

*NHDES ALTERATION OF TERRAIN  
EXCAVATION PERMIT APPLICATION*

# Chester Gravel Pit

## *Excavation Plans*

Map 5 Lot 85  
Fremont Road  
Chester, New Hampshire 03036

### *PREPARED FOR:*

Old Sandown Road, LLC  
352 South Broadway Street  
Salem, New Hampshire 03053

### *PREPARED BY:*



#### **The Dubai Group, Inc.**

136 Harvey Road Bldg B101  
Londonderry, NH 03053  
P: 603-458-6462  
[www.TheDubayGroup.com](http://www.TheDubayGroup.com)

April 5, 2022

*Revised: May 27, 2022*

*Revised: August 9, 2022*

Engineers



Planners



Surveyors



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## **I. APPLICATION**

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# ALTERATION OF TERRAIN PERMIT APPLICATION

Water Division/ Alteration of Terrain Bureau/ Land Resources Management  
Check the Status of your Application: [www.des.nh.gov/onestop](http://www.des.nh.gov/onestop)



RSA/ Rule: RSA 485-A:17, Env-Wq 1500

Administrative Use Only	Administrative Use Only	Administrative Use Only	File Number:
			Check No.
			Amount:
			Initials:

## 1. APPLICANT INFORMATION (INTENDED PERMIT HOLDER)

Applicant Name: Old Samndown Road, LLC		Contact Name: Corey Garabedian	
Email: corey@garabedianprop.com		Daytime Telephone: 603-966-6981	
Mailing Address: 352 South Broadway Street			
Town/City: Salem		State: NH	Zip Code: 03079

## 2. APPLICANT'S AGENT INFORMATION If none, check here: ☒

Business Name:		Contact Name:	
Email:		Daytime Telephone:	
Address:			
Town/City:		State:	Zip Code:

## 3. PROPERTY OWNER INFORMATION (IF DIFFERENT FROM APPLICANT)

Applicant Name: Garabedian Testament Trust		Contact Name: Paul Garabedian	
Email:		Daytime Telephone:	
Mailing Address: 352 South Broadway Street			
Town/City: Salem		State: NH	Zip Code: 03079

## 4. PROPERTY OWNER'S AGENT INFORMATION If none, check here: ☒

Business Name:		Contact Name:	
Email:		Daytime Telephone:	
Address:			
Town/City:		State:	Zip Code:

## 5. CONSULTANT INFORMATION If none, check here: ☐

Engineering Firm: The Dubay Group, Inc.		Contact Name: Doug MacGuire, PE	
Email: doug@thedubaygroup.com		Daytime Telephone: 603-458-6462	
Address: 136 Harvey Road, Bldg. B101			
Town/City: Londonderry		State: NH	Zip Code: 03053

[ridge.mauck@des.nh.gov](mailto:ridge.mauck@des.nh.gov) or (603) 271-2147

NHDES Alteration of Terrain Bureau, PO Box 95, Concord, NH 03303-0095  
[www.des.nh.gov](http://www.des.nh.gov)

**6. PROJECT TYPE**

☒ Excavation Only  
 ☐ Residential  
 ☐ Commercial  
 ☐ Golf Course  
 ☐ School  
 ☐ Municipal  
☐ Agricultural  
☐ Land Conversion  
☐ Other:

**7. PROJECT LOCATION INFORMATION**

Project Name: Chester Gravel Pit

Street/Road Address: Freemont Road

Town/City: Chester

County: Rockingham

Tax Map: 5

Block:

Lot Number: 85

Unit:

Location Coordinates: 42.96354N, 71.22951W

☒ Latitude/Longitude☐ UTM☐ State Plane

Post-development, will the proposed project withdraw from or directly discharge to any of the following? If yes, identify the purpose.

1. Stream or Wetland Purpose: Match Natural Flow Paths	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Withdrawal	<input checked="" type="checkbox"/> Discharge
2. Man-made pond created by impounding a stream or wetland Purpose:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Withdrawal	<input type="checkbox"/> Discharge
3. Unlined pond dug into the water table Purpose:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Withdrawal	<input type="checkbox"/> Discharge

Post-development, will the proposed project discharge to:

- A surface water impaired for phosphorus and/or nitrogen? ☒ No ☐ Yes - include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen
- A Class A surface water or Outstanding Resource Water? ☒ No ☐ Yes - include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen
- A lake or pond not covered previously? ☒ No ☐ Yes - include information to demonstrate that project will not cause net increase in phosphorus in the lake or pond

Is the project a High Load area? ☐ Yes ☒ No

If yes, specify the type of high load land use or activity: \_\_\_\_\_

Is the project within a Water Supply Intake Protection Area (WSIPA)?

☐ Yes ☒ No

Is the project within a Groundwater Protection Area (GPA)?

☐ Yes ☒ No

Will the well setbacks identified in Env-Wq 1508.02 be met?

☐ Yes ☐ NoNote: Guidance document titled "[Using NHDES's OneStop WebGIS to Locate Protection Areas](#)" is available online. For more details on the restrictions in these areas, read Chapter 3.1 in Volume 2 of the NH Stormwater Manual.Is any part of the property within the 100-year floodplain? ☐ Yes ☒ No

If yes: Cut volume: \_\_\_\_\_ cubic feet within the 100-year floodplain

Fill volume: \_\_\_\_\_ cubic feet within the 100-year floodplain

☐ Project IS within ¼ mile of a designated river Name of River: \_\_\_\_\_☒ Project is NOT within ¼ mile of a designated river☐ Project IS within a Coastal/Great Bay Region community - include info required by Env-Wq 1503.08(l) if applicable☒ Project is NOT within a Coastal/Great Bay Region community**8. BRIEF PROJECT DESCRIPTION (PLEASE DO NOT REPLY "SEE ATTACHED")**

Renewing a grandfathers gravel pit for the purpose is to remove material and reclaim area.

**9. IF APPLICABLE, DESCRIBE ANY WORK STARTED PRIOR TO RECEIVING PERMIT**

Trees have been cleared and a 5-acre piece has been stumped. Erosion protection and an active SWPPP has been in place since starting. All equipment has been removed from site and work has stopped until permit can be obtained.

**10. ADDITIONAL REQUIRED INFORMATION**

A. Date a copy of the application was sent to the municipality as required by Env-Wq 1503.05(e)<sup>1</sup>: 4/6/2022.

(Attach proof of delivery)

B. Date a copy of the application was sent to the local river advisory committee if required by Env-Wq 1503.05(e)<sup>2</sup>:   /  /  .

(Attach proof of delivery)

C. Type of plan required: ☐ Land Conversion ☐ Detailed Development ☒ Excavation, Grading & Reclamation ☐ Steep Slope

D. Additional plans required: ☐ Stormwater Drainage & Hydrologic Soil Groups ☐ Source Control ☐ Chloride Management

E. Total area of disturbance: 805,860 square feet

F. Additional impervious cover as a result of the project: 0 square feet (use the “-” symbol to indicate a net reduction in impervious coverage).

Total final impervious cover: 0 square feet

G. Total undisturbed cover:        square feet

H. Number of lots proposed: 0

I. Total length of roadway: 0 linear feet

J. Name(s) of receiving water(s): Wetland

K. Identify all other NHDES permits required for the project, and for each indicate whether an application has been filed and is pending, or if the required approval has been issued provide the permit number, registration date, or approval letter number, as applicable.

Type of Approval	Application Filed?	Status	
		Pending	If Issued:
1. Water Supply Approval	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/>	Permit number:
2. Wetlands Permit	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/>	Permit number:
3. Shoreland Permit	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/>	Permit number:
4. UIC Registration	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/>	Registration date:
5. Large/Small Community Well Approval	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/>	Approval letter date:
6. Large Groundwater Withdrawal Permit	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/>	Permit number:
7. Other:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>	Permit number:

L. List all species identified by the Natural Heritage Bureau as threatened or endangered or of concern: None

M. Using NHDES's Web GIS OneStop program ([www2.des.state.nh.us/gis/onestop/](http://www2.des.state.nh.us/gis/onestop/)), with the Surface Water Impairment layer turned on, list the impairments identified for each receiving water. If no pollutants are listed, enter “N/A.”  
N/A

N. Did the applicant/applicant's agent have a pre-application meeting with AOT staff? ☐ Yes ☒ No  
If yes, name of staff member:

O. Will blasting of bedrock be required? ☒ Yes ☐ No If yes, estimated quantity of blast rock: 790,000 cubic yards  
If yes, standard blasting BMP notes must be placed on the plans, available at:  
<http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-10-12.pdf>

**NOTE:** If greater than 5,000 cubic yards of blast rock will be generated, a groundwater monitoring program must be developed and submitted to NHDES. Contact AOT staff for additional detail.

<sup>1</sup> Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the governing body of each municipality in which the project is proposed.

<sup>2</sup> Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the Local River Advisory Committee, if the project is within ¼ mile of a designated river.

**11. CHECK ALL APPLICATION ATTACHMENTS THAT APPLY (SUBMIT WITH APPLICATION IN ORDER LISTED)****LOOSE:**

- ☒ Signed application form: [des.nh.gov/organization/divisions/water/aot/index.htm](http://des.nh.gov/organization/divisions/water/aot/index.htm) (with attached proof(s) of delivery)
- ☒ Check for the application fee: [des.nh.gov/organization/divisions/water/aot/fees.htm](http://des.nh.gov/organization/divisions/water/aot/fees.htm)
- ☒ Color copy of a USGS map with the property boundaries outlined (1" = 2,000' scale)
- ☐ If Applicant is not the property owner, proof that the applicant will have a legal right to undertake the project on the property if a permit is issued to the applicant.

**BIND IN A REPORT IN THE FOLLOWING ORDER:**

- ☒ Copy of the signed application form & application checklist ([des.nh.gov/organization/divisions/water/aot/index.htm](http://des.nh.gov/organization/divisions/water/aot/index.htm))
- ☒ Copy of the check
- ☒ Copy of the USGS map with the property boundaries outlined (1" = 2,000' scale)
- ☒ Narrative of the project with a summary table of the peak discharge rate for the off-site discharge points
- ☒ Web GIS printout with the "Surface Water Impairments" layer turned on - <http://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx>
- ☒ Web GIS printouts with the AOT screening layers turned on - <http://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx>
- ☒ NHB letter using DataCheck Tool – [www.nhdfi.org/about-forests-and-lands/bureaus/natural-heritage-bureau/](http://www.nhdfi.org/about-forests-and-lands/bureaus/natural-heritage-bureau/)
- ☒ The Web Soil Survey Map with project's watershed outlined – [websoilsurvey.nrcs.usda.gov](http://websoilsurvey.nrcs.usda.gov)
- ☒ Aerial photograph (1" = 2,000' scale with the site boundaries outlined)
- ☒ Photographs representative of the site
- ☐ Groundwater Recharge Volume calculations (one worksheet for each permit application): [des.nh.gov/organization/divisions/water/aot/documents/bmp\\_worksh.xls](http://des.nh.gov/organization/divisions/water/aot/documents/bmp_worksh.xls)
- ☐ BMP worksheets (one worksheet for each treatment system): [des.nh.gov/organization/divisions/water/aot/documents/bmp\\_worksh.xls](http://des.nh.gov/organization/divisions/water/aot/documents/bmp_worksh.xls)
- ☒ Drainage analysis, stamped by a professional engineer (see Application Checklist for details)
- ☐ Riprap apron or other energy dissipation or stability calculations
- ☐ Site Specific Soil Survey report, stamped and with a certification note prepared by the soil scientist that the survey was done in accordance with the Site Specific Soil Mapping standards, *Site-Specific Soil Mapping Standards for NH & VT, SSSNNE Special Publication No. 3*.
- ☐ Infiltration Feasibility Report (example online) [Env-Wq 1503.08(f)(3)]
- ☐ Registration and Notification Form for Storm Water Infiltration to Groundwater (UIC Registration-for underground systems only, including drywells and trenches): [http://des.nh.gov/organization/divisions/water/dwgb/dwspp/gw\\_discharge](http://des.nh.gov/organization/divisions/water/dwgb/dwspp/gw_discharge)
- ☒ Inspection and maintenance manual with, if applicable, long term maintenance agreements [Env-Wq 1503.08(g)]
- ☐ Source control plan

**PLANS:**

- ☒ One set of design plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details)
- ☐ Pre & post-development color coded soil plans on 11" x 17" (see Application Checklist for details)
- ☐ Pre & post-development drainage area plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details)

**100-YEAR FLOODPLAIN REPORT:**

- ☐ All information required in Env-Wq 1503.09, submitted as a separate report.

**ADDITIONAL INFORMATION RE: NUTRIENTS, CLIMATE**

- ☐ See Checklist for Details

- ☒ **REVIEW APPLICATION FOR COMPLETENESS & CONFIRM INFORMATION LISTED ON THE APPLICATION IS INCLUDED WITH SUBMITTAL.**



**12. REQUIRED SIGNATURES**

**DGM** By initialing here, I acknowledge that I am required by Env-Wq 1503.20(e) to submit a copy of all approved documents to the department in PDF format on a CD within one week after permit approval.

By signing below, I certify that:

- The information contained in or otherwise submitted with this application is true, complete, and not misleading to the best of my knowledge and belief;
- I understand that the submission of false, incomplete, or misleading information constitutes grounds for the department to deny the application, revoke any permit that is granted based on the information, and/or refer the matter to the board of professional engineers established by RSA 310-A:3 if I am a professional engineer; and
- I understand that I am subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641.

☒ **APPLICANT** Old Sandown Rd LLC

☐ **APPLICANT'S AGENT:**

Signature: 

Date: 4/4/22

Name (print or type): Corey Garabedian

Title: Manager

☒ **PROPERTY OWNER**

☐ **PROPERTY OWNER'S AGENT:**

Signature: 

Date: 4/4/22

Name (print or type): Paul Garabedian

Title:

SANTANDER BANK  
60-7269/2313

0156

PGVG LLC  
352 South Broadway  
Salem, NH 03079

04/04/2022

PAY TO THE ORDER OF Treasurer, State of New Hampshire

\$ \*\*11,875.00

Eleven Thousand Eight Hundred Seventy-Five and 00/100\*\*\*\*\*

DOLLARS

PROTECTED AGAINST FRAUD

Treasurer, State of New Hampshire  
29 Hazen Drive  
Concord, NH 03302-0095

MEMO

Alteration of Terrain Review Fee: Old Sandown R

⑈000156⑈ ⑆231372691⑆

3577271086⑈

PGVG LLC

Treasurer, State of New Hampshire  
04/04/22

Bill #

04/04/2022

11,875.00

0156

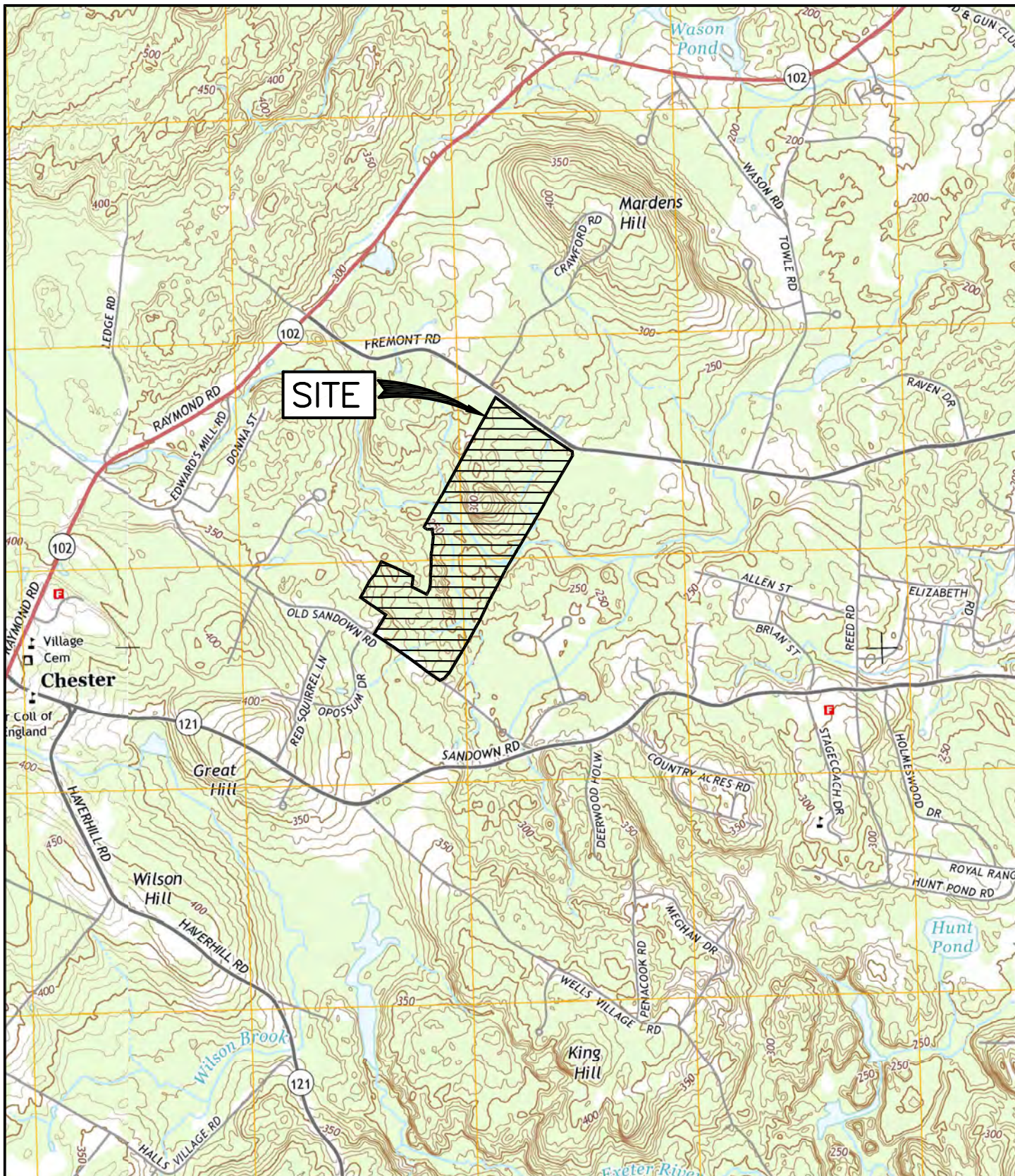
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**The Dubay Group, Inc.**

136 Harvey Road, Bldg B101  
Londonderry, NH 03053  
www.TheDubayGroup.com  
603-458-6462



**CHESTER GRAVEL PIT**

MAP 5 LOT 85  
FREMONT ROAD ROAD  
CHESTER, NH

WINDHAM & SALEM QUADRANGLE  
NEW HAMPSHIRE-ROCKINGHAM CO.  
7.5 MINUTE SERIES (TOPOGRAPHIC)

TITLE: USGS LOCATION MAP

DATE: 4-1-2022

SCALE: 1"=2000'

SHEET: 1 OF 1





**The Dubay Group, Inc.**  
136 Harvey Road Bldg B101  
Londonderry, NH 03053  
603-458-6462 thedubaygroup.com

## MEMORANDUM

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To: Alteration of Terrain Bureau

Date: April 8, 2022

From: Doug MacGuire, PE

Re: Chester Gravel Pit  
Local Submission

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This memorandum is intended to certify that the Town of Chester Planning Board has received a full copy of the plans and NHDES Alteration of Terrain Permit Application submitted on April 8, 2022. The plans are currently under review with the town and Planning Board.

If you have any further questions please don't hesitate to call me at 603-458-6462.

Engineers



Planners



Surveyors

## ATTACHMENT A:

# ALTERATION OF TERRAIN PERMIT APPLICATION CHECKLIST

Check the box to indicate the item has been provided or provide an explanation why the item does not apply.

### DESIGN PLANS

- ☒ Plans printed on 34 - 36" by 22 - 24" white paper
- ☒ PE stamp
- ☒ Wetland delineation
- ☒ Temporary erosion control measures
- ☐ Treatment for all stormwater runoff from impervious surfaces such as roadways (including gravel roadways), parking areas, and non-residential roof runoff. Guidance on treatment BMPs can be found in Volume 2, Chapter 4 of the NH Stormwater Management Manual.
- ☒ Pre-existing 2-foot contours
- ☒ Proposed 2-foot contours
- ☐ Drainage easements protecting the drainage/treatment structures
- ☐ Compliance with the Wetlands Bureau, RSA 482- A <http://des.nh.gov/organization/divisions/water/wetlands/index.htm>. Note that artificial detention in wetlands is not allowed.
- ☐ Compliance with the Comprehensive Shoreland Protection Act, RSA 483-B. <http://des.nh.gov/organization/divisions/water/wetlands/cspa>
- ☐ Benches. Benching is needed if you have more than 20 feet change in elevation on a 2:1 slope, 30 feet change in elevation on a 3:1 slope, 40 feet change in elevation on a 4:1 slope.
- ☐ Check to see if any proposed ponds need state Dam permits.  
<http://des.nh.gov/organization/divisions/water/dam/documents/damdef.pdf>

### DETAILS

- ☐ Typical roadway x-section
- ☒ Detention basin with inverts noted on the outlet structure
- ☐ Stone berm level spreader
- ☐ Outlet protection – riprap aprons
- ☒ A general installation detail for an erosion control blanket
- ☒ Silt fences or mulch berm
- ☐ Storm drain inlet protection. Note that since hay bales must be embedded 4 inches into the ground, they are not to be used on hard surfaces such as pavement.
- ☐ Hay bale barriers
- ☒ Stone check dams
- ☒ Gravel construction exit
- ☒ Temporary sediment trap
- ☐ The treatment BMP's proposed
- ☐ Any innovative BMP's proposed

**CONSTRUCTION SEQUENCE/EROSION CONTROL**

- ☒ Note that the project is to be managed in a manner that meets the requirements and intent of RSA 430:53 and Chapter Agr 3800 relative to invasive species.
- ☒ Note that perimeter controls shall be installed prior to earth moving operations.
- ☒ Note that temporary water diversion (swales, basins, etc) must be used as necessary until areas are stabilized.
- ☒ Note that ponds and swales shall be installed early on in the construction sequence (before rough grading the site).
- ☒ Note that all ditches and swales shall be stabilized prior to directing runoff to them.
- ☒ Note that all roadways and parking lots shall be stabilized within 72 hours of achieving finished grade.
- ☒ Note that all cut and fill slopes shall be seeded/loamed within 72 hours of achieving finished grade
- ☒ Note that all erosion controls shall be inspected weekly AND after every half-inch of rainfall.
- ☒ Note the limits on the open area allowed, see Env-Wq 1505.02 for detailed information.

Example note: The smallest practical area shall be disturbed during construction, but in no case shall exceed 5 acres at any one time before disturbed areas are stabilized.

- ☒ Note the definition of the word “stable”

Example note: An area shall be considered stable if one of the following has occurred:

- Base course gravels have been installed in areas to be paved.
- A minimum of 85 percent vegetated growth has been established.
- A minimum of 3 inches of non-erosive material such stone or riprap has been installed.
- Or, erosion control blankets have been properly installed.

- ☒ Note the limit of time an area may be exposed

Example note: All areas shall be stabilized within 45 days of initial disturbance.

- ☒ Provide temporary and permanent seeding specifications. (Reed canary grass is listed in the Green Book; however, this is a problematic species according to the Wetlands Bureau and therefore should not be specified)
- ☒ Provide winter construction notes that meet or exceed our standards.

**Standard Winter Notes:**

- All proposed vegetated areas that do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting, elsewhere. The installation of erosion control blankets or mulch and netting shall not occur over accumulated snow or on frozen ground and shall be completed in advance of thaw or spring melt events.
  - All ditches or swales which do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions.
  - After October 15, incomplete road or parking surfaces, where work has stopped for the winter season, shall be protected with a minimum of 3 inches of crushed gravel per NHDOT item 304.3.
- ☒ Note at the end of the construction sequence that “Lot disturbance, other than that shown on the approved plans, shall not commence until after the roadway has the base course to design elevation and the associated drainage is complete and stable.” – This note is applicable to single/duplex family subdivisions, when lot development is not part of the permit.

**DRAINAGE ANALYSES**

Please double-side 8 1/2" x 11" sheets where possible but, **do not** reduce the text such that more than one page fits on one side.

- ☒ PE stamp
- ☒ Rainfall amount obtained from the Northeast Regional Climate Center- <http://precip.eas.cornell.edu/>. Include extreme precipitation table as obtained from the above referenced website.
- ☒ Drainage analyses, in the following order:
  - Pre-development analysis: Drainage diagram.
  - Pre-development analysis: Area Listing and Soil Listing.
  - Pre-development analysis: Node listing 1-year (if applicable), 2-year, 10-year and 50-year.
  - Pre-development analysis: Full summary of the 10-year storm.
  - Post-development analysis: Drainage diagram.
  - Post-development analysis: Area Listing and Soil Listing.
  - Post-development analysis: Node listing for the 2-year, 10-year and 50-year.
  - Post-development analysis: Full summary of the 10-year storm.
- ☒ Review the Area Listing and Soil Listing reports
  - Hydrologic soil groups (HSG) match the HSGs on the soil maps provided.
  - There is the same or less HSG A soil area after development (check for each HSG).
  - There is the same or less "woods" cover in the post-development.
  - Undeveloped land was assumed to be in "good" condition.
  - The amount of impervious cover in the analyses is correct.

Note: A good check is to subtract the total impervious area used in the pre analysis from the total impervious area used in the post-analysis. For residential projects without demolition occurring, a good check is to take this change in impervious area, subtract out the roadway and divide the remaining by the number of houses/units proposed. Do these numbers make sense?

- ☒ Check the storage input used to model the ponds.
- ☒ Check to see if the artificial berms pass the 50-year storm, i.e., make sure the constructed berms on ponds are not overtopped.
- ☒ Check the outlet structure proposed and make sure it matches that modeled.
- ☒ Check to see if the total areas in the pre and post analyses are same.
- ☒ Confirm the correct NRCS storm type was modeled (Coos, Carroll & Grafton counties are Type II, all others Type III).

#### **PRE- AND POST-DEVELOPMENT DRAINAGE AREA PLANS**

- ☒ Plans printed on 34 - 36" by 22 - 24" on white paper.
- ☒ Submit these plans separate from the soil plans.
- ☒ A north arrow.
- ☒ A scale.
- ☒ Labeled subcatchments, reaches and ponds.
- ☒ Tc lines.
- ☒ A clear delineation of the subcatchment boundaries.
- ☐ Roadway station numbers.
- ☐ Culverts and other conveyance structures.

#### **PRE AND POST-DEVELOPMENT COLOR-CODED SOIL PLANS**

- ☐ 11" × 17" sheets suitable, as long as it is readable.
- ☐ Submit these plans separate from the drainage area plans.
- ☐ A north arrow.
- ☐ A scale.
- ☐ Name of the soil scientist who performed the survey and date the soil survey took place.
- ☐ 2-foot contours (5-foot contours if application is for a gravel pit) as well as other surveyed features.
- ☐ Delineation of the soil boundaries and wetland boundaries.
- ☐ Delineation of the subcatchment boundaries.
- ☐ Soil series symbols (e.g., 26).
- ☐ A key or legend which identifies each soil series symbol and its associated soil series name (e.g., 26 = Windsor).
- ☐ The hydrologic soil group color coding (A = Green, B = yellow, C= orange, D=red, Water=blue, & Impervious = gray).

**Please note that excavation projects (e.g., gravel pits) have similar requirements to that above, however the following are common exceptions/additions:**

- ☐ Drainage report is not needed if site does not have off-site flow.
- ☐ 5 foot contours allowed rather than 2 foot.
- ☐ No PE stamp needed on the plans.
- ☒ Add a note to the plans that the applicant must submit to the Department of Environmental Services a written update of the project and revised plans documenting the project status every five years from the date of the Alteration of Terrain permit.
- ☒ Add reclamation notes.

See NRCS publication titled: *Vegetating New Hampshire Sand and Gravel Pits* for a good resource, it is posted online at:  
<http://des.nh.gov/organization/divisions/water/aot/categories/publications>.

#### **ADDITIONAL INFORMATION RE: NUTRIENTS, CLIMATE**

- ☐ If project will discharge stormwater to a surface water impaired for phosphorus and/or nitrogen, include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen.
- ☐ If project will discharge stormwater to a Class A surface water or Outstanding Resource Water, include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen.
- ☐ If project will discharge stormwater to a lake or pond not covered previously, include information to demonstrate that project will not cause net increase in phosphorus in the lake or pond.
- ☐ If project is within a Coastal/Great Bay Region community, include info required by Env-Wq 1503.08(I) if applicable.



# Stormwater Management Report

## **II. PROJECT DESCRIPTION**

## II. PROJECT DESCRIPTION

### Executive Summary

The proposed project is expanding a grandfathered excavation operation located off of Fremont Road in Chester, New Hampshire. The existing site is mostly undisturbed except for approximately 40,000 square-feet, which was disturbed under the previous excavation operation. As part of this permit, that area is proposed to be reclaimed.

The applicant intends to disturb approximately 18.5-acres. The project consists of excavating approximately 790,000 cubic yards of material. The plans included, detail the excavation proposed on the site. Stormwater runoff will be directed to a detention pond prior to discharging downstream. A groundwater monitoring program has been included in Section VIII. as required for the proposed blasting associated with the earth excavation.

### Proposed Site Conditions

In accordance with the Town of Chester and the State of New Hampshire, the two (2), ten (10), twenty-five (25), fifty (50), and one hundred (100) year storm frequencies have been used in the various aspects of analysis and design of stormwater management for the subject site. The proposed excavation operation will utilize a detention pond to collect runoff and allow sediment to settle prior to discharging downstream.

The pre- and post-development runoff rates based on the design storms are tabulated below. All watersheds show a decrease (or no increase) in runoff during post-development conditions as required per the Town of Chester Regulations.

**Table 1 - Pre vs. Post Runoff Analysis**

<b>Design Storm</b>	<b><u>Existing Conditions</u></b> <i>Peak Flow Runoff Rate</i>	<b><u>Developed Conditions</u></b> <i>Peak Flow Runoff Rate</i>	<b>Change</b>
<b>DESIGN POINT #1</b>			
	Node Label - L1	Node Label - L1	
2-Year	0.59	0.38	- 0.11
10-Year	4.47	1.99	- 2.48
25-Year	9.32	3.87	- 5.45
50-Year	14.68	5.97	- 8.71
100-Year	21.85	12.57	- 9.28
<b>DESIGN POINT #2</b>			
	Node Label - L1	Node Label - L1	
2-Year	0.43	0.00	- 0.43
10-Year	3.24	0.00	- 3.24
25-Year	6.82	0.00	- 6.82
50-Year	10.77	0.00	- 10.77
100-Year	16.05	0.00	- 16.05

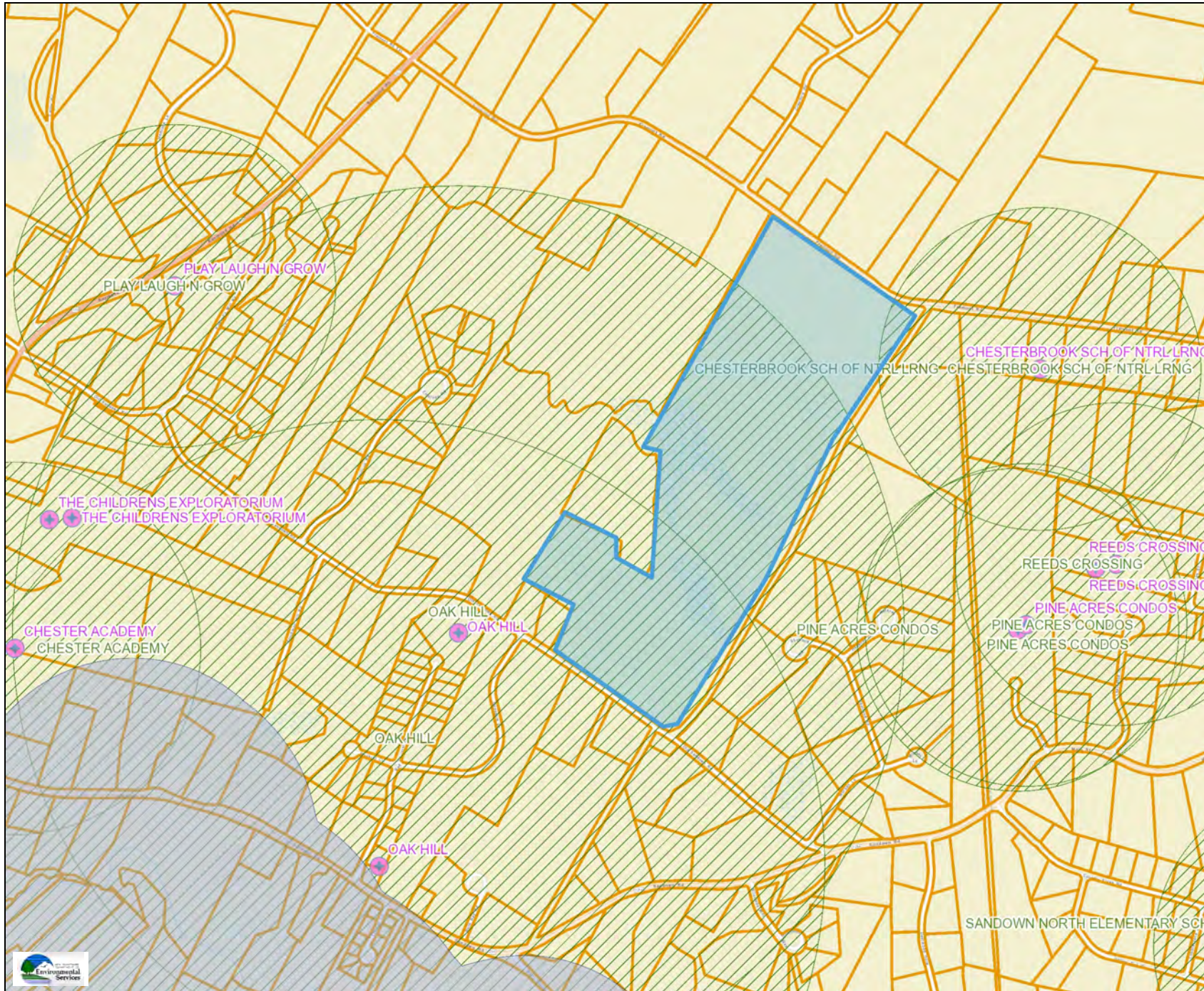
# Stormwater Management Report

## **III. SUPPLEMENTAL SITE REVIEW CRITERIA**

- A. Web GIS Printout - Surface Water Impairment & AoT Screening Layers
- B. NHB Letter
- C. Northeast Regional Climate Center Extreme Precipitation Tables
- D. Web Soil Survey Map
- E. Aerial Photograph
- F. Site Photographs
- G. Rip-Rap Calculations



# Chester Gravel Pit



## Legend

- Coastal and Great Bay Regional Communities
- Designated Rivers Quarter Mile Buffer
- Public Water Supply Wells
- Groundwater Classification / GA1
- Groundwater Classification / GA2
- Water Supply Intake Protect Areas
- Wellhead Protection Areas
- Class A Lakes with a Quarter Buffer
- Class A - All Features
- All Lakes, with a Quarter Mile Buffer
- Outstanding Resource Water Watersheds
- Surface Waters with Impairment 2016 with Quarter Mile Buffer
- Watersheds with Chloride Impairments 2016
- Parcels
- Parcel Polygons
- Attributes for Additional Lines
- Additional Lines

Map Scale

1: 12,988

© NH DES, <http://des.nh.gov>

Map Generated: 3/30/2022



## Notes



# New Hampshire Natural Heritage Bureau

## NHB DataCheck Results Letter

---

**To:** Jacob Doerfler  
136 Harvey Rd  
Bldg B101  
Londonderry, NH 03053

**From:** NH Natural Heritage Bureau

**Date:** 7/20/2021 (This letter is valid through 7/20/2022)

**Re:** Review by NH Natural Heritage Bureau of request dated 7/20/2021

**Permit Type:** Stormwater Pollution Prevention

**NHB ID:** NHB21-2386

**Applicant:** Jacob Doerfler

**Location:** Chester  
Tax Map: 5, Tax Lot: 85  
Address: Fremont Road

**Proj. Description:** Material excavation operation disturbing a maximum of 5 acres.

The NH Natural Heritage database has been checked for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government. We currently have no recorded occurrences for sensitive species near this project area.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

New Hampshire Natural Heritage Bureau  
NHB DataCheck Results Letter

---

**MAP OF PROJECT BOUNDARIES FOR: NHB21-2386**



# Extreme Precipitation Tables

## Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	71.232 degrees West
Latitude	42.962 degrees North
Elevation	0 feet
Date/Time	Thu, 31 Mar 2022 10:03:48 -0400

## Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.66	0.82	1.04	1yr	0.71	0.99	1.21	1.54	1.96	2.53	2.73	1yr	2.24	2.63	3.04	3.72	4.33	1yr
2yr	0.32	0.50	0.62	0.81	1.02	1.29	2yr	0.88	1.18	1.50	1.89	2.39	3.03	3.36	2yr	2.68	3.23	3.74	4.44	5.06	2yr
5yr	0.38	0.59	0.74	0.99	1.27	1.62	5yr	1.10	1.47	1.89	2.40	3.03	3.83	4.30	5yr	3.39	4.14	4.76	5.64	6.37	5yr
10yr	0.43	0.67	0.85	1.15	1.50	1.93	10yr	1.29	1.74	2.26	2.87	3.63	4.59	5.19	10yr	4.06	4.99	5.71	6.76	7.58	10yr
25yr	0.50	0.80	1.02	1.40	1.86	2.42	25yr	1.60	2.18	2.85	3.64	4.61	5.82	6.66	25yr	5.15	6.40	7.28	8.59	9.54	25yr
50yr	0.57	0.91	1.17	1.64	2.20	2.89	50yr	1.89	2.58	3.40	4.36	5.53	6.97	8.04	50yr	6.17	7.73	8.75	10.31	11.37	50yr
100yr	0.64	1.04	1.34	1.90	2.59	3.44	100yr	2.24	3.06	4.07	5.22	6.63	8.35	9.72	100yr	7.39	9.34	10.52	12.38	13.55	100yr
200yr	0.74	1.20	1.55	2.22	3.06	4.09	200yr	2.64	3.63	4.85	6.25	7.94	10.01	11.75	200yr	8.86	11.30	12.64	14.88	16.16	200yr
500yr	0.88	1.44	1.88	2.73	3.82	5.15	500yr	3.30	4.55	6.14	7.93	10.09	12.72	15.10	500yr	11.26	14.52	16.14	18.99	20.43	500yr

## Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.35	0.43	0.58	0.71	0.88	1yr	0.61	0.86	1.04	1.32	1.59	2.15	2.53	1yr	1.90	2.43	2.79	3.34	3.84	1yr
2yr	0.31	0.48	0.59	0.80	0.99	1.18	2yr	0.86	1.15	1.35	1.77	2.27	2.91	3.21	2yr	2.57	3.09	3.60	4.26	4.86	2yr
5yr	0.36	0.55	0.68	0.94	1.19	1.41	5yr	1.03	1.38	1.59	2.07	2.65	3.51	3.83	5yr	3.10	3.69	4.26	5.25	5.77	5yr
10yr	0.39	0.61	0.75	1.05	1.36	1.60	10yr	1.17	1.57	1.80	2.33	2.97	4.00	4.35	10yr	3.54	4.19	4.85	6.11	6.51	10yr
25yr	0.46	0.69	0.86	1.23	1.62	1.89	25yr	1.40	1.85	2.12	2.71	3.46	4.73	5.14	25yr	4.19	4.94	5.75	7.44	8.21	25yr
50yr	0.50	0.77	0.95	1.37	1.85	2.15	50yr	1.59	2.11	2.39	3.04	3.89	5.37	5.82	50yr	4.75	5.59	6.54	8.64	9.42	50yr
100yr	0.57	0.86	1.07	1.55	2.12	2.45	100yr	1.83	2.40	2.70	3.41	4.36	5.68	6.57	100yr	5.02	6.32	7.45	10.04	10.79	100yr
200yr	0.63	0.95	1.20	1.74	2.43	2.78	200yr	2.10	2.72	3.05	3.83	4.90	6.32	8.72	200yr	5.59	8.39	8.50	11.68	12.36	200yr
500yr	0.74	1.10	1.41	2.05	2.92	3.30	500yr	2.52	3.23	3.59	4.46	5.74	7.25	10.59	500yr	6.42	10.18	10.12	14.29	14.78	500yr

## Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.29	0.45	0.55	0.74	0.91	1.08	1yr	0.79	1.06	1.23	1.64	2.08	2.78	3.01	1yr	2.46	2.90	3.44	4.09	4.81	1yr
2yr	0.33	0.51	0.63	0.86	1.06	1.26	2yr	0.91	1.23	1.44	1.89	2.42	3.20	3.56	2yr	2.83	3.42	3.94	4.66	5.37	2yr
5yr	0.41	0.63	0.79	1.08	1.37	1.61	5yr	1.18	1.58	1.85	2.40	3.06	4.19	4.83	5yr	3.70	4.65	5.28	6.05	7.03	5yr
10yr	0.49	0.76	0.94	1.31	1.69	1.97	10yr	1.46	1.92	2.25	2.89	3.66	5.21	6.13	10yr	4.61	5.90	6.62	7.48	8.73	10yr
25yr	0.62	0.95	1.18	1.69	2.22	2.56	25yr	1.92	2.50	2.91	3.70	4.65	6.97	8.43	25yr	6.16	8.11	8.94	9.91	10.95	25yr
50yr	0.74	1.13	1.41	2.02	2.72	3.13	50yr	2.35	3.06	3.54	4.46	5.58	8.68	10.76	50yr	7.68	10.35	11.21	12.27	13.44	50yr
100yr	0.89	1.35	1.69	2.45	3.35	3.82	100yr	2.89	3.73	4.31	5.39	6.70	11.33	13.70	100yr	10.03	13.18	14.05	15.21	16.54	100yr
200yr	1.07	1.61	2.04	2.95	4.12	4.67	200yr	3.55	4.56	5.26	6.51	8.05	14.26	15.48	200yr	12.62	14.89	17.62	18.86	20.38	200yr
500yr	1.37	2.03	2.62	3.80	5.40	6.09	500yr	4.66	5.96	6.84	8.36	10.27	19.36	20.94	500yr	17.14	20.13	23.78	25.07	26.90	500yr



United States  
Department of  
Agriculture

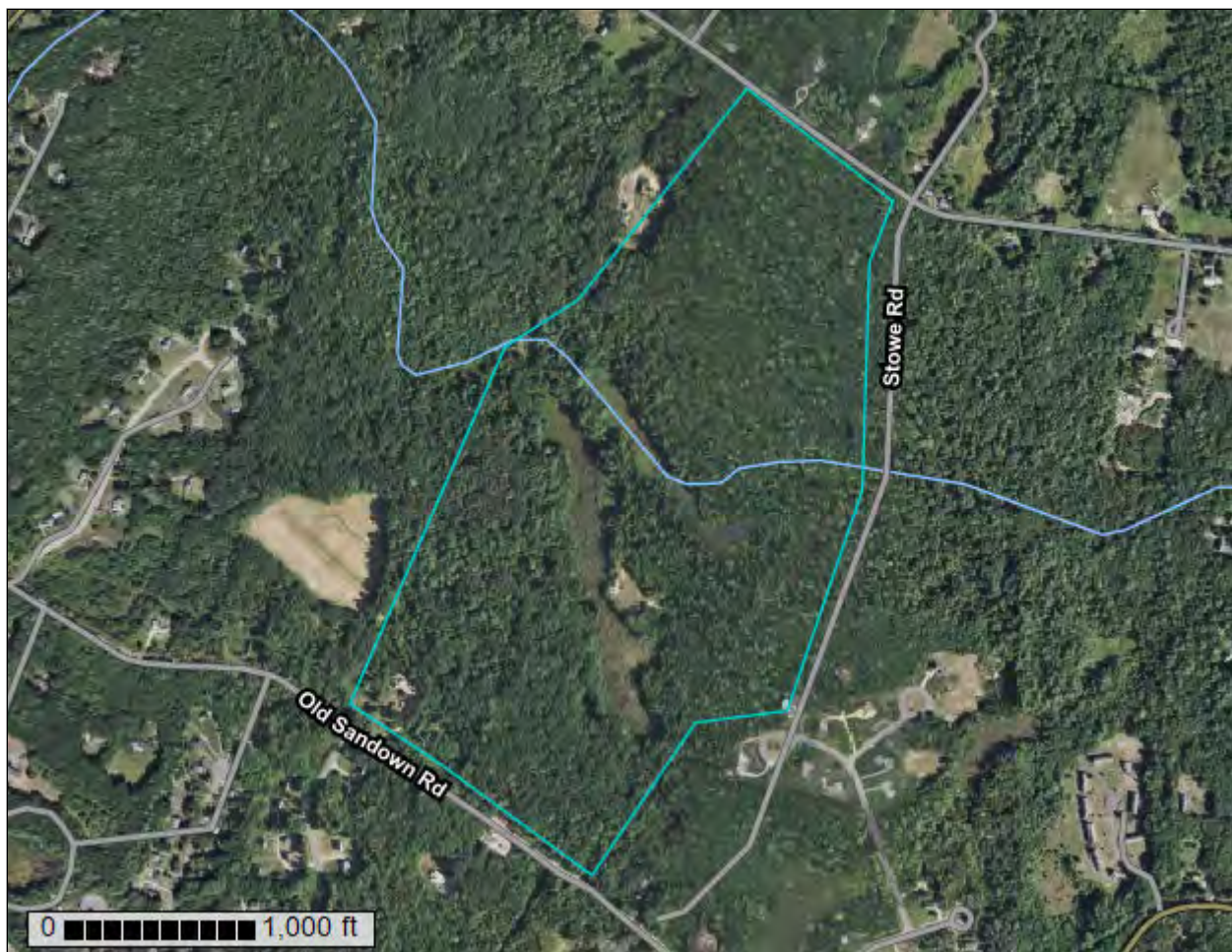
**NRCS**

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 **Rockingham County, New Hampshire**

## Chester Gravel Pit



July 22, 2021



# Preface

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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 (<https://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](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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# How Soil Surveys Are Made

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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

## Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

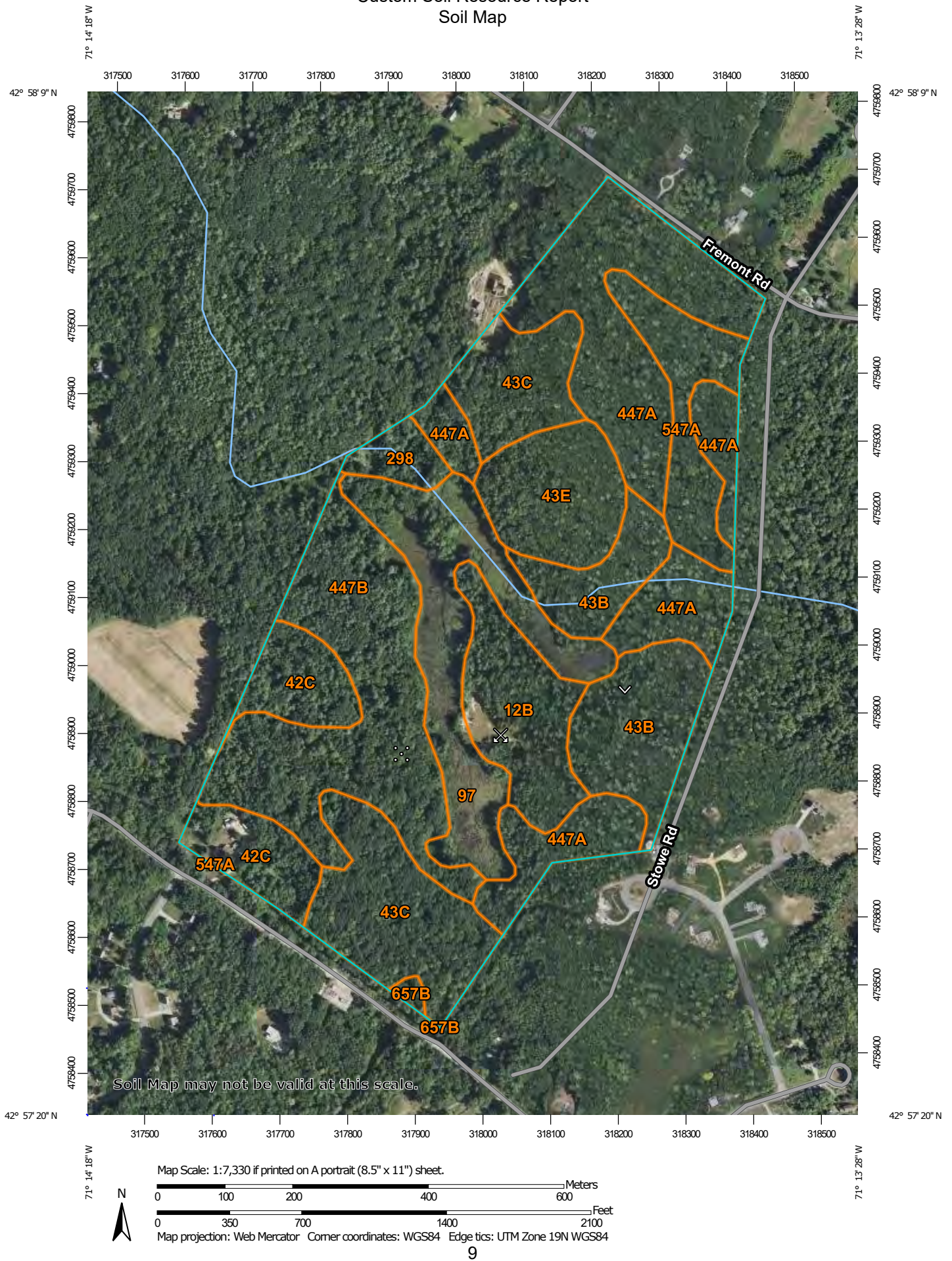
# Soil Map

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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.



# Custom Soil Resource Report Soil Map






# 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 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
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: Rockingham County, New Hampshire  
Survey Area Data: Version 22, May 29, 2020

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

Date(s) aerial images were photographed: Aug 13, 2020—Sep 15, 2020

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

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12B	Hinckley loamy sand, 3 to 8 percent slopes	10.0	6.8%
42C	Canton fine sandy loam, 8 to 15 percent slopes	9.7	6.6%
43B	Canton fine sandy loam, 0 to 8 percent slopes, very stony	14.8	10.1%
43C	Canton fine sandy loam, 8 to 15 percent slopes, very stony	19.2	13.1%
43E	Canton gravelly fine sandy loam, 25 to 35 percent slopes, very stony	9.0	6.1%
97	Freetown and Natchaug mucky peats, ponded, 0 to 2 percent slopes	17.2	11.7%
298	Pits, sand and gravel	2.5	1.7%
447A	Scituate-Newfields complex, 0 to 3 percent slopes, very stony	31.9	21.7%
447B	Scituate-Newfields complex, 3 to 8 percent slopes, very stony	24.3	16.6%
547A	Walpole very fine sandy loam, 0 to 3 percent slopes, very stony	8.0	5.5%
657B	Ridgebury fine sandy loam, 3 to 8 percent slopes, very stony	0.4	0.3%
<b>Totals for Area of Interest</b>		<b>147.0</b>	<b>100.0%</b>

## 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 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.

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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.

## Rockingham County, New Hampshire

### 12B—Hinckley loamy sand, 3 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2svm8

*Elevation:* 0 to 1,430 feet

*Mean annual precipitation:* 36 to 53 inches

*Mean annual air temperature:* 39 to 55 degrees F

*Frost-free period:* 140 to 250 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Hinckley and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Hinckley

##### Setting

*Landform:* Eskers, outwash plains, kames, kame terraces, outwash deltas, moraines, outwash terraces

*Landform position (two-dimensional):* Summit, shoulder, backslope, footslope

*Landform position (three-dimensional):* Nose slope, side slope, base slope, crest, tread, riser

*Down-slope shape:* Linear, convex, concave

*Across-slope shape:* Convex, linear, concave

*Parent material:* Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

##### Typical profile

*Oe - 0 to 1 inches:* moderately decomposed plant material

*A - 1 to 8 inches:* loamy sand

*Bw1 - 8 to 11 inches:* gravelly loamy sand

*Bw2 - 11 to 16 inches:* gravelly loamy sand

*BC - 16 to 19 inches:* very gravelly loamy sand

*C - 19 to 65 inches:* very gravelly sand

##### Properties and qualities

*Slope:* 3 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Excessively drained

*Runoff class:* Very low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to very high (1.42 to 99.90 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water capacity:* Very low (about 3.0 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3s

*Hydrologic Soil Group:* A

## Custom Soil Resource Report

*Ecological site:* F144AY022MA - Dry Outwash

*Hydric soil rating:* No

### Minor Components

#### Windsor

*Percent of map unit:* 8 percent

*Landform:* Eskers, outwash plains, kames, kame terraces, outwash deltas, moraines, outwash terraces

*Landform position (two-dimensional):* Summit, shoulder, backslope, footslope

*Landform position (three-dimensional):* Nose slope, side slope, base slope, crest, tread, riser

*Down-slope shape:* Linear, convex, concave

*Across-slope shape:* Convex, linear, concave

*Hydric soil rating:* No

#### Sudbury

*Percent of map unit:* 5 percent

*Landform:* Outwash plains, kame terraces, outwash deltas, moraines, outwash terraces

*Landform position (two-dimensional):* Backslope, footslope

*Landform position (three-dimensional):* Side slope, base slope, head slope, tread

*Down-slope shape:* Concave, linear

*Across-slope shape:* Linear, concave

*Hydric soil rating:* No

#### Agawam

*Percent of map unit:* 2 percent

*Landform:* Eskers, outwash plains, kames, kame terraces, outwash deltas, moraines, outwash terraces

*Landform position (two-dimensional):* Summit, shoulder, backslope, footslope

*Landform position (three-dimensional):* Nose slope, side slope, base slope, crest, tread, riser

*Down-slope shape:* Linear, convex, concave

*Across-slope shape:* Convex, linear, concave

*Hydric soil rating:* No

## 42C—Canton fine sandy loam, 8 to 15 percent slopes

### Map Unit Setting

*National map unit symbol:* 2w817

*Elevation:* 0 to 1,330 feet

*Mean annual precipitation:* 36 to 71 inches

*Mean annual air temperature:* 39 to 55 degrees F

*Frost-free period:* 140 to 240 days

*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Canton and similar soils:* 80 percent

*Minor components:* 20 percent

## Custom Soil Resource Report

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Canton

#### Setting

*Landform:* Ridges, hills, moraines

*Landform position (two-dimensional):* Backslope, summit, shoulder

*Landform position (three-dimensional):* Side slope, crest, nose slope

*Down-slope shape:* Convex, linear

*Across-slope shape:* Convex

*Parent material:* Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

#### Typical profile

*Ap - 0 to 7 inches:* fine sandy loam

*Bw1 - 7 to 15 inches:* fine sandy loam

*Bw2 - 15 to 26 inches:* gravelly fine sandy loam

*2C - 26 to 65 inches:* gravelly loamy sand

#### Properties and qualities

*Slope:* 8 to 15 percent

*Depth to restrictive feature:* 19 to 39 inches to strongly contrasting textural stratification

*Drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.14 to 14.17 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water capacity:* Very low (about 2.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* B

*Ecological site:* F144AY034CT - Well Drained Till Uplands

*Hydric soil rating:* No

### Minor Components

#### Scituate

*Percent of map unit:* 6 percent

*Landform:* Hills, ground moraines, drumlins

*Landform position (two-dimensional):* Footslope, backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex, linear

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### Montauk

*Percent of map unit:* 6 percent

*Landform:* Hills, ground moraines, moraines, drumlins

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear, convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

**Newfields**

*Percent of map unit:* 4 percent

*Landform:* Hills, ground moraines, moraines

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Concave

*Hydric soil rating:* No

**Charlton**

*Percent of map unit:* 4 percent

*Landform:* Ridges, hills, ground moraines

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear, convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

**43B—Canton fine sandy loam, 0 to 8 percent slopes, very stony**

**Map Unit Setting**

*National map unit symbol:* 2w81l

*Elevation:* 0 to 1,180 feet

*Mean annual precipitation:* 36 to 71 inches

*Mean annual air temperature:* 39 to 55 degrees F

*Frost-free period:* 140 to 240 days

*Farmland classification:* Farmland of local importance

**Map Unit Composition**

*Canton, very stony, and similar soils:* 80 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Canton, Very Stony**

**Setting**

*Landform:* Ridges, hills, moraines

*Landform position (two-dimensional):* Summit, shoulder, backslope

*Landform position (three-dimensional):* Side slope, crest, nose slope

*Down-slope shape:* Convex, linear

*Across-slope shape:* Convex

*Parent material:* Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

**Typical profile**

*Oi - 0 to 2 inches:* slightly decomposed plant material

*A - 2 to 5 inches:* fine sandy loam

*Bw1 - 5 to 16 inches:* fine sandy loam

*Bw2 - 16 to 22 inches:* gravelly fine sandy loam



## Custom Soil Resource Report

2C - 22 to 67 inches: gravelly loamy sand

### Properties and qualities

*Slope:* 0 to 8 percent

*Surface area covered with cobbles, stones or boulders:* 1.6 percent

*Depth to restrictive feature:* 19 to 39 inches to strongly contrasting textural stratification

*Drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.14 to 14.17 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water capacity:* Low (about 3.4 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* B

*Ecological site:* F144AY034CT - Well Drained Till Uplands

*Hydric soil rating:* No

### Minor Components

#### Scituate, very stony

*Percent of map unit:* 9 percent

*Landform:* Hills, ground moraines, drumlins

*Landform position (two-dimensional):* Footslope, backslope, summit

*Landform position (three-dimensional):* Side slope, crest

*Down-slope shape:* Linear, convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### Montauk, very stony

*Percent of map unit:* 5 percent

*Landform:* Hills, ground moraines, recessional moraines, drumlins

*Landform position (two-dimensional):* Backslope, shoulder, summit

*Landform position (three-dimensional):* Side slope, crest

*Down-slope shape:* Linear, convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### Gloucester, very stony

*Percent of map unit:* 4 percent

*Landform:* Ridges, hills, moraines

*Landform position (two-dimensional):* Summit, backslope, shoulder

*Landform position (three-dimensional):* Side slope, crest

*Down-slope shape:* Convex, linear

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### Swansea

*Percent of map unit:* 2 percent

*Landform:* Bogs, marshes, depressions, kettles, swamps

*Down-slope shape:* Concave

*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

#### **43C—Canton fine sandy loam, 8 to 15 percent slopes, very stony**

##### **Map Unit Setting**

*National map unit symbol:* 2w814  
*Elevation:* 0 to 1,160 feet  
*Mean annual precipitation:* 36 to 71 inches  
*Mean annual air temperature:* 39 to 55 degrees F  
*Frost-free period:* 140 to 240 days  
*Farmland classification:* Not prime farmland

##### **Map Unit Composition**

*Canton, very stony, and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

##### **Description of Canton, Very Stony**

###### **Setting**

*Landform:* Ridges, hills, moraines  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Convex  
*Parent material:* Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

###### **Typical profile**

*Oi - 0 to 2 inches:* slightly decomposed plant material  
*A - 2 to 5 inches:* fine sandy loam  
*Bw1 - 5 to 16 inches:* fine sandy loam  
*Bw2 - 16 to 22 inches:* gravelly fine sandy loam  
*2C - 22 to 67 inches:* gravelly loamy sand

###### **Properties and qualities**

*Slope:* 8 to 15 percent  
*Surface area covered with cobbles, stones or boulders:* 1.6 percent  
*Depth to restrictive feature:* 19 to 39 inches to strongly contrasting textural stratification  
*Drainage class:* Well drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.14 to 14.17 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water capacity:* Low (about 3.4 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* B  
*Ecological site:* F144AY034CT - Well Drained Till Uplands  
*Hydric soil rating:* No

**Minor Components**

**Montauk, very stony**

*Percent of map unit:* 6 percent  
*Landform:* Hills, ground moraines, recessional moraines, drumlins  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Scituate, very stony**

*Percent of map unit:* 5 percent  
*Landform:* Hills, ground moraines, drumlins  
*Landform position (two-dimensional):* Footslope, backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Chatfield, very stony**

*Percent of map unit:* 3 percent  
*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Backslope, shoulder, summit  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Swansea**

*Percent of map unit:* 1 percent  
*Landform:* Bogs, marshes, depressions, kettles, swamps  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

**43E—Canton gravelly fine sandy loam, 25 to 35 percent slopes, very stony**

**Map Unit Setting**

*National map unit symbol:* 9cnm  
*Elevation:* 0 to 1,000 feet  
*Mean annual precipitation:* 40 to 50 inches

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*Mean annual air temperature:* 45 to 55 degrees F

*Frost-free period:* 120 to 200 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Canton and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Canton

#### Setting

*Parent material:* Till

#### Typical profile

*H1 - 0 to 5 inches:* gravelly fine sandy loam

*H2 - 5 to 21 inches:* gravelly fine sandy loam

*H3 - 21 to 60 inches:* loamy sand

#### Properties and qualities

*Slope:* 25 to 35 percent

*Surface area covered with cobbles, stones or boulders:* 1.6 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Well drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* High (2.00 to 6.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water capacity:* Low (about 5.3 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7s

*Hydrologic Soil Group:* A

*Ecological site:* F144AY034CT - Well Drained Till Uplands

*Hydric soil rating:* No

### Minor Components

#### Hinckley

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Slope inclusion

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Chatfield

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

## **97—Freetown and Natchaug mucky peats, ponded, 0 to 2 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2w690

*Elevation:* 10 to 930 feet

*Mean annual precipitation:* 36 to 71 inches

*Mean annual air temperature:* 39 to 55 degrees F

*Frost-free period:* 145 to 240 days

*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Freetown, ponded, and similar soils:* 38 percent

*Natchaug, ponded, and similar soils:* 37 percent

*Minor components:* 25 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Freetown, Ponded**

#### **Setting**

*Landform:* Bogs, marshes, depressions, kettles, swamps

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Parent material:* Moderately decomposed organic material

#### **Typical profile**

*Oe1 - 0 to 2 inches:* mucky peat

*Oe2 - 2 to 79 inches:* mucky peat

#### **Properties and qualities**

*Slope:* 0 to 2 percent

*Surface area covered with cobbles, stones or boulders:* 0.0 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Very poorly drained

*Runoff class:* Negligible

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high  
(0.14 to 14.17 in/hr)

*Depth to water table:* About 0 inches

*Frequency of flooding:* None

*Frequency of ponding:* Frequent

*Available water capacity:* Very high (about 20.3 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 8w

*Hydrologic Soil Group:* B/D

*Ecological site:* F144AY043MA - Acidic Organic Wetlands

*Hydric soil rating:* Yes

## **Description of Natchaug, Ponded**

### **Setting**

*Landform:* Depressions, depressions, depressions

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Parent material:* Moderately decomposed organic material over loamy glaciofluvial deposits and/or loamy glaciolacustrine deposits and/or loamy till

### **Typical profile**

*Oe1 - 0 to 12 inches:* mucky peat

*Oe2 - 12 to 31 inches:* mucky peat

*2Cg1 - 31 to 39 inches:* silt loam

*2Cg2 - 39 to 79 inches:* fine sandy loam

### **Properties and qualities**

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Very poorly drained

*Runoff class:* Negligible

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.01 to 14.17 in/hr)

*Depth to water table:* About 0 inches

*Frequency of flooding:* None

*Frequency of ponding:* Frequent

*Calcium carbonate, maximum content:* 25 percent

*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water capacity:* Very high (about 14.4 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 8w

*Hydrologic Soil Group:* B/D

*Ecological site:* F144AY042NY - Semi-Rich Organic Wetlands

*Hydric soil rating:* Yes

## **Minor Components**

### **Scarboro, ponded**

*Percent of map unit:* 9 percent

*Landform:* Depressions, drainageways, outwash deltas, outwash terraces

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

### **Maybid, ponded**

*Percent of map unit:* 8 percent

*Landform:* Depressions, depressions

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

### **Ridgebury, very stony**

*Percent of map unit:* 4 percent

*Landform:* Hills, depressions, drainageways, ground moraines, drumlins

*Landform position (two-dimensional):* Toeslope, footslope

*Landform position (three-dimensional):* Base slope, head slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

**Scitico**

*Percent of map unit:* 4 percent  
*Landform:* Depressions, depressions  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

**298—Pits, sand and gravel**

**Map Unit Composition**

*Pits:* 100 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**447A—Scituate-Newfields complex, 0 to 3 percent slopes, very stony**

**Map Unit Setting**

*National map unit symbol:* 9cnq  
*Elevation:* 0 to 820 feet  
*Mean annual precipitation:* 44 to 49 inches  
*Mean annual air temperature:* 46 to 48 degrees F  
*Frost-free period:* 155 to 165 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Scituate and similar soils:* 50 percent  
*Newfields and similar soils:* 25 percent  
*Minor components:* 25 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Scituate**

**Typical profile**

*H1 - 0 to 8 inches:* fine sandy loam  
*H2 - 8 to 32 inches:* cobbly fine sandy loam  
*H3 - 32 to 60 inches:* gravelly loamy sand

**Properties and qualities**

*Slope:* 0 to 3 percent  
*Surface area covered with cobbles, stones or boulders:* 1.6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Moderately well drained  
*Runoff class:* Medium

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*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 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water capacity:* Low (about 4.2 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 5s

*Hydrologic Soil Group:* C

*Ecological site:* F144AY037MA - Moist Dense Till Uplands

*Hydric soil rating:* No

### Description of Newfields

#### Setting

*Parent material:* Till

#### Typical profile

*H1 - 0 to 9 inches:* fine sandy loam

*H2 - 9 to 35 inches:* fine sandy loam

*H3 - 35 to 64 inches:* gravelly loamy sand

#### Properties and qualities

*Slope:* 0 to 3 percent

*Surface area covered with cobbles, stones or boulders:* 1.6 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Moderately well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)

*Depth to water table:* About 24 to 48 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water capacity:* Moderate (about 6.4 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 5s

*Hydrologic Soil Group:* C

*Ecological site:* F144AY008CT - Moist Till Uplands

*Hydric soil rating:* No

### Minor Components

#### Walpole

*Percent of map unit:* 5 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

#### Montauk

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Not named

*Percent of map unit:* 5 percent

*Hydric soil rating:* No



**Ridgebury**

*Percent of map unit: 5 percent*

*Landform: Depressions*

*Hydric soil rating: Yes*

**Canton**

*Percent of map unit: 5 percent*

*Hydric soil rating: No*

**447B—Scituate-Newfields complex, 3 to 8 percent slopes, very stony**

**Map Unit Setting**

*National map unit symbol: 9cnr*

*Elevation: 0 to 1,000 feet*

*Mean annual precipitation: 35 to 56 inches*

*Mean annual air temperature: 45 to 52 degrees F*

*Frost-free period: 120 to 200 days*

*Farmland classification: Not prime farmland*

**Map Unit Composition**

*Scituate and similar soils: 50 percent*

*Newfields and similar soils: 25 percent*

*Minor components: 25 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Scituate**

**Typical profile**

*H1 - 0 to 8 inches: fine sandy loam*

*H2 - 8 to 32 inches: cobbly fine sandy loam*

*H3 - 32 to 60 inches: gravelly loamy sand*

**Properties and qualities**

*Slope: 3 to 8 percent*

*Surface area covered with cobbles, stones or boulders: 1.6 percent*

*Depth to restrictive feature: More than 80 inches*

*Drainage class: Moderately well drained*

*Runoff class: High*

*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 36 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Available water capacity: Low (about 4.2 inches)*

**Interpretive groups**

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 6s*

*Hydrologic Soil Group: C*

## Custom Soil Resource Report

*Ecological site:* F144AY037MA - Moist Dense Till Uplands

*Hydric soil rating:* No

### Description of Newfields

#### Setting

*Parent material:* Till

#### Typical profile

*H1 - 0 to 9 inches:* fine sandy loam

*H2 - 9 to 35 inches:* fine sandy loam

*H3 - 35 to 64 inches:* gravelly loamy sand

#### Properties and qualities

*Slope:* 3 to 8 percent

*Surface area covered with cobbles, stones or boulders:* 1.6 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Moderately well drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* About 24 to 48 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water capacity:* Moderate (about 6.4 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* C

*Ecological site:* F144AY008CT - Moist Till Uplands

*Hydric soil rating:* No

### Minor Components

#### Montauk

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Walpole

*Percent of map unit:* 5 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

#### Canton

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Ridgebury

*Percent of map unit:* 5 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

#### Not named

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

## **547A—Walpole very fine sandy loam, 0 to 3 percent slopes, very stony**

### **Map Unit Setting**

*National map unit symbol:* 9cpc  
*Elevation:* 0 to 2,100 feet  
*Mean annual precipitation:* 28 to 49 inches  
*Mean annual air temperature:* 46 to 52 degrees F  
*Frost-free period:* 100 to 195 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Walpole and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Walpole**

#### **Setting**

*Landform:* Depressions

#### **Typical profile**

*H1 - 0 to 7 inches:* very fine sandy loam  
*H2 - 7 to 16 inches:* sandy loam  
*H3 - 16 to 60 inches:* gravelly loamy sand

#### **Properties and qualities**

*Slope:* 0 to 3 percent  
*Surface area covered with cobbles, stones or boulders:* 0.1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Poorly drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* High (2.00 to 6.00 in/hr)  
*Depth to water table:* About 0 to 12 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water capacity:* Low (about 4.6 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* A/D  
*Ecological site:* F144AY028MA - Wet Outwash  
*Hydric soil rating:* Yes

### **Minor Components**

#### **Scarboro**

*Percent of map unit:* 10 percent

## Custom Soil Resource Report

*Landform:* Depressions

*Hydric soil rating:* Yes

### **Newfields**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

## **657B—Ridgebury fine sandy loam, 3 to 8 percent slopes, very stony**

### **Map Unit Setting**

*National map unit symbol:* 2xffx

*Elevation:* 40 to 1,320 feet

*Mean annual precipitation:* 36 to 71 inches

*Mean annual air temperature:* 39 to 55 degrees F

*Frost-free period:* 140 to 240 days

*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Ridgebury, very stony, and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Ridgebury, Very Stony**

#### **Setting**

*Landform:* Hills, depressions, drainageways, ground moraines, drumlins

*Landform position (two-dimensional):* Toeslope, footslope

*Landform position (three-dimensional):* Base slope, head slope

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Parent material:* Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

#### **Typical profile**

*Oe - 0 to 1 inches:* moderately decomposed plant material

*A - 1 to 6 inches:* fine sandy loam

*Bw - 6 to 10 inches:* sandy loam

*Bg - 10 to 19 inches:* gravelly sandy loam

*Cd - 19 to 66 inches:* gravelly sandy loam

#### **Properties and qualities**

*Slope:* 3 to 8 percent

*Surface area covered with cobbles, stones or boulders:* 1.6 percent

*Depth to restrictive feature:* 15 to 35 inches to densic material

*Drainage class:* Poorly drained

*Runoff class:* Very high

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.14 in/hr)

*Depth to water table:* About 0 to 6 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

## Custom Soil Resource Report

*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water capacity:* Low (about 3.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4w

*Hydrologic Soil Group:* D

*Ecological site:* F144AY009CT - Wet Till Depressions

*Hydric soil rating:* Yes

### Minor Components

#### Woodbridge, very stony

*Percent of map unit:* 7 percent

*Landform:* Hills, ground moraines, drumlins

*Landform position (two-dimensional):* Footslope, summit, backslope

*Landform position (three-dimensional):* Crest, side slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil rating:* No

#### Whitman, very stony

*Percent of map unit:* 4 percent

*Landform:* Hills, depressions, drainageways, ground moraines, drumlins

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

#### Scituate, very stony

*Percent of map unit:* 2 percent

*Landform:* Hills, ground moraines, drumlins

*Landform position (two-dimensional):* Summit, footslope, backslope

*Landform position (three-dimensional):* Side slope, crest

*Down-slope shape:* Convex, linear

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### Walpole

*Percent of map unit:* 2 percent

*Landform:* Depressions, drainageways, outwash terraces

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

# **Soil Information for All Uses**

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## **Soil Properties and Qualities**

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

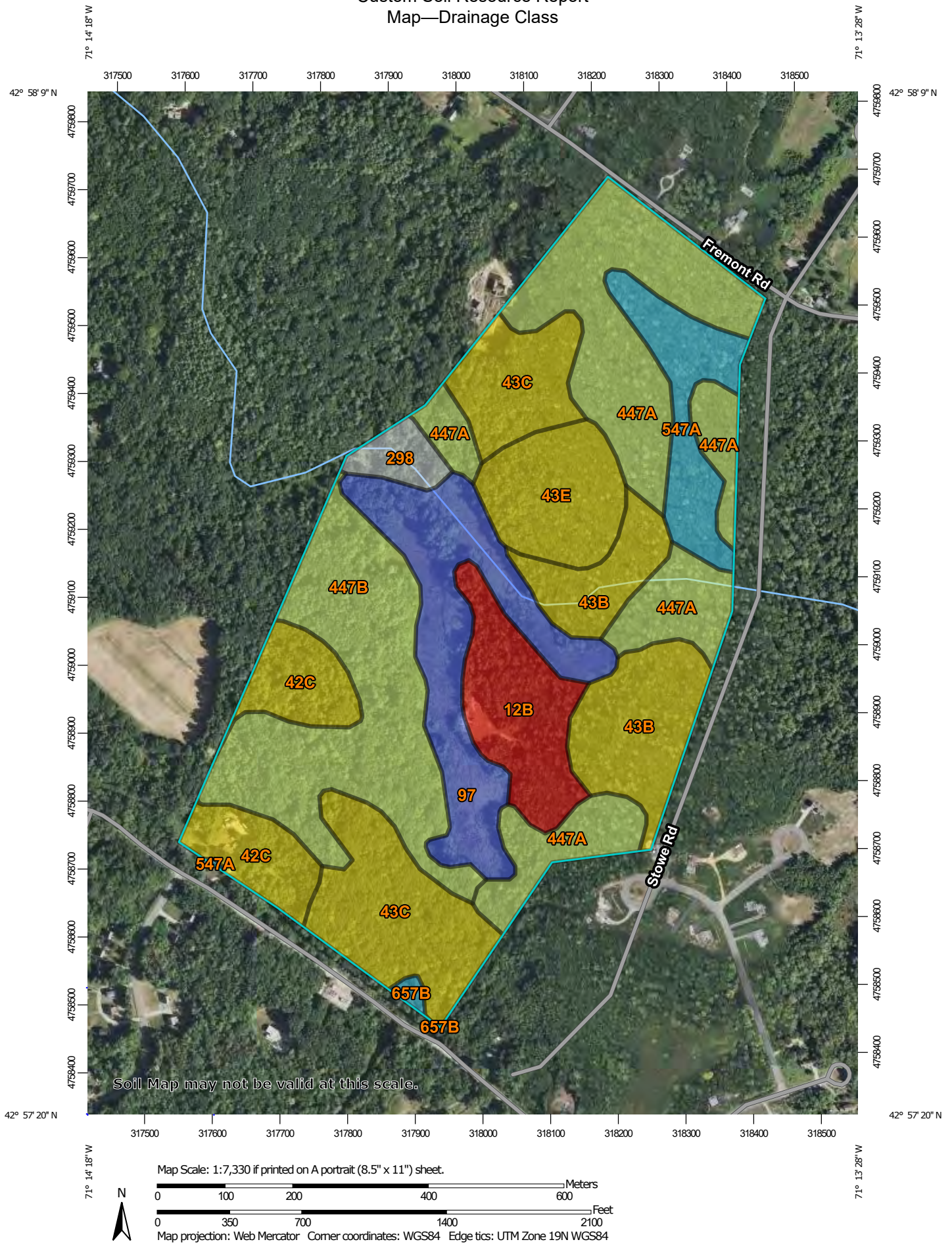
## **Soil Qualities and Features**

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

## **Drainage Class**

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."


# Custom Soil Resource Report Map—Drainage Class























## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons


	Excessively drained		Excessively drained
	Somewhat excessively drained		Somewhat excessively drained
	Well drained		Well drained
	Moderately well drained		Moderately well drained
	Somewhat poorly drained		Somewhat poorly drained
	Poorly drained		Poorly drained
	Very poorly drained		Very poorly drained
	Subaqueous		Subaqueous
	Not rated or not available		Not rated or not available

#### Soil Rating Lines




	Excessively drained
	Somewhat excessively drained
	Well drained
	Moderately well drained
	Somewhat poorly drained
	Poorly drained
	Very poorly drained
	Subaqueous
	Not rated or not available

#### Soil Rating Points


### 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 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
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: Rockingham County, New Hampshire  
Survey Area Data: Version 22, May 29, 2020

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

Date(s) aerial images were photographed: Aug 13, 2020—Sep 15, 2020

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.



**Table—Drainage Class**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
12B	Hinckley loamy sand, 3 to 8 percent slopes	Excessively drained	10.0	6.8%
42C	Canton fine sandy loam, 8 to 15 percent slopes	Well drained	9.7	6.6%
43B	Canton fine sandy loam, 0 to 8 percent slopes, very stony	Well drained	14.8	10.1%
43C	Canton fine sandy loam, 8 to 15 percent slopes, very stony	Well drained	19.2	13.1%
43E	Canton gravelly fine sandy loam, 25 to 35 percent slopes, very stony	Well drained	9.0	6.1%
97	Freetown and Natchaug mucky peats, ponded, 0 to 2 percent slopes	Very poorly drained	17.2	11.7%
298	Pits, sand and gravel		2.5	1.7%
447A	Scituate-Newfields complex, 0 to 3 percent slopes, very stony	Moderately well drained	31.9	21.7%
447B	Scituate-Newfields complex, 3 to 8 percent slopes, very stony	Moderately well drained	24.3	16.6%
547A	Walpole very fine sandy loam, 0 to 3 percent slopes, very stony	Poorly drained	8.0	5.5%
657B	Ridgebury fine sandy loam, 3 to 8 percent slopes, very stony	Poorly drained	0.4	0.3%
<b>Totals for Area of Interest</b>			<b>147.0</b>	<b>100.0%</b>

**Rating Options—Drainage Class***Aggregation Method: Dominant Condition**Component Percent Cutoff: None Specified**Tie-break Rule: Higher***Hydrologic Soil Group**

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the

## Custom Soil Resource Report

soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

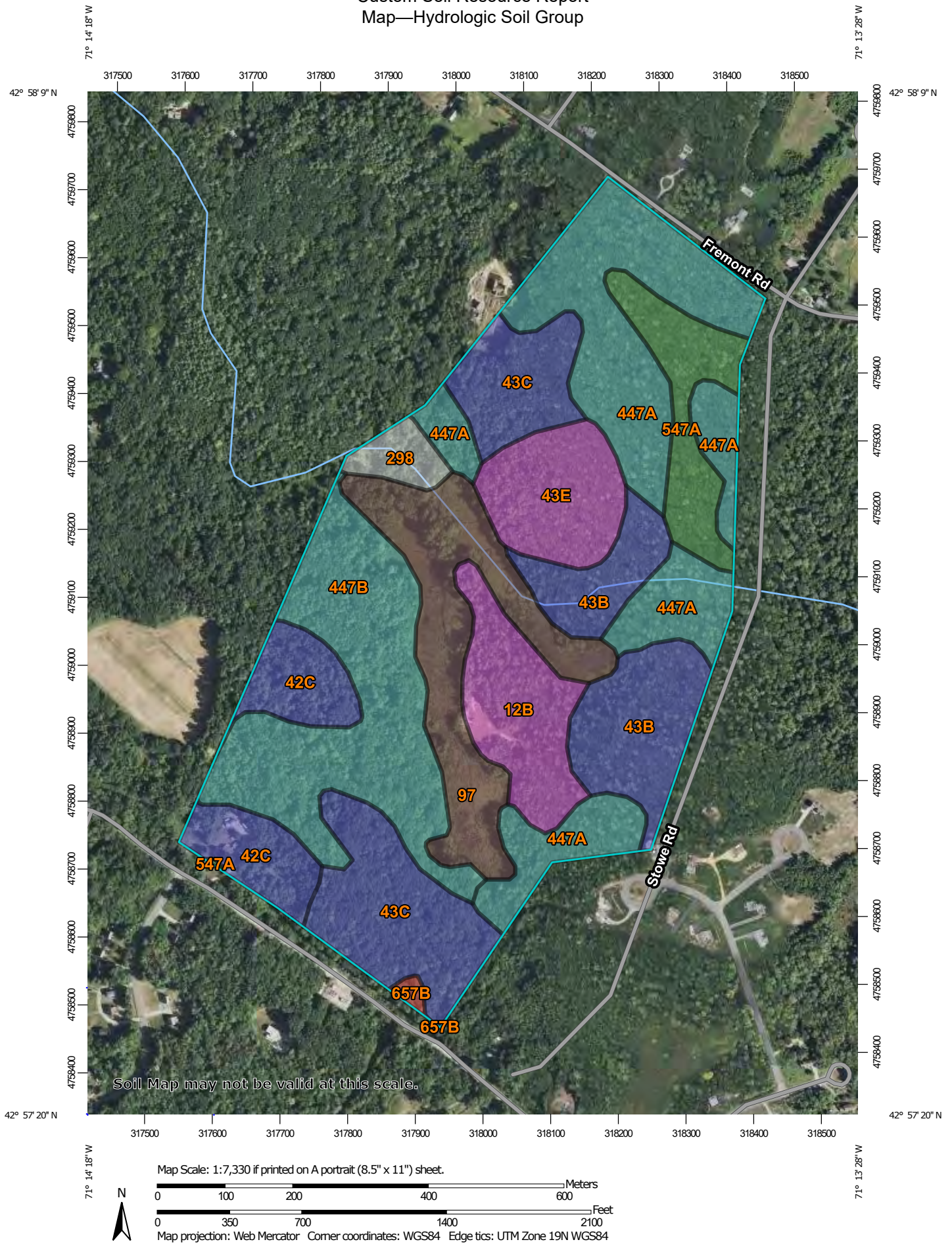
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.


If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report  
Map—Hydrologic Soil Group










## MAP LEGEND

### Area of Interest (AOI)









 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons





 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Lines


 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Points






 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available


### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

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

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 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.

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42C	Canton fine sandy loam, 8 to 15 percent slopes	B	9.7	6.6%
43B	Canton fine sandy loam, 0 to 8 percent slopes, very stony	B	14.8	10.1%
43C	Canton fine sandy loam, 8 to 15 percent slopes, very stony	B	19.2	13.1%
43E	Canton gravelly fine sandy loam, 25 to 35 percent slopes, very stony	A	9.0	6.1%
97	Freetown and Natchaug mucky peats, ponded, 0 to 2 percent slopes	B/D	17.2	11.7%
298	Pits, sand and gravel		2.5	1.7%
447A	Scituate-Newfields complex, 0 to 3 percent slopes, very stony	C	31.9	21.7%
447B	Scituate-Newfields complex, 3 to 8 percent slopes, very stony	C	24.3	16.6%
547A	Walpole very fine sandy loam, 0 to 3 percent slopes, very stony	A/D	8.0	5.5%
657B	Ridgebury fine sandy loam, 3 to 8 percent slopes, very stony	D	0.4	0.3%
<b>Totals for Area of Interest</b>			<b>147.0</b>	<b>100.0%</b>

**Rating Options—Hydrologic Soil Group***Aggregation Method: Dominant Condition**Component Percent Cutoff: None Specified**Tie-break Rule: Higher*



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- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelpdb1043084>

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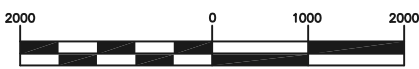


N:\PROJECTS\493-Garabedian-Chester Gravel Pit\DWG\493-USGSLOCMAP&AERIAL2.dwg



**The Dubay Group, Inc.**

136 Harvey Road, Bldg B101  
Londonderry, NH 03053  
www.TheDubayGroup.com  
603-458-6462



1 inch = 2000 ft.



## CHESTER GRAVEL PIT

MAP 5 LOT 85  
FREMONT ROAD ROAD  
CHESTER, NH

TITLE:  
AERIAL LOCATION MAP

DATE:  
4-1-2022

SCALE:  
1"=2000'

SHEET:  
1 OF 1





Facing south, looking down access drive.



Representative view of cleared site looking towards northern tree clearing limits.

RIP RAP OUTLET PROTECTION CALCULATIONS

Chester Gravel Pit  
TDG Project #493

The purpose of this spreadsheet is to calculate the dimensions of rip rap required to help prevent soil loss for the 25-year storm event

Input values required are:

- Q = peak flow, CFS
- Do = diameter of outlet or width of channel, ft
- Tw = tailwater at end of apron, ft

Depending on the tailwater conditions, one of the following formulas is used:

Tw < 1/2Do

↓

**Length of Apron (La):**  $La = 1.8Q/(Do)^{1.5} + 7Do$

↓

**Width of Apron:**  $W1 = 3 * Do$   
 $W2 = 3Do + La$

OR

Tw > 1/2Do

↓

$La = 3.0Q/(Do)^{1.5} + 7Do$

↓

$W1 = 3 * Do$   
 $W2 = 3Do + 0.4 * La$

If defined channel, use channel width for W1 and W2

$d50 = (0.02 * Q^{1.3}) / (Tw * Do)$

Structure & Description		Input Values			Calculated Output						Riprap Gradation Envelope				Riprap Depth
		Q (cfs)	Do (ft)	Tw (ft)	La	W1	W2	d50, ft	d50, in	d50 in.	d100 in.	d85 in.	d50 in.	d15 in.	
Outlet	From P1	3.19	1.00	1.00	17	3	10	0.1	1.08	6	9	8	6	3	15

Notes:

# Stormwater Management Report

## **IV. EROSION & SEDIMENTATION CONTROL PROVISIONS**

- A. Temporary Erosion Control Measures
- B. Construction Sequence
- C. Permanent Erosion Control Measures

## IV. EROSION & SEDIMENTATION CONTROL PROVISIONS

### A. Temporary Erosion Control Measures

As an integral part of the engineering design of this site, an erosion and sedimentation control plan has been developed with the intent of limiting the potential for soil loss and associated receiving water quality degradation, both during and after the construction period. As the project plans indicate, traditional temporary erosion and sedimentation control devices and practices, such as siltation fencing and silt socks have been specified for use during the construction period. In preparation of these provisions, reference was made to the New Hampshire Stormwater Manual: Volume 3, Erosion and Sediment Controls During Construction. Construction details for each temporary erosion control measure and practice specified have been added to the project plans. These plans also contain a number of erosion control notes, which are offered to the selected contractor in order to supplement the specified measures and practices to the extent practical.

### B. Construction Sequence

As pointed out in the erosion control notes, it is important for the contractor to recognize that proper judgment in the implementation of work will be essential if erosion is to be limited, and protection of completed work is to be realized. Any specific changes in sequence and/or field conditions affecting the ability of specific erosion control measures to adequately serve their intended purpose should be reported to this office by the contractor. The contractor is encouraged to supplement specified erosion control measures during the construction period where and when, in his best judgment, additional protection is warranted.

### C. Permanent Erosion

In the original design of this site, consideration was given to limiting the potential for long-term erosion of completed improvements. As a result, several permanent erosion control measures are incorporated into the final design. These provisions include:

- 1) Placement of rip-rap where needed to reduce stormwater velocities to manageable levels;
- 2) Vegetation located in the disturbed areas, including the proposed pond.
- 3) Specification of a turf establishment schedule and seed mixture, utilizing materials and workmanship recognized as appropriate for the site conditions.

# Stormwater Management Report

## **V. STORMWATER ANALYSIS**

### **B. Drainage Analysis**

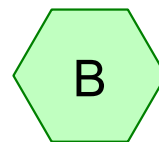
- i. Pre-Development Drainage Diagram
- ii. Pre-Development Area Listing and Soil Listing
- iii. HydroCAD Output, Existing 2-Year Storm, Node List
- iv. HydroCAD Output, Existing 10-Year Storm, Node List & Full Summary
- v. HydroCAD Output, Existing 25-Year Storm, Node List & Full Summary
- vi. HydroCAD Output, Existing 50-Year Storm, Node List
- vii. HydroCAD Output, Existing 100-Year Storm, Node List
- viii. Post-Development Drainage Diagram
- ix. Post-Development Area Listing and Soil Listing
- x. HydroCAD Output, Proposed 2-Year Storm, Node List
- xi. HydroCAD Output, Proposed 10-Year Storm, Node List & Full Summary
- xii. HydroCAD Output, Proposed 25-Year Storm, Node List & Full Summary
- xiii. HydroCAD Output, Proposed 50-Year Storm, Node List
- xiv. HydroCAD Output, Proposed 100-Year Storm, Node List



Subcat A



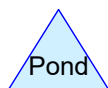
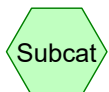
Wetland to the south



Subcat B



Wetland to the North



**Routing Diagram for 493-PRE 2022.6.15**

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Time span=0.00-20.00 hrs, dt=0.05 hrs, 401 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment A: Subcat A**

Runoff Area=485,779 sf 0.00% Impervious Runoff Depth>0.16"  
Flow Length=814' Tc=29.0 min CN=55 Runoff=0.59 cfs 6,668 cf

**Subcatchment B: Subcat B**

Runoff Area=318,703 sf 0.00% Impervious Runoff Depth>0.17"  
Flow Length=715' Tc=22.2 min CN=55 Runoff=0.43 cfs 4,403 cf

**Link L1: Wetland to the south**

Inflow=0.59 cfs 6,668 cf  
Primary=0.59 cfs 6,668 cf

**Link L2: Wetland to the North**

Inflow=0.43 cfs 4,403 cf  
Primary=0.43 cfs 4,403 cf

**Total Runoff Area = 804,482 sf Runoff Volume = 11,071 cf Average Runoff Depth = 0.17"**  
**100.00% Pervious = 804,482 sf 0.00% Impervious = 0 sf**

**Summary for Subcatchment A: Subcat A**

Runoff = 0.59 cfs @ 12.71 hrs, Volume= 6,668 cf, Depth> 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2-YR Rainfall=3.03"

Area (sf)	CN	Description
485,779	55	Woods, Good, HSG B
485,779		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	100	0.0800	0.13		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.03"
7.6	471	0.1700	1.03		<b>Shallow Concentrated Flow,</b> Forest w/Heavy Litter Kv= 2.5 fps
8.7	243	0.0350	0.47		<b>Shallow Concentrated Flow,</b> Forest w/Heavy Litter Kv= 2.5 fps
29.0	814	Total			

**Summary for Subcatchment B: Subcat B**

Runoff = 0.43 cfs @ 12.61 hrs, Volume= 4,403 cf, Depth> 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2-YR Rainfall=3.03"

Area (sf)	CN	Description
318,703	55	Woods, Good, HSG B
318,703		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1200	0.15		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.03"
11.4	615	0.1300	0.90		<b>Shallow Concentrated Flow,</b> Forest w/Heavy Litter Kv= 2.5 fps
22.2	715	Total			

**Summary for Link L1: Wetland to the south**

Inflow Area = 485,779 sf, 0.00% Impervious, Inflow Depth > 0.16" for 2-YR event  
Inflow = 0.59 cfs @ 12.71 hrs, Volume= 6,668 cf  
Primary = 0.59 cfs @ 12.71 hrs, Volume= 6,668 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs

### **Summary for Link L2: Wetland to the North**

Inflow Area = 318,703 sf, 0.00% Impervious, Inflow Depth > 0.17" for 2-YR event  
Inflow = 0.43 cfs @ 12.61 hrs, Volume= 4,403 cf  
Primary = 0.43 cfs @ 12.61 hrs, Volume= 4,403 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs

Time span=0.00-20.00 hrs, dt=0.05 hrs, 401 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment A: Subcat A**

Runoff Area=485,779 sf 0.00% Impervious Runoff Depth>0.68"  
Flow Length=814' Tc=29.0 min CN=55 Runoff=4.47 cfs 27,654 cf

**Subcatchment B: Subcat B**

Runoff Area=318,703 sf 0.00% Impervious Runoff Depth>0.69"  
Flow Length=715' Tc=22.2 min CN=55 Runoff=3.24 cfs 18,220 cf

**Link L1: Wetland to the south**

Inflow=4.47 cfs 27,654 cf  
Primary=4.47 cfs 27,654 cf

**Link L2: Wetland to the North**

Inflow=3.24 cfs 18,220 cf  
Primary=3.24 cfs 18,220 cf

**Total Runoff Area = 804,482 sf Runoff Volume = 45,874 cf Average Runoff Depth = 0.68"**  
**100.00% Pervious = 804,482 sf 0.00% Impervious = 0 sf**

**Summary for Subcatchment A: Subcat A**

Runoff = 4.47 cfs @ 12.51 hrs, Volume= 27,654 cf, Depth> 0.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10-YR Rainfall=4.59"

Area (sf)	CN	Description
485,779	55	Woods, Good, HSG B
485,779		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	100	0.0800	0.13		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.03"
7.6	471	0.1700	1.03		<b>Shallow Concentrated Flow,</b> Forest w/Heavy Litter Kv= 2.5 fps
8.7	243	0.0350	0.47		<b>Shallow Concentrated Flow,</b> Forest w/Heavy Litter Kv= 2.5 fps
29.0	814	Total			

**Summary for Subcatchment B: Subcat B**

Runoff = 3.24 cfs @ 12.40 hrs, Volume= 18,220 cf, Depth> 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10-YR Rainfall=4.59"

Area (sf)	CN	Description
318,703	55	Woods, Good, HSG B
318,703		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1200	0.15		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.03"
11.4	615	0.1300	0.90		<b>Shallow Concentrated Flow,</b> Forest w/Heavy Litter Kv= 2.5 fps
22.2	715	Total			

**Summary for Link L1: Wetland to the south**

Inflow Area = 485,779 sf, 0.00% Impervious, Inflow Depth > 0.68" for 10-YR event  
Inflow = 4.47 cfs @ 12.51 hrs, Volume= 27,654 cf  
Primary = 4.47 cfs @ 12.51 hrs, Volume= 27,654 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs

### **Summary for Link L2: Wetland to the North**

Inflow Area = 318,703 sf, 0.00% Impervious, Inflow Depth > 0.69" for 10-YR event  
Inflow = 3.24 cfs @ 12.40 hrs, Volume= 18,220 cf  
Primary = 3.24 cfs @ 12.40 hrs, Volume= 18,220 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs

Time span=0.00-20.00 hrs, dt=0.05 hrs, 401 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment A: Subcat A**

Runoff Area=485,779 sf 0.00% Impervious Runoff Depth>1.26"  
Flow Length=814' Tc=29.0 min CN=55 Runoff=9.32 cfs 50,972 cf

**Subcatchment B: Subcat B**

Runoff Area=318,703 sf 0.00% Impervious Runoff Depth>1.26"  
Flow Length=715' Tc=22.2 min CN=55 Runoff=6.82 cfs 33,561 cf

**Link L1: Wetland to the south**

Inflow=9.32 cfs 50,972 cf  
Primary=9.32 cfs 50,972 cf

**Link L2: Wetland to the North**

Inflow=6.82 cfs 33,561 cf  
Primary=6.82 cfs 33,561 cf

**Total Runoff Area = 804,482 sf Runoff Volume = 84,533 cf Average Runoff Depth = 1.26"**  
**100.00% Pervious = 804,482 sf 0.00% Impervious = 0 sf**



**Summary for Subcatchment A: Subcat A**

Runoff = 9.32 cfs @ 12.47 hrs, Volume= 50,972 cf, Depth> 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-YR Rainfall=5.82"

Area (sf)	CN	Description
485,779	55	Woods, Good, HSG B
485,779		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	100	0.0800	0.13		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.03"
7.6	471	0.1700	1.03		<b>Shallow Concentrated Flow,</b> Forest w/Heavy Litter Kv= 2.5 fps
8.7	243	0.0350	0.47		<b>Shallow Concentrated Flow,</b> Forest w/Heavy Litter Kv= 2.5 fps
29.0	814	Total			

**Summary for Subcatchment B: Subcat B**

Runoff = 6.82 cfs @ 12.36 hrs, Volume= 33,561 cf, Depth> 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-YR Rainfall=5.82"

Area (sf)	CN	Description
318,703	55	Woods, Good, HSG B
318,703		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1200	0.15		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.03"
11.4	615	0.1300	0.90		<b>Shallow Concentrated Flow,</b> Forest w/Heavy Litter Kv= 2.5 fps
22.2	715	Total			

**Summary for Link L1: Wetland to the south**

Inflow Area = 485,779 sf, 0.00% Impervious, Inflow Depth > 1.26" for 25-YR event  
Inflow = 9.32 cfs @ 12.47 hrs, Volume= 50,972 cf  
Primary = 9.32 cfs @ 12.47 hrs, Volume= 50,972 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs

**Summary for Link L2: Wetland to the North**

Inflow Area = 318,703 sf, 0.00% Impervious, Inflow Depth > 1.26" for 25-YR event  
Inflow = 6.82 cfs @ 12.36 hrs, Volume= 33,561 cf  
Primary = 6.82 cfs @ 12.36 hrs, Volume= 33,561 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs

Time span=0.00-20.00 hrs, dt=0.05 hrs, 401 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment A: Subcat A**

Runoff Area=485,779 sf 0.00% Impervious Runoff Depth>1.89"  
Flow Length=814' Tc=29.0 min CN=55 Runoff=14.68 cfs 76,637 cf

**Subcatchment B: Subcat B**

Runoff Area=318,703 sf 0.00% Impervious Runoff Depth>1.90"  
Flow Length=715' Tc=22.2 min CN=55 Runoff=10.77 cfs 50,442 cf

**Link L1: Wetland to the south**

Inflow=14.68 cfs 76,637 cf  
Primary=14.68 cfs 76,637 cf

**Link L2: Wetland to the North**

Inflow=10.77 cfs 50,442 cf  
Primary=10.77 cfs 50,442 cf

**Total Runoff Area = 804,482 sf   Runoff Volume = 127,079 cf   Average Runoff Depth = 1.90"**  
**100.00% Pervious = 804,482 sf   0.00% Impervious = 0 sf**

Time span=0.00-20.00 hrs, dt=0.05 hrs, 401 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment A: Subcat A**

Runoff Area=485,779 sf 0.00% Impervious Runoff Depth>2.75"  
Flow Length=814' Tc=29.0 min CN=55 Runoff=21.85 cfs 111,147 cf

**Subcatchment B: Subcat B**

Runoff Area=318,703 sf 0.00% Impervious Runoff Depth>2.75"  
Flow Length=715' Tc=22.2 min CN=55 Runoff=16.05 cfs 73,137 cf

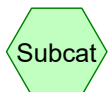
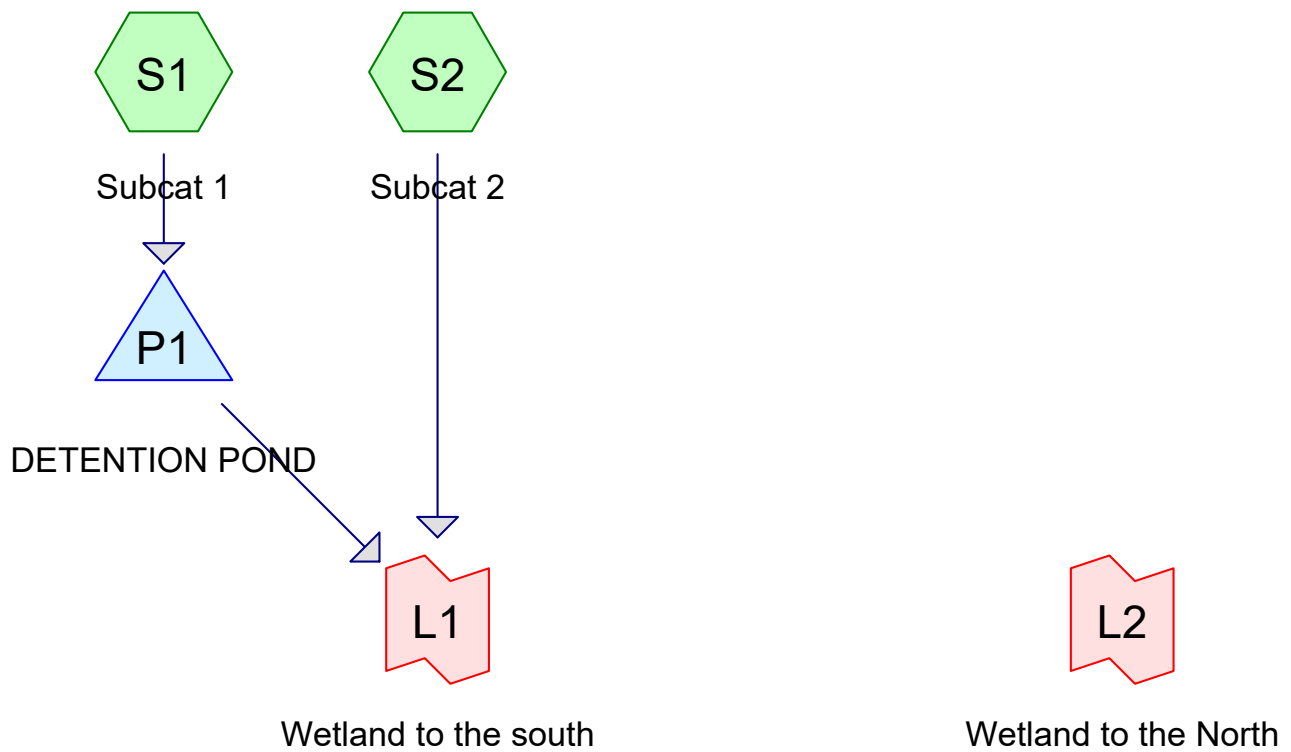
**Link L1: Wetland to the south**

Inflow=21.85 cfs 111,147 cf  
Primary=21.85 cfs 111,147 cf

**Link L2: Wetland to the North**

Inflow=16.05 cfs 73,137 cf  
Primary=16.05 cfs 73,137 cf

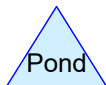
**Total Runoff Area = 804,482 sf Runoff Volume = 184,284 cf Average Runoff Depth = 2.75"**  
**100.00% Pervious = 804,482 sf 0.00% Impervious = 0 sf**



Subcat



Reach



Pond



Link

**493-POST 2022.6.15***Type III 24-hr 2-YR Rainfall=3.03"*

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Time span=0.00-20.00 hrs, dt=0.05 hrs, 401 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment S1: Subcat 1**

Runoff Area=708,508 sf 4.15% Impervious Runoff Depth>0.29"  
Flow Length=1,030' Tc=36.6 min CN=60 Runoff=2.04 cfs 17,148 cf

**Subcatchment S2: Subcat 2**

Runoff Area=95,974 sf 0.46% Impervious Runoff Depth>0.24"  
Tc=6.0 min CN=58 Runoff=0.29 cfs 1,932 cf

**Pond P1: DETENTION POND**

Peak Elev=248.29' Storage=10,412 cf Inflow=2.04 cfs 17,148 cf  
Outflow=0.34 cfs 7,275 cf

**Link L1: Wetland to the south**

Inflow=0.38 cfs 9,207 cf  
Primary=0.38 cfs 9,207 cf

**Link L2: Wetland to the North**

Primary=0.00 cfs 0 cf

**Total Runoff Area = 804,482 sf Runoff Volume = 19,080 cf Average Runoff Depth = 0.28"**  
**96.29% Pervious = 774,641 sf 3.71% Impervious = 29,841 sf**

**Summary for Subcatchment S1: Subcat 1**

Runoff = 2.04 cfs @ 12.70 hrs, Volume= 17,148 cf, Depth> 0.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2-YR Rainfall=3.03"

Area (sf)	CN	Description
679,110	58	Meadow, non-grazed, HSG B
* 29,398	98	1:1 LEDGE CUT
708,508	60	Weighted Average
679,110		95.85% Pervious Area
29,398		4.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	100	0.0080	0.11		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.03"
22.1	930	0.0100	0.70		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
36.6	1,030	Total			

**Summary for Subcatchment S2: Subcat 2**

Runoff = 0.29 cfs @ 12.29 hrs, Volume= 1,932 cf, Depth> 0.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2-YR Rainfall=3.03"

Area (sf)	CN	Description
95,531	58	Meadow, non-grazed, HSG B
* 443	98	1:1 LEDGE CUT
95,974	58	Weighted Average
95,531		99.54% Pervious Area
443		0.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry,</b>

**Summary for Pond P1: DETENTION POND**

Inflow Area = 708,508 sf, 4.15% Impervious, Inflow Depth > 0.29" for 2-YR event  
 Inflow = 2.04 cfs @ 12.70 hrs, Volume= 17,148 cf  
 Outflow = 0.34 cfs @ 17.43 hrs, Volume= 7,275 cf, Atten= 83%, Lag= 283.6 min  
 Primary = 0.34 cfs @ 17.43 hrs, Volume= 7,275 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs



**493-POST 2022.6.15**

Type III 24-hr 2-YR Rainfall=3.03"

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Peak Elev= 248.29' @ 17.43 hrs Surf.Area= 36,664 sf Storage= 10,412 cf

Flood Elev= 251.00' Surf.Area= 46,400 sf Storage= 102,025 cf

Plug-Flow detention time= 237.6 min calculated for 7,257 cf (42% of inflow)

Center-of-Mass det. time= 126.4 min ( 1,014.2 - 887.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	248.00'	102,025 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
248.00	35,425	0	0
250.00	44,000	79,425	79,425
250.50	46,400	22,600	102,025

Device	Routing	Invert	Outlet Devices
#1	Primary	248.00'	<b>12.0" Round Culvert</b> L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 248.00' / 247.50' S= 0.0125 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Primary	249.80'	<b>10.0' long x 15.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

**Primary OutFlow** Max=0.34 cfs @ 17.43 hrs HW=248.29' TW=0.00' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.34 cfs @ 1.83 fps)

2=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

**Summary for Link L1: Wetland to the south**

Inflow Area = 804,482 sf, 3.71% Impervious, Inflow Depth > 0.14" for 2-YR event  
 Inflow = 0.38 cfs @ 16.94 hrs, Volume= 9,207 cf  
 Primary = 0.38 cfs @ 16.94 hrs, Volume= 9,207 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs

**Summary for Link L2: Wetland to the North**

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs

**493-POST 2022.6.15***Type III 24-hr 10-YR Rainfall=4.59"*

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Time span=0.00-20.00 hrs, dt=0.05 hrs, 401 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment S1: Subcat 1**Runoff Area=708,508 sf 4.15% Impervious Runoff Depth>0.94"  
Flow Length=1,030' Tc=36.6 min CN=60 Runoff=9.08 cfs 55,771 cf**Subcatchment S2: Subcat 2**Runoff Area=95,974 sf 0.46% Impervious Runoff Depth>0.85"  
Tc=6.0 min CN=58 Runoff=1.99 cfs 6,791 cf**Pond P1: DETENTION POND**Peak Elev=248.72' Storage=26,714 cf Inflow=9.08 cfs 55,771 cf  
Outflow=1.76 cfs 37,605 cf**Link L1: Wetland to the south**Inflow=1.99 cfs 44,396 cf  
Primary=1.99 cfs 44,396 cf**Link L2: Wetland to the North**

Primary=0.00 cfs 0 cf

**Total Runoff Area = 804,482 sf Runoff Volume = 62,562 cf Average Runoff Depth = 0.93"**  
**96.29% Pervious = 774,641 sf 3.71% Impervious = 29,841 sf**

**Summary for Subcatchment S1: Subcat 1**

Runoff = 9.08 cfs @ 12.59 hrs, Volume= 55,771 cf, Depth> 0.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10-YR Rainfall=4.59"

Area (sf)	CN	Description
679,110	58	Meadow, non-grazed, HSG B
* 29,398	98	1:1 LEDGE CUT
708,508	60	Weighted Average
679,110		95.85% Pervious Area
29,398		4.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	100	0.0080	0.11		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.03"
22.1	930	0.0100	0.70		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
36.6	1,030	Total			

**Summary for Subcatchment S2: Subcat 2**

Runoff = 1.99 cfs @ 12.11 hrs, Volume= 6,791 cf, Depth> 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10-YR Rainfall=4.59"

Area (sf)	CN	Description
95,531	58	Meadow, non-grazed, HSG B
* 443	98	1:1 LEDGE CUT
95,974	58	Weighted Average
95,531		99.54% Pervious Area
443		0.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry,</b>

**Summary for Pond P1: DETENTION POND**

Inflow Area = 708,508 sf, 4.15% Impervious, Inflow Depth > 0.94" for 10-YR event  
 Inflow = 9.08 cfs @ 12.59 hrs, Volume= 55,771 cf  
 Outflow = 1.76 cfs @ 14.51 hrs, Volume= 37,605 cf, Atten= 81%, Lag= 115.5 min  
 Primary = 1.76 cfs @ 14.51 hrs, Volume= 37,605 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs

**493-POST 2022.6.15**

Type III 24-hr 10-YR Rainfall=4.59"

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Page 3

Peak Elev= 248.72' @ 14.51 hrs Surf.Area= 38,523 sf Storage= 26,714 cf

Flood Elev= 251.00' Surf.Area= 46,400 sf Storage= 102,025 cf

Plug-Flow detention time= 182.1 min calculated for 37,511 cf (67% of inflow)

Center-of-Mass det. time= 109.2 min ( 964.7 - 855.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	248.00'	102,025 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
248.00	35,425	0	0
250.00	44,000	79,425	79,425
250.50	46,400	22,600	102,025

Device	Routing	Invert	Outlet Devices
#1	Primary	248.00'	<b>12.0" Round Culvert</b> L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 248.00' / 247.50' S= 0.0125 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Primary	249.80'	<b>10.0' long x 15.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

**Primary OutFlow** Max=1.76 cfs @ 14.51 hrs HW=248.72' TW=0.00' (Dynamic Tailwater)

1=Culvert (Inlet Controls 1.76 cfs @ 2.89 fps)

2=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

**Summary for Link L1: Wetland to the south**

Inflow Area = 804,482 sf, 3.71% Impervious, Inflow Depth > 0.66" for 10-YR event  
 Inflow = 1.99 cfs @ 12.11 hrs, Volume= 44,396 cf  
 Primary = 1.99 cfs @ 12.11 hrs, Volume= 44,396 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs

**Summary for Link L2: Wetland to the North**

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs

**493-POST 2022.6.15***Type III 24-hr 25-YR Rainfall=5.82"*

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Time span=0.00-20.00 hrs, dt=0.05 hrs, 401 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment S1: Subcat 1**

Runoff Area=708,508 sf 4.15% Impervious Runoff Depth>1.62"  
Flow Length=1,030' Tc=36.6 min CN=60 Runoff=16.57 cfs 95,621 cf

**Subcatchment S2: Subcat 2**

Runoff Area=95,974 sf 0.46% Impervious Runoff Depth>1.49"  
Tc=6.0 min CN=58 Runoff=3.85 cfs 11,932 cf

**Pond P1: DETENTION POND**

Peak Elev=249.21' Storage=46,088 cf Inflow=16.57 cfs 95,621 cf  
Outflow=3.19 cfs 70,492 cf

**Link L1: Wetland to the south**

Inflow=3.87 cfs 82,423 cf  
Primary=3.87 cfs 82,423 cf

**Link L2: Wetland to the North**

Primary=0.00 cfs 0 cf

**Total Runoff Area = 804,482 sf Runoff Volume = 107,552 cf Average Runoff Depth = 1.60"**  
**96.29% Pervious = 774,641 sf 3.71% Impervious = 29,841 sf**

**Summary for Subcatchment S1: Subcat 1**

Runoff = 16.57 cfs @ 12.56 hrs, Volume= 95,621 cf, Depth> 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-YR Rainfall=5.82"

Area (sf)	CN	Description
679,110	58	Meadow, non-grazed, HSG B
* 29,398	98	1:1 LEDGE CUT
708,508	60	Weighted Average
679,110		95.85% Pervious Area
29,398		4.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	100	0.0080	0.11		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.03"
22.1	930	0.0100	0.70		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
36.6	1,030	Total			

**Summary for Subcatchment S2: Subcat 2**

Runoff = 3.85 cfs @ 12.10 hrs, Volume= 11,932 cf, Depth> 1.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-YR Rainfall=5.82"

Area (sf)	CN	Description
95,531	58	Meadow, non-grazed, HSG B
* 443	98	1:1 LEDGE CUT
95,974	58	Weighted Average
95,531		99.54% Pervious Area
443		0.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry,</b>

**Summary for Pond P1: DETENTION POND**

Inflow Area = 708,508 sf, 4.15% Impervious, Inflow Depth > 1.62" for 25-YR event  
 Inflow = 16.57 cfs @ 12.56 hrs, Volume= 95,621 cf  
 Outflow = 3.19 cfs @ 14.10 hrs, Volume= 70,492 cf, Atten= 81%, Lag= 93.0 min  
 Primary = 3.19 cfs @ 14.10 hrs, Volume= 70,492 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs

**493-POST 2022.6.15**

Type III 24-hr 25-YR Rainfall=5.82"

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Peak Elev= 249.21' @ 14.10 hrs Surf.Area= 40,622 sf Storage= 46,088 cf

Flood Elev= 251.00' Surf.Area= 46,400 sf Storage= 102,025 cf

Plug-Flow detention time= 176.0 min calculated for 70,492 cf (74% of inflow)

Center-of-Mass det. time= 113.7 min ( 957.1 - 843.4 )

Volume	Invert	Avail.Storage	Storage Description
#1	248.00'	102,025 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
248.00	35,425	0	0
250.00	44,000	79,425	79,425
250.50	46,400	22,600	102,025

Device	Routing	Invert	Outlet Devices
#1	Primary	248.00'	<b>12.0" Round Culvert</b> L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 248.00' / 247.50' S= 0.0125 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Primary	249.80'	<b>10.0' long x 15.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

**Primary OutFlow** Max=3.19 cfs @ 14.10 hrs HW=249.21' TW=0.00' (Dynamic Tailwater)

1=Culvert (Inlet Controls 3.19 cfs @ 4.06 fps)

2=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

**Summary for Link L1: Wetland to the south**

Inflow Area = 804,482 sf, 3.71% Impervious, Inflow Depth > 1.23" for 25-YR event  
 Inflow = 3.87 cfs @ 12.10 hrs, Volume= 82,423 cf  
 Primary = 3.87 cfs @ 12.10 hrs, Volume= 82,423 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs

**Summary for Link L2: Wetland to the North**

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs



Time span=0.00-20.00 hrs, dt=0.05 hrs, 401 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment S1: Subcat 1**

Runoff Area=708,508 sf 4.15% Impervious Runoff Depth>2.34"  
Flow Length=1,030' Tc=36.6 min CN=60 Runoff=24.48 cfs 138,027 cf

**Subcatchment S2: Subcat 2**

Runoff Area=95,974 sf 0.46% Impervious Runoff Depth>2.18"  
Tc=6.0 min CN=58 Runoff=5.81 cfs 17,466 cf

**Pond P1: DETENTION POND**

Peak Elev=249.78' Storage=69,981 cf Inflow=24.48 cfs 138,027 cf  
Outflow=4.28 cfs 101,048 cf

**Link L1: Wetland to the south**

Inflow=5.97 cfs 118,514 cf  
Primary=5.97 cfs 118,514 cf

**Link L2: Wetland to the North**

Primary=0.00 cfs 0 cf

**Total Runoff Area = 804,482 sf Runoff Volume = 155,493 cf Average Runoff Depth = 2.32"**  
**96.29% Pervious = 774,641 sf 3.71% Impervious = 29,841 sf**

Time span=0.00-20.00 hrs, dt=0.05 hrs, 401 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment S1: Subcat 1**

Runoff Area=708,508 sf 4.15% Impervious Runoff Depth>3.28"  
Flow Length=1,030' Tc=36.6 min CN=60 Runoff=34.75 cfs 193,713 cf

**Subcatchment S2: Subcat 2**

Runoff Area=95,974 sf 0.46% Impervious Runoff Depth>3.10"  
Tc=6.0 min CN=58 Runoff=8.39 cfs 24,795 cf

**Pond P1: DETENTION POND**

Peak Elev=250.20' Storage=88,294 cf Inflow=34.75 cfs 193,713 cf  
Outflow=11.74 cfs 148,241 cf

**Link L1: Wetland to the south**

Inflow=12.57 cfs 173,035 cf  
Primary=12.57 cfs 173,035 cf

**Link L2: Wetland to the North**

Primary=0.00 cfs 0 cf

**Total Runoff Area = 804,482 sf Runoff Volume = 218,508 cf Average Runoff Depth = 3.26"**  
**96.29% Pervious = 774,641 sf 3.71% Impervious = 29,841 sf**

# Stormwater Management Report

## **VI. DRAINAGE AREA PLANS**

### **A. Pre/Post Excavation Drainage Comparison Plan**

WATERSHED LEGEND:



SUBCATCHMENT: A RELATIVELY HOMOGENEOUS AREA OF LAND THAT DRAINS INTO A SINGLE REACH OR POND. EACH SUBCATCHMENT GENERATES A RUNOFF HYDROGRAPH. (A SUBCATCHMENT MAY ALSO BE USED TO ACCOUNT FOR THE RAIN FALLING DIRECTLY ON THE SURFACE OF A POND.)



REACH: A UNIFORM STREAM, CHANNEL, OR PIPE THAT CONVEYS WATER FROM ONE POINT TO ANOTHER REACH OR POND. THE OUTFLOW OF EACH REACH IS DETERMINED BY A HYDROGRAPH ROUTING CALCULATION.



POND: A POND, SWAMP, DAM, OR OTHER IMPOUNDMENT THAT FILLS WITH WATER FROM ONE OR MORE SOURCES AND EMPTIES IN A MANNER DETERMINED BY A WEIR, CULVERT, OR OTHER DEVICE(S) AT ITS OUTLET. THE OUTFLOW(S) OF EACH POND IS DETERMINED BY A HYDROGRAPH ROUTING CALCULATION. THE PRIMARY AND/OR SECONDARY OUTFLOW MAY DRAIN INTO A REACH OR INTO ANOTHER POND.



LINK: A METHOD OF INTERCONNECTING SEVERAL HYDROGRAPHS WHICH MAY CONVERGE TOGETHER AT A COMMON ANALYSIS POINT.

298

43C

447A

FIELD LOCATED LIMIT OF  
POORLY DRAINED SOIL

25' NO DISTURB  
BUFFER

500' ABUTTER  
SETBACK

A

B

43C

43E

447A

97

43B

L1

43B

447A

STOWE ROAD

547A

L2

298

43C

447A

FIELD LOCATED LIMIT OF  
POORLY DRAINED SOIL

25' NO DISTURB  
BUFFER

500' ABUTTER  
SETBACK

S1

13.2 AC

43E

EXCAVATION AREA  
18.5 ± ACRES

S2

5.3 AC

447A

97

43B

P1

INV.IN= 251.0

INV.IN= 248.0

251.0

43'-12" HDPE

S=0.013

INV.IN= 249.8

251.0

249.8

L1

43B

447A

L2

547A

SOILS LEGEND

43C

USDA NRCS SOIL DESIGNATION

SOIL BOUNDARY



The Dubay Group, Inc.

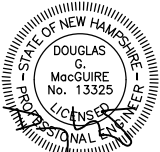
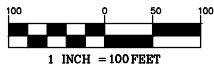
136 Harvey Rd. Bldg B101  
Londonderry, NH 03053  
603-458-6462

Engineers

Planners

Surveyors

TheDubayGroup.com



REVISIONS:

REV	DATE	COMMENT	BY
2	8/8/22	REVS PER AOT & TOWN COMMENTS	JHD

DRAWN BY: JHD  
CHECKED BY: DGM  
DATE: SEPTEMBER 17, 2021  
SCALE: 1"=100'  
FILE: 493-DRAINAGE Plans2  
DEED REF: -

PROJECT:

CHESTER  
GRAVEL PIT

MAP 5 LOT 85  
152 FREMONT ROAD  
CHESTER, NH

FOR

OLD SANDOWN RD, LLC

352 SOUTH BROADWAY ST.  
SALEM, NH 03079

OWNER

GARABEDIAN

TESTAMENT TRUST

352 SOUTH BROADWAY ST.  
SALEM, NH 03079

SHEET TITLE:

PRE/POST  
EXCAVATION  
DRAINAGE  
COMPARISON  
PLAN

PROJECT #493 SHEET 1 of 1

# Stormwater Management Report

## **VII. GROUNDWATER MONITORING PROGRAM**

# *NHDES GROUNDWATER MONITORING REPORT*

## **Chester Gravel Pit**

### ***Excavation Plans***

Map 5 Lot 85  
Fremont Road  
Chester, New Hampshire 03036

#### ***PREPARED FOR:***

Old Sandown Road, LLC  
352 South Broadway Street  
Salem, New Hampshire 03053

#### ***PREPARED BY:***



#### **The Dubai Group, Inc.**

136 Harvey Road Bldg B101  
Londonderry, NH 03053  
P: 603-458-6462  
[www.TheDubayGroup.com](http://www.TheDubayGroup.com)

April 5, 2022

Engineers



Planners



Surveyors



## Table of Contents:

### **I. GROUNDWATER MONITORING PLAN**

### **II. FIGURE 1: Cut/Fill Analysis Plan**

### **III. FIGURE 2: Wells & Public Water Systems Within 2,000 Feet To Be Sampled**

### **IV. SUPPLEMENTAL WELL DATA**

- a. All wells & public water systems within 2,000 feet map
- b. List of all properties within 2,000 feet
- c. List of wells & public water systems within 2,000 feet as found on NHDES OneStop
- d. Well Water Reports for wells and public water systems to be sampled



# Groundwater Monitoring Report

## **I. GROUNDWATER MONITORING PLAN**



# **GROUNDWATER MONITORING PLAN FOR CHESTER GRAVEL PIT**

AoT Permit for \_\_\_\_\_ Name of Property in Chester, NH

Date: April 5, 2022

The Dubay Group, Inc. has prepared this Groundwater Monitoring Plan to address the requirement of the Alteration of Terrain Permit (AoT Permit) for the proposed Chester Gravel Pit for Old Sandown Road, LLC located on Fremont Road in Chester, NH.

## **1. Development of Groundwater Monitoring Program in Support of AoT Permit**

The Groundwater Monitoring Plan monitors the potential impact to private and public water supply wells that may result from blasting of bedrock when quantities exceed 5,000 cubic yards, a Groundwater Monitoring Program must be developed and submitted to the New Hampshire Department of Environmental Services (NHDES).

The Groundwater Monitoring Program must:

1. Identify all private and public water supply wells and their owners within a 2,000-ft. radius of the proposed blasting area;
2. Specify how owners will be contacted and how permission will be obtained to access the wells for sampling;
3. Propose specific baseline and extended groundwater analytical and laboratory sampling limits to be used for monitoring groundwater before and after blasting;
4. Define specific sampling methods, sample preservation, sample storage, sample transportation and chain-of custody protocol;
5. Define a sampling schedule for the identified public and private wells within a 2,000-ft. radius that could potentially be impacted by the blasting operation. This will include a pre-blasting baseline sampling event followed by additional post-blasting sampling events; and

Define the reporting requirements and schedule for submittals.

## **2. Site and Project Description**

The proposed project is to consist of a proposed gravel excavation operation.

### 3. Bedrock Blasting

The purpose of this project is to excavate and produce gravel produces. The total quantity of blast rock to be generate will exceed 5,000 cy.

Figure 1 illustrates the approximate blasting limits with Cut & Fill Analysis.

### 4. Public and Private Bedrock Wells Within a 2,000-ft. Radius of the Proposed Blasting Area

There are numerous properties and wells within 2,000 feet of the proposed blasting area. All properties are apparently not serviced by municipal water. They utilize private supply wells (bedrock wells) for potable water. After consultation with NHDES, 10 wells have been chosen to be sampled as a representation of the wells within 2,000 feet of the blast area. These properties are summarized in Table 1 below:

Table 1-Properties Within a 2,000-ft. Radius of Blast Area **TO BE SAMPLED**

Street Address	Lot Designation	Owner(s)	Comment	State Well ID WRB#
74 Emerson Rd	5-80-12	Lynn Ann Boutin	Private Residence	044.0905
104 Fremont Rd	8-69	Louie Guglielmo	Private Residence	044.0248
126 Fremont Rd	8-72	John J. & Gloria J. Pelozzi	Private Residence	044.1063
14 Crawford Rd	8-70-1	Thomas & Lindsey Paton	Private Residence	044.0543
159 Fremont Rd	8-74	Charles & Nancy Myette Myette Family Rev Trust	Private Residence	044.0901
205 Fremont Rd (Mailing: 183 Fremont Rd)	9-23	William L. Gallant	Private Residence	044.0269
232 Fremont Rd	9-21-3	Chesterbrook School of Natural Learning c/o Leon Joseph Surette Jr & Sarah Surette	Non-Transient Non-Community System	PWS ID: 435080
28 Shetland Rd	6-17-19	Edwin & Chistianne Karjara	Private Residence	044.1088
41 Shetland Rd	6-17-13	Jason & Sarah St Jean	Private Residence	044.0934
Route 121A-Scott Ln, Sandown (Mailing: 4 Scott Ln, Sandown)	6-16	Pine Acres Condos c/o Brian Wheelock	Community System	PWS ID: 2082040

A lot layout plan illustrating the above properties is attached as Figure 2

A full list of properties and wells with 2,000 feet of the proposed blasting area can be found in Section IV.

### 5. Notification and Request for Property Access

All residential property owners identified in Table 1 will be contacted by mail. The mailing will:

1. Request permission to access the property for the purpose of sampling the water supply well on property;
2. Explain why the sampling is being requested;
3. Explain the sampling method to be used (i.e. from an outdoor or indoor faucet);
4. Inform the owner(s) that multiple sampling events will be required;
5. Provide a tentative sampling schedule; and

6. Indicate that the owner(s) will be provided with copies of all laboratory analytical data as soon as available.

Following issuance of the original mailing, each property owner will be contacted 2-3 days before the scheduled sampling event. The water supply wells of property owners denying access, will not be sampled as part of the Groundwater Monitoring Program. Property owners who do not respond to the initial mailing will be contacted again by telephone, second mailing or other means. If there is still not a response from a representative sampling of well owners within the 2000 ft radius, additional entities should be notified to request inclusion in the monitoring program.

## **6. Proposed Sampling Method**

The water supply wells at each property will be sampled from an outdoor or indoor faucet, as available. If possible, groundwater samples will be collected before passing through any on-site treatment/filter system (e.g. water softener). The water will be run for a minimum of 30 minutes prior to sample collection. This will serve to purge the well and allow a fresh recharge of groundwater into the well that is representative of aquifer conditions at the time of sampling.

All samples will be collected in containers provided by the laboratory, preserved as required, stored on ice, and transported to the analytical laboratory within holding times under chain-of-custody protocol.

## **7. Proposed Analytical Parameters**

The analytical parameters required for the Groundwater Monitoring Program include nitrates and nitrites. However, should “elevated” concentrations of nitrates and nitrites be identified during any monitoring event conducted during or following the blasting program, the required analytical parameter list will be expanded to include Volatile Organic Compounds (VOCs) and Semi-Volatile Organic Compounds (SVOCs). The term “elevated” concentrations means the detections of nitrates and nitrites at levels anomalously exceeding those identified during the baseline sampling event (i.e., the pre-blasting sampling event).

## **8. Proposed Sampling Schedule**

The groundwater sampling schedule will include the following events:

1. A pre-blasting sampling event to measure baseline concentrations of nitrates and nitrites;
2. A sampling event (or events) conducted during the blasting program. One sampling event per month will be conducted throughout the duration of the blasting program; and
3. A minimum of two (2) sampling events at 1-month intervals following completion of the blasting program.

Sampling frequency would be increased at the direction of the New Hampshire DES should anomalously high levels of nitrates and nitrites be identified at any sampling location.

## **9. Reporting Schedule**

Reporting of groundwater quality data from each sampling event will be completed immediately upon receipt of the laboratory analytical results. Copies of the reports will be sent to the following recipients:

- New Hampshire DES, Alteration of Terrain Bureau;
- New Hampshire DES, Drinking and Groundwater Bureau;
- Old Sandown Road, LLC (the client);
- TBD (contracted construction company);
- All property owners participating in the sampling program.

**10. Agent Contact Information for Questions and Coordination:**

Name: Doug MacGuire

Engineering/ Consulting Firm (if applicable): The Dubay Group, Inc.

Position: Vice President

Phone Number: 603-458-6462

Email Address: [doug@thedubaygroup.com](mailto:doug@thedubaygroup.com)

# Groundwater Monitoring Report

## **II. FIGURE 1: Cut/Fill Analysis Plan**

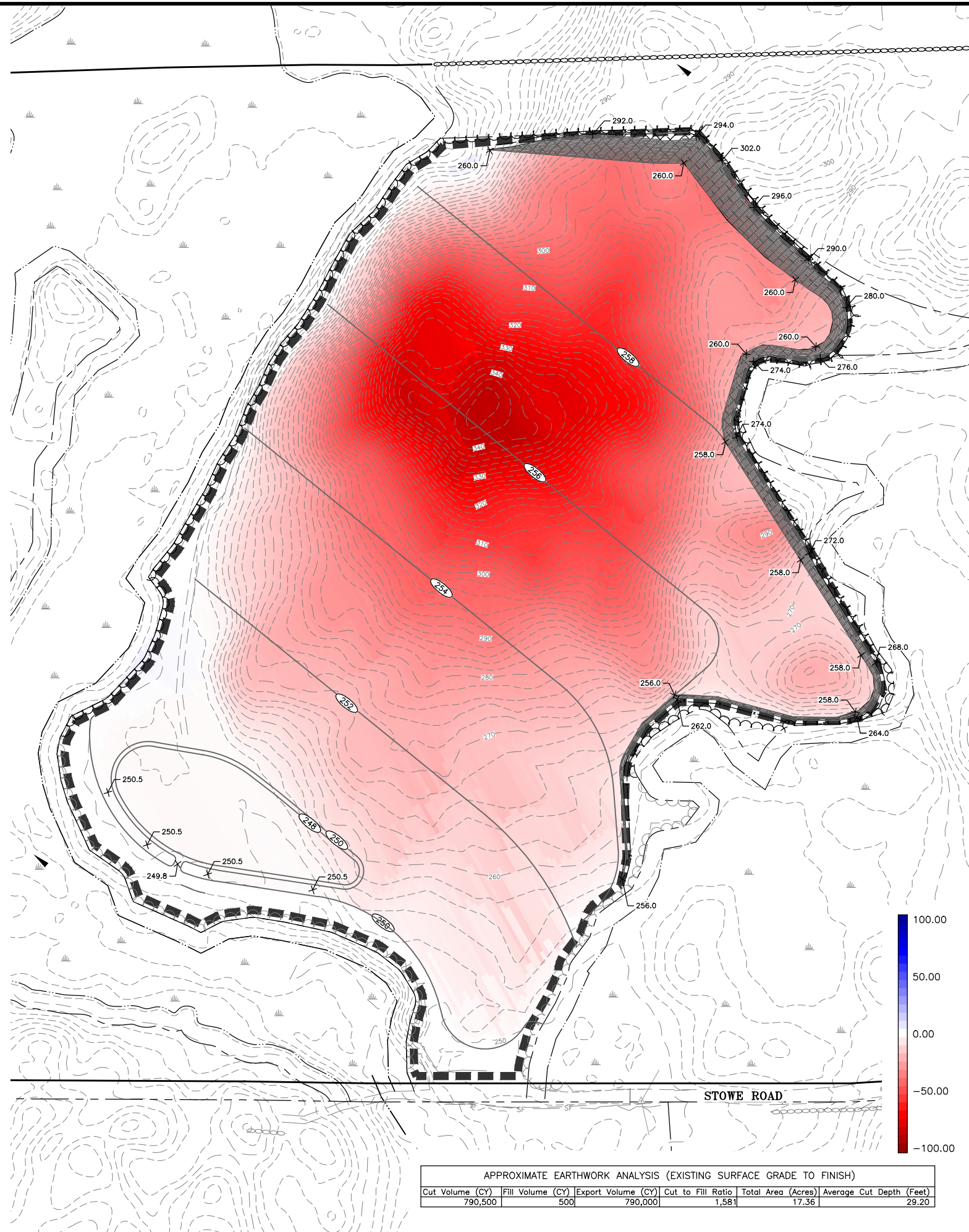
**\*\*A GROUNDWATER MONITORING PLAN MUST BE DEVELOPED IF LEDGE IS ENCOUNTERED ON SITE AND EXPECTED TO EXCEED 5,000 CUBIC YARDS OF BLAST MATERIAL. THE MONITORING PLAN MUST BE REVIEWED AND APPROVED BY NHDES PRIOR TO COMMENCING WITH BLASTING OPERATIONS\*\***

ALL ACTIVITIES RELATED TO BLASTING SHALL FOLLOW BEST MANAGEMENT PRACTICES (BMPs) TO PREVENT CONTAMINATION OF GROUNDWATER INCLUDING PREPARING, REVIEWING AND FOLLOWING AN APPROVED BLASTING PLAN; PROPER DRILLING, EXPLOSIVE HANDLING AND LOADING PROCEDURES; OBSERVING THE ENTIRE BLASTING PROCEDURES; EVALUATING BLASTING PERFORMANCE; AND HANDLING AND STORAGE OF BLASTED ROCK.

- LOADING PRACTICES:** THE FOLLOWING BLASTED ROCK LOADING PRACTICES TO MINIMIZE ENVIRONMENTAL EFFECTS SHALL BE FOLLOWED:
- A. DRILLING LOGS SHALL BE MAINTAINED BY THE DRILLER AND COMMUNICATED DIRECTLY TO THE BLASTER. THE LOGS SHALL INDICATE DEPTHS AND LENGTHS OF VOIDS, CAVITIES, AND FAULT ZONES OR OTHER WEAK ZONES ENCOUNTERED AS WELL AS GROUNDWATER CONDITIONS.
  - B. EXPLOSIVE PRODUCTS SHALL BE MANAGED ON-SITE SO THAT THEY ARE EITHER USED IN THE BOREHOLE, RETURNED TO THE DELIVERY VEHICLE FOR HANDLING OR PLACEMENT IN CONTAINERS, OR CONTAINED IN AN AREA WHERE WASTEWATER CAN BE TREATED.
  - C. SPILLAGE AROUND THE BOREHOLE SHALL EITHER BE PLACED IN THE BOREHOLE OR CLEANED UP AND RETURNED TO AN APPROPRIATE VEHICLE FOR HANDLING OR PLACEMENT IN SECURED CONTAINERS FOR OFF-SITE DISPOSAL.
  - D. LEFT-ON EXPLOSIVE SHALL BE TOWAWAY AS SOON AS POSSIBLE AND SHALL NOT BE LEFT IN THE BLASTHOLES OVERNIGHT, UNLESS WEATHER OR OTHER SAFETY CONCERNS REASONABLY DICTATE THAT DETONATION SHOULD BE POSTPONED.
  - E. LOADING EQUIPMENT SHALL BE HANDLED IN AN AREA WHERE WASTEWATER CAN BE PROPERLY CONTAINED AND HANDLED IN A MANNER THAT PREVENTS RELEASE OF CONTAMINANTS TO THE ENVIRONMENT.
  - F. THE CONTRACTOR SHALL MAINTAIN GOOD CONTINUITY IN THE COLUMN LOAD TO PROMOTE COMPLETE DETONATION. INDUSTRY ACCEPTED LOADING PRACTICES FOR PRIMING SETTING, DECKING AND COLUMN RISE NEED TO BE ATTENDED TO.
2. **EXPLOSIVE SELECTION:** THE FOLLOWING BMPs SHALL BE FOLLOWED TO REDUCE THE POTENTIAL FOR GROUNDWATER CONTAMINATION WHEN EXPLOSIVES ARE USED.
- A. EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT ARE APPROPRIATE FOR SITE CONDITIONS AND SAFE BLAST EXECUTION.
  - B. EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT HAVE THE APPROPRIATE WATER RESISTANCE FOR THE SITE CONDITIONS TO PRESENT TO MINIMIZE THE POTENTIAL FOR HAZARDOUS EFFECT OF THE PRODUCT UPON GROUNDWATER.
3. **PREVENTION OF MISFIRE:** APPROPRIATE PRACTICES SHALL BE DEVELOPED AND IMPLEMENTED TO PREVENT MISFIRE.
4. **MUCK PILE MANAGEMENT:** MUCK PILES (THE BLASTED PIECES OF ROCK) AND ROCK PILES SHALL BE MANAGED IN A MANNER TO REDUCE THE POTENTIAL FOR CONTAMINATION BY IMPLEMENTING THE FOLLOWING MEASURES:
- A. REMOVE THE MUCK PILE FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE.
  - B. MANAGE THE INTERACTION OF BLASTED ROCK PILES AND STORMWATER TO PREVENT CONTAMINATION OF WATER SUPPLY WELLS OR SURFACE WATER.
5. **SPILL PREVENTION MEASURES AND SPILL MITIGATION:** SPILL PREVENTION AND SPILL MITIGATION MEASURES SHALL BE IMPLEMENTED TO PREVENT THE RELEASE OF FUEL AND OTHER RELATED SUBSTANCES TO THE ENVIRONMENT. THE MEASURES SHALL INCLUDE AT A MINIMUM:
- A. THE FUEL STORAGE REQUIREMENTS SHALL INCLUDE:
    - 1) STORAGE OF REGULATED SUBSTANCES ON AN IMPERVIOUS SURFACE.
    - 2) SECURE STORAGE AREAS AGAINST UNAUTHORIZED ENTRY.
    - 3) LABEL REGULATED CONTAINERS CLEARLY AND VISIBLY.
    - 4) INSPECT STORAGE AREAS WEEKLY.
    - 5) COVER REGULATED CONTAINERS IN OUTSIDE STORAGE AREAS.
    - 6) WHEREVER POSSIBLE, KEEP REGULATED CONTAINERS THAT ARE STORED OUTSIDE MORE THAN 50 FEET FROM SURFACE WATER AND STORM DRAINS, 75 FEET FROM PRIVATE WELLS, AND 400 FEET FROM PUBLIC WELLS.
  - 7) SECONDARY CONTAINMENT SHALL BE PROVIDED FOR ALL CONTAINERS CONTAINING REGULATED SUBSTANCES STORED OUTSIDE, EXCEPT FOR ON PREMISE USE HEATING FUEL TANKS OR ABOVEGROUND OR UNDERGROUND STORAGE TANKS OTHERWISE REGULATED.
- B. THE FUEL HANDLING REQUIREMENTS SHALL INCLUDE:
- 1) EXCEPT WHEN IN USE, KEEP CONTAINERS CONTAINING REGULATED SUBSTANCES CLOSED AND SEALED.
  - 2) PLACE DRIP PANS UNDER SPIGOTS, VALVES, AND PUMPS.
  - 3) HAVE SPILL CONTROL AND CONTAINMENT EQUIPMENT READILY AVAILABLE IN ALL WORK AREAS.
  - 4) USE FUNNELS AND DRIP PANS WHEN TRANSFERRING REGULATED SUBSTANCES.
  - 5) PERFORM TRANSFERS OF REGULATED SUBSTANCES OVER AN IMPERVIOUS SURFACE.
- C. THE TRAINING OF ON-SITE EMPLOYEES AND THE ON-SITE POSTING OF RELEASE RESPONSE INFORMATION DESCRIBING WHAT TO DO IN THE EVENT OF A SPILL OF REGULATED SUBSTANCES.
- D. FUELING AND MAINTENANCE OF EXCAVATION, EARTHMOVING AND OTHER CONSTRUCTION EQUIPMENT SHALL BE IN COMPLIANCE WITH REGULATIONS OF THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES [NOTE THESE REQUIREMENTS ARE SUMMARIZED IN WD-DWGB-22-6 BEST MANAGEMENT PRACTICES FOR FUELING AND MAINTENANCE OF EXCAVATION AND EARTHMOVING EQUIPMENT OR ITS SUCCESSOR DOCUMENT]. (SEE <https://des.nh.gov/organization/commissioner/pip/factsheet/dwgb/documents/dwgb-22-6.pdf>)

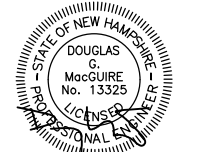
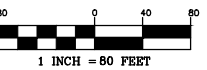


CONSTRUCTION ZONE SIGN OR  
APPROVED EQUAL  
NOT TO SCALE



**The Dubai Group, Inc.**  
136 Harvey Rd. Bldg B101  
Londonderry, NH 03053  
603-458-6462

Engineers  
Planners  
Surveyors  
bayGroup.com

[illegible]

DRAWN BY: JHD  
CHECKED BY: DGM  
DATE: SEPTEMBER 17, 2021  
SCALE: 1"=80'  
FILE: 493-Excavation Plan  
DEED REF: -

PROJECT:

**CHESTER  
GRAVEL PIT**

MAP 5 LOT 85  
152 FREMONT ROAD  
CHESTER, NH

— FOR —

**OLD SANDOWN RD, LLC**

352 SOUTH BROADWAY ST.  
SALEM, NH 03079

— OWNER —

**GARABEDIAN  
TESTAMENT TRUST**

352 SOUTH BROADWAY ST.  
SALEM, NH 03079

SHEET TITLE:

**CUT/FILL ANALYSIS  
& DETAILS**

PROJECT #493 SHEET 4 of 6

# Groundwater Monitoring Report

## **III. FIGURE 2:** Wells & Public Water Systems Within 2,000 Feet To Be Sampled







# Groundwater Monitoring Report

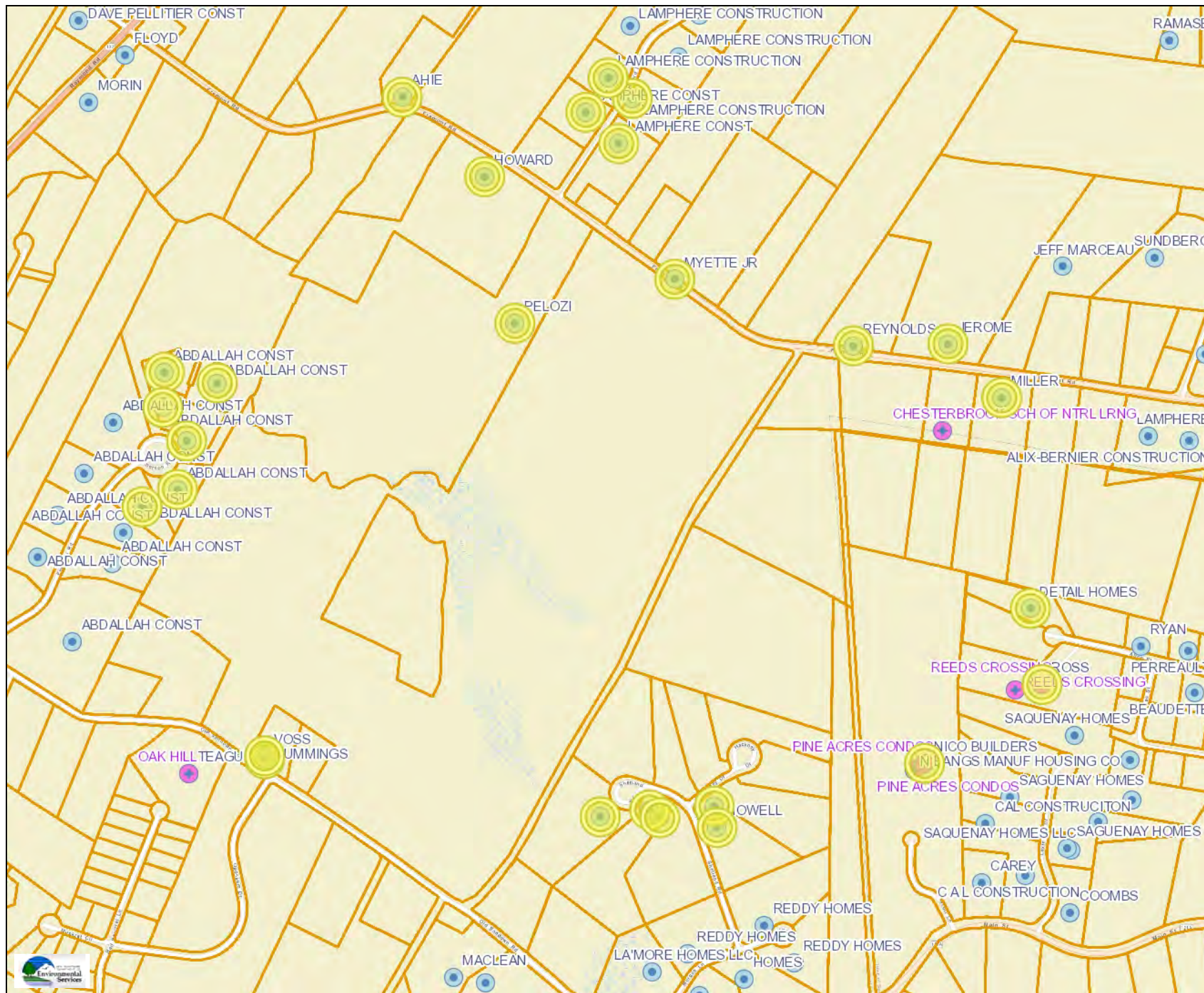
## **IV. SUPPLEMENTAL WELL DATA**

- a. All wells & public water systems within 2,000 feet map
- b. List of all properties within 2,000 feet
- c. List of wells & public water systems within 2,000 feet as found on NHDES OneStop
- d. Well Water Reports for wells and public water systems to be sampled

# All Wells within 2,000 Feet of Blast Area

## Legend

- Public Water Supply Wells
- Water Well Inventory
- Parcels
  - Parcel Polygons
  - Attributes for Additional Lines
- Additional Lines



Map Scale

1: 10,000

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Map Generated: 4/5/2022



## Notes

Parcel Number	Property Address	Owner Name	Owner Address	City	State	Zip
005-080-004	54 EMERSON RD	HAGGART, SHAWN & REBECCA	54 EMERSON RD	CHESTER	NH	03036
005-080-005	70 EMERSON RD	ANDERSON, KRISTINE & SCOTT	70 EMERSON RD	CHESTER	NH	03036
005-080-006	EMERSON RD	ABDALLAH CONSTRUCTION CORP	PO BOX 367	CHESTER	NH	03036
005-080-011	72 EMERSON RD	MELO, ALFREDO & PATRICIA	72 EMERSON RD	CHESTER	NH	03036
005-080-012	74 EMERSON RD	BOUTIN, LYNN ANN	74 EMERSON RD	CHESTER	NH	03036
005-080-013	67 EMERSON RD	LEFEBVRE, MARIANNE & TROY	67 EMERSON RD	CHESTER	NH	03036
005-080-014	65 EMERSON RD	CURRIE, J. CHRISTOPHER & ANGEL CURRIE FAMILY TRUST	65 EMERSON RD	CHESTER	NH	03036
005-082-000	163 OLD SANDOWN RD	CHASE, DEBORAH	163 OLD SANDOWN RD	CHESTER	NH	03036
005-083-000	STOWE RD	LEWIS BUILDERS, INC	54 SAWYER AVE	ATKINSON	NH	03811
005-084-000	189 OLD SANDOWN RD	WAGNER, THOMAS & VOSS, MARGARET MARGARET VOSS REVOC TRUST	PO BOX 274	CHESTER	NH	03036
005-084-001	199 OLD SANDOWN RD	ARTHUR, SUZANNE & SCOTT	199 OLD SANDOWN ROAD	CHESTER	NH	03036
006-016-000	SANDOWN RD	PINE ACRES CONDOMINIUM ASSOCIATION C/O BRIAN WHEELOCK	4 SCOTT LN	SANDOWN	NH	03036
006-017-001	265 OLD SANDOWN RD	SHACKELFORD, MICHAEL R & SHACKELFORD, SUSAN M	265 OLD SANDOWN RD	CHESTER	NH	03036
006-017-002	281 OLD SANDOWN RD	YOUNG, MARY & THEODORE	281 OLD SANDOWN RD	CHESTER	NH	03036
006-017-011	31 SHETLAND RD	TILLEY, WILLIAM & ROBERTA TILLEY FAMILY REVOCABLE TRST	31 SHETLAND RD	CHESTER	NH	03036
006-017-012	37 SHETLAND RD	PALLEO(TRSTES), JOHN & SUSAN PALLEO REVOC TRUST(S)	37 SHETLAND RD	CHESTER	NH	03036
006-017-013	41 SHETLAND RD	ST JEAN, JASON & SARAH	41 SHETLAND RD	CHESTER	NH	03036
006-017-014	45 SHETLAND RD	R & K OFCARCIK FAMILY TRST	45 SHETLAND RD	CHESTER	NH	03036
006-017-015	11 HACKNEY DR	DOBBINS, ELIZABETH & EPHRIAM DOBBINS REVOC TRST	11 HACKNEY DR	CHESTER	NH	03036
006-017-016	HACKNEY DR	DOBBINS, EPHRAIM & ELIZABETH DOBBINS REVOC TRST	11 HACKNEY DR	CHESTER	NH	03036
006-017-017	17 HACKNEY DR	MASSERO RICHARD W MASSERO KELLY	17 HACKNEY RD	CHESTER	NH	03036
006-017-018	HACKNEY DR	MASSERO, RICHARD W MASSERO KELLY	17 HACKNEY DR	CHESTER	NH	03036
006-017-019	28 SHETLAND RD	KARJALA, EDWIN & CHRISTIANNE	28 SHETLAND RD	CHESTER	NH	03036
006-017-020	24 SHETLAND RD	BECK, JAMES & CARLA	24 SHETLAND RD	CHESTER	NH	03036
006-018-000	STOWE RD	WEST, RICHARD	843 GOULD HILL RD	CONTOOCOOK	NH	03229
006-019-000	STOWE RD	CHESTER, TOWN OF	84 CHESTER ST	CHESTER	NH	03036
008-066-000	54 FREMONT RD	DONIGIAN, JACOB	134 CHESTER ROAD	FREMONT	NH	03044
008-066-001	46 FREMONT RD	ISACCO, PAUL & ANNE	46 FREMONT RD	CHESTER	NH	03036
008-067-000	59 FREMONT RD	LAHEY, PATRICK M & LAHEY, SHERI- LYN	59 FREMONT RD	CHESTER	NH	03036
008-067-001	75 FREMONT RD	LESSARD, ARIELLE	75 FREMONT RD	CHESTER	NH	03036

008-068-000	93 FREMONT RD	HEALEY, ROBERT HEALEY, BARBARA	93 FREMONT RD	CHESTER	NH	03036
008-069-000	104 FREMONT RD	GUGLIELMO, LOUIE	104 FREMONT ROAD	CHESTER	NH	03036
008-069-001	84 FREMONT RD	GUGLIELMO, LOUIE GUGLIELMO, ALBERT	84 FREMONT RD	CHESTER	NH	03036
008-070-000	107 FREMONT RD	GUGLIEMO, ALBERT	84 FREMONT RD	CHESTER	NH	03036
008-070-001	14 CRAWFORD RD	PATON, THOMAS & LINDSAY	14 CRAWFORD RD	CHESTER	NH	03036
008-070-002	19 CRAWFORD RD	CARR, STEVEN M & CARR, STEPHANIE L	19 CRAWFORD RD	CHESTER	NH	03036
008-070-003	30 CRAWFORD RD	HORNING, SYLVIE & HORNING, DANIEL D	30 CRAWFORD RD	CHESTER	NH	03036
008-070-004	31 CRAWFORD RD	GILON, MICHAEL (TRUSTEE) LEA GILON IRREVOC TRUST	31 CRAWFORD RD	CHESTER	NH	03036
008-071-000	127 FREMONT RD	SAUNDERS, ERIK & TILTON, ALYSSA	127 FREMONT RD	CHESTER	NH	03036
008-072-000	126 FREMONT RD	PIROZZI, JOHN J & PIROZZI, GLORIA J	126 FREMONT RD	CHESTER	NH	03036
008-073-000	143 FREMONT RD	SALMON, MORGAN	143 FREMONT RD	CHESTER	NH	03036
008-074-000	159 FREMONT RD	MYETTE, CHARLES & NANCY MYETTE FAMILY REVOC TRUST	159 FREMONT RD	CHESTER	NH	03036
008-075-000	FREMONT RD	MYETTE, CHARLES & NANCY MYETTE FAMILY REVOC TRUST	159 FREMONT RD	CHESTER	NH	03036
008-075-001	173 FREMONT RD	PARIS, R J & PARIS, SHIRLEY	173 FREMONT RD	CHESTER	NH	03036
009-021-001	200 FREMONT RD	STEENBRUGGEN, DEREK & MEGHAN	200 FREMONT RD	CHESTER	NH	03036
009-021-002	218 FREMONT RD	MALONE, BRIAN W	218 FREMONT ROAD	CHESTER	NH	03036
009-021-003	232 FREMONT RD	SURRETTE JR, LEON JOSEPH	232 FREMONT RD	CHESTER	NH	03036
009-022-000	183 FREMONT RD	GALLANT, WILLIAM L	183 FREMONT RD	CHESTER	NH	03036
009-023-000	205 FREMONT RD	GALLANT, WILLIAM L	183 FREMONT RD	CHESTER	NH	03036
009-024-000	231 FREMONT RD	MAZZAGLIA, VINCENT & SUSAN	231 FREMONT RD	CHESTER	NH	03036
21-37-03	41 ALLEN ST	MORASSE, TIMOTHY & MORASSE, TRINA	41 ALLEN STREET	SANDOWN	NH	03873
21-37-03-1	42 ALLEN ST	CLARK, DIANNA & GREGORY	42 ALLEN ST	SANDOWN	NH	03873
21-37-09	20 LEXINGTON DR	DUMONT RICHARD & NATASHA	20 LEXINGTON DR	SANDOWN	NH	03873
21-37-10	22 LEXINGTON DR	MOKRAY WALTER & SUSAN TRUSTEES MOKRAY FAMILY TRUST	PO BOX 213	SANDOWN	NH	03873
21-37-4-6	28-38 ALLEN ST					
21-66	ALLEN ST (CHESTER) OFF	MALONE, BRIAN W	218 FREMONT RD	CHESTER	NH	03036
21-67	ALLEN ST	SURRETTE, LEON JOSEPH JR.	232 FREMONT ROAD	CHESTER	NH	03036
21-68	ALLEN ST	MILLER PAUL & BARBARA TRUSTEES THE MILLER FAMILY REV. TRUST	242 FREMONT RD	CHESTER	NH	03036

**FIGURE 1: ALL WELLS WITHIN 2,000 FEET OF BLAST AREA**

Well ID	Street Number	Road	Town	Use
211.0195		RTE 121A	SANDOWN	SMALL COMMUNITY WATER SUPPLY
435080	232	FREMONT ROAD	CHESTER	NON-TRANSIENT NON COMMUNITY
044.0914	72	EMERSON ROAD	CHESTER	DOMESTIC DRINKING WATER
044.1063	126	FREMONT ROAD	CHESTER	DOMESTIC DRINKING WATER
044.1088	28	SHETLAND RD	CHESTER	DOMESTIC DRINKING WATER
044.1047	24	SHETLAND ROAD	CHESTER	DOMESTIC DRINKING WATER
044.1005	37	SHETLAND RD	CHESTER	DOMESTIC DRINKING WATER
044.0939	37	SHETLAND ROAD	CHESTER	DOMESTIC DRINKING WATER
044.0934	41	SHETLAND ROAD	CHESTER	DOMESTIC DRINKING WATER
044.1072	33	WILCOMB'S WAY	CHESTER	DOMESTIC DRINKING WATER
044.1129	247	SANDOWN ROAD	CHESTER	DOMESTIC DRINKING WATER
044.1130	231	SANDOWN ROAD	CHESTER	DOMESTIC DRINKING WATER
044.1043	272	OLD SANDOWN ROAD	CHESTER	DOMESTIC DRINKING WATER
044.1048	266	OLD SANDOWN ROAD	CHESTER	DOMESTIC DRINKING WATER
044.0132	189	OLD SANDOWN RD	CHESTER	DOMESTIC
044.0635	24	EMERSON RD	CHESTER	DOMESTIC
044.0070	95	OLD SANDOWN RD	CHESTER	DOMESTIC
044.0669		EMERSON RD	CHESTER	DOMESTIC
044.0734	30	EMERSON RD	CHESTER	DOMESTIC
044.0733	43	EMERSON RD	CHESTER	DOMESTIC
044.0735	46	EMERSON RD	CHESTER	DOMESTIC
044.0748	54	EMERSON RD	CHESTER	DOMESTIC
044.0736	47	EMERSON RD	CHESTER	DOMESTIC
044.0732	70	EMERSON RD	CHESTER	DOMESTIC
044.0670		EMERSON RD	CHESTER	DOMESTIC
044.0895		EMERSON RD	CHESTER	DOMESTIC
044.0905		EMERSON RD	CHESTER	DOMESTIC
044.0896		EMERSON RD	CHESTER	DOMESTIC
044.0248	104	FREMONT RD	CHESTER	DOMESTIC
044.0765	75	FREMONT RD	CHESTER	DOMESTIC
044.0543	14	CRAWFORD MEADOW	CHESTER	DOMESTIC
044.0544	19	CRAWFORD MEADOW	CHESTER	DOMESTIC
044.0326	31	CRAWFORD RD	CHESTER	DOMESTIC
044.0305	30	CRAWFORD RD	CHESTER	DOMESTIC
044.0316	46	CRAWFORD RD	CHESTER	DOMESTIC
044.0304	43	CRAWFORD RD	CHESTER	DOMESTIC
044.0592	66	CRAWFORD HEIGHT	CHESTER	DOMESTIC
044.0718	91	CRAWFORD MEADOW	CHESTER	DOMESTIC
044.0901	159	FREMONT RD	CHESTER	DOMESTIC
044.0269	205	FREMONT RD	CHESTER	DOMESTIC
044.0478	231	FREMONT RD	CHESTER	DOMESTIC
044.0823		FREMONT RD	CHESTER	DOMESTIC
044.0871	242	FREMONT RD	CHESTER	DOMESTIC

044.0539	41	MORGAN LN	CHESTER	DOMESTIC
044.0537	44	MORGAN LN	CHESTER	DOMESTIC
044.0357	30	MORGAN LN	CHESTER	DOMESTIC
044.0538	23	MORGAN LN	CHESTER	DOMESTIC
044.0365	19	MORGAN LN	CHESTER	DOMESTIC
044.0358	20	MORGAN LN	CHESTER	DOMESTIC
044.0520	12	MORGAN LN	CHESTER	DOMESTIC
044.0506	254	SANDOWN RD	CHESTER	DOMESTIC
044.0530	25	WELLS VILLAGE RD	CHESTER	DOMESTIC
044.0384	211	SANDOWN RD	CHESTER	DOMESTIC
044.0367	177	SANDOWN RD	CHESTER	DOMESTIC
044.0533	189	OLD SANDOWN RD	CHESTER	DOMESTIC

ALL PUBLIC WATER SYSTEMS WITHIN 2,000 FEET FROM BLASTING AREA

Master ID	Public Water System ID	System Name	Address	Town	Population	Yield
14051	2082040	PINE ACRES CONDOS	RTE 121A	SANDOWN	90	89
51822	2082030	REEDS CROSSING	ALLEN ST	SANDOWN	40	0
51822	2082030	REEDS CROSSING	ALLEN ST	SANDOWN	40	85
71454	435080	CHESTERBROOK SCH OF NTRL LRNG	232 FREMONT RD	CHESTER	38	4
14051	2082040	PINE ACRES CONDOS	RTE 121A	SANDOWN	90	76



Well Id (WRB#): **044.0248**Date Completed: **08/02/1993**Name and Location: **S. HOWARD  
104 FREMONT RD  
[Mapit](#) CHESTER**Total Depth: **475 ft**Depth to Bedrock: **40 ft**Tax Map No: **8**Casing: **61 ft**Lot No: **69**Tested Yield: **17 gal/min**Type: **DRILLED IN BEDROCK**Static Water Level: **10 ft**Use: **DOMESTIC;**

Measured Yield After Development:

**Well Driller**Driller License No: **299**Driller Well Id: **24516**Name and Address: **A & W ARTESIAN WELL CO OF VT  
PO BOX 549  
WOONSOCKET RI 02895**Current License Status: **Inactive**

Email:

Phone Number: **800-637-3500**

Well Id (WRB#): **044.0269**Date Completed: **12/09/1993**Name and Location: **C. REYNOLDS  
205 FREMONT RD  
[Mapit](#) CHESTER**Total Depth: **205 ft**Depth to Bedrock: **10 ft**Tax Map No: **9**Casing: **18 ft**Lot No: **23**Tested Yield: **50 gal/min**Type: **DRILLED IN BEDROCK**Static Water Level: **15 ft**Use: **DOMESTIC;**

Measured Yield After Development:

**Well Driller**Driller License No: **141**Driller Well Id: **764**Name and Address: **E M YOUNG WELL COMPANY  
36 PELHAM RD  
SALEM NH 03079**Current License Status: **Active**Email: **JYOUNGWELL@GMAIL.COM**Phone Number: **603-898-2504**

Well Id (WRB#): **044.0543**Date Completed: **01/06/1998**Name and Location: **LAMPHERE CONST  
14 CRAWFORD MEADOW  
[Mapit](#) CHESTER**Total Depth: **320 ft**Depth to Bedrock: **32 ft**Tax Map No: **8**Casing: **40 ft**Lot No: **70-1**Tested Yield: **6 gal/min**Type: **DRILLED IN BEDROCK**Static Water Level: **15 ft**Use: **DOMESTIC;**

Measured Yield After Development:

**Well Driller**Driller License No: **1543**Driller Well Id: **12105**Name and Address: **SKILLINGS & SONS INC  
9 COLUMBIA DR  
AMHERST NH 03031**Current License Status: **Active**Email: **NSKILLINGS@SKILLINGSANDSONS.COM**Phone Number: **603-889-5009**

Well Id (WRB#): **044.0901**Date Completed: **11/29/2010**Name and Location: **C. F. MYETTE JR  
159 FREMONT RD  
[Mapit](#) CHESTER**Total Depth: **600 ft**Depth to Bedrock: **64 ft**Tax Map No: **9**Casing: **80 ft**Lot No: **21**Tested Yield: **20 gal/min**Type: **DRILLED IN BEDROCK**

Static Water Level:

Use: **DOMESTIC;**

Measured Yield After Development:

**Well Driller**Driller License No: **225**Driller Well Id: **10226**Name and Address: **CAPITAL WELL CO INC  
150 CONCORD STAGE RD  
DUNBARTON NH 03046**Current License Status: **Active**Email: **JDRAGON@CAPITALWELL.COM**Phone Number: **603-774-6155**

Well Id (WRB#): **044.0905**Date Completed: **03/02/2011**Name and Location: **ABDALLAH CONST  
EMERSON RD  
[Mapit](#) CHESTER**Total Depth: **405 ft**Depth to Bedrock: **10 ft**Tax Map No: **5-80**Casing: **40 ft**Lot No: **12**Tested Yield: **10 gal/min**Type: **DRILLED IN BEDROCK**Static Water Level: **35 ft**Use: **DOMESTIC;**

Measured Yield After Development:

**Well Driller**Driller License No: **141**

Driller Well Id:

Name and Address: **E M YOUNG WELL COMPANY  
36 PELHAM RD  
SALEM NH 03079**Current License Status: **Active**Email: **JYOUNGWELL@GMAIL.COM**Phone Number: **603-898-2504**

Well Id (WRB#): **044.0934**Date Completed: **07/27/2012**Name and Location: **UNKNOWN NAME  
41 SHETLAND ROAD  
[Mapit](#) CHESTER**Total Depth: **100 ft**Depth to Bedrock: **12 ft**Tax Map No: **6**Casing: **30 ft**Lot No: **17-13**Tested Yield: **50 gal/min**Type: **BEDROCK (DRILLED)**Static Water Level: **4 ft**Use: **DOMESTIC DRINKING WATER; OPEN LOOP GEOTHERMAL**

Measured Yield After Development:

**Well Driller**Driller License No: **364**Driller Well Id: **364-20112830**Name and Address: **FAXON'S ARTESIAN WELLS & PUMPS  
81 HAMPSTEAD RD  
SANDOWN NH 03873**Current License Status: **Inactive**

Email:

Phone Number: **603-887-8169**

Well Id (WRB#): **044.1063**Date Completed: **02/24/2017**Name and Location: **GLORIA PELOZI  
126 FREMONT ROAD  
[Mapit](#) CHESTER**Total Depth: **240 ft**Depth to Bedrock: **15 ft**Tax Map No: **08**Casing: **30 ft**Lot No: **072**Tested Yield: **12 gal/min**Type: **BEDROCK (DRILLED)**Static Water Level: **08 ft**Use: **DOMESTIC DRINKING WATER;**

Measured Yield After Development:

**Well Driller**Driller License No: **1768**Driller Well Id: **839598**Name and Address: **FAXON WELL  
81 HAMPSTEAD RD  
SANDOWN NH 03873-2415**Current License Status: **Active**Email: **LFAXON84@GMAIL.COM**Phone Number: **603-887-8169**



Well Id (WRB#): **044.1088**Date Completed: **06/01/2018**Name and Location: **UNKNOWN NAME**  
**28 SHETLAND RD**  
[Mapit](#) **CHESTER**Total Depth: **180 ft**Depth to Bedrock: **35 ft**Tax Map No: **6**Casing: **51 ft**Lot No: **17-19**Tested Yield: **20 gal/min**Type: **BEDROCK (DRILLED)**

Static Water Level:

Use: **DOMESTIC DRINKING WATER; DOMESTIC DRINKING WATER**

Measured Yield After Development:

**Well Driller**Driller License No: **1768**Driller Well Id: **2018349**Name and Address: **FAXON WELL**  
**81 HAMPSTEAD RD**  
**SANDOWN NH 03873-2415**Current License Status: **Active**Email: **LFAXON84@GMAIL.COM**Phone Number: **603-887-8169**

PWS ID: **435080**System Type: **NON-TRANSIENT NON-COMMUNITY**

System Name and Address: **CHESTERBROOK SCH OF NTRL LRNG**  
**232 FREMONT RD**  
**CHESTER**

[Mapit](#)System Category: **DAY CARE**System Status: **Active**Startup Date: **09-2018**Population Served: **38**Service Connections: **2**System: **Open: JANUARY Close: DECEMBER**

## Permits to Operate (4)

Year	Effective Date	Expiration date	Date Certificate Issued	Permit	Application
2023	07/01/2022	06/30/2023			<a href="#">Show</a>
2022	07/01/2021	06/30/2022	05/19/2021	<a href="#">Show</a>	<a href="#">Show</a>
2021	07/01/2020	06/30/2021	09/10/2020	<a href="#">Show</a>	<a href="#">Show</a>
2020	07/01/2019	06/30/2020	08/20/2019	<a href="#">Show</a>	<a href="#">Show</a>

## Contacts (3)

Type	Name and Address	Phone	Primary Contact
OWNER	CHESTERBROOK SCH OF NTRL LRNG LEON JOSEPH SURRETTE 232 FREMONT RD CHESTER NH 03036	603-489-9776	NO
PRIMARY OPERATOR	HAMPSTEAD AREA WATER CO RICHARD BIBEAU 54 SAWYER AVE ATKINSON NH 03811	603-362-1941	NO
<a href="#">OWNER'S REPRESENTATIVE</a>	<a href="#">CHESTERBROOK SCH OF NTRL LRNG</a> <a href="#">SARAH SURRETTE</a> <a href="#">232 FREMONT RD</a> <a href="#">CHESTER NH 03036</a>	<a href="#">603-489-9776</a>	<a href="#">YES</a>

## Lead and Copper 90th Percentile (2)

Compliance Begin Date	Frequency	Monitoring Round	Lead 90th Percentile	Copper 90th Percentile	Calculated Date
07/01/2019	Semi-Annual	2	.001	.267	09/13/2019
01/01/2019	Semi-Annual	1	.001	.201	02/28/2019

PWS ID: 435080

System Type: NON-TRANSIENT NON-COMMUNITY

System Name and Address: CHESTERBROOK SCH OF NTRL LRNG  
232 FREMONT RD  
CHESTER

[Mapit](#)

System Category: DAY CARE

System Status: Active

Startup Date: 09-2018

Population Served: 38

Service Connections: 2

System: Open: JANUARY Close: DECEMBER

## Samples (57)

Note: Only samples processed by laboratories that report samples electronically are shown here.

Collected Date	Sampling Location	Sample Number	Sample Type	Laboratory
02/08/2022	001-NATURE PRESCHOOL SINK	<a href="#">122020625.01</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
02/08/2022	501-DEP TAP AF TRT/001	<a href="#">122020627.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
11/09/2021	001-NATURE PRESCHOOL SINK	<a href="#">121110965.01</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
11/09/2021	501-DEP TAP AF TRT/001	<a href="#">121110968.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
11/09/2021	501-DEP TAP AF TRT/001	<a href="#">121110969.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
11/09/2021	501-DEP TAP AF TRT/001	<a href="#">121110970.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
11/09/2021	501-DEP TAP AF TRT/001	<a href="#">121110971.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
08/16/2021	001-NATURE PRESCHOOL SINK	<a href="#">121081740.01</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
08/16/2021	501-DEP TAP AF TRT/001	<a href="#">121081742.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
05/10/2021	501-DEP TAP AF TRT/001	<a href="#">121050987.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
05/10/2021	001-NATURE PRESCHOOL SINK	<a href="#">121050991.01</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
03/08/2021	501-DEP TAP AF TRT/001	<a href="#">121030810.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
03/08/2021	501-DEP TAP AF TRT/001	<a href="#">121030811.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
02/09/2021	001-NATURE PRESCHOOL SINK	<a href="#">121020821.01</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
11/09/2020	501-DEP TAP AF TRT/001	<a href="#">120110902.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
11/09/2020	501-DEP TAP AF TRT/001	<a href="#">120110903.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
11/09/2020	501-DEP TAP AF TRT/001	<a href="#">120110904.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
11/09/2020	501-DEP TAP AF TRT/001	<a href="#">120110905.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
11/09/2020	001-NATURE PRESCHOOL SINK	<a href="#">120110909.01</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
08/10/2020	001-NATURE PRESCHOOL SINK	<a href="#">120081083.01</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
08/10/2020	501-DEP TAP AF TRT/001	<a href="#">120081086.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
05/06/2020	001-NATURE PRESCHOOL SINK	<a href="#">120050489.01</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
05/06/2020	501-DEP TAP AF TRT/001	<a href="#">120050490.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
02/12/2020	501-DEP TAP AF TRT/001	<a href="#">120020897.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
02/12/2020	001-NATURE PRESCHOOL SINK	<a href="#">120020898.01</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
11/13/2019	001-NATURE PRESCHOOL SINK	<a href="#">119111390.01</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
11/13/2019	501-DEP TAP AF TRT/001	<a href="#">119111401.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC

PWS ID: 435080

System Type: NON-TRANSIENT NON-COMMUNITY

System Name and Address: CHESTERBROOK SCH OF NTRL LRNG  
232 FREMONT RD  
CHESTER

[Mapit](#)

System Category: DAY CARE

System Status: Active

Startup Date: 09-2018

Population Served: 38

Service Connections: 2

System: Open: JANUARY Close: DECEMBER

## Samples (57)

Note: Only samples processed by laboratories that report samples electronically are shown here.

Collected Date	Sampling Location	Sample Number	Sample Type	Laboratory
11/13/2019	501-DEP TAP AF TRT/001	<a href="#">119111402.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
11/13/2019	501-DEP TAP AF TRT/001	<a href="#">119111403.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
11/13/2019	501-DEP TAP AF TRT/001	<a href="#">119111404.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
09/09/2019	001-RESIDENCE KITCHEN SINK	<a href="#">119090869.01</a>	LEAD AND COPPER RULE	NELSON ANALYTICAL LLC
09/09/2019	002-NATURE PRESCHOOL SINK	<a href="#">119090869.02</a>	LEAD AND COPPER RULE	NELSON ANALYTICAL LLC
09/09/2019	003-FOREST HOUSE / HIGH SINK	<a href="#">119090869.03</a>	LEAD AND COPPER RULE	NELSON ANALYTICAL LLC
09/09/2019	004-FOREST HOUSE / LOW LEFT SINK	<a href="#">119090869.04</a>	LEAD AND COPPER RULE	NELSON ANALYTICAL LLC
09/09/2019	005-FOREST HOUSE / LOW RIGHT SINK	<a href="#">119090869.05</a>	LEAD AND COPPER RULE	NELSON ANALYTICAL LLC
08/30/2019	O--DEP TAP	<a href="#">119083640.01</a>	GENERAL SYSTEM EVALUATION SAMP	NELSON ANALYTICAL LLC
08/13/2019	501-DEP TAP AF TRT/001	<a href="#">119081557.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
08/13/2019	501-DEP TAP AF TRT/001	<a href="#">119081558.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
08/13/2019	001-NATURE PRESCHOOL SINK	<a href="#">119081561.01</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
06/05/2019	501-DEP TAP AF TRT/001	<a href="#">119060611.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
05/06/2019	001-NATURE PRESCHOOL SINK	<a href="#">119050605.01</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
05/06/2019	501-DEP TAP AF TRT/001	<a href="#">119050608.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
03/14/2019	O--RESIDENT FAUCET (001)	<a href="#">119031197.01</a>	GENERAL SYSTEM EVALUATION SAMP	NELSON ANALYTICAL LLC
03/14/2019	O--RAW WATER (WELL)	<a href="#">119031197.02</a>	GENERAL SYSTEM EVALUATION SAMP	NELSON ANALYTICAL LLC
02/07/2019	001-RESIDENCE KITCHEN SINK	<a href="#">119020593.01</a>	LEAD AND COPPER RULE	NELSON ANALYTICAL LLC
02/07/2019	002-NATURE PRESCHOOL SINK	<a href="#">119020593.02</a>	LEAD AND COPPER RULE	NELSON ANALYTICAL LLC
02/07/2019	003-FOREST HOUSE / HIGH SINK	<a href="#">119020593.03</a>	LEAD AND COPPER RULE	NELSON ANALYTICAL LLC
02/07/2019	004-FOREST HOUSE / LOW LEFT SINK	<a href="#">119020593.04</a>	LEAD AND COPPER RULE	NELSON ANALYTICAL LLC
02/07/2019	005-FOREST HOUSE / LOW RIGHT SINK	<a href="#">119020593.05</a>	LEAD AND COPPER RULE	NELSON ANALYTICAL LLC
02/06/2019	001-NATURE PRESCHOOL SINK	<a href="#">119020434.01</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
01/23/2019	001-RESIDENCE KITCHEN SINK	<a href="#">119011901.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
01/09/2019	001-RESIDENCE KITCHEN SINK	<a href="#">119010780.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
11/19/2018	001-NATURE PRESCHOOL SINK	<a href="#">118111793.01</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC

PWS ID: **435080**System Type: **NON-TRANSIENT NON-COMMUNITY**

System Name and Address: **CHESTERBROOK SCH OF NTRL LRNG**  
**232 FREMONT RD**  
**CHESTER**

[Mapit](#)System Category: **DAY CARE**System Status: **Active**Startup Date: **09-2018**Population Served: **38**Service Connections: **2**System: **Open: JANUARY Close: DECEMBER**

## Samples (57)

Note: Only samples processed by laboratories that report samples electronically are shown here.

Collected Date	Sampling Location	Sample Number	Sample Type	Laboratory
11/19/2018	001-RESIDENCE KITCHEN SINK	<a href="#">118111794.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
11/19/2018	001-RESIDENCE KITCHEN SINK	<a href="#">118111795.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
11/19/2018	001-RESIDENCE KITCHEN SINK	<a href="#">118111796.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
11/19/2018	001-RESIDENCE KITCHEN SINK	<a href="#">118111797.01</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC

## Violations (5)

Violation Description	Contaminant or Rule	Violation Month	Violation Year	Begin Date	Returned to Compliance	Regulator
FAILURE TO PAY PTO FEE	FAILURE TO PAY PTO FEE	7	2020	07/01/2020	08/27/2020	STATE
MCL / SAMPLE AVERAGE VIOLATION	ARSENIC	7	2019	07/01/2019	01/31/2020	FEDERAL
FAILURE TO PAY PTO FEE	FAILURE TO PAY PTO FEE	7	2019	07/01/2019	08/19/2019	STATE
MCL / SAMPLE AVERAGE VIOLATION	ARSENIC	1	2019	01/01/2019	06/03/2019	FEDERAL
CERTIFIED OPERATOR VIOLATION	CERTIFIED OPERATOR VIOLATION	11	2018	11/02/2018	12/11/2018	STATE

PWS ID: **2082040**System Type: **COMMUNITY SYSTEM**

System Name and Address: **PINE ACRES CONDOS**  
**RTE 121A**  
[Mapit](#) **SCOTT LN**  
**SANDOWN**

System Category: **CONDOMINIUMS**System Status: **Active**

Startup Date:

Population Served: **90**Service Connections: **36**

## Permits to Operate (17)

Year	Effective Date	Expiration date	Date Certificate Issued	Permit	Application
2023	07/01/2022	06/30/2023	03/29/2022	<a href="#">Show</a>	<a href="#">Show</a>
2022	07/01/2021	06/30/2022	05/28/2021	<a href="#">Show</a>	<a href="#">Show</a>
2021	07/01/2020	06/30/2021	05/12/2020	<a href="#">Show</a>	<a href="#">Show</a>
2020	07/01/2019	06/30/2020	07/31/2019	<a href="#">Show</a>	<a href="#">Show</a>
2019	07/01/2018	06/30/2019	04/13/2018	<a href="#">Show</a>	<a href="#">Show</a>
2018	07/01/2017	06/30/2018	04/10/2017	<a href="#">Show</a>	<a href="#">Show</a>
2017	07/01/2016	06/30/2017	04/18/2016	<a href="#">Show</a>	<a href="#">Show</a>
2016	07/01/2015	06/30/2016	07/13/2015	<a href="#">Show</a>	<a href="#">Show</a>
2015	07/01/2014	06/30/2015	08/21/2014	<a href="#">Show</a>	<a href="#">Show</a>
2014	07/01/2013	06/30/2014	06/04/2013	<a href="#">Show</a>	<a href="#">Show</a>
2013	07/01/2012	06/30/2013	06/12/2012	<a href="#">Show</a>	<a href="#">Show</a>
2012	07/01/2011	06/30/2012	08/01/2011	<a href="#">Show</a>	<a href="#">Show</a>
2011	07/01/2010	06/30/2011	06/10/2010	<a href="#">Show</a>	<a href="#">Show</a>
2010	07/01/2009	06/30/2010	07/20/2009	<a href="#">Show</a>	<a href="#">Show</a>
2009	07/01/2008	06/30/2009	06/10/2008	<a href="#">Show</a>	<a href="#">Show</a>
2008	07/01/2007	06/30/2008	06/13/2007	<a href="#">Show</a>	<a href="#">Show</a>
2007	07/01/2006	06/30/2007	07/10/2006	<a href="#">Show</a>	<a href="#">Show</a>

## Contacts (3)

Type	Name and Address	Phone	Primary Contact
OWNER	PINE ACRES TOWNHOUSE CONDOMINIUMS BRIAN WHEELock 4 SCOTT LN SANDOWN NH 03873	603-475-1855	NO
PRIMARY OPERATOR	GRANITE STATE ANALYTICAL CORBIN KENNEDY 22 MANCHESTER RD UT 2 DERRY NH 03038	603-432-3044	NO
OWNER'S REPRESENTATIVE	BRIGS LLC CHRISTINA ABREAU PO BOX 970075 BOSTON MA 02297	603-403-5294	YES

PWS ID: **2082040**System Type: **COMMUNITY SYSTEM**

System Name and Address: **PINE ACRES CONDOS**  
**RTE 121A**  
[Mapit](#) **SCOTT LN**  
**SANDOWN**

System Category: **CONDOMINIUMS**System Status: **Active**

Startup Date:

Population Served: **90**Service Connections: **36**

### Lead and Copper 90th Percentile (13)

Compliance Begin Date	Frequency	Monitoring Round	Lead 90th Percentile	Copper 90th Percentile	Calculated Date
01/01/2021	Triennial (once every 3 yrs.)	13	.001	.028	11/03/2021
01/01/2018	Triennial (once every 3 yrs.)	12	0	.049	12/12/2018
01/01/2015	Triennial (once every 3 yrs.)	11	0	.033	11/12/2015
01/01/2012	Triennial (once every 3 yrs.)	10	.001	.067	12/18/2012
01/01/2009	Triennial (once every 3 yrs.)	9	.002	.02	11/18/2009
01/01/2006	Triennial (once every 3 yrs.)	8	.005	.1	11/21/2006
01/01/2003	Triennial (once every 3 yrs.)	7	.005	.259	01/15/2004
01/01/2000	Triennial (once every 3 yrs.)	6	.005	.325	03/30/2001
01/01/1997	Annual	5	.005	.854	02/05/1998
01/01/1996	Annual	4	.001	.001	06/03/1996
01/01/1995	Annual	3	.001	.001	11/14/1995
01/01/1994	Semi-Annual	2	.001	.011	11/30/1994
07/01/1993	Semi-Annual	1	.01	.2	03/29/1994

PWS ID: **2082040**System Type: **COMMUNITY SYSTEM**

System Name and Address: **PINE ACRES CONDOS**  
**RTE 121A**  
[Mapit](#) **SCOTT LN**  
**SANDOWN**

System Category: **CONDOMINIUMS**System Status: **Active**

Startup Date:

Population Served: **90**Service Connections: **36**

## Samples (211)

Note: Only samples processed by laboratories that report samples electronically are shown here.

Collected Date	Sampling Location	Sample Number	Sample Type	Laboratory
02/09/2022	012-UT 3 GARAGE OUTSIDE TAP	<a href="#">2202-01187-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
02/09/2022	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">2202-01188-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
11/19/2021	012-UT 3 GARAGE OUTSIDE TAP	<a href="#">2111-03173-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
10/20/2021	001-UNIT 29	<a href="#">2110-03482-001</a>	LEAD AND COPPER RULE	GRANITE STATE ANALYTICAL SERVICES LLC
10/20/2021	013-UNIT 2	<a href="#">2110-03482-002</a>	LEAD AND COPPER RULE	GRANITE STATE ANALYTICAL SERVICES LLC
10/20/2021	014-UNIT 13	<a href="#">2110-03482-003</a>	LEAD AND COPPER RULE	GRANITE STATE ANALYTICAL SERVICES LLC
10/20/2021	016-UNIT 20	<a href="#">2110-03482-005</a>	LEAD AND COPPER RULE	GRANITE STATE ANALYTICAL SERVICES LLC
10/19/2021	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">2110-03182-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
10/19/2021	015-UNIT 28	<a href="#">2110-03482-004</a>	LEAD AND COPPER RULE	GRANITE STATE ANALYTICAL SERVICES LLC
08/09/2021	001-UT 8	<a href="#">2108-01327-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
08/09/2021	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">2108-01343-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
08/09/2021	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">2108-01344-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
05/11/2021	001-UT 8	<a href="#">2105-01575-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
05/11/2021	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">2105-01576-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
05/11/2021	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">2105-01577-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
05/11/2021	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">2105-01578-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
05/11/2021	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">2105-01579-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
05/11/2021	301-UNIT 8	<a href="#">2105-01580-001</a>	DISINFECTION BYPRODUCT	GRANITE STATE ANALYTICAL SERVICES LLC
03/04/2021	001-POST SOFTENER	<a href="#">2103-00621-001</a>	GENERAL SYSTEM EVALUATION SAMP	GRANITE STATE ANALYTICAL SERVICES LLC
02/11/2021	001-UT 8	<a href="#">2102-01233-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
02/11/2021	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">2102-01247-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
11/03/2020	001-UT 8	<a href="#">2011-00319-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC



PWS ID: **2082040**System Type: **COMMUNITY SYSTEM**

System Name and Address: **PINE ACRES CONDOS**  
**RTE 121A**  
[Mapit](#) **SCOTT LN**  
**SANDOWN**

System Category: **CONDOMINIUMS**System Status: **Active**

Startup Date:

Population Served: **90**Service Connections: **36**

## Samples (211)

Note: Only samples processed by laboratories that report samples electronically are shown here.

Collected Date	Sampling Location	Sample Number	Sample Type	Laboratory
11/03/2020	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">2011-00320-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
08/25/2020	501-NON TRTED TAP /PUMPHOUSE/001 002	<a href="#">2008-03703-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
08/06/2020	001-UT 8	<a href="#">2008-00853-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
08/06/2020	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">2008-00854-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
05/22/2020	001-UT 8	<a href="#">2005-02514-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
04/07/2020	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">2004-00601-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
04/07/2020	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">2004-00602-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
04/07/2020	501-NON TRTED TAP /PUMPHOUSE/001 002	<a href="#">2004-00606-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
02/20/2020	001-UT 8	<a href="#">2002-01816-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
02/13/2020	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">2002-01249-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
02/13/2020	501-NON TRTED TAP /PUMPHOUSE/001 002	<a href="#">2002-01250-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
12/05/2019	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1912-00428-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
11/14/2019	001-UNIT 8	<a href="#">1911-01565-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
11/14/2019	501-NON TRTED TAP /PUMPHOUSE/001 002	<a href="#">1911-01566-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
08/20/2019	001-UNIT 8	<a href="#">1908-02799-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
08/20/2019	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1908-02800-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
05/07/2019	001-UNIT 8	<a href="#">1905-00846-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
05/07/2019	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1905-00848-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
05/07/2019	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1905-00849-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
05/07/2019	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1905-00851-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
02/07/2019	001-UNIT 8	<a href="#">1902-00632-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
02/07/2019	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1902-00633-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC

PWS ID: **2082040**System Type: **COMMUNITY SYSTEM**

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**SANDOWN**

System Category: **CONDOMINIUMS**System Status: **Active**

Startup Date:

Population Served: **90**Service Connections: **36**

## Samples (211)

Note: Only samples processed by laboratories that report samples electronically are shown here.

Collected Date	Sampling Location	Sample Number	Sample Type	Laboratory
12/04/2018	006-UNIT 33	<a href="#">1812-00321-002</a>	LEAD AND COPPER RULE	GRANITE STATE ANALYTICAL SERVICES LLC
12/04/2018	007-UNIT 31	<a href="#">1812-00321-003</a>	LEAD AND COPPER RULE	GRANITE STATE ANALYTICAL SERVICES LLC
12/04/2018	008-UNIT 8	<a href="#">1812-00321-004</a>	LEAD AND COPPER RULE	GRANITE STATE ANALYTICAL SERVICES LLC
12/04/2018	012-UNIT 6	<a href="#">1812-00321-005</a>	LEAD AND COPPER RULE	GRANITE STATE ANALYTICAL SERVICES LLC
12/03/2018	005-UNIT 35	<a href="#">1812-00321-001</a>	LEAD AND COPPER RULE	GRANITE STATE ANALYTICAL SERVICES LLC
11/19/2018	001-UNIT 8	<a href="#">1811-01900-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
11/19/2018	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1811-01901-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
09/26/2018	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1809-03515-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
08/23/2018	001-UNIT 8	<a href="#">1808-03424-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
05/08/2018	001-UNIT 8	<a href="#">1805-01114-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
05/08/2018	301-UNIT 8	<a href="#">1805-01115-001</a>	DISINFECTION BYPRODUCT	GRANITE STATE ANALYTICAL SERVICES LLC
05/08/2018	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1805-01116-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
05/08/2018	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1805-01117-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
05/08/2018	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1805-01118-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
02/22/2018	001-UNIT 8	<a href="#">1802-01746-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
02/22/2018	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1802-01747-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
11/07/2017	001-UNIT 8	<a href="#">1711-00733-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
11/07/2017	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1711-00734-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
08/04/2017	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1708-00699-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
08/02/2017	011-UNIT 8 /KITCHEN SINK	<a href="#">1708-00380-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
05/15/2017	011-UNIT 8 /KITCHEN SINK	<a href="#">1705-01870-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
05/15/2017	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1705-01872-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC

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Startup Date:

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## Samples (211)

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Collected Date	Sampling Location	Sample Number	Sample Type	Laboratory
05/15/2017	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1705-01873-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
02/16/2017	011-UNIT 8 /KITCHEN SINK	<a href="#">1702-01233-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
02/16/2017	O-1-RAW	<a href="#">1702-01234-001</a>	GENERAL SYSTEM EVALUATION SAMP	GRANITE STATE ANALYTICAL SERVICES LLC
02/16/2017	O-2-MIDPOINT	<a href="#">1702-01234-002</a>	GENERAL SYSTEM EVALUATION SAMP	GRANITE STATE ANALYTICAL SERVICES LLC
02/16/2017	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1702-01235-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
11/16/2016	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1611-01517-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
11/16/2016	011-UNIT 8 /KITCHEN SINK	<a href="#">1611-01518-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
08/19/2016	011-UNIT 8 /KITCHEN SINK	<a href="#">1608-02290-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
08/19/2016	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1608-02291-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
05/25/2016	011-UNIT 8 /KITCHEN SINK	<a href="#">1605-02946-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
05/25/2016	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1605-02947-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
05/25/2016	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1605-02948-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
05/25/2016	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1605-02949-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
02/25/2016	011-UNIT 8 /KITCHEN SINK	<a href="#">1602-01880-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
02/25/2016	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1602-01881-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
12/08/2015	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1512-00824-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
11/18/2015	011-UNIT 8 /KITCHEN SINK	<a href="#">1511-01335-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
11/06/2015	011-UNIT 10	<a href="#">1511-00619-004</a>	LEAD AND COPPER RULE	GRANITE STATE ANALYTICAL SERVICES LLC
10/27/2015	002-UNIT 30	<a href="#">1511-00619-001</a>	LEAD AND COPPER RULE	GRANITE STATE ANALYTICAL SERVICES LLC
10/27/2015	005-UNIT 35	<a href="#">1511-00619-002</a>	LEAD AND COPPER RULE	GRANITE STATE ANALYTICAL SERVICES LLC
10/27/2015	006-UNIT 33	<a href="#">1511-00619-003</a>	LEAD AND COPPER RULE	GRANITE STATE ANALYTICAL SERVICES LLC
10/27/2015	010-UNIT 27	<a href="#">1511-00619-005</a>	LEAD AND COPPER RULE	GRANITE STATE ANALYTICAL SERVICES LLC

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System Category: **CONDOMINIUMS**System Status: **Active**

Startup Date:

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## Samples (211)

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Collected Date	Sampling Location	Sample Number	Sample Type	Laboratory
09/29/2015	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1509-02241-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
08/19/2015	011-UNIT 8 /KITCHEN SINK	<a href="#">1508-01610-001</a>	DISINFECTION BYPRODUCT	GRANITE STATE ANALYTICAL SERVICES LLC
08/19/2015	011-UNIT 8 /KITCHEN SINK	<a href="#">1508-01611-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
06/24/2015	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1506-02141-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
06/23/2015	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1506-01980-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
06/23/2015	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1506-01982-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
06/23/2015	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1506-01984-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
05/26/2015	011-UNIT 8 /KITCHEN SINK	<a href="#">1505-02048-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
02/17/2015	011-UNIT 8 /KITCHEN SINK	<a href="#">1502-00693-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
02/17/2015	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1502-00694-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
02/17/2015	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1502-00777-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
11/20/2014	011-UNIT 8 /KITCHEN SINK	<a href="#">1411-01234-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
08/26/2014	011-UNIT 8 /KITCHEN SINK	<a href="#">1408-00905-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
08/26/2014	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1408-00906-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
06/02/2014	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1406-00068-001</a>	GENERAL SYSTEM EVALUATION SAMP	GRANITE STATE ANALYTICAL SERVICES LLC
05/21/2014	011-UNIT 8 /KITCHEN SINK	<a href="#">1405-00703-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
05/21/2014	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1405-00704-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
05/21/2014	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1405-00707-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
05/21/2014	O-001-RAW	<a href="#">1405-00708-001</a>	GENERAL SYSTEM EVALUATION SAMP	GRANITE STATE ANALYTICAL SERVICES LLC
05/21/2014	O-002-MIDPOINT	<a href="#">1405-00708-002</a>	GENERAL SYSTEM EVALUATION SAMP	GRANITE STATE ANALYTICAL SERVICES LLC
02/18/2014	011-UNIT 8 /KITCHEN SINK	<a href="#">1402-00340-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC

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## Samples (211)

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Collected Date	Sampling Location	Sample Number	Sample Type	Laboratory
02/18/2014	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1402-00610-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
11/22/2013	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">1311-00726-001</a>	CHEMICAL MONITORING	GRANITE STATE ANALYTICAL SERVICES LLC
11/20/2013	011-UNIT 8 /KITCHEN SINK	<a href="#">1311-00538-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
08/28/2013	011-UNIT 8 /KITCHEN SINK	<a href="#">1308-01110-001</a>	TOTAL COLIFORM RULE	GRANITE STATE ANALYTICAL SERVICES LLC
07/11/2013	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">3307-670-1</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
05/07/2013	011-UNIT 8 /KITCHEN SINK	<a href="#">3305-466-1</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
05/07/2013	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">3305-467-1</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
05/07/2013	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">3305-468-1</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
05/07/2013	502-DEP TAP PH/ AFTER AS TRTMT/ BLEND 001 002	<a href="#">3305-469</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
02/01/2013	011-UNIT 8 /KITCHEN SINK	<a href="#">3302-23-1</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
02/01/2013	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">3302-25-1</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
11/15/2012	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">3211-716-1</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
11/15/2012	011-UNIT 8 /KITCHEN SINK	<a href="#">3211-717-1</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
11/15/2012	008-UNIT 8	<a href="#">3211-718-1</a>	LEAD AND COPPER RULE	NELSON ANALYTICAL LLC
11/15/2012	009-UNIT 32	<a href="#">3211-718-2</a>	LEAD AND COPPER RULE	NELSON ANALYTICAL LLC
11/15/2012	010-UNIT 27	<a href="#">3211-718-3</a>	LEAD AND COPPER RULE	NELSON ANALYTICAL LLC
11/15/2012	002-UNIT 30	<a href="#">3211-718-4</a>	LEAD AND COPPER RULE	NELSON ANALYTICAL LLC
11/15/2012	003-UNIT 36	<a href="#">3211-718-5</a>	LEAD AND COPPER RULE	NELSON ANALYTICAL LLC
08/13/2012	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">3208-705-1</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
08/13/2012	011-UNIT 8 /KITCHEN SINK	<a href="#">3208-706-1</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
05/14/2012	502-DEP TAP PH/AFTER AS TRTMT/BLEND 001 002	<a href="#">3205-779</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
05/07/2012	011-UNIT 8 /KITCHEN SINK	<a href="#">3205-357-1</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC

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Collected Date	Sampling Location	Sample Number	Sample Type	Laboratory
05/07/2012	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">3205-358</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
05/07/2012	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">3205-499</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
02/02/2012	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">3202-112</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
02/02/2012	011-UNIT 8 /KITCHEN SINK	<a href="#">3202-113-1</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
11/07/2011	011-UNIT 8 /KITCHEN SINK	<a href="#">3111-258-1</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
10/03/2011	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">3110-52</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
08/09/2011	011-UNIT 8 /KITCHEN SINK	<a href="#">3108-459-1</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
07/05/2011	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">3107-179</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
05/04/2011	011-UNIT 8 /KITCHEN SINK	<a href="#">3105-157-1</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
05/04/2011	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">3105-158</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
05/04/2011	502-DEP TAP PH/AFTER AS TRTMT/BLEND 001 002	<a href="#">3105-159</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
04/10/2011	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">3104-507</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
03/15/2011	502-DEP TAP PH/ AFTER AS TRTMT/BLEND 001 002	<a href="#">3103-549</a>	CHEMICAL MONITORING	NELSON ANALYTICAL LLC
02/08/2011	011-UNIT 8 /KITCHEN SINK	<a href="#">3102-256-1</a>	TOTAL COLIFORM RULE	NELSON ANALYTICAL LLC
03/08/2005	DEP TAP/PUMPHOUSE/BLEND 001&002	<a href="#">A87438-1</a>	METHYL-T-BUTYL ETHER	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
02/21/2005	BLEND 001 + 002	<a href="#">A87139-1</a>	CHEM MON	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
12/14/2004	DEP TAP/PH/BLEND 001&002	<a href="#">A84787-1</a>	METHYL-T-BUTYL ETHER	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
12/14/2004	DEP TAP/PH/BLEND 001&002	<a href="#">A84787-2</a>	CHEM MON	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
07/18/2004	UNIT 8	<a href="#">A77531-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
04/06/2004	UNIT 8	<a href="#">A72130-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
04/06/2004	DEP TAP/PH/BLEND 001&002	<a href="#">A72146-1</a>	SDWA-VOA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
04/06/2004	DEP TAP/PH/BLEND 001&002	<a href="#">A72146-2</a>	SDWA INORGANICS	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
03/09/2004	UNIT 8	<a href="#">A71125-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY

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Startup Date:

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## Samples (211)

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Collected Date	Sampling Location	Sample Number	Sample Type	Laboratory
03/09/2004	501-DEP TAP/PUMPHOUSE BLEND 001 & 002	<a href="#">A71139-1</a>	METHYL-T-BUTYL ETHER	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
11/17/2003	UNIT 8	<a href="#">A67126-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
09/12/2003	501-DEP TAP/PH/BLEND 001&002	<a href="#">A64422-1</a>	METHYL-T-BUTYL ETHER	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
07/15/2003	UNIT 8	<a href="#">A60475-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
07/15/2003	UNIT 10	<a href="#">A60475-2</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
07/15/2003	UNIT 25	<a href="#">A60475-3</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
07/15/2003	UNIT 24	<a href="#">A60475-4</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
07/15/2003	UNIT 3	<a href="#">A60475-5</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
05/08/2003	UNIT 8	<a href="#">A56508-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
05/08/2003	501 DEP TAP PH BLEND 1&2	<a href="#">A56512-1</a>	SDWA-VOA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
05/08/2003	501 DEP TAP PH BLEND 1&2	<a href="#">A56512-2</a>	SDWA-PEST	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
05/08/2003	501 DEP TAP PH BLEND 1&2	<a href="#">A56512-3</a>	CHEM MON	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
03/12/2003	DEP TAP/PH/BLEND 001&002	<a href="#">A54293-1</a>	METHYL-T-BUTYL ETHER	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
01/27/2003	UNIT 8	<a href="#">A52732-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
11/12/2002	DEP PH BLEND 001+002	<a href="#">A50369-1</a>	METHYL-T-BUTYL ETHER	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
10/11/2002	UNIT 8	<a href="#">A48959-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
09/03/2002	UNIT 8	<a href="#">A47124-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
09/03/2002	UNIT 10	<a href="#">A47124-2</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
09/03/2002	UNIT 15	<a href="#">A47124-3</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
09/03/2002	UNIT 3	<a href="#">A47124-4</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
09/03/2002	DEP TAP /PH/BLEND 001&002	<a href="#">A47135-1</a>	METHYL-T-BUTYL ETHER	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
06/10/2002	UNIT 8	<a href="#">A41626-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
06/10/2002	DEP SAMPLING TAP/PUMP	<a href="#">A41628-1</a>	SDWA-VOA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
06/10/2002	DEP SAMPLING TAP/PUMP	<a href="#">A41628-2</a>	SDWA NITRATE/NITRITE	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
06/10/2002	DEP SAMPLING TAP/PUMP	<a href="#">A41628-3</a>	CHEM MON	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
03/07/2002	UNIT 8	<a href="#">A37405-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
02/07/2002	UNIT 8	<a href="#">A36339-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY



PWS ID: **2082040**System Type: **COMMUNITY SYSTEM**

System Name and Address: **PINE ACRES CONDOS**  
**RTE 121A**  
[Mapit](#) **SCOTT LN**  
**SANDOWN**

System Category: **CONDOMINIUMS**System Status: **Active**

Startup Date:

Population Served: **90**Service Connections: **36**

## Samples (211)

Note: Only samples processed by laboratories that report samples electronically are shown here.

Collected Date	Sampling Location	Sample Number	Sample Type	Laboratory
02/07/2002	DEP SAMPLING TAP/PUMP	<a href="#">A36344-1</a>	METHYL-T-BUTYL ETHER	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
01/02/2002	UNIT 8	<a href="#">A34991-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
12/31/2001	DEP SAMPLING TAP	<a href="#">A35005-1</a>	METHYL-T-BUTYL ETHER	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
12/20/2001	UNIT 8	<a href="#">A34679-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
09/24/2001	UNIT 8	<a href="#">A31101-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
07/17/2001	UNIT 8	<a href="#">A26789-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
06/21/2001	UNIT 8	<a href="#">A25168-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
05/03/2001	UNIT 8	<a href="#">A22575-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
05/03/2001	DEP SAMPLING TAP/PH	<a href="#">A22579-1</a>	SDWA-VOA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
05/03/2001	DEP SAMPLING TAP/PH	<a href="#">A22579-2</a>	SDWA-PEST	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
05/03/2001	DEP SAMPLING TAP/PH	<a href="#">A22579-3</a>	SDWA RADIOLOGICAL	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
05/03/2001	DEP SAMPLING TAP/PH	<a href="#">A22579-4</a>	SDWA INORGANICS	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
04/12/2001	UNIT 8	<a href="#">A21725-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
03/14/2001	UNIT 8	<a href="#">A20414-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
02/05/2001	UNIT 8	<a href="#">A19128-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
01/08/2001	UNIT 8	<a href="#">A18293-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
12/12/2000	UNIT 8	<a href="#">A17330-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
09/06/2000	UNIT 8	<a href="#">A13080-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
07/10/2000	UNIT 8	<a href="#">A9000-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
06/06/2000	UNIT 8	<a href="#">A6995-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
05/05/2000	UNIT 8	<a href="#">A5264-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
05/05/2000	DEP SAMPLING TAP/PUMP	<a href="#">A5265-1</a>	SDWA-VOA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
05/05/2000	DEP SAMPLING TAP/PUMP	<a href="#">A5265-2</a>	SDWA-PEST	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
05/05/2000	DEP SAMPLING TAP/PUMP	<a href="#">A5265-3</a>	SDWA NITRATE/NITRITE	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
04/10/2000	UNIT 8	<a href="#">A4051-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
03/08/2000	UNIT 8	<a href="#">A2673-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
02/21/2000	UNIT 8	<a href="#">A1858-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY



4/5/2022

Public Drinking Water System Report

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PWS ID: 2082040

System Name and Address: PINE ACRES CONDOS  
RTE 121A  
SCOTT LN  
SANDOWN

[Mapit](#)

System Type: COMMUNITY SYSTEM

System Category: CONDOMINIUMS

System Status: Active

Population Served: 90

Startup Date:

Service Connections: 36

Samples (211)

Note: Only samples processed by laboratories that report samples electronically are shown here.

Collected Date	Sampling Location	Sample Number	Sample Type	Laboratory
01/04/2000	UNIT 8	<a href="#">A163-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
12/03/1999	UNIT 8	<a href="#">L91630-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY
10/18/1999	UNIT 8	<a href="#">L89580-1</a>	DW BACTERIA	NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES LABORATORY

Violations (1)

Violation Description	Contaminant or Rule	Violation Month	Violation Year	Begin Date	Returned to Compliance	Regulator
FAILURE TO PAY PTO FEE	FAILURE TO PAY PTO FEE	7	2019	07/01/2019	07/29/2019	STATE