



Town of North Castle, NY
Stormwater Pollution Prevention Plan
Water District No. 2 Distribution System Replacement

July 2014

STORMWATER POLLUTION PREVENTION PLAN
WATER DISTRICT NO. 2: DISTRIBUTION SYSTEM REPLACEMENT
TOWN OF NORTH CASTLE, NEW YORK

Prepared for
TOWN OF NORTH CASTLE, NY

Prepared by
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Project No. 8616265

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1. Scope

1.1 Purpose

On behalf of the Town of North Castle (owner/operator), NY, GHD Consulting Services Inc. has prepared this Stormwater Pollution Prevention Plan (SWPPP) in compliance with the New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) Construction General Permit governing stormwater discharges to surface water during construction. The contractor's participation and adherence to this SWPPP is mandatory and non-compliance is subject to various remedies, including without limitation, monetary set-offs, withholding payments; reimbursement for costs, expenses (including reasonable attorney's fees), fines, and civil penalties incurred by the Town of North Castle; and/or liquidated damages. This project has been identified as a project type listed in construction activities in Table 1 of Appendix B of the *General Permit for Stormwater Discharges from Construction Activity GP-0-10-001* (General Permit). Therefore, the SWPPP only includes erosion and sediment control practices designed in conformance with Part III.B.1 of GP-0-10-001.

1.2 Responsibilities

The contractor shall manage the discharge of stormwater from the site and shall be responsible for conducting stormwater management practices in accordance with the General Permit. The contractor shall be responsible for providing qualified inspectors to conduct the inspections required by the SWPPP. The contractor shall be responsible for any enforcement action taken or imposed by federal, state, or local agencies, including the cost of fines, construction delays, and remedial actions resulting from the contractor's failure to comply with the Permit provisions.

It shall be the responsibility of the contractor to make any necessary changes to the SWPPP when the contractor or any of his subcontractors elects to use borrow, fill, or material storage sites, either contiguous to or remote from the construction site, when such sites are used *solely* for this project. Such borrow, fill, or material storage sites are considered to be part of the construction site covered by the Permit and this SWPPP. Off-site borrow, fill, or material storage sites used for *multiple* construction projects are not subject to this requirement, unless specifically required by state or local jurisdictional entity regulations. The contractor should consider this requirement in negotiating with earthwork subcontractors, since the choice of an off-site borrow, fill, or material storage site may impact their duty to implement, make changes to, and perform inspections required by the SWPPP for the site.

1.3 Notice of Intent

The owner/operator has petitioned the NYSDEC for the stormwater discharges during construction of the project to be covered by the General Permit. The owner/operator has filed a Notice of Intent (NOI) to be covered under this Permit. The SWPPP must be prepared prior to submittal of the NOI.

The signatory on the NOI must sign all documents associated with the SWPPP. If the signatory chooses not to sign all documents, he/she must designate a duly authorized representative to sign all relevant documents. This designation must be made in writing and be included in the SWPPP. The duly authorized representative shall meet the requirements of GP-0-10-001, Part VII.H.2

1.4 Certifications

The SWPPP Ledger shall provide forms for both the contractor and subcontractor(s), identifying the company name, business address, and telephone number as well as the responsible person for the contractor and subcontractors who will implement the measures identified in the SWPPP. The contractor shall sign the "Contractor's Certification" and all subcontractors shall sign the "Subcontractor's Certification," verifying they have been instructed on how to comply with and fully understand the requirements of the NYSDEC and the SWPPP. This certification must be signed by a fully qualified individual on behalf of each entity prior to beginning any construction activities, and shall be filed in the project's SWPPP Ledger.

1.5 SWPPP Location Requirements

The SWPPP Ledger is meant to be a working document that shall be maintained at the site of the construction activities at all times throughout the project. It shall be readily available upon request by owner/operator's personnel, NYSDEC, or any other agency with regulatory authority over stormwater issues, and shall be kept on site until the site complies with Section 1.8 of this document.

A sign or other notice must be posted near the main entrance of the construction site which contains a completed NOI, the location of the SWPPP; the name and telephone number of a contact person responsible for scheduling SWPPP viewing times; and any other state-specific requirements.

One copy of the SWPPP Ledger, tabbed and indexed for the following sections, shall be provided:

1. Table of Contents.
2. Written SWPPP.
3. Erosion and Sedimentation Control Plan(s).
4. Signed NYSDEC Notice of Intent.
5. Signatory Authorization Designation.
6. General Contractor's Certification.
7. Subcontractor's Certification.
8. Inspection Report.
9. Stabilization Schedule.
10. Implementation Schedule.
11. Status Report.
12. Final Stabilization/Termination Checklist.
13. Project Rainfall Log.

1.6 Inspections and Recordkeeping

The contractor shall hire a qualified third party that shall provide a "qualified inspector" who shall meet the requirements identified in the GP 0-10-001, Part IV.C, and conduct site inspections in

conformance with the following. A minimum of 1 inspection is required every 7 calendar days and within 24 hours following a rainfall event of 0.5 inch or greater. The inspection(s) shall continue until the site complies with Section 1.8 of this document. Each inspection must be followed up by a report documenting the inspector's findings and requesting the required maintenance and/or repair for the erosion and sedimentation control measures. It is imperative that the contractor document the inspection and maintenance of all erosion and sedimentation control measures as soon as possible after the inspection and/or maintenance are completed. These records document that the required inspection and maintenance were performed, and they shall be placed in the SWPPP Ledger. In addition to inspection and maintenance reports, records should be kept of the construction activities that occur on the site. A summary of the site inspection activities, on a monthly basis, shall be posted by the owner/operator in a publicly-accessible location at the site.

The contractor shall supply to the owner all reports and documents under this SWPPP. The following list identifies the minimal required inspection and maintenance documentation that must be supplied to the owner:

1. Inspection Report.
2. Stabilization schedule.
3. Implementation schedule.
4. Status Report.
5. Project Rainfall Log.

1.7 SWPPP Modifications/Revisions

The SWPPP is meant to be an active working guide that is to be kept current and amended:

1. Whenever owner/operator and contractor are notified by the NYSDEC that the Plan does not comply with the minimum permit requirements.
2. Whenever the design, construction, operation, or maintenance of the site changes in a way which significantly affects the potential for the discharge of pollutants or when the Plan proves ineffective in eliminating or significantly minimizing pollutant discharges.
3. Within seven calendar days of knowledge of a reportable release.

The inspection reports should also identify if any modifications/revisions to the SWPPP are warranted due to unexpected conditions. Any such changes to the SWPPP must be made in writing within seven days of the date such modification/revision is made. The contractor's failure to monitor or report deficiencies to the owner/operator will result in the contractor being liable for fines and construction delays resulting from any federal, state, or local agency enforcement action.

1.8 Final Stabilization/Notice of Termination of Permit Coverage

A site can be considered finally stabilized when all soil disturbing activities have been completed and a uniform perennial vegetative cover with a density of 80 percent of the unpaved areas and areas not covered by permanent structures has been established, or when equivalent permanent stabilization measures have been established and the facility no longer discharges stormwater associated with construction activities and a Notice of Termination (NOT) has been filed by the owner/operator with the NYSDEC. Prior to filing the NOT, the owner/operator shall have the

qualified professional perform a final site inspection. The qualified professional shall certify that the site has undergone final stabilization using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (i.e., silt fencing) not needed for long-term erosion control have been removed. Filing of the NOT terminates coverage under the General Permit as well as the contractor's responsibility to implement the SWPPP, but the requirements of the SWPPP, including periodic inspections, must be continued until the NOT is filed. Upon achieving this milestone, the contractor shall also submit a "Final Stabilization Certification/Termination Checklist". Final payment and/or the release of retainage will be withheld until all provisions of the SWPPP have been submitted, completed, and accepted by the owner/operator.

2. Project Description

2.1 Project Name and Location

The project name is "Water District No. 2 Distribution System Replacement in the Town of North Castle, NY." The project has a midpoint coordinate of N 4868269, E 428211 (UTM 18).

2.2 Owner/Operator's Name and Address

	Owner	Project Engineer	Contractor
Client contact person	Sal Misiti	Joseph Awald, PE	Mike Wagner
Company	Town of North Castle	GHD Consulting Services Inc.	Bilotta Construction Corp
Address	15 Business Park Drive Armonk, NY 10504	One Remington Park Drive Cazenovia, NY 13035	296 Purchase Street, Rye NY 10580
Telephone/Fax	Office: (914) 273-1882 Cell: (914) 403-7769 Fax: (914) 273-3075	Office: (315) 679-5800 Fax: (315) 679-5801	Office: (914) 967-2944 Fax: (914) 967-2946
Email	smisiti@northcastleny.com	Joseph.awald@ghd.com	bilottacorp@aol.com

2.3 Project Description

The existing system consists of about 8.5 miles of water main constructed with four types of pipe: cast iron, ductile iron, asbestos cement (i.e., transite), and copper. The majority of the existing pipe network is constructed of transite and the predominant diameter is 6 inches. Transite pipe is known to have a shorter service life than cast iron or ductile iron pipe. Table 1 gives the diameter and approximate total length of each type of pipe in the system.

Table 1 Existing System Pipe Summary

Pipe Type	Diameter (inches)	Approximate Length (feet)
Cast iron	4	1,005
	6	5,020
	8	5,005
Ductile iron	12	186
	8	522
Asbestos cement (transite)	6	28,162
	8	1,920
Copper	1-1/4 to 2	1,280
TOTAL		45,000

The District has decided to replace all of the +45,000 linear feet (LF) of existing piping, 77 existing hydrants, and 55 existing isolation valves within the distribution system. New service connections, including curb stops, will be provided for all existing in-District users. Construction and provision of new piping, hydrants, and valves will be in accordance with AWWA C651, and Great Lakes–Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, *Recommended Standards for Water Works* (Ten-States Standards).

New pipe material will be Class 52 cement-lined ductile iron and will replace the existing mix of cast iron, ductile iron, asbestos cement, and copper. As this project is a replacement of the system, new pipe will be installed in the same roadways and parallel to the existing pipe to the extent practicable. Locations of the proposed water mains are shown on the contract plans.

2.4 Stormwater Technical Standards

To perform a stormwater analysis, the project's watershed must be defined. The watershed area, land use, soil types, and flow patterns are determined from available mapping and field observations. To estimate the runoff volume and the peak runoff rates from the watershed under both the present and proposed conditions, a mathematical model of the watershed was prepared. This model utilizes standard engineering practices based on the National Engineering Handbook Sections 4, Hydrology (NEH-4) and 5, Hydraulics (NEH-5); the United States Department of Agriculture's Soils Conservation Service (SCS) Technical Release 20 (TR-20); and the SCS Technical Release 55 (TR-55) Urban Hydrology for Small Watersheds.

2.5 Watershed Characteristics

The project's existing watershed encompasses approximately 60 acres of land as delineated from available United States Geological Survey (USGS) Quadrangle topographic maps of the project, GIS data mapping, and a limited field survey prepared for this project.

2.5.1 Runoff Coefficient

The initial coefficient of runoff for the preconstruction site is "c" = 0.26. The post-construction coefficient of runoff for the site will be "c" = 0.26 (calculation of weighted "c").

2.5.2 Rainfall Information

The Town of North Castle receives an average of 51.18 inches of rainfall per year. The Town receives approximately 2.81 inches of rain during a 1-year, 24-hour rainfall event; 5.11 inches during a 10-year, 24 hour rainfall event; and 9.12 inches during a 100-year, 24 hour rainfall event

2.5.3 Soils Information

Several soil types were identified within the watershed. A brief description of these soils and their hydrologic soils groups and map showing the location of the soils is presented in Appendix A.

2.5.4 Receiving Waters

The project area drains to an existing roadside ditch, which then connects to the Town of North Castle's municipal storm sewer system. The sewer system eventually discharges into North Lake and Long Pond.

2.5.5 Environmentally Sensitive Areas/Wetlands

There are state and town-regulated wetlands within the vicinity of the work site. Work directly within these resources is not proposed or permitted. Any work within 100 feet of these resources shall be conducted in accordance with the project plans and specifications. Erosion and sediment control practices and site restoration shall be required in accordance with this SWPPP and the project plans.

2.5.6 Historic Preservation

No historic landmarks were identified on the project site by the New York State Office of Parks, Recreation and Historic Preservation. A letter from the agency, indicating "No Effect" is provided in Appendix A.

2.5.7 Utilities

Natural gas, telephone, and cable utility lines are located along the project corridors, within the highway rights-of way. The owner of the natural gas, telephone, and cable utility lines is Con Edison Co. of NY, 315 Old Sawmill River Road, Valhalla, NY 10595; telephone (914) 789-6636.

The Contract Drawings contain more detailed information.

3. Project Controls

3.1 Erosion Prevention and Sediment Controls Best Management Practices

Prior to the commencement of construction, the owner/operator will identify the contractors and subcontractors that will implement each erosion and sediment control measure identified in this SWPPP. All contractors and subcontractors identified in the SWPPP must sign a copy of the certification statement in Part III.A.6. of the SPDES General Permit.

3.1.1 Stabilization Practices (Permanent)

Permanent stabilization practices for this site include:

1. Permanent paving for final restoration of work performed within the roadway.
2. Permanent seeding and planting of all unpaved areas using the hydro-mulching grass seeding technique.

3.1.2 Stabilization Practices (Temporary)

Temporary stabilization practices for this site include:

1. Temporary seeding and planting of all unpaved areas when construction activity has ceased, or will cease, in an area for 14 days. Water management practices must be installed as appropriate for site conditions. The area must be rough graded and slopes physically stable. Seed bed must be seeded within 24 hours of disturbance, or scarification of the soil surface is required prior to seeding. Any seeding method may be used that will provide uniform application of seed to the area and result in relatively good soil-to-seed contact. During spring, summer, or early fall, the area shall be seeded with a mixture of ryegrass (annual or perennial) at 30 lbs/acre (approximately 0.7 lbs/1,000 ft², or use 1 lbs/1,000 ft²). For late fall or winter, seed the area with certified 'Aroostook' winter rye (cereal rye) at 100 lbs/acre (92.5 lbs/1,000 ft²).
2. Mulching exposed areas with straw at 2 tons/acre (approximately 90 lbs/1,000 ft², or two bales). The quality of straw mulch will be determined based on long-term use and visual concerns. Mulch anchoring will be required where wind or areas of concentrated water are of concern. Wood fiber hydro-mulch or other sprayable products approved for erosion control (nylon web or mesh) may be used if applied according to manufacturer's specification. Note that nylon or other synthetic products may be difficult to remove prior to final seeding.
3. Dust control will be provided to prevent surface and air movement of dust from disturbed soil surfaces that may cause off-site damage, health hazards, and traffic safety problems

3.1.3 Non-Driving Areas

Vegetative Cover

For disturbed areas not subject to traffic, vegetation provides the most practical method of dust control. Refer to the temporary seeding discussion above.

Mulch

Mulch offers a fast and effective means of controlling dust. This can also include rolled erosion control blankets.

3.1.4 Driving Areas

Sprinkling

The site may be sprayed with water until the surface is wet. This is especially effective on haul roads and access routes.

Polymer Additives

These polymers are mixed with water and applied to the driving surface by a water truck with a gravity feed drip bar, spray bar, or automated distributor truck. The mixing ratios and application rates will be in accordance with the manufacturer's recommendations. Incorporation of the emulsion into the soil will be done to the appropriate depth based on anticipated traffic. Compaction after incorporation will be by vibratory roller to a minimum of 95 percent. The prepared surface shall be moist and no application of the polymer will be made if there is a probability of precipitation within 48 hours of its proposed use. Material Safety Data Sheets (MSDS) will be provided to all applicators working with the material.

Barriers

Woven geotextiles can be placed on the driving surface to effectively reduce dust throw and particle migration on haul roads. Stone can also be used for effective dust control on construction roads.

Windbreak

A silt fence or similar barrier can control air currents at intervals equal to 10 times the barrier height. Preserve existing wind barrier vegetation as much as practical

3.1.5 Structural Practices (Permanent)

1. Fills shall be compacted as needed to prevent unequal settlement that would cause damage in the complete trench.

3.1.6 Structural Practices (Temporary)

Temporary structural practices for this site include:

1. Each construction staging area shall be stabilized by the means of a "stabilized construction entrance". The purpose of a stabilized construction entrance is to reduce or eliminate the tracking of sediment onto the public right-of-way. The stabilized construction entrance shall conform to the Contract Documents.
2. Sump pit/dewatering, stockpile protection, catch basin inlet protection, silt fence, in accordance with Contract Documents.
 - Silt Fence – to reduce runoff velocity and effect deposition of transported sediment.
 - Catch basin inlet protection – to prevent heavily sediment laden water from entering a storm drain system.

- Sump pit/dewatering – to remove excess water from excavations to be filtered through a filter cloth bag prior to being discharged to municipals from drain system.
- Stockpile protection – to reduce depositing of earth and rock material.

3.2 Sequence of Major Activities

The contractor will be responsible for implementing the following erosion control and stormwater management control practices. The contractor may designate these tasks to certain subcontractors, but the ultimate responsibility for implementing the controls and ensuring their proper functioning remains with the contractor. The basic order of activities will be as follows:

1. Construct stabilized staging areas and stockpiling areas in accordance with plans.
2. Install catch basin inlet protection and silt fences in the area where work will be active and will commence within five days.
3. Excavation, installation, and backfill of pipe in accordance with project sequence
4. Pressure testing and disinfection.
5. Switch residential services from existing system to new water mains
6. Carry out temporary paving in trench limits.
7. Permanent paving for trenching limits for water mains and services.
8. Remove silt fencing and catch basin inlet protection only after final stabilization is complete.
9. Demobilization.

3.3 Post-Construction Best Management Practices (BMPs)

At the time of final stabilization, the qualified inspector shall perform a final inspection to verify that the site has successfully undergone final stabilization using vegetative or structural stabilization methods, and that temporary controls are removed. The following is a checklist of items that should be checked and maintained by the owner/operator as necessary during the scheduled inspection and maintenance operations for the stormwater drainage system.

1. Catch basin grates and existing drain inlets will be inspected for proper operation and litter collection. Drain inlets will be cleaned of all debris. Catch basins will be opened and sumps will be checked for sediment accumulation and cleaned of all silt and debris.
2. Within the limits of disturbance, driveway surfaces will be cleaned of accumulated sand, sediment, leaves, and debris.
3. Areas of permanent vegetation will be inspected to determine if additional planting or seeding is required to maintain a minimum 85 percent vegetative cover.

4. Compliance with Federal, State, and Local Regulations

The contractor will obtain copies of any and all local and state regulations applicable to stormwater management, erosion control, and pollution minimization at the job site and will comply fully with such regulations. The contractor will submit written evidence of such compliance if requested by the owner/operator or any agent of a regulatory body. The contractor will comply with all conditions of the General Permit, including the conditions related to maintaining the SWPPP, evidence of compliance with the SWPPP at the job site, and allowing regulatory personnel access to records and the job site in order to determine compliance

4.1 Maintenance and Inspection Procedures

The following inspection and maintenance practices will be used to maintain erosion and sediment controls and stabilization measures during construction:

1. All control measures will be inspected at least once every 7 calendar days and within 24 hours following a rainfall event of 0.5 inches or greater.
2. All measures will be maintained in good working order; if repairs or other erosion control measures are found to be necessary, they will be initiated within 24 hours of report.
3. The stabilized construction entrance shall be maintained in a condition that will prevent tracking or flowing of sediment onto public rights-of-way. All sediment spilled, dropped, washed, or tracked onto public rights-of-way must be removed immediately.
4. Built-up sediment will be removed from silt fence when it has reached one-third the height of the fence.
5. Silt fences will be inspected for depth of sediment, tears, etc., to see if the fabric is securely attached to the fence posts and that the fence posts are securely in the ground.
6. Catch basin inlet protection shall be inspected after each runoff event. Correct all damage immediately
7. Sediment accumulated behind the catch basin inlet protection will be removed as needed to allow the channel to drain through the inlet protection
8. Temporary and permanent seeding and all other stabilization measures will be inspected for bare spots, washouts, and healthy growth.
9. The owner/operator shall have a qualified professional conduct site inspections following the commencement of construction. A qualified professional is a person knowledgeable in the principles and practices of erosion and sediment controls, such as a licensed professional engineer, Certified Professional in Erosion and Sediment Control, or soil scientist.

A maintenance inspection report will be made after each inspection. Disturbed areas and materials storage areas will be inspected for evidence of or potential for pollutants entering stormwater systems. Copies of the report forms to be completed by the inspector are included in this SWPPP.

Report to NYSDEC within 24 hours any non-compliance with the SWPPP that will endanger public health or the environment. Follow up with a written report within five days of the non-compliance event. The following events require 24-hour reporting: (1) any unanticipated bypass which exceeds any effluent limitation in the permit; (2) any upset which exceeds any effluent limitation in the permit; and (3) a violation of a maximum daily discharge limitation for any of the pollutants listed by the U.S. Environmental Protection Agency in the permit to be reported within 24 hours. The written submission must contain a description of the non-compliance and its cause; the period of non-compliance, including exact dates and times, and if the non-compliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the non-compliance.

Releases of hazardous substances or oil in excess of reportable quantities (as established under 40 CFR 110, 40 CFR 117 or 40 CFR 302) must be reported.

4.2 Maintenance and Inspection Report Forms

After the installation of any required or optional erosion control device or measure has been completed, a qualified inspector shall inspect each practice at least once every 7 calendar days and within 24 hours following a rainfall event of 0.5 inches or greater. The inspector shall use the forms found in this SWPPP to inventory and report the condition of each measure to assist in maintaining the erosion and sediment control measures in good working order.

These report forms shall become an integral part of the SWPPP and shall be made readily accessible to governmental inspection officials, the owner/operator's engineer, and the owner/operator for review upon request during visits to the project site. In addition, copies of the reports shall be provided to any of these persons, upon request, via mail or facsimile transmission. The SWPPP Ledger is to be retained by the permittee for five years following the final stabilization of the site.

4.3 Recordkeeping and Training Requirements

The contractor shall keep the following records related to construction activities for the project:

1. Dates when major grading activities occur and which areas were graded.
2. Dates and details concerning the installation of temporary and permanent structural controls.
3. Dates when construction activities cease in an area.
4. Dates when an area is stabilized, either temporarily or permanently.
5. Dates of rainfall and the amount of rainfall.
6. Dates and descriptions of the type and amount of any spills of hazardous materials.
7. Records of reports filed with regulatory agencies if reportable quantities of hazardous materials spilled.

5. Materials Management Plan

Impacts related to water quality are divided between the construction stages of the project. This division is based on the type of pollutants and impacts that can be anticipated for each stage.

5.1 Materials Covered

The following materials or substances are expected to be present on site during construction:

- concrete/additives/wastes
- cleaning solvents
- detergents
- petroleum-based products
- paints/solvents
- pesticides
- acids
- fertilizers
- solid and construction wastes
- sanitary wastes

5.2 Material Management Practices

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff. The contractor's superintendent will be responsible for ensuring these procedures are followed.

5.2.1 Good Housekeeping Practices

The following good housekeeping practices will be followed on site during the construction project:

1. An effort will be made to store only enough products required to do the job.
2. All materials stored on site will be stored in a neat, orderly manner and, if possible, under a roof or in a containment area. At a minimum, all containers will be stored with their lids on when not in use. Drip pans shall be provided under all dispensers.
3. Products will be kept in their original containers with the original manufacturer's label in legible condition.
4. Substances will not be mixed with one another unless recommended by the manufacturer.
5. Whenever possible, all of a product will be used before disposing of the container.
6. Manufacturer's recommendations for proper use and disposal will be followed.

The contractor's superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

5.2.2 Hazardous Products Practices

These practices will be used to reduce the risks associated with hazardous materials. MSDS and original labels for each substance with hazardous properties used on the project site will be obtained by the contractor's superintendent and used for the proper management of potential wastes that may result from these products. A MSDS will be posted in the immediate area where such product is stored and/or used; a second copy of each MSDS will be maintained in the SWPPP file at the construction trailer office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product being used, particularly regarding spill control techniques.

Products will be kept in original containers with the original labels in legible condition.

If surplus product must be disposed of, manufacturers or local/state/federal recommended methods for proper disposal will be followed

5.2.3 Product-Specific Practices

The following product-specific practices shall be adhered to at project site.

Petroleum Products

All on-site vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed clearly labeled containers. Any petroleum storage tank used on site will have a dike or berm containment structure constructed around it to contain any spills which may occur. Drip pans shall be provided for all dispensers.

Fertilizers

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to stormwater. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills

Paints, Paint Solvents, and Cleaning Solvents:

All containers will be tightly sealed and stored when not in use. Excess paint and solvents shall be properly disposed of according to manufacturer's instructions or state and federal regulations

Concrete Wastes

Concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water on the site, but only in either: (1) specifically designated diked areas which have been prepared to prevent contact between the concrete and/or washout and stormwater which will be discharged from the site; or (2) locations where waste concrete can be poured into forms to make riprap or other useful concrete products. The hardened residue from the concrete washout diked areas will be disposed of in the same manner as other non-hazardous construction waste materials or may be broken up and used on site as deemed appropriate by the contractor.

All concrete washout areas will be located in an area where the likelihood of the area contributing to stormwater discharges is negligible. If required, additional BMPs must be implemented to prevent concrete wastes from contributing to stormwater discharges

Solid and Construction Wastes

All waste materials will be collected and stored in a covered metal dumpster rented from a local solid waste management company licensed to do business in New York State and Town of North Castle. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied a minimum of twice per week or more often if necessary, and the trash will be hauled to a landfill approved by New York State and Town of North Castle. No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedures for waste disposal.

All waste dumpsters and roll-off containers will be located in an area where the likelihood of the containers contributing to stormwater discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent such occurrences

Sanitary Wastes

All sanitary waste will be collected from the portable units as required by a licensed portable facility provider in complete compliance with local and state regulations. All sanitary waste units will be located in an area where the likelihood of the unit contributing to stormwater discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent such occurrences

Contaminated Soils

Any contaminated soils resulting from spills of materials with hazardous properties which may result from construction activities will be contained and cleaned up immediately in accordance with applicable state and federal regulations

6. Spill Prevention and Response Procedures

The contractor will train all personnel in the proper handling and cleanup of spilled materials. If a spill occurs and comes in contact with any stormwater runoff from the site, the stormwater discharge will be contained on site until appropriate measures in compliance with state and federal regulations are taken to collect and dispose of such contaminated stormwater. It shall be the responsibility of the contractor to properly train all personnel in spill prevention and cleanup procedures.

To minimize the potential for a spill of hazardous materials to come into contact with stormwater, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, with their lids on, preferably under cover, when not in use.
2. The minimum practical quantity of all such materials will be kept on the job site.
3. A spill control and containment kit (containing, for example, absorbent materials, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) shall be maintained at the storage site.
4. Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.

In the event of a spill, the following procedures should be followed:

1. All spills will be cleaned up immediately after discovery.
2. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the hazardous substances.
3. The Owner's project manager and the Engineer of Record will be notified immediately.
4. Spills of toxic or hazardous materials will be reported to the appropriate federal, state, and/or local government agency, regardless of the size of the spill. Spills of amounts that exceed Reportable Quantities of certain substances specifically mentioned in federal regulations (40 CFR 110, 40 CFR 117, and 40 CFR 302) must be immediately reported to the **NYSDEC 24-Hour Spill Hotline at 1-800-457-7362.**

If a spill exceeds a Reportable Quantity, the SWPPP must be modified within seven calendar days of knowledge of the discharge to provide a description of the release, the circumstances leading to the release, and the date of the release. The SWPPP must identify measures to prevent the recurrence of such releases and to respond to such releases.

The contractor's superintendent will be the spill prevention and response coordinator. They will designate the individuals who will receive spill prevention and response training. These individuals

will each become responsible for a particular phase of prevention and response. The names of these personnel will be posted in the material storage area and in the office trailer on site.

7. Control of Non-Stormwater Discharges

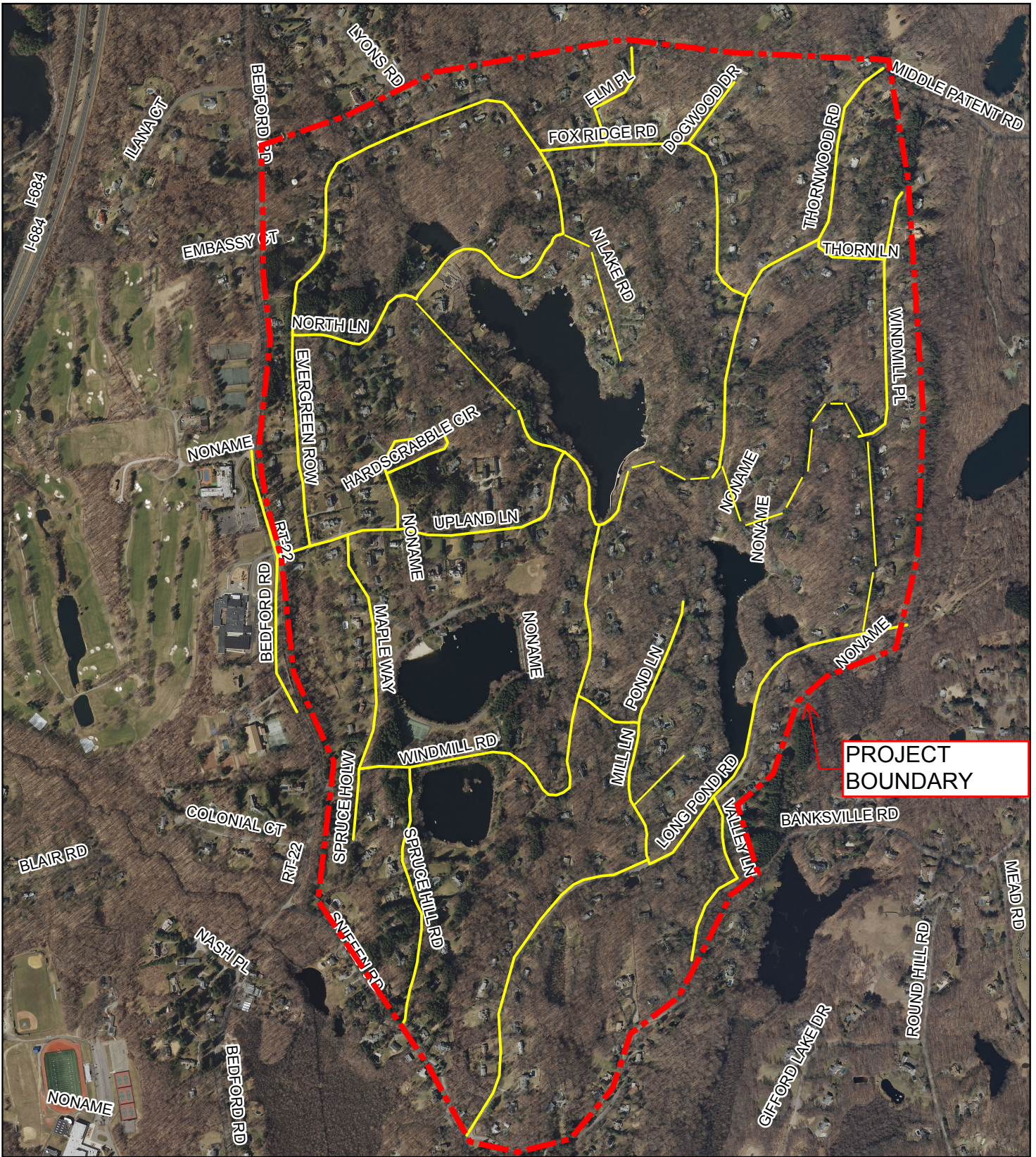
Certain types of discharges are allowable under the SPDES General Permit, and it is the intent of this SWPPP to allow such discharges. These types of discharges will be permitted under the conditions that no pollutants will be allowed to come in contact with the water prior to or after its discharge. The control measures outlined previously in this SWPPP will be strictly followed to ensure that no contamination of these non-stormwater discharges takes place.

The following non-stormwater discharges are allowed by the NYSDEC and may occur at the job site: (1) discharges from firefighting activities; (2) fire hydrant flushing; and (3) potable water line flushing, which must be directed to a stabilized ditch or drainage way.

8. Certification and Notification

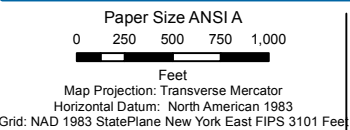
The NYSDEC requires that the owner/operator and contractor certify knowledge of the contents of this SWPPP and agree to follow the SWPPP. The terms of the General Permit also require that each contractor sign the SWPPP, thereby making them co-permittees and acknowledging their responsibility for certain operational aspects of the Plan. These certifications should be signed before the contractor begins activities and should be filed with the site's SWPPP at the job site.

Appendix A – Project Maps/Contract Plans



LEGEND

Proposed Water Pipe Improvements



CLIENTS|PEOPLE|PERFORMANCE

Town of North Castle
Water District #2 (Windmill Farm) Improvements
Job Number 86-0903972
Revision A
Date 12 Jun 2012

Proposed Project
Area

Figure 1

G:\8610903972\GIS\Maps\Site Map.mxd

One Remingtone Park Drive Cazenovia, NY 13035 T 315-679-5800 F 315-679-5801 E cazmail@ghd.com W www.ghd.com

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Appendix B - SPDES Permit GP-0-10-001



NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

from

CONSTRUCTION ACTIVITY

Permit No. GP-0-10-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70
of the Environmental Conservation Law

Effective Date: January 29, 2010

Expiration Date: January 28, 2015

William R. Adriance
Chief Permit Administrator

William R. Adriance
Authorized Signature

January 28, 2010
Date

Address: NYS DEC
Div. Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

PREFACE

Pursuant to Section 402 of the Clean Water Act (“CWA”), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System (“NPDES”)* permit or by a state permit program. New York’s *State Pollutant Discharge Elimination System (“SPDES”)* is a NPDES-approved program with permits issued in accordance with the *Environmental Conservation Law (“ECL”)*.

This general permit (“permit”) is issued pursuant to Article 17, Titles 7, 8 and Article 70 of the ECL. An *owner or operator* may obtain coverage under this permit by submitting a Notice of Intent (“NOI”) to the Department. Copies of this permit and the NOI for New York are available by calling (518) 402-8109 or at any New York State Department of Environmental Conservation (“the Department”) regional office (see Appendix G). They are also available on the Department’s website at:

<http://www.dec.ny.gov/>

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of “*construction activity*”, as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a point source and therefore, pursuant to Article 17-0505 of the ECL, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. They cannot wait until there is an actual *discharge* from the construction site to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES**

FROM CONSTRUCTION ACTIVITIES

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Part I. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application - This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;
2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State*.
3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land.

B. Maintaining Water Quality - It shall be a violation of this permit and the *ECL* for any *discharge* to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;
2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and
3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

C. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph D. of this Part.
2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater discharges from *construction activities*.

(Part I. C)

3. Notwithstanding paragraphs C.1 and C.2 above, the following non-stormwater *discharges* may be authorized by this permit: discharges from fire fighting activities; fire hydrant flushings; waters to which cleansers or other components have not been added that are used to wash vehicles or control dust in accordance with the SWPPP, routine external building washdown which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated groundwater or spring water; uncontaminated discharges from construction site de-watering operations; and foundation or footing drains where flows are not contaminated with process materials such as solvents. For those entities required to obtain coverage under this permit, and who discharge as noted in this paragraph, and with the exception of flows from fire fighting activities, these discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with water quality standards in Part I.B.

D. Activities Which Are Ineligible for Coverage Under This General Permit - All of the following are **not** authorized by this permit:

1. *Discharges after construction activities* have been completed and the site has undergone *final stabilization*;
2. *Discharges* that are mixed with sources of non-stormwater other than those expressly authorized under subsection C.3. of this Part and identified in the SWPPP required by this permit;
3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII, subparagraph K of this permit;
4. *Discharges from construction activities* that adversely affect a listed, or proposed to be listed, endangered or threatened species, or its critical habitat;
5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;
6. *Construction activities* for residential, commercial and institutional projects that:
 - a. are tributary to waters of the state classified as AA or AA-s; and

(Part I. D. 6)

- b. disturb one or more acres of land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey for the County in which the disturbance will occur.
- 7. *Construction activities* for linear transportation projects and linear utility projects that:
 - a. are tributary to waters of the state classified as AA or AA-s; and
 - b. disturb two or more acres of land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey for the County in which the disturbance will occur.
- 8. *Construction activities* that adversely affect a property that is listed or is eligible for listing on the State or National Register of Historic Places (Note: includes Archeological sites), unless there are written agreements in place with the NYS Office of Parks, Recreation and Historic Preservation (OPRHP) or other governmental agencies to mitigate the effects, or there are local land use approvals evidencing the same.

Part II. OBTAINING PERMIT COVERAGE

A. Notice of Intent (NOI) Submittal

- 1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a *regulated, traditional land use control MS4* must first develop a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the address below in order to be authorized to *discharge* under this permit. The NOI form shall be one which is associated with this permit, signed in accordance with Part VII.H. of this permit.

**NOTICE OF INTENT
NYS DEC, Bureau of Water Permits
625 Broadway, 4th Floor
Albany, New York 12233-3505**

- 2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first develop a SWPPP in accordance with all applicable requirements of this permit and then have its SWPPP reviewed and accepted by the *MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the “MS4 SWPPP Acceptance” form signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4*, or by a duly authorized representative of that person, and then submit that form along with the NOI to the address referenced under “Notice of Intent (NOI) Submittal”.

(Part II. A.2)

This requirement does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.E. (Change of Owner or Operator).

3. The *owner or operator* shall have the SWPPP preparer sign the “SWPPP Preparer Certification” statement on the NOI prior to submitting the form to the Department.
4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

B. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.
2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:
 - a. project review pursuant to the State Environmental Quality Review Act (SEQRA) have been satisfied, when SEQRA is applicable,
 - b. where required, all necessary Department permits subject to the *Uniform Procedures Act (UPA)* (see 6 NYCRR Part 621) have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits must submit a preliminary SWPPP to the appropriate DEC Regional Office in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,
 - c. the final SWPPP has been prepared, and
 - d. an NOI has been submitted to the Department in accordance with the requirements of this permit.
3. An *owner or operator* that has satisfied the requirements of Part II.B.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

(Part II. B. 3)

- a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:
 - i. Five (5) business days from the date the Department receives a complete NOI for *construction activities* with a SWPPP that has been prepared in conformance with the technical standards referenced in Parts III.B.1, 2 and/or 3, or
 - ii. Sixty (60) business days from the date the Department receives a complete NOI for *construction activities* with a SWPPP that has not been prepared in conformance with the technical standards referenced in Parts III.B.1, 2 or 3.
- b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:
 - i. Five (5) business days from the date the Department receives a complete NOI and signed “MS4 SWPPP Acceptance” form,
4. The Department may suspend or deny an *owner’s or operator’s* coverage under this permit if the Department determines that the SWPPP does not meet the permit requirements.
5. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department.

C. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination (NOT) has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4.
2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-10-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form and inspection reports at the construction site until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department.

(Part II. C. 2)

The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land use control MS4*, the MS4 (provided the MS4 is not the *owner or operator* of the construction activity). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:
 - a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.
 - b. In areas where soil disturbance activity has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control.
 - c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.
 - d. The *owner or operator* shall install any additional site specific practices needed to protect water quality.
 - e. The *owner or operator* shall include the requirements above in their SWPPP.
4. The Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements.

(Part II. C)

5. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the *MS4* in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *MS4* prior to commencing construction of the post-construction stormwater management practice.

D. Permit Coverage for Discharges Authorized Under GP-0-08-001

1. Upon renewal of SPDES General Permit for Stormwater Discharges from Construction Activity (Permit No. GP-0-08-001), an *owner or operator* of *construction activity* with coverage under GP-0-08-001, as of the effective date of GP-0-10-001, shall be authorized to *discharge* in accordance with GP-0-10-001 unless otherwise notified by the Department.

E. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.A.1.. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or operator* was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*.

(Part III. A)

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the pollutants in stormwater discharges and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.
3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.
4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP:
 - a. whenever the current provisions prove to be ineffective in minimizing pollutants in stormwater *discharges* from the site;
 - b. whenever there is a change in design, construction, or operation at the construction site that has or could have an effect on the discharge of pollutants; and
 - c. to address issues or deficiencies identified during an inspection by the *qualified inspector*, the Department or other regulatory authority.
5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit.
6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP.

(Part III. A. 6)

The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor*. The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings. "

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the construction site. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.
8. The SWPPP must include documentation supporting the determination of permit eligibility with regard to Part I.D.8. (Historic Places or Archeological Resource). At a minimum, the supporting documentation shall include the following:

(Part III. A. 8)

- a. Information on whether the stormwater discharge or *construction activities* would have an effect on a property (historic or archeological resource) that is listed or eligible for listing on the State or National Register of Historic Places;
- b. Results of historic resources screening determinations conducted. Information regarding the location of historic places listed, or eligible for listing, on the State or National Registers of Historic Places and areas of archeological sensitivity that may indicate the need for a survey can be obtained online by viewing the New York State Office of Parks, Recreation and Historic Places (OPRHP) online resources located on their web site at: <http://nysparks.state.ny.us/shpo/online-tools/> (using The Geographic Information System for Archeology and National Register). OPRHP can also be contacted at: NYS OPRHP, State Historic Preservation Office, Peebles Island Resources Center, P.O. Box 189, Waterford, NY 12188-0189, phone: 518-237-8643;
- c. A description of measures necessary to avoid or minimize adverse impacts on places listed, or eligible for listing, on the State or National Register of Historic Places. If the *owner or operator* fails to describe and implement such measures, the stormwater *discharge* is ineligible for coverage under this permit; and
- d. Where adverse effects may occur, any written agreements in place with OPRHP or other governmental agency to mitigate those effects, or local land use approvals evidencing the same.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control. Where erosion and sediment control practices are not designed in conformance with this technical standard, the *owner or operator* must demonstrate equivalence to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:
 - a. Background information about the scope of the project, including the location, type and size of project;

(Part III. B. 1)

- b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s), wetlands and drainage patterns that could be affected by the construction activity; existing and final slopes; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater discharge(s);
- c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);
- d. A construction phasing plan and sequence of operations describing the intended order of construction activities, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;
- e. A description of the minimum erosion and sediment control practices to be installed or implemented for each construction activity that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;
- f. A temporary and permanent soil stabilization plan that meets the requirements of the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of final stabilization;
- g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;
- h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

(Part III. B. 1)

- i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6., to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection schedule shall be in accordance with the requirements in the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control;
 - j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a pollutant source in the stormwater *discharges*;
 - k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the construction site; and
 - l. Identification of any elements of the design that are not in conformance with the requirements in the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is equivalent to the technical standards.
2. Post-construction stormwater management practice component - All construction projects identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the most current version of the technical standard, New York State Stormwater Management Design Manual (“Design Manual”). If the Design Manual is revised during the term of this permit, an *owner or operator* must begin using the revised version of the Design Manual to prepare their SWPPP six (6) months from the final revision date of the Design Manual.

Where post-construction stormwater management practices are not designed in conformance with this technical standard, the *owner or operator* must demonstrate equivalence to the technical standard.

At a minimum, the post-construction stormwater management practice component of the SWPPP shall include the following:

- a. Identification of all post-construction stormwater management practices to be constructed as part of the project;

(Part III. B. 2)

- b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;
 - c. The dimensions, material specifications and installation details for each post-construction stormwater management practice;
 - d. Identification of any elements of the design that are not in conformance with the Design Manual. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is equivalent to the technical standards;
 - e. A hydrologic and hydraulic analysis for all structural components of the stormwater management control system;
 - f. A detailed summary (including calculations) of the sizing criteria that was used to design all post-construction stormwater management practices. At a minimum, the summary shall address the required design criteria from the applicable chapter of the Design Manual; including the identification of and justification for any deviations from the Design Manual, and identification of any design criteria that are not required based on the design criteria or waiver criteria included in the Design Manual; and
 - g. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.
3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.g. above.

(Part III. C)

C. Required SWPPP Components by Project Type - Unless otherwise notified by the Department, *owners or operators of construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3.

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices and all post-construction stormwater management practices identified in the SWPPP are maintained in effective operating condition at all times.
2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York, or protect the public health and safety and/or the environment.

B. Owner or Operator Maintenance Inspection Requirements

1. The *owner or operator* shall inspect, in accordance with the requirements in the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, the erosion and sediment controls identified in the SWPPP to ensure that they are being maintained in effective operating condition at all times.
2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the *owner or operator* can stop conducting the maintenance inspections. The *owner or operator* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. as soon as soil disturbance activities resume.
3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *owner or operator* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

(Part IV. C)

C. Qualified Inspector Inspection Requirements - The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- Licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- Registered Landscape Architect, or
- Someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

- a. the construction of a single family residential subdivision with 25% or less impervious cover at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;
- b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;
- c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and
- d. construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

- a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

(Part IV. C. 2)

- b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.C.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.
- c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the Regional Office stormwater contact person (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4*, the MS4 (provided the MS4 is not the *owner or operator* of the construction activity) in writing prior to reducing the frequency of inspections.
- d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the Regional Office stormwater contact person (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4*, the MS4 (provided the MS4 is not the *owner or operator* of the construction activity). in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization*, and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the “Final Stabilization” and “Post-Construction Stormwater Management Practice” certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.A.1..

(Part IV. C. 3)

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization*, all points of discharge to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of discharge from the construction site.
4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:
 - a. Date and time of inspection;
 - b. Name and title of person(s) performing inspection;
 - c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;
 - d. A description of the condition of the runoff at all points of discharge from the construction site. This shall include identification of any *discharges* of sediment from the construction site. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;
 - e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;
 - f. Identification of all erosion and sediment control practices that need repair or maintenance;
 - g. Identification of all erosion and sediment control practices that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;
 - h. Description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection;

(Part IV. C 4)

- i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;
 - j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s); and
 - k. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.
5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.
 6. All inspection reports shall be signed by the *qualified inspector*. Pursuant to Part II.C.2., the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.A.1. The NOT form shall be one which is associated with this general permit, signed in accordance with Part VII.H.
2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

(Part V. A. 2)

- a. Total project completion - All construction activity identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;
 - b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;
 - c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.E.
3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the “Final Stabilization” and “Post-Construction Stormwater Management Practice” certification statements on the NOT, certify that all disturbed areas have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP.
4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall also have the MS4 sign the “MS4 Acceptance” statement on the NOT. The *owner or operator* shall have the principal executive officer, ranking elected official, or duly authorized representative from the *regulated, traditional land use control MS4*, sign the “MS4 Acceptance” statement. The MS4 official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The MS4 can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector’s* final site inspection certification(s) required in Part V.3.
5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

(Part V. A. 5)

- a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,
- b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),
- c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has modified their deed of record to include a deed covenant that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan,
- d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, college, university), or government agency or authority, the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION OF RECORDS

A. Record Retention - The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the site achieves *final stabilization*. This period may be extended by the Department, in its sole discretion, at any time upon written notification.

B. Addresses - With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.A.1), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate Department Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply - The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied.

(Part VII. A)

The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

B. Continuation of the Expired General Permit - This permit expires five (5) years from the effective date. However, coverage may be obtained under the expired general permit, which will continue in force and effect, until a new general permit is issued. Unless otherwise notified by the Department in writing, an *owner or operator* seeking authorization under the new general permit must submit a new NOI in accordance with the terms of such new general permit.

C. Enforcement - Failure of the *owner or operator*, its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to \$37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense - It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

E. Duty to Mitigate - The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to minimize or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information - The *owner or operator* shall make available to the Department for review and copying or furnish to the Department within five (5) business days of receipt of a Department request for such information, any information requested for the purpose of determining compliance with this permit. This can include, but is not limited to, the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form, executed maintenance agreement, and inspection reports. Failure to provide information requested by the Department within the request timeframe shall be a violation of this permit.

The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review the NOI, SWPPP or inspection reports. Copying of documents will be done at the requester's expense.

G. Other Information - When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any other report, or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s)

(Part VII. G)

changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or impervious area), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

- a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
 - i. a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or
 - ii. the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
- b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or
- c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:
 - i. the chief executive officer of the agency, or

(Part VII. H. 1. c)

- ii. a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).
- 2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in Part VII.H.1.;
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,
 - c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.
- 3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.
- 4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4*, or by a duly authorized representative of that person.

It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights - The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability - The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

(Part VII. K)

K. Denial of Coverage Under This Permit

1. At its sole discretion, the Department may require any *owner or operator* authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the *owner or operator* to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from *owner or operator* receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Regional Water Engineer, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.
2. Any *owner or operator* authorized by this permit may request to be excluded from the coverage under this permit by applying for an individual permit or another general permit. In such cases, the *owner or operator* shall submit an individual application or an alternative general permit application in accordance with the requirements of this general permit, 40 CFR 122.26(c)(1)(ii) and 6 NYCRR Part 621, with reasons supporting the request, to the Department at the address for the appropriate Department Office (see addresses in Appendix F). The request may be granted by issuance of an individual permit or another general permit at the discretion of the Department.
3. When an individual SPDES permit is issued to a discharger authorized to discharge under a general SPDES permit for the same discharge(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance - The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry - The *owner or operator* shall allow the Department or an authorized representative of EPA, the State, or, in the case of a construction site which discharges through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

(Part VII. M)

1. Enter upon the *owner's or operator's* premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;
2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and
3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment).

N. Permit Actions - At the Department's sole discretion, this permit may, at any time, be modified, suspended, revoked, or renewed. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions - Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with *construction activity* covered by this permit, the *owner or operator* of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.
2. Permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports – Article 17 of the ECL provides for a civil penalty of \$37,500 per day per violation of this permit. Articles 175 and 210 of the New York State Penal Law provide for a criminal penalty of a fine and/or imprisonment for falsifying forms and reports required by this permit.

R. Other Permits – Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

APPENDIX A

Definitions

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both “sewage” and “stormwater”.

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for “Construction Activity(ies)” also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a construction site by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a construction site to a separate storm sewer system and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or point source.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 authorizing a category of discharges.

Groundwater - means waters in the saturated zone. The saturated zone is a subsurface zone in

which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct construction activities are occurring, or will occur, under one plan. The term “plan” in “larger common plan of development or sale” is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) application, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that construction activities may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same “common plan” is not concurrently being disturbed.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

- i. Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State;
- ii. Designed or used for collecting or conveying stormwater;
- iii. Which is not a *combined sewer*; and
- iv. Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department’s receipt and acceptance of a complete Notice of Intent. This letter documents the owner’s or operator’s authorization to discharge in accordance with the general permit for stormwater discharges from construction activity.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the construction activity is occurring; and/or an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in Parts 700 et seq of this Title.

Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics in order to prepare a SWPPP that conforms to the Department's technical standard. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is required to gain coverage under New York State DEC's SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s).

Routine Maintenance Activity - means construction activity that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Stream bank restoration projects (does not include the placement of spoil material),
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that makes the transition between the road shoulder and the ditch or embankment,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or embankment,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for point source discharges, load allocations (LAs) for nonpoint sources, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* will be responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

APPENDIX B

Required SWPPP Components by Project Type

Table 1

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other agricultural building, silo, stock yard or pen.

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Bike paths and trails
- Sidewalk construction projects that are not part of a road/ highway construction or reconstruction project
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics
- Spoil areas that will be covered with vegetation
- Land clearing and grading for the purposes of creating vegetated open space (i.e. recreational parks, lawns, meadows, fields), excluding projects that *alter hydrology from pre to post development* conditions
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the “Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State”, excluding projects that involve soil disturbances of less than five acres and construction activities that include the construction or reconstruction of impervious area

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

- All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land.

Table 2
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP
THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other agricultural building(e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional, includes hospitals, prisons, schools and colleges
- Industrial facilities, includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's and water treatment plants
- Office complexes
- Sports complexes
- Racetracks, includes racetracks with earthen (dirt) surface
- Road construction or reconstruction
- Parking lot construction or reconstruction
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover*, and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project or other linear utility project
- All other construction activities that include the construction or reconstruction of *impervious area* and *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

APPENDIX C

Watersheds Where Enhanced Phosphorus Removal Standards Are Required

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual (“Design Manual”).

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed -Figure 3
- Oscawana Lake Watershed – Figure 4

Figure 1 - New York City Watershed East of the Hudson

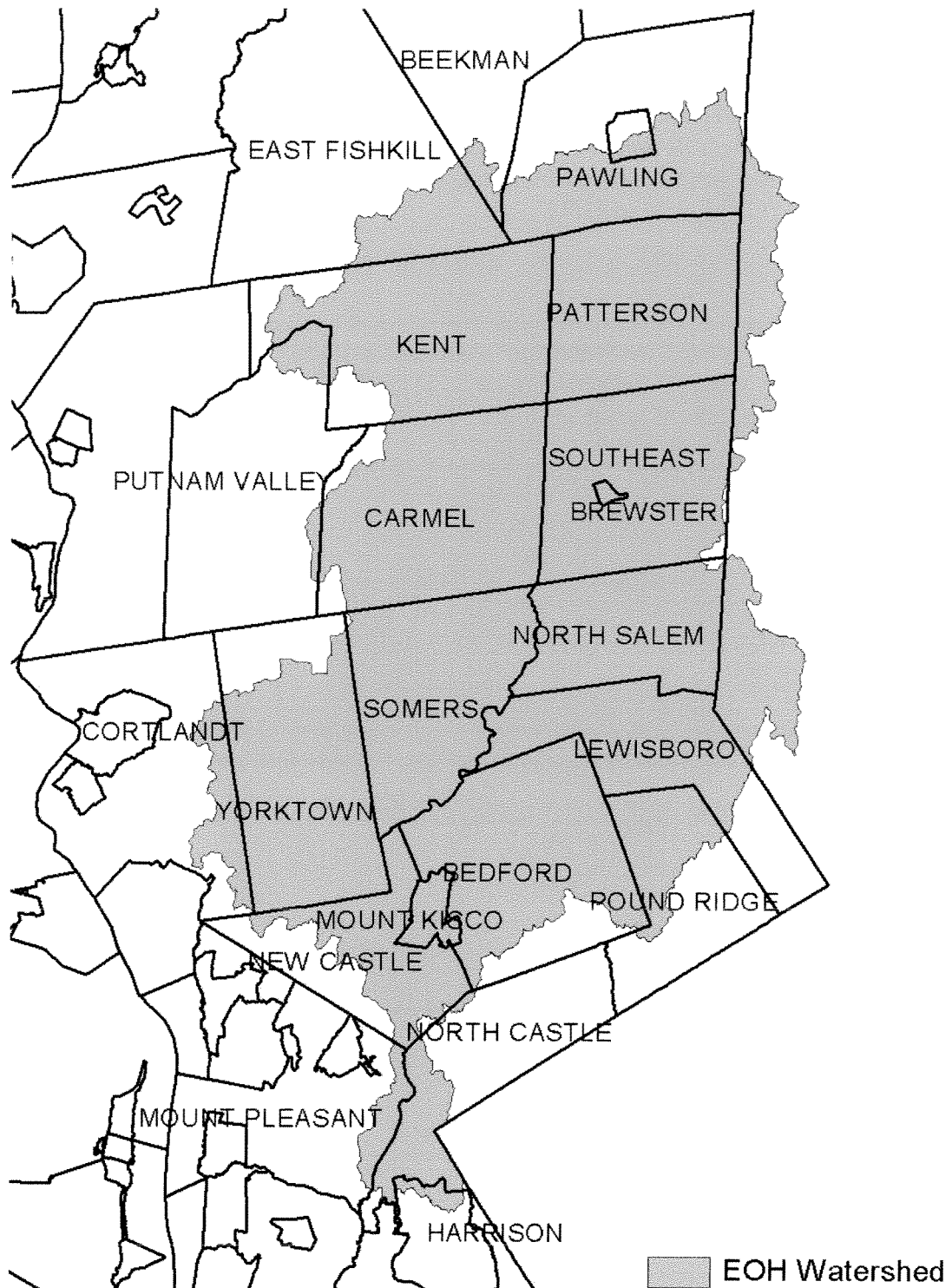


Figure 2 - Onondaga Lake Watershed

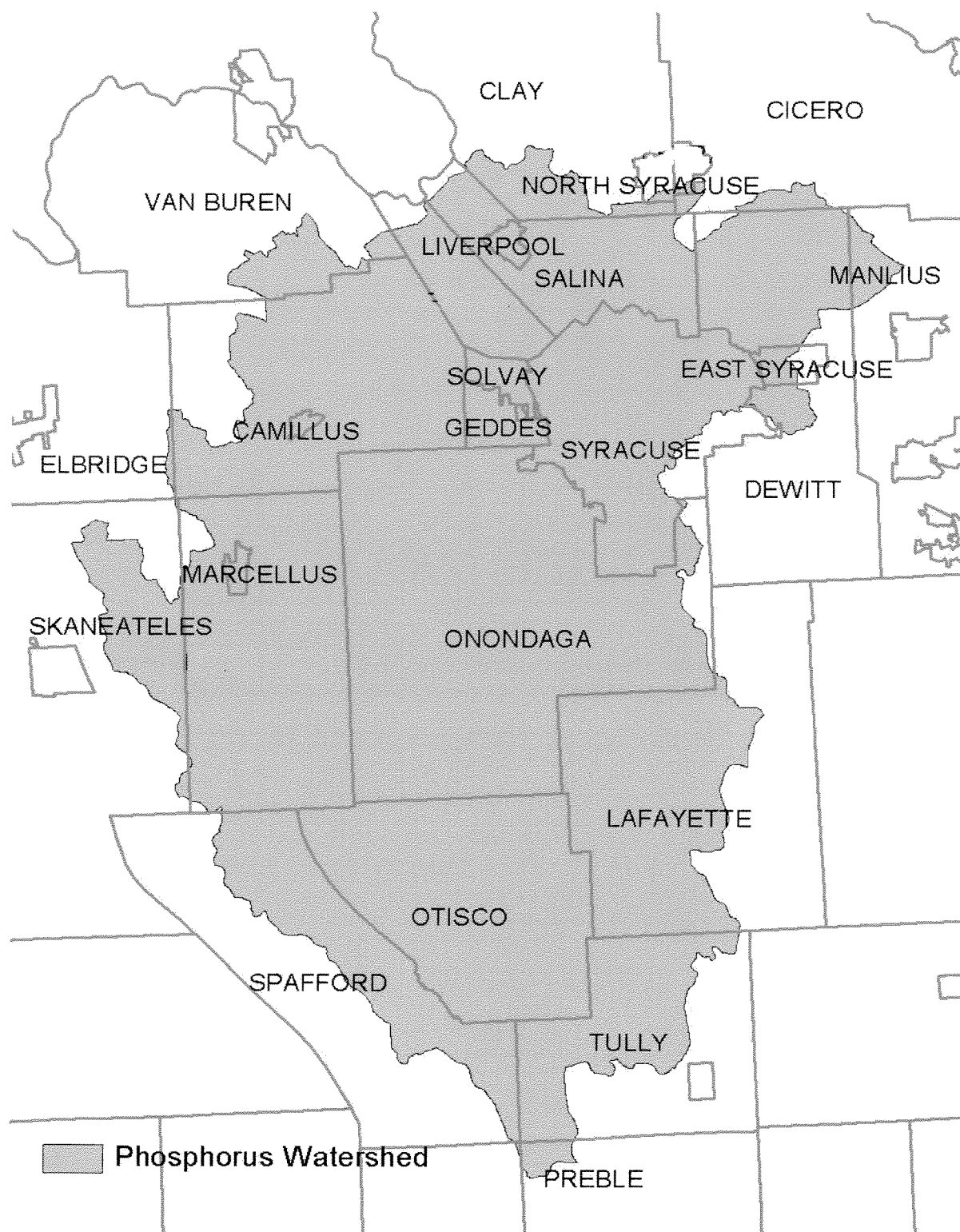


Figure 3 - Greenwood Lake Watershed

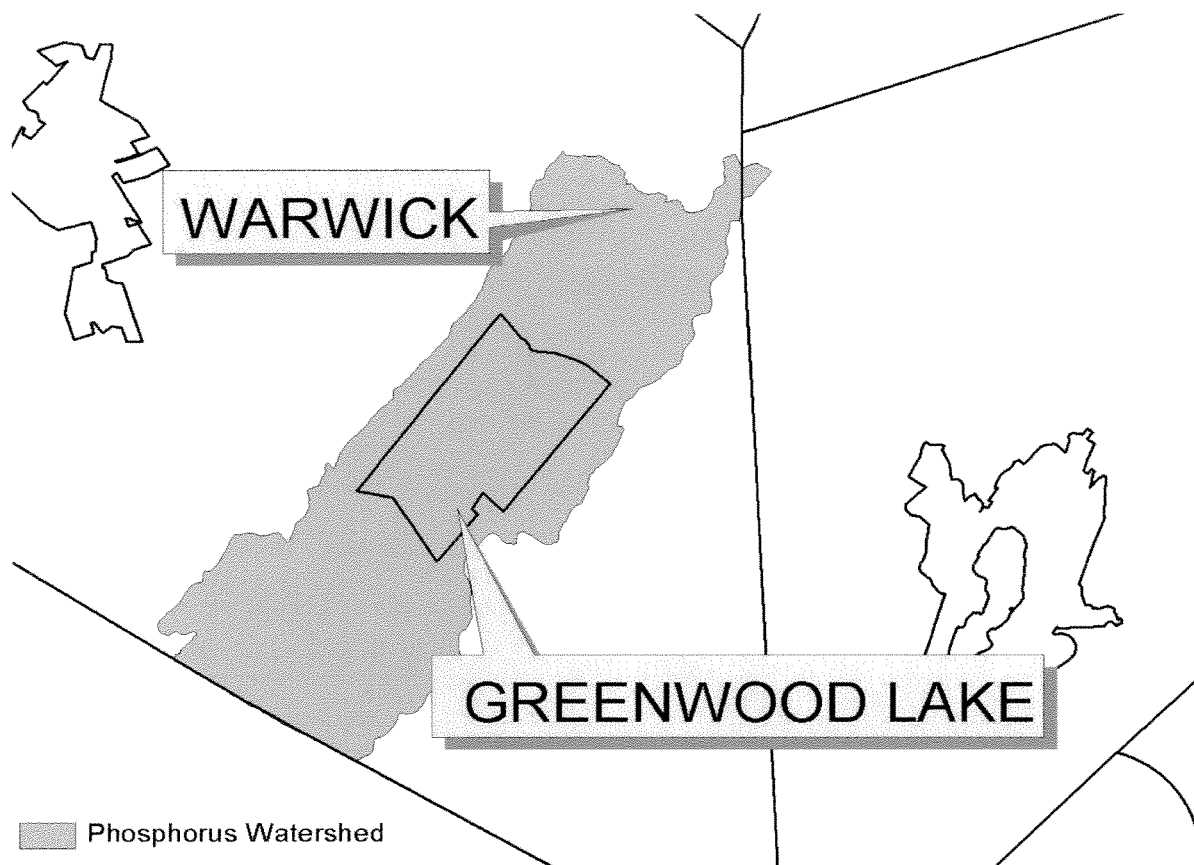
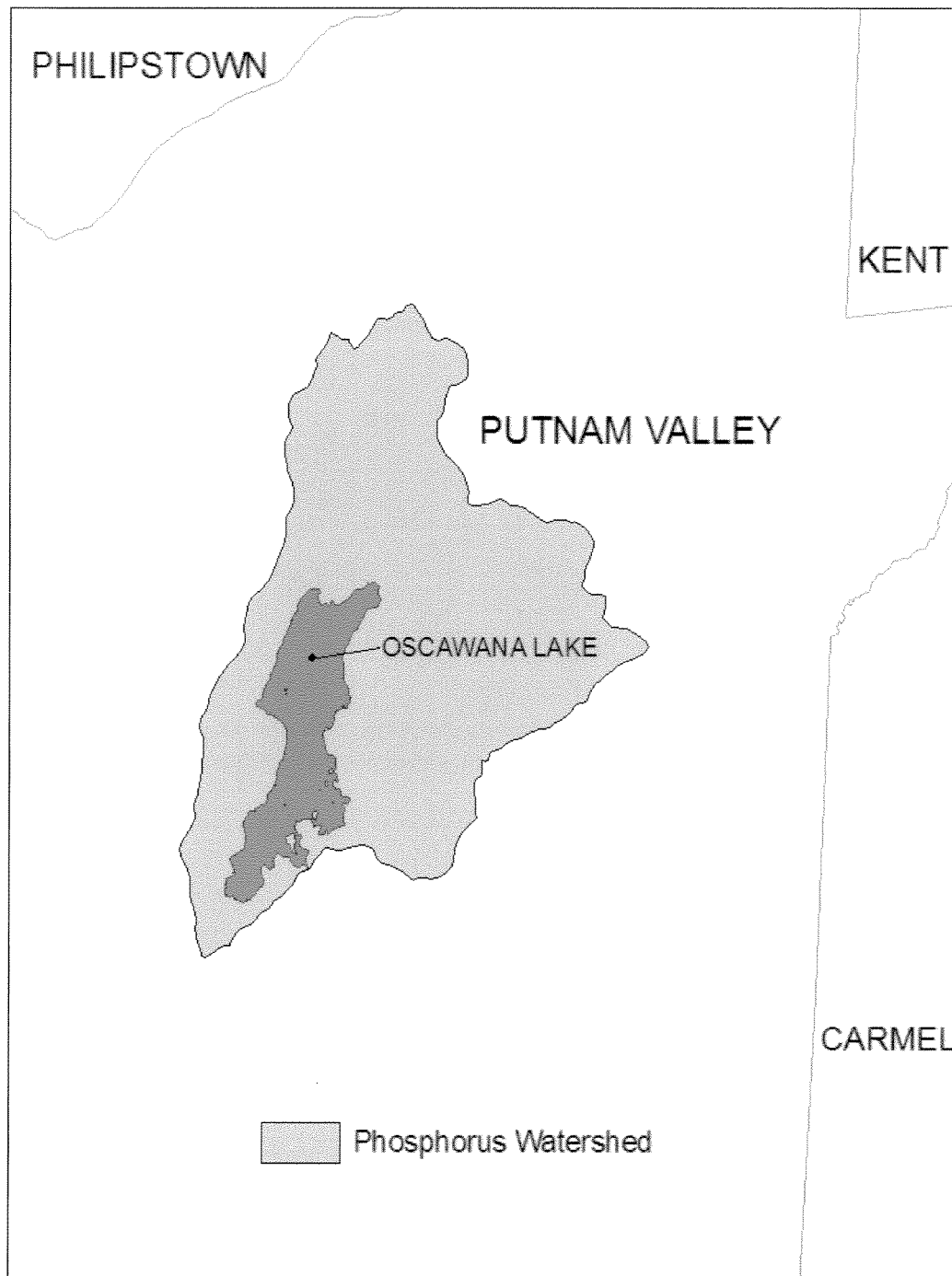


Figure 4 - Oscawana Lake Watershed



APPENDIX D

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C
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APPENDIX E

List of 303(d) segments impaired by pollutants related to construction activity (e.g. silt, sediment or nutrients). *Owners or operators* of single family home and single family residential subdivision construction activities that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the most current version of the technical standard, New York State Stormwater Management Design Manual (“Design Manual”).

COUNTY	WATERBODY	COUNTY	WATERBODY
Albany	Ann Lee (Shakers) Pond, Stump Pond	Monroe	Genesee River, Lower, Main Stem
Albany	Basic Creek Reservoir	Monroe	Genesee River, Middle, Main Stem
Bronx	Van Cortlandt Lake	Monroe	Black Creek, Lower, and minor tribs
Broome	Whitney Point Lake/Reservoir	Monroe	Buck Pond
Broome	Beaver Lake	Monroe	Long Pond
Broome	White Birch Lake	Monroe	Cranberry Pond
Chautauqua	Chautauqua Lake, North	Monroe	Mill Creek and tribs
Chautauqua	Chautauqua Lake, South	Monroe	Shipbuilders Creek and tribs
Chautauqua	Bear Lake	Monroe	Minor tribs to Irondequoit Bay
Chautauqua	Chadakoin River and tribs	Monroe	Thomas Creek/White Brook and tribs
Chautauqua	Lower Cassadaga Lake	Nassau	Glen Cove Creek, Lower, and tribs
Chautauqua	Middle Cassadaga Lake	Nassau	LI Tribs (fresh) to East Bay
Chautauqua	Findley Lake	Nassau	East Meadow Brook, Upper, and tribs
Clinton	Great Chazy River, Lower, Main Stem	Nassau	Hempstead Bay
Columbia	Kinderhook Lake	Nassau	Hempstead Lake
Columbia	Robinson Pond	Nassau	Grant Park Pond
Dutchess	Hillside Lake	Niagara	Bergholtz Creek and tribs
Dutchess	Wappinger Lakes	Oneida	Ballou, Nail Creeks
Dutchess	Fall Kill and tribs	Onondaga	Ley Creek and tribs
Dutchess	Rudd Pond	Onondaga	Onondaga Creek, Lower and tribs
Erie	Rush Creek and tribs	Onondaga	Onondaga creek, Middle and tribs
Erie	Ellicott Creek, Lower, and tribs	Onondaga	Onondaga Creek, Upper, and minor tribs
Erie	Beeman Creek and tribs	Onondaga	Harbor Brook, Lower, and tribs
Erie	Murder Creek, Lower, and tribs	Onondaga	Ninemile Creek, Lower, and tribs
Erie	South Branch Smoke Cr, Lower, and tribs	Onondaga	Minor tribs to Onondaga Lake
Erie	Little Sister Creek, Lower, and tribs	Ontario	Honeoye Lake
Essex	Lake George (primary county listed as Warren)	Ontario	Hemlock Lake Outlet and minor tribs
Genesee	Black Creek, Upper, and minor tribs	Ontario	Great Brook and minor tribs
Genesee	Tonawanda Creek, Middle, Main Stem	Oswego	Lake Neatahwanta
Genesee	Tonawanda Creek, Upper, and minor tribs	Putnam	Oscawana Lake
Genesee	Little Tonawanda Creek, Lower, and tribs	Putnam	Lake Carmel
Genesee	Oak Orchard Creek, Upper, and tribs	Queens	Jamaica Bay, Eastern, and tribs (Queens)
Genesee	Bowen Brook and tribs	Queens	Bergen Basin
Genesee	Bigelow Creek and tribs	Queens	Shellbank Basin
Greene	Schoharie Reservoir	Rensselaer	Snyders Lake
Greene	Sleepy Hollow Lake	Richmond	Grasmere, Arbutus and Wolfes Lakes
Herkimer	Steele Creek tribs	Saratoga	Dwaas Kill and tribs
Kings	Hendrix Creek	Saratoga	Tribs to Lake Lonely
Lewis	Mill Creek/South Branch and tribs	Saratoga	Lake Lonely
Livingston	Conesus Lake	Saratoga	Schuyler Creek and tribs
Livingston	Jaycox Creek and tribs	Schenectady	Collins Lake
Livingston	Mill Creek and minor tribs		

APPENDIX E

List of 303(d) segments impaired by pollutants related to construction activity, cont'd.

COUNTY	WATERBODY	COUNTY	WATERBODY
Schoharie	Engleville Pond		
Schoharie	Summit Lake		
St. Lawrence	Black Lake Outlet/Black Lake		
Steuben	Lake Salubria		
Steuben	Smith Pond		
Suffolk	Millers Pond		
Suffolk	Mattituck (Marratooka) Pond		
Suffolk	Tidal tribs to West Moriches Bay		
Suffolk	Canaan Lake		
Suffolk	Lake Ronkonkoma		
Tompkins	Cayuga Lake, Southern End		
Tompkins	Owasco Inlet, Upper, and tribs		
Ulster	Ashokan Reservoir		
Ulster	Esopus Creek, Upper, and minor tribs		
Warren	Lake George		
Warren	Tribs to L.George, Village of L George		
Warren	Huddle/Finkle Brooks and tribs		
Warren	Indian Brook and tribs		
Warren	Hague Brook and tribs		
Washington	Tribs to L.George, East Shore of Lake George		
Washington	Cossayuna Lake		
Wayne	Port Bay		
Wayne	Marbletown Creek and tribs		
Westchester	Peach Lake		
Westchester	Mamaroneck River, Lower		
Westchester	Mamaroneck River, Upper, and minor tribs		
Westchester	Sheldrake River and tribs		
Westchester	Blind Brook, Lower		
Westchester	Blind Brook, Upper, and tribs		
Westchester	Lake Lincolndale		
Westchester	Lake Meahaugh		
Wyoming	Java Lake		
Wyoming	Silver Lake		

Note: The list above identifies those waters from the final New York State “2008 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy”, dated May 26, 2008, that are impaired by silt, sediment or nutrients.

APPENDIX F

LIST OF NYS DEC REGIONAL OFFICES

<u>Region</u>	<u>COVERING THE FOLLOWING COUNTIES:</u>	<u>DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS</u>	<u>DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM</u>
1	NASSAU AND SUFFOLK	50 CIRCLE ROAD STONY BROOK, NY 11790 TEL. (631) 444-0365	50 CIRCLE ROAD STONY BROOK, NY 11790-3409 TEL. (631) 444-0405
2	BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4997	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4933
3	DUTCHESS, ORANGE, PUTNAM, ROCKLAND, SULLIVAN, ULSTER AND WESTCHESTER	21 SOUTH PUTT CORNERS ROAD NEW PALTZ, NY 12561-1696 TEL. (845) 256-3059	100 HILLSIDE AVENUE, SUITE 1W WHITE PLAINS, NY 10603 TEL. (914) 428 - 2505
4	ALBANY, COLUMBIA, DELAWARE, GREENE, MONTGOMERY, OTSEGO, RENSSELAER, SCHENECTADY AND SCHOHARIE	1150 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2069	1130 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2045
5	CLINTON, ESSEX, FRANKLIN, FULTON, HAMILTON, SARATOGA, WARREN AND WASHINGTON	1115 STATE ROUTE 86, PO BOX 296 RAY BROOK, NY 12977-0296 TEL. (518) 897-1234	232 GOLF COURSE ROAD, PO BOX 220 WARRENSBURG, NY 12885-0220 TEL. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROAD AVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVE. BUFFALO, NY 14203-2999 TEL. (716) 851-7070

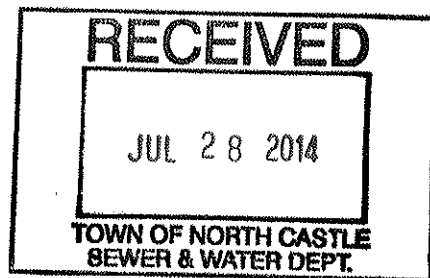
Appendix C - Notice of Intent/Notice of Termination

New York State Department of Environmental Conservation
Division of Water
Bureau of Water Permits, 4th Floor
625 Broadway, Albany, New York 12233-3505
Phone: (518) 402-8111 • **Fax:** (518) 402-9029
Website: www.dec.ny.gov



7/22/2014

NORTH CASTLE, TOWN OF
SAL MISITI
15 BUSINESS PARK DRIVE
ARMONK NY 10504-



Re: ACKNOWLEDGMENT of NOTICE of INTENT for
Coverage Under SPDES General Permit for Storm
Water Discharges from CONSTRUCTION
ACTIVITY General Permit No. GP-0-10-001

Dear Prospective Permittee:

This is to acknowledge that the New York State Department of Environmental Conservation (Department) has received a complete Notice of Intent (NOI) for coverage under General Permit No. GP-0-10-001 for the construction activities located at:

WATER DISTRIBUTION SYSTEM REPLACEMENT
WINDMILL ROAD
NORTH CASTLE NY 10504-

County: WESTCHESTER

Pursuant to Environmental Conservation Law (ECL) Article 17, Titles 7 and 8, ECL Article 70, discharges in accordance with GP-0-10-001 from the above construction site will be authorized **5** business days from **7/17/2014** which is the date we received your final NOI, unless notified differently by the Department.

The permit identification number for this site is: **NYR 10Y216**. Be sure to include this permit identification number on any forms or correspondence you send us. When coverage under the permit is no longer needed, you must submit a Notice of Termination to the Department.

This authorization is conditioned upon the following:

1. The information submitted in the NOI received by the Department on **7/17/2014** is accurate and complete.
2. You have developed a Storm Water Pollution Prevention Plan (SWPPP) that complies with GP-0-10-001 which must be implemented as the first element of construction at the above-noted construction site.
3. Activities related to the above construction site comply with all other requirements of GP-0-10-001.

4. Payment of the annual \$100 regulatory fee, which is billed separately by the Department in the late fall. The regulatory fee covers a period of one calendar year. In addition, since September 1, 2004, construction stormwater permittees have been assessed an initial authorization fee which is now \$100 per acre of land disturbed and \$600 per acre of future impervious area. The initial authorization fee covers the duration of the authorized disturbance.

5. When applicable, project review pursuant to the State Environmental Quality Review Act (SEQRA) has been satisfied.

6. You have obtained all necessary Department permits subject to the Uniform Procedures Act (UPA). You should check with your Regional Permit Administrator for further information.

***Note: Construction activities cannot commence until project review pursuant to SEQRA has been satisfied, when SEQRA is applicable; and, where required, all necessary Department permits subject to the UPA have been obtained.**

Please be advised that the Department may request a copy of your SWPPP for review.

Should you have any questions regarding any aspect of the requirements specified in GP-0-10-001, please contact Dave Gasper at (518) 402-8114 or the undersigned at (518) 402-8109.

Sincerely,



Toni Cioffi

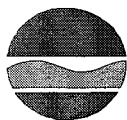
Environmental Program Specialist 1

cc: RWE - 3

SWPPP Preparer

GHD CONSULTING SERVICES, INC.
CASTRO, KEVIN
ONE REMINGTON PARK DRIVE
CAZENOVIA NY 13035-

NOTICE OF INTENT



New York State Department of Environmental Conservation

Division of Water

625 Broadway, 4th Floor

Albany, New York 12233-3505

NYR

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(for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-10-001
 All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

- IMPORTANT -**RETURN THIS FORM TO THE ADDRESS ABOVE**OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)

T o w n o f N o r t h C a s t l e

Owner/Operator Contact Person Last Name (NOT CONSULTANT)

M i s i t i

Owner/Operator Contact Person First Name

S a l

Owner/Operator Mailing Address

1 5 B u s i n e s s P a r k D r i v e

City

A r m o n k

State

N Y

Zip

1 0 5 0 4 -

Phone (Owner/Operator)

9 1 4 - 2 7 3 - 1 8 8 2

Fax (Owner/Operator)

9 1 4 - 2 7 3 - 3 0 7 5

Email (Owner/Operator)

s m i s i t i @ n o r t h c a s t l e n y . c o m

FED TAX ID

1 4 - 6 0 0 2 3 4 1

(not required for individuals)

Project Site Information

Project/Site Name

Water Distribution System Replacement

Street Address (NOT P.O. BOX)

Windmill Road

Side of Street

☒ North ☐ South ☐ East ☐ West

City/Town/Village (THAT ISSUES BUILDING PERMIT)

North Castle

State Zip

NY

10504

-

County

Westchester

DEC Region

3

Name of Nearest Cross Street

Windmill Road

Distance to Nearest Cross Street (Feet)

100

Project In Relation to Cross Street

☐ North ☒ South ☐ East ☐ West

Tax Map Numbers

Section-Block-Parcel

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you must go to the NYSDEC Stormwater Interactive Map on the DEC website at:

www.dec.ny.gov/imsmaps/stormwater/viewer.htm

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site, go to the tool boxes on the top and choose "i"(identify). Then click on the center of your site and a new window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)

6 1 0 8 2 1

Y Coordinates (Northing)

4 5 5 6 2 3 8

2. What is the nature of this construction project?

- ☐ New Construction
- ☐ Redevelopment with increase in impervious area
- ☒ Redevelopment with no increase in impervious area

3. Select the predominant land use for both pre and post development conditions.

SELECT ONLY ONE CHOICE FOR EACH

**Pre-Development
Existing Land Use**

- ☐ FOREST
☐ PASTURE/OPEN LAND
☐ CULTIVATED LAND
☐ SINGLE FAMILY HOME
☐ SINGLE FAMILY SUBDIVISION
☐ TOWN HOME RESIDENTIAL
☐ MULTIFAMILY RESIDENTIAL
☐ INSTITUTIONAL/SCHOOL
☐ INDUSTRIAL
☐ COMMERCIAL
☒ ROAD/HIGHWAY
☐ RECREATIONAL/SPORTS FIELD
☐ BIKE PATH/TRAIL
☐ LINEAR UTILITY
☐ PARKING LOT
☐ OTHER

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Post-Development
Future Land Use**

- ☐ SINGLE FAMILY HOME
☐ SINGLE FAMILY SUBDIVISION
☐ TOWN HOME RESIDENTIAL
☐ MULTIFAMILY RESIDENTIAL
☐ INSTITUTIONAL/SCHOOL
☐ INDUSTRIAL
☐ COMMERCIAL
☐ MUNICIPAL
☒ ROAD/HIGHWAY
☐ RECREATIONAL/SPORTS FIELD
☐ BIKE PATH/TRAIL
☐ LINEAR UTILITY (water, sewer, gas, etc.)
☐ PARKING LOT
☐ CLEARING/GRADING ONLY
☐ DEMOLITION, NO REDEVELOPMENT
☐ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
☐ OTHER

Number of Lots

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***Note:** for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

**Total Site
Area**

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Total Area To
Be Disturbed**

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Existing Impervious
Area To Be Disturbed**

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Future Impervious
Area Within
Disturbed Area**

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

5. Do you plan to disturb more than 5 acres of soil at any one time?

☐ Yes ☒ No

6. Indicate the percentage of each Hydrologic Soil Group (HSG) at the site.

A

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

 %

B

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

 %

C

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

 %

D

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

 %

7. Is this a phased project?

☐ Yes ☒ No

8. Enter the planned start and end dates of the disturbance activities.

Start Date

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

End Date

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name

[illegible]

9a. Type of waterbody identified in Question 9?

- ☐ Wetland / State Jurisdiction On Site (Answer 9b)
☒ Wetland / State Jurisdiction Off Site
☐ Wetland / Federal Jurisdiction On Site (Answer 9b)
☐ Wetland / Federal Jurisdiction Off Site
☐ Stream / Creek On Site
☐ Stream / Creek Off Site
☐ River On Site
☐ River Off Site
☐ Lake On Site
☐ Lake Off Site
☐ Other Type On Site
☐ Other Type Off Site

[illegible]

9b. How was the wetland identified?

- ☒ Regulatory Map
☐ Delineated by Consultant
☐ Delineated by Army Corps of Engineers
☐ Other (identify)

[illegible]

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-10-001?

☐ Yes ☒ No

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-10-001?

☐ Yes ☒ No

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters?

☐ Yes ☒ No

If no, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey?

☐ Yes ☐ No

If Yes, what is the acreage to be disturbed?

--	--	--	--	--

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area?

☒ Yes ☐ No

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ☒ Yes ☐ No ☐ Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?

[illegible]

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ☐ Yes ☒ No ☐ Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ☐ Yes ☒ No

19. Is this property owned by a state authority, state agency, federal government or local government? ☒ Yes ☐ No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ☐ Yes ☒ No

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ☒ Yes ☐ No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ☐ Yes ☒ No

If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ☐ Yes ☐ No

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ☒ Professional Engineer (P.E.)
- ☐ Soil and Water Conservation District (SWCD)
- ☐ Registered Landscape Architect (R.L.A.)
- ☐ Certified Professional in Erosion and Sediment Control (CPESC)
- ☐ Owner/Operator
- ☐ Other

SWPPP Preparer

[illegible]

Contact Name (Last, Space, First)

[illegible]

Mailing Address

[illegible]

City

C	a	z	e	n	o	v	i	a
---	---	---	---	---	---	---	---	---

State Zip

N	Y	1	3	0	3	5	-				
---	---	---	---	---	---	---	---	--	--	--	--

Phone

3	1	5	-	6	7	9	-	5	7	8	5
---	---	---	---	---	---	---	---	---	---	---	---

Fax

3	1	5	-	6	7	9	-	5	8	0	1
---	---	---	---	---	---	---	---	---	---	---	---

Email

[illegible]

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-10-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name

[illegible]

MI

10

Last Name

[illegible]

Signature

Kevin Cull

Date _____

0	7	/	1	4	/	2	0	1	4
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Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- ☐ Preservation of Undisturbed Areas
- ☐ Preservation of Buffers
- ☐ Reduction of Clearing and Grading
- ☐ Locating Development in Less Sensitive Areas
- ☐ Roadway Reduction
- ☐ Sidewalk Reduction
- ☐ Driveway Reduction
- ☐ Cul-de-sac Reduction
- ☐ Building Footprint Reduction
- ☐ Parking Reduction

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- ☐ All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- ☐ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

. acre-feet

29. Identify the RR techniques (Area Reduction), RR techniques (Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Table 1 - Runoff Reduction (RR) Techniques
and Standard Stormwater Management
Practices (SMPs)

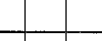
RR Techniques (Area Reduction)	Total Contributing Area (acres)	Total Contributing Impervious Area (acres)
<input type="radio"/> Conservation of Natural Areas (RR-1) ...	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	and/or <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Sheetflow to Riparian Buffers/Filters Strips (RR-2)	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	and/or <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Tree Planting/Tree Pit (RR-3)	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	and/or <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Disconnection of Rooftop Runoff (RR-4) ..	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	and/or <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<u>RR Techniques (Volume Reduction)</u>		
<input type="radio"/> Vegetated Swale (RR-5)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Rain Garden (RR-6)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Stormwater Planter (RR-7)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Rain Barrel/Cistern (RR-8)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Porous Pavement (RR-9)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Green Roof (RR-10)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<u>Standard SMPs with RRv Capacity</u>		
<input type="radio"/> Infiltration Trench (I-1)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Infiltration Basin (I-2)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Dry Well (I-3)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Underground Infiltration System (I-4)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Bioretention (F-5)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Dry Swale (O-1)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<u>Standard SMPs</u>		
<input type="radio"/> Micropool Extended Detention (P-1)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Wet Pond (P-2)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Wet Extended Detention (P-3)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Multiple Pond System (P-4)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Pocket Pond (P-5)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Surface Sand Filter (F-1)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Underground Sand Filter (F-2)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Perimeter Sand Filter (F-3)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Organic Filter (F-4)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Shallow Wetland (W-1)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Extended Detention Wetland (W-2)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Pond/Wetland System (W-3)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Pocket Wetland (W-4)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Wet Swale (O-2)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>

Table 2 - Alternative SMPs
(DO NOT INCLUDE PRACTICES BEING
USED FOR PRETREATMENT ONLY)

Alternative SMP

Total Contributing
Impervious Area(acres)

- [illegible]



Two empty 4x3 grids for drawing.

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQV treatment.

[illegible][illegible]

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRV provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRV capacity identified in question 29.

Total RRv provided

. acre-feet

31. Is the Total RRV provided (#30) greater than or equal to the total WQv required (#28).

☐ Yes ☐ No

If Yes, go to question 36.

If No, go to question 32.

32. Provide the Minimum RRv required based on HSG.
[Minimum RRv Required = (P)(0.95)(Ai)/12, Ai=(S)(Aic)]

Minimum RRv Required

--	--	--

 .

--	--	--

 acre-feet

- 32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

☐ Yes ☐ No

If Yes, go to question 33.

Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQV required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQV required (#28) must also be included in the SWPPP.

If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRV Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

- 33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRV Capacity identified in question 29.

WQv Provided

. acre-feet

Note: For the standard SMPs with RRV capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRV provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRV provided (#30) and the WQv provided (#33a).

.

35. Is the sum of the RRV provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ☐ Yes ☐ No

If Yes, go to question 36.

If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required

. acre-feet

CPv Provided

. acre-feet

- 36a. The need to provide channel protection has been waived because:

- ☐ Site discharges directly to tidal waters or a fifth order or larger stream.
- ☐ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development

. CFS

Post-development

. CFS

Total Extreme Flood Control Criteria (Qf)

Pre-Development

. CFS

Post-development

. CFS

- [illegible]

☐ Yes ☒ No

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- ☒ Yes ☐ No

☐ Yes ☒ No

- | | | | | | | | | |
|---|---|---|--|--|--|--|--|--|
| N | Y | R | | | | | | |
|---|---|---|--|--|--|--|--|--|

Owner/Operator Certification


I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name

S a l

MI**Print Last Name**

M i s i t i

Owner/Operator Signature**Date**

07 / 11 / 2014

Appendix D - Inspection Forms

INITIAL INSPECTION CHECKLIST FOR STORMWATER POLLUTION PREVENTION

Project Name and Site Location _____

Inspector's Printed Name: _____

Inspector's Signature: _____

Date Signed: _____

Complete this form after the temporary stormwater measures are put in place, but before any other construction begins. Describe any work required to repair problems identified in this report. Give estimated completion dates. Retain the completed inspection form on file in the Stormwater Pollution Prevention Plan.

ITEM	YES/NO/ N/A	COMMENTS
1. Are the and silt fences installed as shown on the Erosion and Sediment Control Drawing?		
2. Walk around the site perimeter to identify any areas where sediment may escape from the site. Do all areas to be disturbed drain to an area where sediment will be captured by silt fencing, straw bales, catch basins, or equal measure?		
3. Are any previously disturbed areas in need of hydroseeding or manual seeding?		
4. Do all disturbed areas drain to either a drainage swale, sediment basin, or protected stormwater system?		
5. Are the construction vehicle entrances to the site free of sediment, mud, or trash?		
6. Are any erosion channels visible in the project area?		
7. Is dust control water spraying required? Occurring as required?		
8. Are there any disturbed areas that could cause ponding of runoff, other than a sediment basin?		
9. Are the erosion and sediment control measures in place adequately installed to capture sediment in runoff from the site?		

WEEKLY INSPECTION CHECKLIST FOR STORMWATER POLLUTION PREVENTION

Week Ending: _____

Project Name and Site Location: _____

Inspector's Printed Name: _____

Inspector's Signature: _____

Date Signed: _____

Complete this form at the end of each work week, or on the day following any large rainstorm, where precipitation totals more than 0.5 inches of rain in 24 hours as reported at the nearest weather station. Describe any work required to repair problems identified this week. Give estimated completion dates.

ITEM	YES/NO/ N/A	COMMENTS
1. During the past week, was there any rainfall?		
2. Walk around the site perimeter to identify any areas where sediment is escaping from the site. Is sediment being captured on site by the silt fencing?		
3. Is the silt fencing in place and functional?		
4. Do all disturbed areas drain to either a drainage swale or a protected stormwater sewer?		
5. Are the construction vehicle entrances to the site free of sediment, mud, or trash?		
6. If applicable, check all newly planted vegetation to make sure that it is properly protected and growing. Is new vegetation growing?		
7. Are any erosion channels visible in the project area?		
8. Is dust control water spraying required? Occurring as required?		
9. Check stormwater structures for signs of sediment buildup. Estimate the sediment volume. Does the structure need to be cleaned out or replaced?		
10. Are there any disturbed areas that could cause ponding of runoff?		

THREE-MONTH INSPECTION CHECKLIST FOR STORMWATER POLLUTION PREVENTION

Date: _____

Project Name and Site Location: _____

Inspector's Printed Name: _____

Inspector's Signature: _____

Date Signed: _____

Complete this form three months after the initial inspection report is signed. Retain the completed inspection form on file in the Stormwater Pollution Prevention Plan. During the past three months:

ITEM	YES/NO/ N/A	COMMENTS
1. Have weekly inspection reports been completed each week, and the written checklists added to the Stormwater Pollution Prevention Plan?		
2. Have any special inspections been conducted because more than 0.5 inches of rain fell during a 24-hour period?		
3. Has the silt fencing been maintained in serviceable condition?		
4. Has all newly planted vegetation been properly protected and allowed to grow?		
5. Have any erosion problems noted been fixed quickly?		
6. Have the stormwater structures been checked for sediment buildup, and cleaned out if necessary?		

FINAL INSPECTION CHECKLIST FOR STORMWATER POLLUTION PREVENTION

Project Name and Site Location: _____

Inspector's Printed Name: _____

Inspector's Signature: _____

Date Signed: _____

Complete this form after all construction on the project is complete and the site is stabilized. Retain the completed inspection form on file in the Stormwater Pollution Prevention Plan.

ITEM	YES/NO/ N/A	COMMENTS
1. Is construction complete on the project?		
2. Walk around the site perimeter to identify any areas where sediment may escape from the site. Any signs of sediment release?		
3. Are any previously disturbed areas in need of additional hydroseeding or manual seeding and mulching?		
4. Do all disturbed areas drain to either a drainage swale, storm sewer or the detention structure? Are these areas permanently stabilized?		
5. Have the inlet protection devices been removed? Check storm inlets for signs of sediment buildup. Does the inlet need to be cleaned?		
6. Have the temporary silt fences and straw bales been removed?		

RAINFALL LOG

Month: _____

Month: _____

[illegible]

SWPPP Amendment Log

Project Name: _____ NYS Permit _____

SWPPP Contact: _____ Signature _____

Inspection Date	Inspector Name(s)	Description of BMP Deficiency	Corrective Action Needed (Including Planned Date/Responsible Person)	Date Action Taken/ Responsible Person

SWPPP Corrective Action Log

Project Name: _____ NYS Permit _____

SWPPP Contact: _____ Signature _____

Amendment No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

Appendix E - Contractor Certifications

CONTRACTOR'S CERTIFICATION

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") General Permit for Stormwater Discharges From Construction Activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

Signed: _____

Printed Name: _____

Title: _____

Company Name: _____

Date: _____

Appendix F - Soil Borings/Soil Survey



GeoLogic NY, Inc.

P.O. Box 350 • 37 Copeland Ave. • Homer, NY 13077 • 607.749.5000 • Fax: 607.749.5063

**SUBSURFACE REPORT
WATER DISTRICT NO. 2
WATER DISTRIBUTION SYSTEM REPLACEMENT
NORTH CASTLE, NEW YORK**

Prepared For:

GHD Consulting Engineers, LLC

Prepared By:

GeoLogic NY, Inc.

**January 2014
Project No. 213119-D**

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**SUBSURFACE REPORT
Water District No. 2
Water Distribution System Replacement
North Castle, New York**

1. INTRODUCTION

This report is an instrument of service of GeoLogic NY, Inc. (GeoLogic). This report presents the results of subsurface drilling activities completed on January 23, 2014 for the Water District No. 2, North Castle, New York. The scope of services completed was mutually agreed upon by GeoLogic and GHD and was outlined in our Task Order of November 14, 2013. The services completed included providing personnel and equipment to advance soil borings and obtain soil samples.

1.1. Purpose

The purpose of the work was to evaluate soil, bedrock and groundwater conditions at various locations.

1.2 Scope of Services

The services provided by GeoLogic are outlined below:

Provided equipment and personnel to advance borings and collect soil and samples. The borings were logged and the soils and rock were visually classified;

Submitted the findings of the sampling in a report.

The site fieldwork was performed between January 21 and January 23, 2014.

2. METHODOLOGY

2.1 Methodology

Soil borings were advanced using 3 1/4 inch I.D. hollow stem augers and roller bit.

Representative samples of the overburden were obtained by driving a 2 inch O.D. split spoon sampler into the soil, through and beneath the augers, using a 140 pound hammer free-falling 30 inches (ASTM D 1586). Borings were backfilled upon completion.

Probe Rods were driven for P-1 – P-21 and P-X to predetermined depths of 6.0 feet.

3. FINDINGS

3.1. Site Specific Geologic and Hydrogeologic Conditions

The locations of the borings were selected by a representative of GHD Consulting Engineers. The borings were selected to evaluate subsurface conditions for the design of a water distribution system replacement.

The soils at the sites were variable; fill was encountered in B-1 and B-3 underlain by brown sand, silt, and gravel. B-2, B-5 and B-6 generally consisted of a brown sand, silt and gravel unit. Auger refusal was encountered in B-6 at a depth of 7.5 feet below ground surface. No soil samples were obtained for P-1 – P-21 and P-X. Refusal was encountered before the predetermined depth of 6.0 feet was reached at P-3, P-5, P-6 and P-12.

Upon completion, no groundwater was observed in borings B-1, B-3, B-5, and B-6. In boring B-2, with augers at 8.0 feet below ground surface, groundwater was encountered at a depth of 4.8 feet bgs.

The material descriptions and observations are presented on the attached Subsurface Logs.

4. CONCLUSIONS

GeoLogic has completed subsurface investigative work for the Water District No. 2, North Castle, New York. The conclusions reached in this report are based solely on the observations made and data collected during the course of the study. Should additional information pertaining to the site become available, GeoLogic should be afforded an opportunity to review the information and to make additional conclusions and recommendations as necessary.

The soils at the sites were variable; fill was encountered in B-1 and B-3 underlain by brown sand, silt, and gravel. B-2, B-5 and B-6 generally consisted of a brown sand, silt and gravel unit. Auger refusal was encountered in B-6 at a depth of 7.5 feet below ground surface. No soil samples were obtained for P-1 – P-21 and P-X. Refusal was encountered before the predetermined depth of 6.0 feet was reached at P-3, P-5, P-6 and P-12.

Upon completion, no groundwater was observed in borings B-1, B-3, B-5, and B-6. In boring B-2, with augers at 8.0 feet below ground surface, groundwater was encountered at a depth of 4.8 feet bgs.

The Subsurface Logs attached to this report present the observations and mechanical data collected at the site, supplemented by classification of material removed from the borings as determined through visual identification.

It is cautioned that the materials removed from the borings represent only a fraction of the total volume of the deposits at the site and may not necessarily be representative of the subsurface conditions between adjacent borings or between the sampled intervals.

The data presented on the Subsurface Logs together with the recovered samples will provide a basis for evaluating the character of the subsurface conditions relative to the project.

The evaluation must consider all the recorded details and their significance relative to each other. Often the analysis of probe hole data indicate the need for additional testing or sampling procedures to more adequately evaluate the subsurface conditions. Any evaluation of the contents of this report and the recovered samples must be performed by knowledgeable Professionals.

5. LIMITATIONS

In conducting and preparing this work, GeoLogic observed the ordinary standard of care normally exercised by other consultants at the same time and under similar conditions. No other warranty, expressed or implied is intended.

The conclusions reached in this report do not represent scientific certainties, but rather are probabilities based on our professional judgment. The conclusions made in this report are based solely on the scope of services described herein, and the information obtained during the course of the work.

The observations and data contained in this report are only indicative of the conditions at the date, time and location they were made. Environmental conditions are inherently transient; therefore, variation with time and location should be expected.

Respectfully Submitted,

GeoLogic NY, Inc.



Forrest Earl
President/Principal Hydrogeologist

APPENDIX A
SUBSURFACE LOGS

GeoLogic NY, Inc.

P.O. Box 350
Homer, New York 13077
(607) 749-5000

KEY TO SUBSURFACE LOG

Boring No.: B-1
Project No.: 209001
Date Started: 1/31/10
Date Completed: 1/31/10

Sheet 1 of 1

Reference Elevation: 100.0

Project:
Location:

Depth (ft.)	Sample No.	Type	SPT Blows	N-Value	Recovery (ft.)	PID Reading (ppm)	MATERIAL DESCRIPTION	REMARKS
0							Ground Surface	Water level at 2.0'
1	1	ss	1 2 2 1	4	2.0	32	Brown SILT, Some fine-coarse Sand, trace clay, moist-loose	with augers at 7.5'. At completion water level at 2.2'
2	2						Gray SHALE, medium hard weathered, thin bedded, some fractures	with augers at 10.0'. Run #1: 3.0'-5.0' 95% Recovery, 50% RQD

TABLE I

Identification of soil type is made on basis of an estimate of particle sizes, and in the case of fine-grained soils also on basis of plasticity.

Soil Type	Soil Particle	
Boulder	> 12"	Coarse Grained (Granular)
Cobble	12" - 3"	
Gravel	3" - 3/4"	
	- Coarse	
	- Fine	
Sand	3/4" - #4	Fine Grained
	- Coarse	
	- Medium	
	- Fine	
Silt-Non Plastic (Granular)	#4 - #10	Fine Grained
	#10 - #40	
	#40 - #200	
Clay-Plastic (Cohesive)	< #200	Fine Grained

TABLE II

The following terms are used in classifying soils consisting of mixtures of two or more soil types. The estimate is based on weight of total sample.

Term	Percent of Total Sample
"and"	35 - 50
"some"	20 - 35
"little"	10 - 20
"trace"	1 - 10

(When sampling gravelly soils with a standard split spoon, the true percentage of gravel is often not recovered due to the relatively small sampler diameter.)

TABLE III

The relative compactness or consistency is described in accordance with the following terms.

Granular Soils		Cohesive Soils	
Term	Blows per Foot, N	Term	Blows per Foot, N
Loose	< 11	Very Soft	< 2
Firm	11 - 30	Soft	2 - 4
Compact	31 - 50	Medium	4 - 8
Very Compact	> 51	Stiff	8 - 15
		Very Stiff	15 - 30
		Hard	>30

(Large particles in the soils will often significantly influence the blows per foot recorded during the Penetration Test.)

TABLE IV

Stratified Soils	
Descriptive Term	Thickness
Parting	- 0" - 1/16"
Seam	- 1/16" - 1/2"
Layer	- 1/2" - 12"
Stratum	- >12"
Varved Clay	- Alternating seams or layers of sand, silt & clay
Pocket	- small, erratic deposit, usually <12"
Lens	- lenticular deposit
Occasional	- one or less per foot of thickness
Frequent	- more than one per foot of thickness

TABLE V

Rock Classification Terms		
	Term	Meaning
Hardness	Soft	Scratched by fingernail
	Medium Hard	Scratched easily by penknife
	Hard	Scratched with difficulty by penknife
	Very Hard	Cannot be scratched by penknife
Weathering	Very Weathered	Judged from the relative amounts of disintegration, iron staining, core recovery, clay seams, etc.
	Weathered	
	Sound	
Bedding	Laminated	Natural breaks in Rock Layers
	Thin bedded	<1"
	Bedded	1"-4"
	Thick bedded	4"-12"
	Massive	12"-36"
(Fracturing refers to natural breaks in the rock oriented at some angle to the rock layers.)		

GENERAL INFORMATION & KEY TO SUBSURFACE LOGS

The information presented in the following defines some of the procedures and terms used on the Subsurface Logs to describe the conditions encountered.

1. The figures in the Depth column define the scale of the Subsurface Log.
2. The Sample No. is used for identification on sample containers.
3. The sample column shows, graphically, the depth range from which a sample was recovered. (ss – split spoon; core – rock core; st – shelby tube; dp – direct push). If not shown as a separate column, the sample type should be referenced in the Remark column or in the footnote.
4. Blows on Sampler - shows the results of the "Penetration Test", recording the number of blows required to drive a split spoon sampler into the soil. The number of blows required for each six inches of penetration is recorded. The first 6 inches of penetration is considered to be a seating drive. The number of blows required for the second and third 6 inches of penetration is termed the penetration resistance, N. The outside diameter of the sampler, the hammer weight and the length of drop are noted at the bottom of the Subsurface Log.
5. Recovery shows the length of the recovered soil sample for the sample device noted.
6. All recovered soil samples are reviewed in the office by an experienced technical specialist or geologist, unless noted otherwise. The visual descriptions are made on the basis of a combination of the field descriptions and observations and the sample as received in the office. The method of visual classification is based primarily on the Unified Soil Classification (ASTM D 2487-83) with regard to the particle size and plasticity. (See Table I). Additionally, the relative portion, by weight, of two or more soil types is described for granular soils in accordance with "Suggested Methods of Test for Identification of Soils" by D.M. Burmister, ASTM Special Technical Publication 479, June 1970. (See Table II) The description of the relative soil density or consistency is based upon the penetration records as defined on Table No. III. The description of the soil moisture is based upon the relative wetness of the soil as recovered and is described as damp, moist, wet and saturated. Water introduced in the boring either naturally or during drilling may have affected the moisture condition of the recovered sample. Special terms are used as required to describe materials in greater detail; several such terms are listed in Table IV. When sampling gravelly soils with a standard two-inch diameter split spoon, the true percentage of gravel is often not recovered due to the relatively small sampler diameter. The presence of boulders and large gravel is sometimes, but not necessarily, detected by an evaluation of the casing/hollow stem augers and samplers blows or through the "action" of the drill rig.
7. The description of the rock shown is based on the recovered rock core and the field observations. The terms frequently used in the description are included in Table V.
8. The stratification lines represent the approximate boundary between soil types, and the actual transition may be gradual.
9. Miscellaneous observations and procedures noted in the field are shown in this column, including water level observations. It is important to realize the reliability of the water level observations depends upon the soil type (water does not readily stabilize in a hole through fine grained soils), and that drill water used to advance the boring may have influenced the observations. The groundwater level typically will fluctuate seasonally. One or more perched or trapped water levels may exist in the ground seasonally. All the available readings should be evaluated. If definite conclusions cannot be made, it is often prudent to examine the conditions more thoroughly through test pit excavations or monitoring wells.
10. The length of core run is defined as the length of penetration of the core barrel. Core recovery is the length of core recovered divided by the core run. The RQD (Rock Quality Designation) is the total pieces of NX core exceeding 4 inches in length divided by the core run. The size of the core barrel used is also noted at the bottom of the subsurface log.

The Subsurface Logs attached to this report present the observations and mechanical data collected at the site, supplemented by classification of material removed from the borings as determined through visual identification. It is cautioned that the materials removed from the borings represent only a fraction of the total volume of the deposits at the site and may not necessarily be representative of the subsurface conditions between adjacent borings or between the sampled intervals. The data presented on the Subsurface Logs together with the recovered samples will provide a basis for evaluating the character of the subsurface conditions relative to the project. The evaluation must consider all the recorded details and their significance relative to each other. Often analyses of boring data indicate the need for additional testing or sampling procedures to more accurately evaluate the subsurface conditions. Any evaluation of the contents of this report and the recovered samples must be performed by knowledgeable Professionals.



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SUBSURFACE LOG

(Page 1 of 1)

Water District No. 2

41 Windmill Road

North Castle, New York

Boring No.: B-1
Project No.: 213119-D
Date Started: 01/23/14
Date Completed: 01/23/14

Depth (ft)	Sample No.	Blow Count	N-Value	Recovery (ft)	DESCRIPTION	REMARKS
0		2			Topsoil 0.4'	
1		3			FILL: Brown fine-medium SAND, Some Silt, cobbles, moist	
		6	-	1.0		
		4				
2		4			similar	
		4				
2		6	10	1.0		
		3				
4		9				
		6				
3		4	10	1.0		
		4				
6		4				
		8				
4		4	12	0.5		
		6				
8		7				
		11				
5		10	21	1.0		
		10				
10		7				No free water observed.
		6				Backfilled with auger cuttings and crushed stone.
6		6	12	-		Caved at 5.0'.
		4				
12					BORING TERMINATED AT 12.0'	
14						

Sampling Method: ASTM D-1586, unless otherwise noted.

Notes: 3 1/4" ID Hollow Stem Augers

Visually Classified by: Driller

File: 213119-D/tech/B-1

SUBSURFACE LOG

(Page 1 of 1)

Water District No. 2

North Lane

North Castle, New York

Boring No.: B-2
Project No.: 213119-D
Date Started: 01/23/14
Date Completed: 01/23/14

Depth (ft)	Sample No.	Blow Count	N-Value	Recovery (ft)	DESCRIPTION	REMARKS
0		1			Topsoil 0.3'	
1		1	5	1.0	Brown fine-medium SAND, little fine gravel, moist	
		4				
		8				
2		3			Black fine SAND, Some Silt, trace organics, moist	
		4	7	1.0		
2		3				
		9				
4		3			Brown SILT, fine SAND, moist	
		3	8	1.4		
3		5				
		6				
6		10			similar	
		13	32	1.5		
4		19				
		15				
8		10			similar with Cobbles	
		12	23	0.5		
5		11				
		13				
10		12			Brown fine SAND and SILT with possible decomposed Rock fragments, wet	
		14	29	1.5		
6		15				
		10				
12					BORING TERMINATED AT 12.0'	With augers at 4.0', water first encountered at 5.0'. Upon completion, with augers at 8.0', water level at 4.8'. Backfilled with auger cuttings and crushed stone. Caved at 3.0', dry.
14						

Sampling Method: ASTM D-1586, unless otherwise noted.

Notes: 3 1/4" ID Hollow Stem Augers

Visually Classified by: Driller

File: 213119-D/tech/B-2

SUBSURFACE LOG

(Page 1 of 1)

Water District No. 2

Windmill Road

North Castle, New York

Boring No.: B-3
Project No.: 213119-D
Date Started: 01/23/14
Date Completed: 01/23/14

Depth (ft)	Sample No.	Blow Count	N-Value	Recovery (ft)	DESCRIPTION	REMARKS
0		1			Topsoil 0.4'	
1		2	5	1.5	FILL: Brown fine SAND, Some Silt and CLAY, little fine gravel, moist	
		3				
2		3			similar	
		2	6	0.5		
		3				
4		3			similar	
		5	13	1.2		
		6				
6		6			similar	
		7	29	1.4		
		22			FILL: Brown fine-coarse SAND, SILT, COBBLES, damp	
		18				
8		6			FILL: Brown SILT and CLAY, Some fine Sand and Gravel, moist	
		8	18	-		
		10				
10		10				No free water observed.
		15	44	-		Backfilled with auger cuttings.
		18				Caved at 5.5'.
		26				
		24				
12					BORING TERMINATED AT 12.0'	
14						

Sampling Method: ASTM D-1586, unless otherwise noted.

Notes: 3 1/4" ID Hollow Stem Augers

Visually Classified by: Driller

File: 213119-D/tech/B-3



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SUBSURFACE LOG

(Page 1 of 1)

Water District No. 2

North Castle, New York

Boring No.: B-4
Project No.: 213119-D
Date Started: :
Date Completed: :

Depth (ft)	Sample No.	Blow Count	N-Value	Recovery (ft)	DESCRIPTION	REMARKS
0					BORING DELETED AS PER GHD	
2						
4						
6						
8						
10						

Sampling Method: ASTM D-1586, unless otherwise noted.

Notes: 3 1/4" ID Hollow Stem Augers

Visually Classified by: Driller

File: 213119-D/tech/B-4

SUBSURFACE LOG

(Page 1 of 1)

Water District No. 2

Thornwood Road

North Castle, New York

Boring No.: B-5
Project No.: 213119-D
Date Started: 01/23/14
Date Completed: 01/23/14

Depth (ft)	Sample No.	Blow Count	N-Value	Recovery (ft)	DESCRIPTION	REMARKS
0		2			Topsoil 0.4'	
1		14	39	1.0	Brown fine-medium SAND, little silt, moist	
		25				
2		25			similar	
		14				
2		27	57	1.0		
		30				
4		30			Brown fine-medium SAND, little gravel, moist	
	3	50/0	-	-		
	CR1	-	-	-	Core Run #1, 4.5' - 5.5' 0.4' Recovery BOULDER	
6					Brown SILT, fine SAND, moist	
		5				
4		6	12	1.5		
		6				
8		7			Brown fine-coarse SAND, SILT and COBBLES, damp	
		14				
5		20	44	1.5		
		24				
10		40				
		12				
6		14	30	-		No free water observed.
		16				Backfilled with auger cuttings.
12		16				
					BORING TERMINATED AT 12.0'	
14						

Sampling Method: ASTM D-1586, unless otherwise noted.

Notes: 3 1/4" ID Hollow Stem Augers/Roller Bit

Visually Classified by: Driller

File: 213119-D/tech/B-5



(Page 1 of 1)

Upland Lane

North Castle, New York

Boring No.: B-6
Project No.: 213119-D
Date Started: 01/22/14
Date Completed: 01/22/14

No free water observed.
Backfilled with auger cuttings.
Caved at 2.4'.

AUGER REFUSAL AT 7.5'

Sampling Method: ASTM D-1586, unless otherwise noted.
Notes: 3 1/4" ID Hollow Stem Augers
Visually Classified by: Driller
File: 213119-D/tech/B-6

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SUBSURFACE LOG - DIRECT PUSH

(Page 1 of 1)

Water District No. 2

Evergreen Row

North Castle, New York

Boring No.: P-1
Project No.: 213119-D
Date Started: 01/22/14
Date Completed: 01/22/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
1	4		No Soil Sampling	
2	8			
3	32			
4	34			
5	13			
6	14			No free water observed.
6			BORING TERMINATED AT 6.0'	
7				
8				

Visually Classified by: N/A

File: 213119-D/tech/P-1

SUBSURFACE LOG - DIRECT PUSH

(Page 1 of 1)

Water District No. 2

Evergreen Row

North Castle, New York

Boring No.: P-2
Project No.: 213119-D
Date Started: 01/21/14
Date Completed: 01/21/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
1	3		No Soil Sampling	
2	7			
3	7			
4	8			
5	9			
6	25			No free water observed.
6			BORING TERMINATED AT 6.0'	
7				
8				

Visually Classified by: N/A

File: 213119-D/tech/P-2



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SUBSURFACE LOG - DIRECT PUSH

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Water District No. 2

46 Evergreen Row

North Castle, New York

Boring No.: P-3
Project No.: 213119-D
Date Started: 01/21/14
Date Completed: 01/21/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod No Soil Sampling	
1	2			
2	7			
3	150/.5		PROBE REFUSAL AT 2.5'	No free water observed.
4			AUGER REFUSAL AT 2.7'	

Visually Classified by: N/A

File: 213119-D/tech/P-3



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SUBSURFACE LOG - DIRECT PUSH

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Water District No. 2

24 Fox Ridge Road

North Castle, New York

Boring No.: P-4
Project No.: 213119-D
Date Started: 01/21/14
Date Completed: 01/21/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
1	4		No Soil Sampling	
2	16			
3	15			
4	9			
5	4			
6	4			No free water observed.
6			BORING TERMINATED AT 6.0'	
7				
8				

Visually Classified by: N/A

File: 213119-D/tech/P-4



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SUBSURFACE LOG - DIRECT PUSH

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Water District No. 2

Evergreen Row

North Castle, New York

Boring No.: P-5
Project No.: 213119-D
Date Started: 01/21/14
Date Completed: 01/21/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod No Soil Sampling	
1	5			
2	5			
3	100/.5			
			PROBE REFUSAL AT 2.5' AUGER REFUSAL AT 2.6'	No free water observed.
4				

Visually Classified by: N/A

File: 213119-D/tech/P-5

SUBSURFACE LOG - DIRECT PUSH

(Page 1 of 1)

Water District No. 2

43 North Lake Road

North Castle, New York

Boring No.: P-6
Project No.: 213119-D
Date Started: 01/21/14
Date Completed: 01/21/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
			No Soil Sampling	
1	4			
2	75			
3	150/.5			
3			PROBE REFUSAL AT 2.5'	
			With augers down, SAND, GRAVEL, COBBLES, dense, dry	
4				
5				No free water observed.
6			AUGER REFUSAL AT 5.5'	

Visually Classified by: N/A

File: 213119-D/tech/P-6



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SUBSURFACE LOG - DIRECT PUSH

(Page 1 of 1)

Water District No. 2

2 Elm Place

North Castle, New York

Boring No.: P-7
Project No.: 213119-D
Date Started: 01/21/14
Date Completed: 01/21/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
1	4		No Soil Sampling	
2	4			
3	7			
4	21			
5	38			
6	74			No free water observed.
6			BORING TERMINATED AT 6.0'	
7				
8				

Visually Classified by: N/A

File: 213119-D/tech/P-7

SUBSURFACE LOG - DIRECT PUSH

(Page 1 of 1)

Water District No. 2

13 Fox Ridge Road

North Castle, New York

Boring No.: P-8
Project No.: 213119-D
Date Started: 01/21/14
Date Completed: 01/21/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
1	3		No Soil Sampling	
2	8			
3	16			
4	14			
5	17			
6	15			No free water observed.
6			BORING TERMINATED AT 6.0'	
7				
8				

Visually Classified by: N/A

File: 213119-D/tech/P-8



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SUBSURFACE LOG - DIRECT PUSH

(Page 1 of 1)

Water District No. 2

Thornwood Road

North Castle, New York

Boring No.: P-9
Project No.: 213119-D
Date Started: 01/21/14
Date Completed: 01/21/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
1	6		No Soil Sampling	
2	7			
3	6			
4	6			
5	4			
6	2			No free water observed.
6			BORING TERMINATED AT 6.0'	
7				
8				

Visually Classified by: N/A

File: 213119-D/tech/P-9

SUBSURFACE LOG - DIRECT PUSH

(Page 1 of 1)

Water District No. 2

32 Thornwood Road

North Castle, New York

Boring No.: P-10
Project No.: 213119-D
Date Started: 01/23/14
Date Completed: 01/23/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
1	9		No Soil Sampling	
2	15			
3	18			
4	17			
5	16			
6	14			No free water observed.
6			BORING TERMINATED AT 6.0'	
7				
8				

Visually Classified by: N/A

File: 213119-D/tech/P-10



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SUBSURFACE LOG - DIRECT PUSH

(Page 1 of 1)

Water District No. 2

24 Windmill Place

North Castle, New York

Boring No.: P-11
Project No.: 213119-D
Date Started: 01/21/14
Date Completed: 01/21/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
1	3		No Soil Sampling	
2	8			
3	18			
4	27			
5	15			
6	50			No free water observed.
6			BORING TERMINATED AT 6.0'	
7				
8				

Visually Classified by: N/A

File: 213119-D/tech/P-11



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SUBSURFACE LOG - DIRECT PUSH

(Page 1 of 1)

Water District No. 2

Windmill Road

North Castle, New York

Boring No.: P-12
Project No.: 213119-D
Date Started: 01/22/14
Date Completed: 01/22/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
			No Soil Sampling	
1	1	2		
2	2	4		
3	3	7		
4	4	7		
5	5	9		No free water observed.
6	6	100/.1	PROBE REFUSAL AT 5.1'	

Visually Classified by: N/A

File: 213119-D/tech/P-12



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SUBSURFACE LOG - DIRECT PUSH

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Water District No. 2

Long Pond Road

North Castle, New York

Boring No.: P-13
Project No.: 213119-D
Date Started: 01/22/14
Date Completed: 01/22/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
1	6		No Soil Sampling	
2	10			
3	8			
4	21			
5	24			
6	18			No free water observed.
6			BORING TERMINATED AT 6.0'	
7				
8				

Visually Classified by: N/A

File: 213119-D/tech/P-13



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SUBSURFACE LOG - DIRECT PUSH

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Water District No. 2

Valley Lane

North Castle, New York

Boring No.: P-14
Project No.: 213119-D
Date Started: 01/22/14
Date Completed: 01/22/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
1	3		No Soil Sampling	
2	4			
3	4			
4	5			
5	5			
6	12			No free water observed.
6			BORING TERMINATED AT 6.0'	
7				
8				

Visually Classified by: N/A

File: 213119-D/tech/P-14



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SUBSURFACE LOG - DIRECT PUSH

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Water District No. 2

Valley Lane

North Castle, New York

Boring No.: P-15
Project No.: 213119-D
Date Started: 01/22/14
Date Completed: 01/22/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
1	1	4	No Soil Sampling	
2	2	8		
3	3	40		
4	4	22		
5	5	20		
6	6	24		No free water observed.
6			BORING TERMINATED AT 6.0'	
7				
8				

Visually Classified by: N/A

File: 213119-D/tech/P-15



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SUBSURFACE LOG - DIRECT PUSH

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Water District No. 2

Long Pond Road

North Castle, New York

Boring No.: P-16
Project No.: 213119-D
Date Started: 01/22/14
Date Completed: 01/22/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
1	1	4	No Soil Sampling	
2	2	4		
3	3	5		
4	4	8		
5	5	9		
6	6	12		No free water observed.
6			BORING TERMINATED AT 6.0'	
7				
8				

Visually Classified by: N/A

File: 213119-D/tech/P-16



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SUBSURFACE LOG - DIRECT PUSH

(Page 1 of 1)

Water District No. 2

2 Spruce Hill Road

North Castle, New York

Boring No.: P-17
Project No.: 213119-D
Date Started: 01/22/14
Date Completed: 01/22/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
1	3		No Soil Sampling	
2	1			
3	4			
4	15			
5	24			
6	35			No free water observed.
6			BORING TERMINATED AT 6.0'	
7				
8				

Visually Classified by: N/A

File: 213119-D/tech/P-17



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SUBSURFACE LOG - DIRECT PUSH

(Page 1 of 1)

Water District No. 2

3 Windmill Road

North Castle, New York

Boring No.: P-18
Project No.: 213119-D
Date Started: 01/22/14
Date Completed: 01/22/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
1	4		No Soil Sampling	
2	12			
3	19			
4	12			
5	14			
6	14			No free water observed.
6			BORING TERMINATED AT 6.0'	
7				
8				

Visually Classified by: N/A

File: 213119-D/tech/P-18



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SUBSURFACE LOG - DIRECT PUSH

(Page 1 of 1)

Water District No. 2

19 Windmill Road

North Castle, New York

Boring No.: P-19
Project No.: 213119-D
Date Started: 01/22/14
Date Completed: 01/22/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
1	4		No Soil Sampling	
2	25			
3	34			
4	17			
5	14			
6	10			No free water observed.
6			BORING TERMINATED AT 6.0'	
7				
8				

Visually Classified by: N/A

File: 213119-D/tech/P-19



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SUBSURFACE LOG - DIRECT PUSH

(Page 1 of 1)

Water District No. 2

1 Mill Lane

North Castle, New York

Boring No.: P-20
Project No.: 213119-D
Date Started: 01/22/14
Date Completed: 01/22/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
1	3		No Soil Sampling	
2	8			
3	10			
4	15			
5	4			
6	4			No free water observed.
6			BORING TERMINATED AT 6.0'	
7				
8				

Visually Classified by: N/A

File: 213119-D/tech/P-20

SUBSURFACE LOG - DIRECT PUSH

(Page 1 of 1)

Water District No. 2

Windmill Road

North Castle, New York

Boring No.: P-21
Project No.: 213119-D
Date Started: 01/21/14
Date Completed: 01/21/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
1	9		No Soil Sampling	
2	23			
3	7			
4	9			
5	27			
6	11			No free water observed.
6			BORING TERMINATED AT 6.0'	
7				
8				

Visually Classified by: N/A

File: 213119-D/tech/P-21



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SUBSURFACE LOG - DIRECT PUSH

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Water District No. 2

40 Windmill Road

North Castle, New York

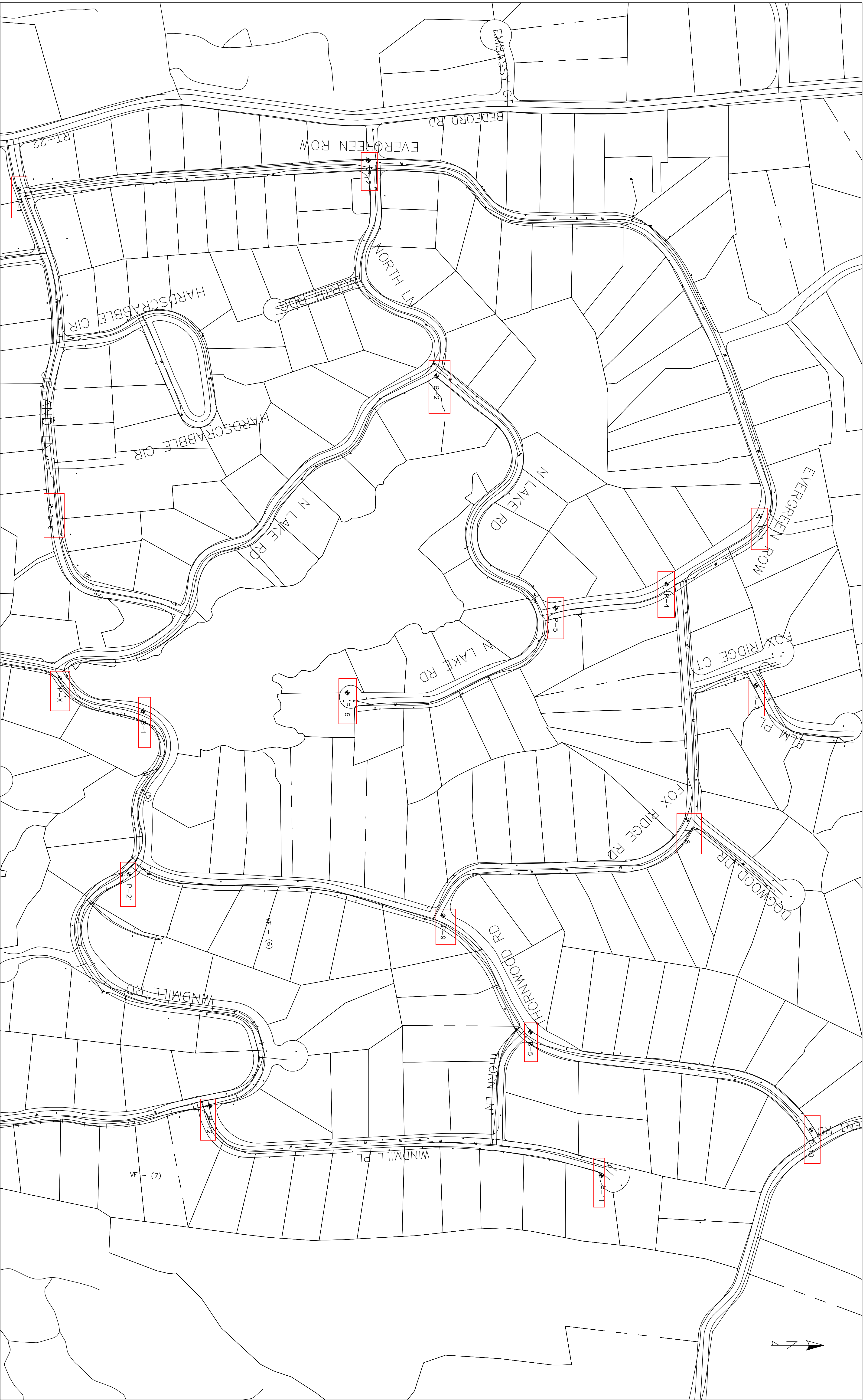
Boring No.: P-X
Project No.: 213119-D
Date Started: 01/22/14
Date Completed: 01/22/14

Depth (ft)	Sample No.	N	DESCRIPTION	REMARKS
0			Drove Probe Rod	
1	6		No Soil Sampling	
2	16			
3	22			
4	25			
5	16			
6	14			No free water observed.
6			BORING TERMINATED AT 6.0'	
7				
8				

Visually Classified by: N/A

File: 213119-D/tech/P-X

APPENDIX B
BORING LOCATION PLANS







United States
Department of
Agriculture



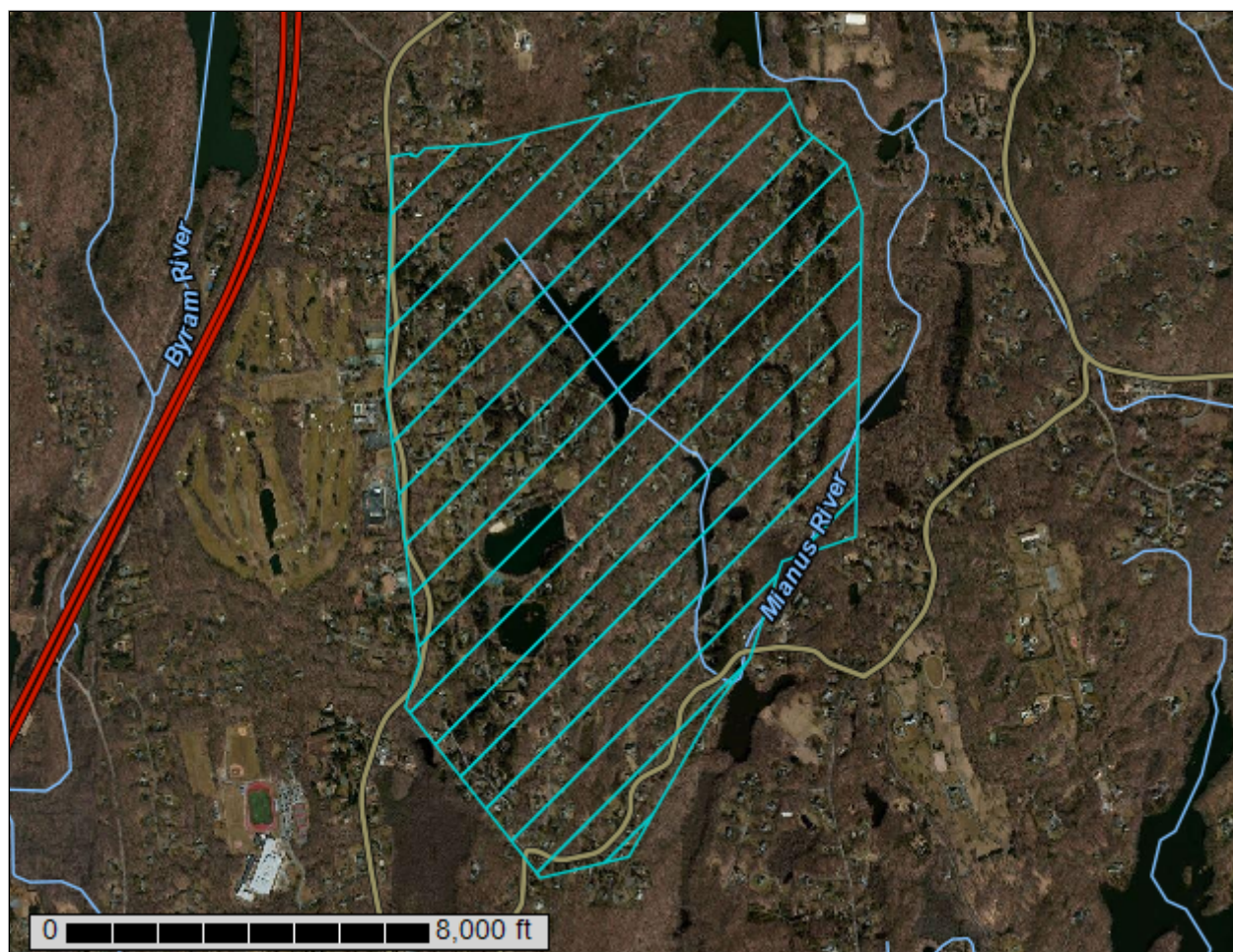
NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Westchester County, New York**

WD No. 2, North Castle, NY



February 24, 2014

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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CrC—Charlton-Chatfield complex, rolling, very rocky.....	16
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CtC—Chatfield-Hollis-Rock outcrop complex, rolling.....	20
CuD—Chatfield-Hollis-Rock outcrop complex, hilly.....	22
HnB—Hinckley gravelly loamy sand, 3 to 8 percent slopes.....	24
LcB—Leicester loam, 3 to 8 percent slopes, stony.....	25
Pa—Palms muck.....	27
PnB—Paxton fine sandy loam, 2 to 8 percent slopes.....	28
PnC—Paxton fine sandy loam, 8 to 15 percent slopes.....	29
RdB—Ridgebury loam, 3 to 8 percent slopes.....	30
Sh—Sun loam.....	32
Sm—Sun loam, extremely stony.....	33
Ub—Udorthents, smoothed.....	34
Uc—Udorthents, wet substratum.....	35
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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

[illegible]


A horizontal number line is shown with major tick marks at 0, 500, 1000, 2000, and 3000. The word "Feet" is written at the right end of the line. Two bars are drawn above the line: one from 0 to 2000 and another from 2000 to 3000.

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84


Custom Soil Resource Report


MAP LEGEND


Area of Interest (AOI)

 Area of Interest (AOI)


Soils


 Soil Map Unit Polygons


 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit


 Clay Spot


 Closed Depression

 Gravel Pit

 Gravelly Spot


 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop


 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole


 Slide or Slip


 Sodic Spot

 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals


Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Westchester County, New York
Survey Area Data: Version 9, Dec 15, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 26, 2011—Apr 16, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Westchester County, New York (NY119)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ce	Carlisle muck	10.4	1.3%
ChC	Charlton loam, 8 to 15 percent slopes	6.6	0.8%
ChD	Charlton loam, 15 to 25 percent slopes	5.1	0.6%
CrC	Charlton-Chatfield complex, rolling, very rocky	329.9	40.3%
CsD	Chatfield-Charlton complex, hilly, very rocky	146.9	18.0%
CtC	Chatfield-Hollis-Rock outcrop complex, rolling	34.2	4.2%
CuD	Chatfield-Hollis-Rock outcrop complex, hilly	53.3	6.5%
HnB	Hinckley gravelly loamy sand, 3 to 8 percent slopes	0.3	0.0%
LcB	Leicester loam, 3 to 8 percent slopes, stony	29.2	3.6%
Pa	Palms muck	2.4	0.3%
PnB	Paxton fine sandy loam, 2 to 8 percent slopes	52.7	6.4%
PnC	Paxton fine sandy loam, 8 to 15 percent slopes	34.0	4.2%
RdB	Ridgebury loam, 3 to 8 percent slopes	18.3	2.2%
Sh	Sun loam	9.5	1.2%
Sm	Sun loam, extremely stony	13.2	1.6%
Ub	Udorthents, smoothed	6.9	0.8%
Uc	Udorthents, wet substratum	3.5	0.4%
W	Water	51.3	6.3%
WdB	Woodbridge loam, 3 to 8 percent slopes	10.5	1.3%
Totals for Area of Interest		818.1	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named

according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or

Custom Soil Resource Report

anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Westchester County, New York

Ce—Carlisle muck

Map Unit Setting

Elevation: 600 to 1,200 feet

Mean annual precipitation: 46 to 50 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 115 to 215 days

Map Unit Composition

Carlisle and similar soils: 80 percent

Minor components: 20 percent

Description of Carlisle

Setting

Landform: Swamps, marshes

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Talf

Down-slope shape: Concave

Across-slope shape: Concave

Parent material: Deep organic material

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 5.95 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water capacity: Very high (about 23.9 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability (nonirrigated): 5w

Hydrologic Soil Group: A/D

Typical profile

0 to 60 inches: Muck

Minor Components

Palms

Percent of map unit: 10 percent

Landform: Swamps, marshes

Sun

Percent of map unit: 5 percent

Landform: Depressions

Fluvaquents

Percent of map unit: 3 percent

Landform: Flood plains

Udifluvents

Percent of map unit: 2 percent

ChC—Charlton loam, 8 to 15 percent slopes

Map Unit Setting

Mean annual precipitation: 46 to 50 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 115 to 215 days

Map Unit Composition

Charlton and similar soils: 80 percent

Minor components: 20 percent

Description of Charlton

Setting

Landform: Till plains, ridges, hills

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Crest

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Acid loamy till derived mainly from schist, gneiss, or granite

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 5.95 in/hr)*

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Moderate (about 7.5 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance

Land capability (nonirrigated): 3e

Hydrologic Soil Group: B

Typical profile

0 to 8 inches: Loam

8 to 24 inches: Sandy loam

24 to 60 inches: Sandy loam

Minor Components

Paxton

Percent of map unit: 5 percent

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Sutton

Percent of map unit: 5 percent

Chatfield

Percent of map unit: 5 percent

Knickerbocker

Percent of map unit: 2 percent

Riverhead

Percent of map unit: 2 percent

Charlton, very stony

Percent of map unit: 1 percent

ChD—Charlton loam, 15 to 25 percent slopes

Map Unit Setting

Mean annual precipitation: 46 to 50 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 115 to 215 days

Map Unit Composition

Charlton and similar soils: 80 percent

Minor components: 20 percent

Description of Charlton

Setting

Landform: Till plains, ridges, hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Acid loamy till derived mainly from schist, gneiss, or granite

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 5.95 in/hr)*

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Moderate (about 7.5 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability (nonirrigated): 4e

Hydrologic Soil Group: B

Typical profile

*0 to 8 inches: Loam
8 to 24 inches: Sandy loam
24 to 60 inches: Sandy loam*

Minor Components

Paxton

Percent of map unit: 5 percent

Chatfield

Percent of map unit: 5 percent

Sutton

Percent of map unit: 4 percent

Knickerbocker

Percent of map unit: 2 percent

Riverhead

Percent of map unit: 2 percent

Hollis

Percent of map unit: 1 percent

Charlton, very stony

Percent of map unit: 1 percent

CrC—Charlton-Chatfield complex, rolling, very rocky

Map Unit Setting

*Elevation: 100 to 1,000 feet
Mean annual precipitation: 46 to 50 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 115 to 215 days*

Map Unit Composition

*Charlton and similar soils: 50 percent
Chatfield and similar soils: 30 percent
Minor components: 20 percent*

Description of Charlton

Setting

*Landform: Till plains, ridges, hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Acid loamy till derived mainly from schist, gneiss, or granite*

Properties and qualities

Slope: 2 to 15 percent

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Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Moderate (about 7.5 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability (nonirrigated): 6s

Hydrologic Soil Group: B

Typical profile

0 to 8 inches: Loam

8 to 24 inches: Sandy loam

24 to 60 inches: Sandy loam

Description of Chatfield

Setting

Landform: Ridges, hills

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Crest

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loamy till derived mainly from granite, gneiss, or schist

Properties and qualities

Slope: 2 to 15 percent

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95
in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 1 percent

Available water capacity: Low (about 3.2 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability (nonirrigated): 6s

Hydrologic Soil Group: B

Typical profile

0 to 7 inches: Loam

7 to 24 inches: Flaggy silt loam

24 to 28 inches: Unweathered bedrock

Minor Components

Hollis

Percent of map unit: 5 percent

Rock outcrop

Percent of map unit: 5 percent

Sutton

Percent of map unit: 4 percent

Sun

Percent of map unit: 2 percent

Landform: Depressions

Leicester

Percent of map unit: 2 percent

Palms

Percent of map unit: 1 percent

Landform: Swamps, marshes

Carlisle

Percent of map unit: 1 percent

Landform: Swamps, marshes

CsD—Chatfield-Charlton complex, hilly, very rocky

Map Unit Setting

Elevation: 100 to 1,000 feet

Mean annual precipitation: 46 to 50 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 115 to 215 days

Map Unit Composition

Chatfield and similar soils: 45 percent

Charlton and similar soils: 35 percent

Minor components: 20 percent

Description of Chatfield

Setting

Landform: Ridges, hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loamy till derived mainly from granite, gneiss, or schist

Properties and qualities

Slope: 15 to 35 percent

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

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Calcium carbonate, maximum content: 1 percent
Available water capacity: Low (about 3.2 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 7s
Hydrologic Soil Group: B

Typical profile

0 to 7 inches: Loam
7 to 24 inches: Flaggy silt loam
24 to 28 inches: Unweathered bedrock

Description of Charlton

Setting

Landform: Till plains, ridges, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Acid loamy till derived mainly from schist, gneiss, or granite

Properties and qualities

Slope: 15 to 35 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.5 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 7s
Hydrologic Soil Group: B

Typical profile

0 to 8 inches: Loam
8 to 24 inches: Sandy loam
24 to 60 inches: Sandy loam

Minor Components

Hollis

Percent of map unit: 5 percent

Rock outcrop

Percent of map unit: 5 percent

Sutton

Percent of map unit: 4 percent

Leicester

Percent of map unit: 2 percent

Sun

Percent of map unit: 2 percent

Landform: Depressions

Carlisle

Percent of map unit: 1 percent

Landform: Swamps, marshes

Palms

Percent of map unit: 1 percent

Landform: Swamps, marshes

CtC—Chatfield-Hollis-Rock outcrop complex, rolling

Map Unit Setting

Elevation: 100 to 1,000 feet

Mean annual precipitation: 46 to 50 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 115 to 215 days

Map Unit Composition

Chatfield and similar soils: 30 percent

Hollis and similar soils: 30 percent

Rock outcrop: 20 percent

Minor components: 20 percent

Description of Hollis

Setting

Landform: Ridges, hills

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Crest

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: A thin mantle of loamy till derived mainly from schist, granite, and gneiss

Properties and qualities

Slope: 3 to 15 percent

Depth to restrictive feature: 10 to 20 inches to lithic bedrock

Drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Very low (about 2.0 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability (nonirrigated): 6s

Hydrologic Soil Group: D

Typical profile

0 to 1 inches: Fine sandy loam
1 to 16 inches: Fine sandy loam
16 to 20 inches: Unweathered bedrock

Description of Chatfield

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from granite, gneiss, or schist

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Available water capacity: Low (about 3.2 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 6s
Hydrologic Soil Group: B

Typical profile

0 to 7 inches: Loam
7 to 24 inches: Flaggy silt loam
24 to 28 inches: Unweathered bedrock

Description of Rock Outcrop

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Capacity of the most limiting layer to transmit water (Ksat): Low to very high (0.01 to 19.98 in/hr)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 6s

Minor Components

Charlton

Percent of map unit: 8 percent

Sutton

Percent of map unit: 5 percent

Sun

Percent of map unit: 2 percent

Landform: Depressions

Leicester

Percent of map unit: 2 percent

Unnamed soils, very shallow

Percent of map unit: 2 percent

Palms

Percent of map unit: 1 percent

Landform: Swamps, marshes

CuD—Chatfield-Hollis-Rock outcrop complex, hilly

Map Unit Setting

Elevation: 100 to 1,000 feet

Mean annual precipitation: 46 to 50 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 115 to 215 days

Map Unit Composition

Chatfield and similar soils: 30 percent

Hollis and similar soils: 30 percent

Rock outcrop: 25 percent

Minor components: 15 percent

Description of Hollis

Setting

Landform: Ridges, hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: A thin mantle of loamy till derived mainly from schist, granite, and gneiss

Properties and qualities

Slope: 15 to 35 percent

Depth to restrictive feature: 10 to 20 inches to lithic bedrock

Drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

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Available water capacity: Very low (about 2.0 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability (nonirrigated): 7s

Hydrologic Soil Group: D

Typical profile

0 to 1 inches: Fine sandy loam

1 to 16 inches: Fine sandy loam

16 to 20 inches: Unweathered bedrock

Description of Chatfield

Setting

Landform: Ridges, hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loamy till derived mainly from granite, gneiss, or schist

Properties and qualities

Slope: 15 to 35 percent

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 1 percent

Available water capacity: Low (about 3.2 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability (nonirrigated): 7s

Hydrologic Soil Group: B

Typical profile

0 to 7 inches: Loam

7 to 24 inches: Flaggy silt loam

24 to 28 inches: Unweathered bedrock

Description of Rock Outcrop

Properties and qualities

Slope: 15 to 35 percent

Depth to restrictive feature: 0 inches to lithic bedrock

Capacity of the most limiting layer to transmit water (Ksat): Low to very high (0.01 to 19.98 in/hr)

Interpretive groups

Farmland classification: Not prime farmland

Land capability (nonirrigated): 7s

Minor Components

Charlton

Percent of map unit: 5 percent

Sutton

Percent of map unit: 3 percent

Sun

Percent of map unit: 2 percent

Landform: Depressions

Unnamed soils, very shallow

Percent of map unit: 2 percent

Leicester

Percent of map unit: 2 percent

Palms

Percent of map unit: 1 percent

Landform: Swamps, marshes

HnB—Hinckley gravelly loamy sand, 3 to 8 percent slopes

Map Unit Setting

Elevation: 0 to 1,000 feet

Mean annual precipitation: 46 to 50 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 115 to 215 days

Map Unit Composition

Hinckley and similar soils: 85 percent

Minor components: 15 percent

Description of Hinckley

Setting

Landform: Outwash plains, terraces, deltas

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Sandy and gravelly glaciofluvial deposits derived principally from granite, gneiss, and schist

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

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Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Very low (about 2.9 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance

Land capability (nonirrigated): 3s

Hydrologic Soil Group: A

Typical profile

0 to 7 inches: Gravelly loamy sand

7 to 17 inches: Very gravelly loamy sand

17 to 60 inches: Stratified very gravelly coarse sand to sand

Minor Components

Pompton

Percent of map unit: 5 percent

Knickerbocker

Percent of map unit: 5 percent

Riverhead

Percent of map unit: 5 percent

LcB—Leicester loam, 3 to 8 percent slopes, stony

Map Unit Setting

Mean annual precipitation: 46 to 50 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 115 to 215 days

Map Unit Composition

Leicester, somewhat poorly drained, and similar soils: 50 percent

Leicester, poorly drained, and similar soils: 35 percent

Minor components: 15 percent

Description of Leicester, Somewhat Poorly Drained

Setting

Landform: Till plains, ridges, hills

Landform position (two-dimensional): Footslope, summit

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Loamy acid till derived mostly from schist and gneiss

Properties and qualities

Slope: 3 to 8 percent

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Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 5.95 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.7 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 6s
Hydrologic Soil Group: A/D

Typical profile

0 to 8 inches: Loam
8 to 26 inches: Sandy loam
26 to 60 inches: Sandy loam

Description of Leicester, Poorly Drained

Setting

Landform: Till plains, ridges, hills
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy acid till derived mostly from schist and gneiss

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 5.95 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.7 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 6s
Hydrologic Soil Group: A/D

Typical profile

0 to 8 inches: Loam
8 to 26 inches: Sandy loam
26 to 60 inches: Sandy loam

Minor Components

Sun

Percent of map unit: 7 percent
Landform: Depressions

Sutton

Percent of map unit: 5 percent

Leicester, very stony

Percent of map unit: 3 percent

Pa—Palms muck

Map Unit Setting

Elevation: 250 to 1,500 feet

Mean annual precipitation: 46 to 50 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 115 to 215 days

Map Unit Composition

Palms and similar soils: 80 percent

Minor components: 20 percent

Description of Palms

Setting

Landform: Swamps, marshes

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Talf

Down-slope shape: Concave

Across-slope shape: Concave

Parent material: Organic material over loamy glacial drift

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 1.98 in/hr)*

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 20 percent

Available water capacity: Very high (about 21.3 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability (nonirrigated): 5w

Hydrologic Soil Group: A/D

Typical profile

0 to 10 inches: Muck

10 to 48 inches: Muck

48 to 60 inches: Loam

Minor Components

Carlisle

Percent of map unit: 10 percent
Landform: Swamps, marshes

Sun

Percent of map unit: 5 percent
Landform: Depressions

Fluvaquents

Percent of map unit: 4 percent
Landform: Flood plains

Udifulvents

Percent of map unit: 1 percent

PnB—Paxton fine sandy loam, 2 to 8 percent slopes

Map Unit Setting

Mean annual precipitation: 46 to 50 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 115 to 215 days

Map Unit Composition

Paxton and similar soils: 85 percent
Minor components: 15 percent

Description of Paxton

Setting

Landform: Till plains, drumlinoid ridges, hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Acid loamy till derived mainly from crystalline rock

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 18 to 38 inches to densic material
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 2.8 inches)

Interpretive groups

Farmland classification: All areas are prime farmland

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Land capability (nonirrigated): 2e

Hydrologic Soil Group: C

Typical profile

0 to 10 inches: Fine sandy loam

10 to 20 inches: Loam

20 to 60 inches: Gravelly sandy loam

Minor Components

Charlton

Percent of map unit: 5 percent

Woodbridge

Percent of map unit: 5 percent

Ridgebury

Percent of map unit: 3 percent

Paxton, very stony

Percent of map unit: 2 percent

PnC—Paxton fine sandy loam, 8 to 15 percent slopes

Map Unit Setting

Mean annual precipitation: 46 to 50 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 115 to 215 days

Map Unit Composition

Paxton and similar soils: 85 percent

Minor components: 15 percent

Description of Paxton

Setting

Landform: Till plains, drumlinoid ridges, hills

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Crest

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Acid loamy till derived mainly from crystalline rock

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: 18 to 38 inches to densic material

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 18 to 30 inches

Frequency of flooding: None

Frequency of ponding: None

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Available water capacity: Very low (about 2.8 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance

Land capability (nonirrigated): 3e

Hydrologic Soil Group: C

Typical profile

0 to 10 inches: Fine sandy loam

10 to 20 inches: Loam

20 to 60 inches: Gravelly sandy loam

Minor Components

Woodbridge

Percent of map unit: 5 percent

Charlton

Percent of map unit: 5 percent

Ridgebury

Percent of map unit: 3 percent

Paxton, very stony

Percent of map unit: 2 percent

RdB—Ridgebury loam, 3 to 8 percent slopes

Map Unit Setting

Elevation: 50 to 1,000 feet

Mean annual precipitation: 46 to 50 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 115 to 215 days

Map Unit Composition

Ridgebury, somewhat poorly drained, and similar soils: 50 percent

Ridgebury, poorly drained, and similar soils: 35 percent

Minor components: 15 percent

Description of Ridgebury, Somewhat Poorly Drained

Setting

Landform: Till plains, drumlinoid ridges, hills

Landform position (two-dimensional): Footslope, summit

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Loamy till derived mainly from granite, gneiss, and schist

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: 14 to 30 inches to densic material

Drainage class: Somewhat poorly drained

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 6 to 18 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Low (about 3.4 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance

Land capability (nonirrigated): 3w

Hydrologic Soil Group: B/D

Typical profile

0 to 8 inches: Loam

8 to 26 inches: Gravelly fine sandy loam

26 to 60 inches: Gravelly loam

Description of Ridgebury, Poorly Drained

Setting

Landform: Till plains, drumlinoid ridges, hills

Landform position (two-dimensional): Footslope, summit

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Loamy till derived mainly from granite, gneiss, and schist

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: 14 to 30 inches to densic material

Drainage class: Poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 0 to 12 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Low (about 3.4 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance

Land capability (nonirrigated): 3w

Hydrologic Soil Group: B/D

Typical profile

0 to 8 inches: Loam

8 to 26 inches: Gravelly fine sandy loam

26 to 60 inches: Gravelly loam

Minor Components

Sun

Percent of map unit: 5 percent

Landform: Depressions

Leicester

Percent of map unit: 3 percent

Woodbridge

Percent of map unit: 3 percent

Paxton

Percent of map unit: 2 percent

Ridgebury, very stony

Percent of map unit: 2 percent

Sh—Sun loam

Map Unit Setting

Elevation: 600 to 1,800 feet

Mean annual precipitation: 46 to 50 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 115 to 215 days

Map Unit Composition

Sun and similar soils: 85 percent

Minor components: 15 percent

Description of Sun

Setting

Landform: Depressions

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Concave

Parent material: Loamy till derived primarily from limestone and sandstone, with a component of schist, shale, or granitic rocks in some areas

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 15 percent

Available water capacity: Moderate (about 6.7 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance

Land capability (nonirrigated): 4w

Hydrologic Soil Group: C/D

Typical profile

0 to 9 inches: Loam

9 to 27 inches: Loam

27 to 60 inches: Gravelly fine sandy loam

Minor Components

Leicester

Percent of map unit: 5 percent
Landform: Depressions

Ridgebury

Percent of map unit: 5 percent
Landform: Depressions

Palms

Percent of map unit: 3 percent
Landform: Swamps, marshes

Sun, stony

Percent of map unit: 2 percent
Landform: Depressions

Sm—Sun loam, extremely stony

Map Unit Setting

Mean annual precipitation: 46 to 50 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 115 to 215 days

Map Unit Composition

Sun and similar soils: 85 percent
Minor components: 15 percent

Description of Sun

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loamy till derived primarily from limestone and sandstone, with a component of schist, shale, or granitic rocks in some areas

Properties and qualities

Slope: 0 to 3 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 15 percent

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Available water capacity: Moderate (about 6.7 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability (nonirrigated): 7s

Hydrologic Soil Group: C/D

Typical profile

0 to 9 inches: Loam

9 to 27 inches: Loam

27 to 60 inches: Gravelly fine sandy loam

Minor Components

Ridgebury

Percent of map unit: 5 percent

Landform: Depressions

Leicester

Percent of map unit: 5 percent

Landform: Depressions

Palms

Percent of map unit: 3 percent

Landform: Swamps, marshes

Sun, non-stony

Percent of map unit: 2 percent

Landform: Depressions

Ub—Udorthents, smoothed

Map Unit Setting

Elevation: 50 to 2,400 feet

Mean annual precipitation: 46 to 50 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 115 to 215 days

Map Unit Composition

Udorthents, smoothed, and similar soils: 80 percent

Minor components: 20 percent

Description of Udorthents, Smoothed

Properties and qualities

Slope: 0 to 8 percent

Depth to restrictive feature: 40 to 60 inches to lithic bedrock

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 5.95 in/hr)

Depth to water table: About 18 to 48 inches

Frequency of flooding: None

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Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water capacity: Low (about 4.6 inches)

Typical profile

0 to 4 inches: Gravelly loam
4 to 70 inches: Very gravelly loam

Minor Components

Udorthents, wet substratum

Percent of map unit: 5 percent

Urban land

Percent of map unit: 5 percent

Leicester

Percent of map unit: 2 percent

Hollis

Percent of map unit: 2 percent

Charlton

Percent of map unit: 2 percent

Riverhead

Percent of map unit: 2 percent

Sun

Percent of map unit: 2 percent

Landform: Depressions

Uc—Udorthents, wet substratum

Map Unit Setting

Elevation: 50 to 2,400 feet
Mean annual precipitation: 46 to 50 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 115 to 215 days

Map Unit Composition

Udorthents, wet substratum, and similar soils: 80 percent
Minor components: 20 percent

Description of Udorthents, Wet Substratum

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 5.95 in/hr)
Depth to water table: About 6 to 24 inches

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Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water capacity: Low (about 4.6 inches)

Typical profile

0 to 4 inches: Gravelly loam
4 to 72 inches: Very gravelly loam

Minor Components

Udorthents

Percent of map unit: 5 percent

Urban land

Percent of map unit: 5 percent

Ipswich

Percent of map unit: 2 percent
Landform: Tidal marshes

Hinckley

Percent of map unit: 2 percent

Fredon

Percent of map unit: 2 percent
Landform: Depressions

Paxton

Percent of map unit: 2 percent

Raynham

Percent of map unit: 2 percent

W—Water

Map Unit Setting

Mean annual precipitation: 46 to 50 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 115 to 215 days

Map Unit Composition

Water: 100 percent

WdB—Woodbridge loam, 3 to 8 percent slopes

Map Unit Setting

Mean annual precipitation: 46 to 50 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 115 to 215 days

Map Unit Composition

Woodbridge and similar soils: 85 percent

Minor components: 15 percent

Description of Woodbridge

Setting

Landform: Till plains, drumlinoid ridges, hills

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Crest

Down-slope shape: Concave

Across-slope shape: Convex

Parent material: Loamy acid till derived mainly from crystalline rock

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: 18 to 38 inches to densic material

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 18 to 30 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Low (about 4.0 inches)

Interpretive groups

Farmland classification: All areas are prime farmland

Land capability (nonirrigated): 2e

Hydrologic Soil Group: C

Typical profile

0 to 12 inches: Loam

12 to 29 inches: Gravelly loam

29 to 60 inches: Gravelly loam

Minor Components

Paxton

Percent of map unit: 5 percent

Ridgebury

Percent of map unit: 5 percent

Sutton

Percent of map unit: 2 percent

Sun

Percent of map unit: 2 percent

Landform: Depressions

Woodbridge, very stony

Percent of map unit: 1 percent

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