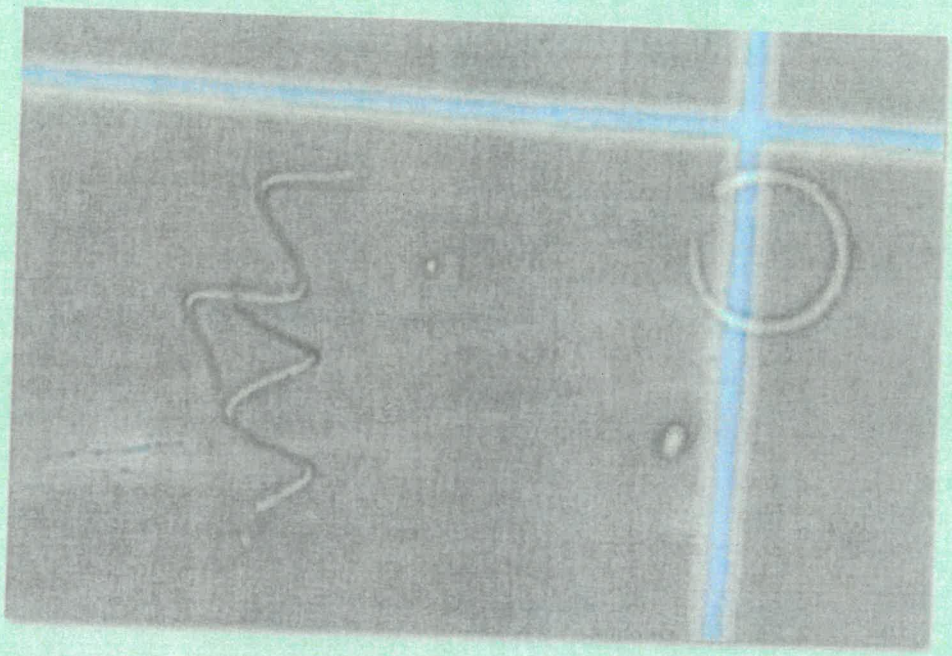
Identification	Classification	Description	Density/Biomass (cells/mL)
Planktolyngbya sp.	Cyanophyta-Blue-green algae	Filamentous, planktonic, potential toxin producer	3,700,000 ★★★
Cylindrospermopsis sp.	Cyanophyta-Blue-green algae	Filamentous, planktonic, potential toxin and taste/odor producer	175,000
Aphanocapsa sp.	Cyanophyta-Blue-green algae	Colonial, scum-former, planktonic, potential toxin and taste/odor producer	80,000
Microcystis sp.	Cyanophyta-Blue-green algae	Colonial, scum-former, planktonic, potential toxin and taste/odor producer	60,000

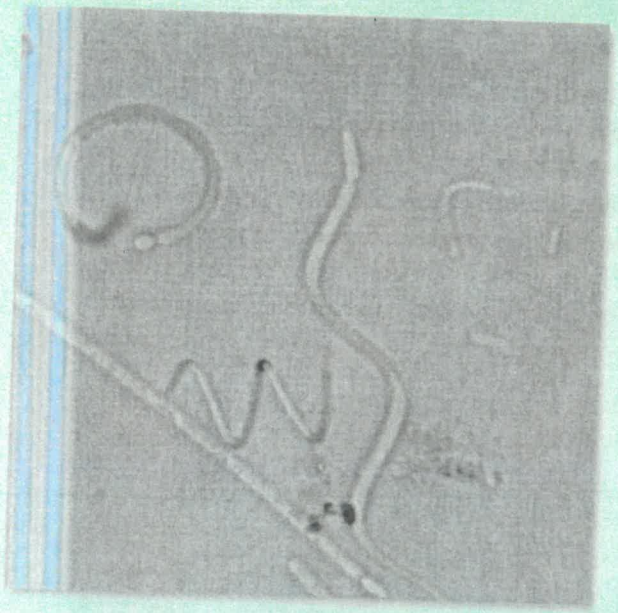
Other algae in the sample at densities below 2000 cells/mL, include: *Aulacoseira, Synedra* (Bacillariophyta); *Scenedesmus* (Chlorophyta); *Anabaenopsis, Gomphosphaeria, Merismopedia* (Cyanophyta); *Euglena* (Euglenophyta); *Cosmarium* (Streptophyta)

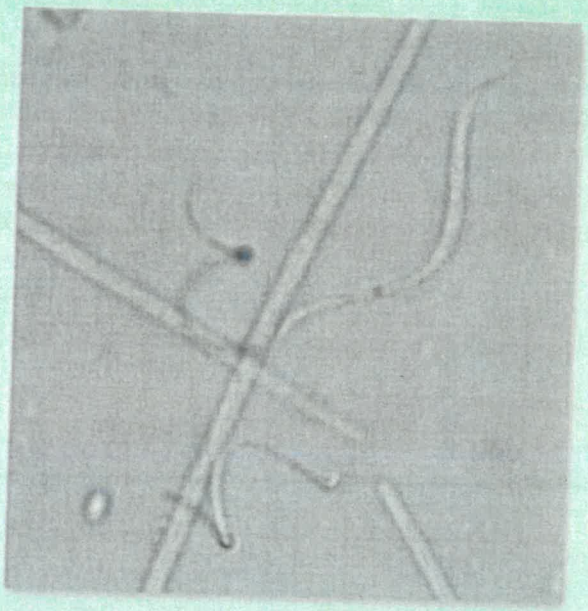
SeSCRIPT* ALERT INDEX	EXPOSURE RISK	CYANOBACTERIA LEVELS (cells/mL)
★	Low	<20,000
★★	Moderate	20,000 to 100,000
★★★	High	>100,000
★★★★	Extreme	>100,000 with scums/mats

See the following Cyanobacteria Alert Guide for additional information

Algae ID Results
Lake Meahagh







SeSCRIPT
Analysis

Cyanobacteria Alert Guide

The water sample analyzed from this water body exceeded a threshold cyanobacteria level and consequently produced a SeSCRIPT Cyanobacteria Alert (Table 1). This SeSCRIPT Alert Index highlights potential risks associated with toxic cyanobacteria and provides general management options for consideration.

Table 1. Alert levels of cyanobacteria in freshwaters (modified from World Health Organization 1999).

SeSCRIPT* ALERT INDEX	EXPOSURE RISK	CYANOBACTERIA LEVELS (cells/mL)	POTENTIAL EXPOSURE RISKS
★	Low	< 20,000	Although cyanobacteria may currently be at low levels, presence is an indicator the water body may support conditions that could fuel levels of health concern for animals and humans.
★★	Moderate	20,000 - 100,000	Moderate probability of short-term adverse health outcomes (skin irritations, gastrointestinal illness). Potential for long-term illness with chronic exposures.
★★★	High	>100,000	High probability of short-term adverse health outcomes (skin irritations, gastrointestinal illness). Potential for long-term illness with chronic exposures.
★★★★	Extreme	>100,000 with scums/mats	High potential for significant respiratory, gastrointestinal and neurological impacts. Potential for acute poisonings. Potential for long-term illness with chronic exposures.

Cyanobacteria Facts

Cyanobacteria, also known as blue-green algae, are readily present in freshwaters throughout the United States. Cyanobacteria blooms often appear as bluish-green surface scums or thick mats (Images 1 and 2), although some infestations are dispersed through the water and provide slight discoloration (Image 3). With rapid growth rates under certain conditions, these organisms have the ability to achieve levels of concern in short order. Some cyanobacteria have the ability to form surface scums through buoyancy regulation and become highly concentrated in static or windblown areas of water bodies. Caution should be taken around cyanobacteria infestations to avoid exposure and resultant potential health risks.

Image 1. Cyanobacteria scum

Image 2. Cyanobacteria mat

Image 3. Discolored water

Cyanobacteria Impacts

Cyanobacteria are capable of producing toxins that can pose significant risks to humans and wildlife. Common cyanobacteria associated toxins includes; hepatotoxins (impacts liver/kidney), neurotoxins (impacts brain), dermatitis toxins (impacts skin, digestive system) and gastrointestinal toxins (impacts digestive system). Animal mortalities from cyanobacteria toxin exposure have, in part, included: cows, dogs, pigs, and ducks (Cook et al. 1989; Mez et al. 1997; Wood et al. 2007). Human exposure is commonly from inhalation of aerosolized toxins, ingestion/consumption of contaminated water/ algae cells, or recreational skin contact with cyanobacteria infestations. A summary of toxins groups and exposure signs and symptoms is presented in Table 2. Correlations have been made between chronic cyanotoxin exposure and neurodegenerative diseases, such as ALS and Alzheimer's (Bradley & Mash 2009), and human mortalities have been observed (Carmichael 2001) in extreme exposure scenarios.

Table 2. Partial summary of cyanobacteria toxin types and associated exposure signs and symptoms (modified Codd et al. 1999; WHO 1999; Graham 2007, Jewet et al. 2008).

Toxin Group	Toxin Name	Exposure Signs & Symptoms
Hepatotoxins (liver/kidney)	Microcystins Nodularins Cylindrospermopsin	Numbness of lips, tingling in fingers/toes, dizziness, headache, diarrhea, jaundice, shock, abdominal pain/distention, weakness, nausea/vomiting, severe thirst, rapid/weak pulse, acute pneumonia
Neurotoxins (brain)	Anatoxins Saxitoxins β-Methylamino-L-alanine	Tingling, burning, numbness, drowsiness, incoherent speech, paralysis, weakness, staggering, convulsions, difficulty in breathing, vomiting, muscle twitching, gasping, backward arching of neck in birds, and death
Dermatitis/Gastrointestinal toxins (skin/digestive)	Aplysiatoxins Lipopolysaccharides Lyngbyatoxin	Rash, redness, burning, skin irritation, acute dermatitis, hives, blisters, abdominal pain, vomiting, diarrhea

Cyanobacteria Management

Even if toxins are not at detectable levels, we cannot conclusively say there are no risks associated with cyanobacteria infestations due to, 1) the continued discoveries of new toxins and other secondary metabolites and consequent lack of knowledge regarding their toxicological effects or analytical detection, and 2) the production of toxins is intermittent (some algae may not produce today, though may tomorrow or next week). Therefore, source control of the potential toxin producing culprits (i.e. cyanobacteria) is recommended to shut off the potential toxin source, remove the exposure and offset consequent risks. Management can be proactive (phosphorus management) to prevent further growth and/or reactive (algaecides). Management programs are developed on a site specific basis by incorporating characteristics of the algae (density, structure, location etc.), characteristics of the water (nutrient levels, hardness, pH etc.) and the designed formulation of solutions (phosphorus inactivation, copper formulation, surfactant presence, etc.). See the Treatment Guidance section of your SeSCRIPT report for a customized, site-specific management program and contact your SePRO Aquatic Specialist for additional assistance.

Cyanobacteria (Blue/Green Algae)

Cyanobacteria is commonly known and referred to as blue/green algae or harmful algae bloom. Although the cyanobacteria does look like algae it is in fact a type of aquatic bacteria that, just like plants, has the ability to photosynthesize (make its own food from sunlight). Cyanobacteria does occur naturally and is very widespread. Similar to other types of algae, when conditions are favorable cyanobacteria can rapidly multiply in surface water and cause "blooms." Cyanobacteria can concentrate on the water surface causing a pea-soup green color. The blooms can also be blue, bright green, brown, or red and may look like paint floating on the water. Other cyanobacteria blooms may remain dispersed through the water column leading to a generalized discoloration of the water.

Conditions that enhance growth of cyanobacterial harmful algal blooms include light intensity, total sunlight duration, nutrient availability (especially phosphorus), water temperature, pH, an increase in precipitation events, and water flow. Cyanobacteria blooms can be harmful to the environment, animals, and human health. People and pets should not come in contact with water suspected to contain blue/green algae. It can cause skin rashes and vomiting if ingested. A bloom decay consumes oxygen, creating conditions which result in plant and animal die-off. This also causes the water to have a foul odor. Under favorable conditions of light and nutrients, some species of cyanobacteria produce toxins. The conditions that cause cyanobacteria to produce toxins are not well understood. Some species with the ability to produce toxins may not produce them under all conditions. Both nontoxic and toxic varieties of cyanobacteria exist, and it is impossible to tell if a species is toxic or not just by looking at it. Tests are available to determine if the cyanobacteria carry the toxin gene.

HOW TO TREAT BLUE GREEN ALGAE

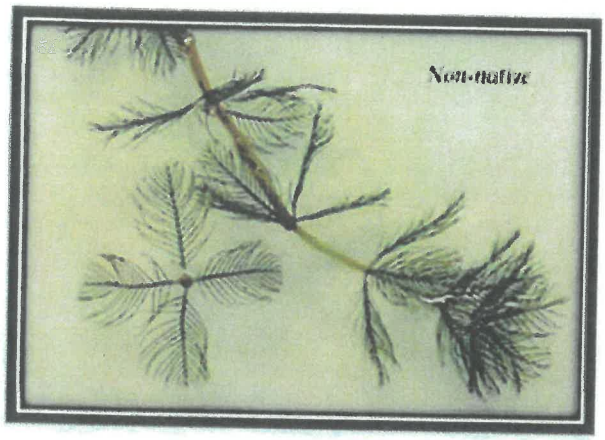
Aeration: There are two types of aeration, surface and sub-surface. Both types are beneficial when dealing with blue green algae.

Aquatic Herbicides: Blue green algae can be removed using EPA approved and registered products. These products offer guaranteed results and are typically a low-cost option. A permit may be required to apply herbicides to your pond or lake.

Biological Removal: Beneficial bacteria can be added to the water to help breakdown nutrients in the water, suppressing the growth of the blue green algae.

Eurasian Watermilfoil

(Myriophyllum spicatum)



Eurasian watermilfoil is an invasive submerged aquatic plant originally from Europe and Asia. The plant's range now reaches throughout most of the continental U.S. It is one of the "poster children" for aquatic invasive species and often is seen on billboards or handouts. The plant can grow to over 6 feet in length and often creates a canopy on the water's surface. The leaves are in whorls of 4 around the stem. Eurasian watermilfoil is at a competitive advantage against other plants because it can grow in water up to 20 feet deep, can tolerate cold water, and can reproduce rapidly through fragmentation. Growing 20 feet deep in the water provides this plant a habitat that most others cannot withstand. Tolerating cold water allows this plant to start growing before other aquatic plants in a system (sometimes it even overwinters). This subsequently sequentially can create a dense canopy shading out the water column and not permitting other plants to photosynthesize to their fullest potential. Reproducing through fragmentation grants the ability for a single stem or leaf to take root somewhere and establish a new colony. These traits, although spectacular, make it a massive issue for lakes and ponds outside of its native range. The best way to stop this plant from spreading still lies in prevention and unfortunately, many lakes and ponds are already infected with this nuisance plant.

HOW TO TREAT EURASIAN WATERMILFOIL

Aquatic Herbicides: Eurasian watermilfoil can be removed using EPA approved and registered products. These products offer guaranteed results and are typically a low-cost option. A permit may be required to apply herbicides to your pond or lake.

Mechanical Removal: Eurasian watermilfoil can be removed by raking it from the pond or lake. However, Eurasian watermilfoil will continue to reestablish itself from any remaining fragments or roots.

Biological: Triploid Grass Carp can be used to control Eurasian watermilfoil. Triploid Grass Carp will seldom control aquatic vegetation the first year they are stocked, but they will consume Eurasian watermilfoil.