Town of Waterboro

Preliminary Subdivision Application

WATERBORO WOODYARDS
Chadbourne Ridge Road, Waterboro, Maine

November 2023

Applicant:
Waterboro Woodyards, LLC
117 Main Street
Cornish, Maine 04020

Engineer:
BH2M
Attn: Steve Blake
PE# 11695
380B Main Street
Gorham, Maine 04038
November 29, 2023

Angela Chute
Town of Waterboro
24 Townhouse Road
East Waterboro, ME 04030

RE: Waterboro Woodyards – Proposed 11-Lot Cluster Subdivision
Chadbourne Ridge Road
Preliminary Subdivision Application

Dear Angela;

We have been retained by Waterboro Woodyards LLC to provide surveying, engineering, and permitting services for an 11-lot residential subdivision located on Chadbourne Ridge Road (Map 14 Lot 44T). In support of the application enclosed are plans and the following materials for review:

- Preliminary Subdivision Application & Planning Board Form & Checklist
- Attachment 1 – Figures (USGS, Tax, & FEMA Maps)
- Attachment 2 – Parcel Deed & Purchase and Sale Agreement
- Attachment 3 – Abutter’s List
- Attachment 4 – Letter of Good Standing
- Attachment 5 – Wetland Study by Flycatcher
- Attachment 7 – High Intensity Soils by Mark Hampton Associates, Inc.
- Attachment 8 – Hydrogeologic Assessment by Mark Cenci Geologic, Inc.
- Attachment 9 – Stormwater Report Narrative

In addition to these materials, three copies of the stormwater report, Stormwater Permit by Rule, NRPA Permit by Rule, and Maine General Permit have been provided for staff review.

**Project Summary**

The Applicant, Waterboro Woodyards, LLC, is proposing to construct an 11 lot cluster subdivision. The applicant is proposing to develop approximately 33.72 acres, approximately 20.60 acres will be preserved as open space. The parcel is primarily wooded with frontage on Chadbourne Ridge Road. The parcel is also bisected by the Agricultural and Residential (AR) and Forest and Agriculture (F&A) zones.

The proposed subdivision will include new construction of a public road, Woodyard Road, that will be offered to the Town for acceptance. The proposed entrance to the subdivision will be located approximately 940 ft. from Bradeen Road. All lots, except lot 11, will have driveways off of Woodyard Road as shown on in the plan set. Lot 11 will have a driveway off of Chadbourne Ridge Road.
The proposed infrastructure improvements will also include stormwater management facilities and underground power. The proposed stormwater management facilities include two soil filters at the end of the Woodyard Road as shown in the plans. Public water and sewer are not available. Each of the proposed lots will have individual subsurface disposal systems and drilled wells for domestic water supply. The project has been designed to minimize wetland impacts.

**Comments from Code Enforcement Office**

1) The sketch plan seems to be adequate for conceptual review, however, the density is marginal due to combined zone requirements FA/AR zones. It appears the majority of the affected area is in the FA Zone and should likely require much more open space.
   See note 19 on sheet 1 of plan set for open space information.

2) Wetlands are delineated on the sketch plan, however, are any of these portions forested wetlands?
   See attachment 5 for wetland study by Flycatcher.

3) Vernal Pool restrictions will require special review as there has been no site evaluators input to this point other than perhaps wetland review, i.e. no test pits. Due to vernal pool location, I am curious as to the existence of an outlet or would the wetland be considered an inlet? If either of these are present, vernal pool review is mute.
   See attachment 5 for wetland study and vernal information. See attachment 6 for test pit information.

**Comments from Department of Public Works**

1) How many feet from Bradeen Road will the entrance to the subdivision be located?
   The entrance of the proposed subdivision will be approximately 940 feet from Bradeen Road.

2) What will the paved width of the street be?
   The proposed roadway is 20 feet wide with 2’ shoulders.

3) Will this road connect to future parts of the subdivision?
   The proposed road will not connect to future parts of the subdivision.

4) Based on the sketch plan, it appears that the storm water will drain down behind lots 1-5, is this correct?
   The stormwater is designed to drain to a soil filter at the end of the roadway as shown in the plan set.

5) Lots 10 & 11, where will they enter and exit from? It appears Lot 11 will have a driveway cut off Chadbourne Ridge Road but would just like to verify that and Lot 10 seems it’s entrance would be tight if entering through the subdivision road access.
   All lots, except lot 11, will have driveways off of Woodyard Road as shown on in the plan set. Lot 11 will have a driveway off of Chadbourne Ridge Road.

6) Request to have several tall pine trees cut from the side of Chadbourne Ridge Road during the development of the subdivision.
   To be determined.
Subdivision Ordinance Section 6.2.1

1) The proposed subdivision name or identifying title, the name of the town and state, the date, the graphic scale, and the true North arrow displayed in a conspicuous place.
   See sheet 1 of plan set.

2) Name and address of the record owner, subdivider, soil scientist, designer and/or engineer and land surveyor.
   See sheet 1 of plan set.

3) Number of acres within the proposed subdivision, location of property lines, existing easements, buildings, watercourses and other essential existing physical features.
   See sheet 1 and 2 of plan set.

4) The names of all subdivisions immediately adjacent and the names of owners of record of other adjacent parcels, not subdivided, including those subdivisions and parcels directly across abutting streets, streams and right-of-ways.
   See sheet 2 of plan set and attached abutter’s list.

5) The provisions of the Zoning Ordinance applicable to the area to be subdivided and any Zoning district boundaries affecting the proposed subdivision.
   See sheet 1 of plan set.

6) The location and size of any proposed or existing sewers, water mains, culverts or drains, and existing swampy areas, brooks, perpetual springs of significant size and natural drainage ditches.
   See attached plan set.

7) Locations, names and present widths of existing and proposed streets, highways, easements, building lines, alleys, parks and other public open spaces.
   See sheet 1 of plan set.

8) The width and location of any streets or other public ways or places shown upon the Official Map and the Comprehensive Plan, if any, within the area to be subdivided, and the width, location, grades, and street profiles of all streets or other public ways proposed by the subdivider.
   See attached plan set.

9) Contour lines at such intervals as the Board may require. (May be required on a separate transparency)
   See attached plan set.

10) A Log of On-Site Soil Investigations by a Registered Soil Scientist, made in accordance with the requirements of the State Plumbing Code, for two (2) test pits per lot separated by a minimum of 50 feet, the location of which to be clearly delineated on both the Preliminary and Final Plans; also the sewage disposal system recommended for each lot.
    See attachment 7 for High Intensity Soils Report by Mark Hampton Associates.

11) Deed description of and plan of perimeter survey of tract to be developed, made and certified by a Registered Land Surveyor and tied to established permanent reference points: reference to lot number or numbers as shown on the Town Tax Maps, also book and page in and on which the deed for the tract is recorded.
    See sheet 2 of plan set.
12) **Connection with existing public or private community water supply.**  
The proposed project will be served by individual drilled wells.

13) **Connection with existing public or private community sanitary sewerage system.**  
The proposed project will be served by individual on-site subsurface disposal systems.

14) **Provisions for collecting and discharging storm drainage, in the form of a drainage plan.**  
See attached plan set.

15) **Preliminary designs of any bridges and size of which are proposed, showing their location.**  
Not applicable.

16) **Proposed lot lines with approximate dimensions, lot numbers or names, approximate lot acreage and suggested location of buildings.**  
See sheet 1 of plan set.

17) **Location of temporary bound markers conspicuous enough to enable the Board to readily locate and envision, while in the field, the basic layout.**  
See attached plan set.

18) **All parcels of land proposed to be dedicated to public or community use and with a statement of the conditions of such dedication.**  
Not applicable.

19) **Proposed use of any part of the original tract which is not to be included in the subdivision.**  
See attached plan set.

20) **The location of all natural features or site elements to be preserved.**  
See attached plan set.

21) **A soil erosion and sediment control plan containing the endorsement of the York County Soil and Water Conservation District or the Maine Soil and Water Conservation Commission.**  
See attached plan set.

22) **A statement relative to the schedule of construction.**  
The proposed project is anticipated to start in the summer of 2024.

23) **A statement relative the amenities or services and future responsibilities therefore.**  
Not applicable.

24) **Provisions for centralized mail delivery. Applicant must contact the State of Maine E911 coordinator and provide to the board evidence that newly created lots will receive a new E911 address from the state.**  
To be determined.

25) **A location map showing the geographical location of the subdivision in the Town.**  
See USGS Map in attachment 1.
26) A report prepared by a geologist registered in the State of Maine and qualified, by training and experience, to evaluate the impact which the proposed development, alone or in conjunction with existing activities, will have on the quality of groundwater. The report shall include an analysis of the groundwater impact predicted for the construction which is proposed; of the water supplies serving the development; and of any other aspects of the proposed development which may, either alone or in conjunction with existing activities; adversely affect the quality or quantity of groundwater in the area. A hydrogeologic impact study prepared by a State of Maine Certified Geologist or a Registered Professional Engineer with experience in hydrogeology shall be provided for all subdivisions utilizing on-site septic disposal systems.

See attachment 8 for Hydrogeologic Assessment by Mark Cenci Geologic, Inc.

If you have any questions about this application or require any additional information for this submission, please contact myself. We look forward to working with you on this project.

Sincerely,

Steven J. Blake, P.E.
Senior Engineer
TOWN OF WATERBORO SUBDIVISION APPLICATION

Subdivision Name: Waterboro Woodyards
Date of Application: 

Application Fee: $4,275
Fee Received: 

APPLICANT INFORMATION

1. Name of Property Owner: Climate Forest
   Address: 117 Main Street
             Cornish, ME 04020

2. Name of Applicant: Waterboro Woodyards, LLC
   Address: 117 Main Street
             Cornish, ME 04020
   Telephone: 

3. If applicant is a corporation, check if licensed in Maine: Yes ___ No __
   and attach a copy of State's Registration.

4. Name of Applicant’s Authorized Agent: Steven J. Blake, PE - BH2M Engineers
   Address: 380B Main Street
             Gorham, ME 04038
   Telephone: (207) 839-2771

5. Land Surveyor, Engineer, Architect or others preparing plan
   Name: Robert C. Libby Jr., PLS #2190 - BH2M
   Address: 380B Main Street
             Gorham, ME 04038
   Telephone: (207) 839-2771
   Registration #: PLS# 2190

6. Contact person/address to send all correspondence regarding this application
   Steven J. Blake, PE - BH2M Engineers

7. What legal interest does the applicant have in the property to be developed
   (ownership, option, purchase and sales contract, etc.)? Purchase and Sale Agreement
   Attach Evidence of interest: See attachment 2.

8. What interest does the applicant have in any abutting property? N/A
LAND INFORMATION

9. Location of Property
   (from County Registry of Deeds)
   (from Tax Maps)
   Road Chadbourne Ridge Road
   Book 19076
   Map 14
   Page 799
   Lot 44T

10. Current zoning of property: AR and F&A

11. Is any portion of the property within 250 feet of the high water mark of a pond, river or wetland? 
    ✔ Yes ☒ No

12. Acreage to be developed +/- 33.72

13. Indicate the nature of any restrictive covenants to be placed in the deeds: N/A

14. Has this land been part of a prior approved subdivision? ☐ Yes ✔ No
    Or other divisions within the past five years? ☐ Yes ✔ No

15. Identify existing use(s) of land. (farmland, wood lot, etc.)
   The land is primarily a wooded area.

16. Does the parcel include any waterbodies? ☑ Yes ☐ No

17. Is any portion of the property within a special flood hazard area as identified by the Federal Emergency Management Agency:
    ☑ Yes ☐ No

18. List below the names and mailing addresses of abutting property owners and owners across the road.
   Name
   Address
   See Attached Abutter's List
Abutting property owners continued:

GENERAL INFORMATION

19. Proposed name of development: Waterbor Woodyards

20. Number of lots or units: 11 lots

21. Anticipated date for construction: Feburary 2024

22. Anticipated date of completion: Fall 2024

23. Does this development require extension of public infrastructure?
   
   Yes ☑️ No
   
   Roads ☐ Storm drainage ☐ Other
   
   Sidewalks ☐ Water lines ☐ Fire protection equipment

24. Estimated cost for infrastructure improvements $ TBD

25. Identify method of water supply to the proposed development?
   
   ☑️ Individual wells
   
   Central well with distribution lines connection to public water system
   
   Other, please state alternative

26. Identify method of sewage disposal to the proposed development?
   
   ☑️ Individual septic tanks
   
   Central on site disposal with distribution lines
   
   Other, please state alternative

27. Identify method of fire protection for the proposed development?
   
   ☐ Hydrants connected to the public water system
   
   Dry hydrants located on an existing pond, water body or firepond
   
   ☑️ Other, please state alternative TBD

28. Does the applicant propose to dedicate to the public any streets, recreation or common lands?
   
   If any, street(s) ☐ Yes ☑️ No Estimated Length ☐
   
   Recreation area(s) ☐ Yes ☑️ No Estimated Acreage ☐
   
   Common land(s) ☐ Yes ☑️ No Estimated Acreage ☐
29. Does the applicant intend to request waivers of any of the subdivision submission requirements?
If yes, list them and state reasons for the request.

N/A

To the best of my knowledge, all the above state information submitted in this application is true and correct.

[Signature] - Agent 11/29/2023
(signature of applicant) (date)
TOWN OF WATERBORO
PLACEMENT ON
PLANNING BOARD AGENDA

Date received: ________________________

APPLICATION TO BE PLACED ON PLANNING BOARD AGENDA Next Available

I, ________________ (agent for Waterboro Woodyards, LLC)

Address: BH2M Engineers          Tax Map # 14  Lot # 44T

380B Main Street          Zone AR and F&A

Gorham, ME 04038          Telephone # (207) 839-2771 x205

HEREBY MAKE APPLICATION TO BE PLACED ON THE AGENDA OF THE WATERBORO PLANNING BOARD:

Nature of business to be presented before the board:

Preliminary Subdivision Plan application for a proposed 11-lot cluster subdivision located on Chadbourne Ridge Road.

Is the project in the Shoreland Zone? _____ yes  x  no

Estimate of time necessary for presentation: 30 min  45 min  x

Name (s) of person (s) who will be appearing before the Planning Board: Brent Day - Waterboro Woodyards

Steve Blake - BH2M

Please file this form with the Code Enforcement Officer, at which time a non-refundable fee* must be paid. You will be notified of the date and time you are to appear. You shall notify all abutters of your property of the date, time and purpose of your meeting and allow them 10 days prior to the meeting date to submit any concerns they may have in writing to the Planning Board. Attach the following information:

- Building permit application
- Diagram of the lot and project in relation to said lot
- Any other information to better review your application

WATERBORO PLANNING BOARD FEES*

x Placement on agenda (informational)  N/A

Conditional use / set back reduction  $100.00
(includes relocation in Shoreland Zone)

Special Structures (Height modification)  $50.00

x Cluster development

$100.00 +$50.00 for each development review residential, commercial or industrial unit in the development

Planned Unit

$100.00 +$50.00 for each development review residential, commercial or industrial unit in the development

Temporary Use Review  $50.00

Rev 08162018
The applicant is responsible for the development of and mailing of the **Abutter notifications within 500’ of the property.** This notification must be developed using the layout provided as part of this packet. The Applicant shall use either their own letterhead or a blank paper for the development of this notification. The applicant shall also send these notifications out as a Return Receipt mailing and provide the Planning Office with the tracking information for the abutter’s notification and 8 copies of the Return Receipts for the planning board members prior to the planning board meeting which the project is scheduled to be heard on. If all notifications have not been acknowledged than the application may be tabled by the board.

The Planning and Codes support stuff will generate the abutters list and provide it to the applicant as part of this process.

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<tr>
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<th>Submitted By Applicant</th>
<th>Request For Waiver</th>
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<td>Owner Climate Forest, LLC</td>
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**Section 5.1.2 pre-application (SKETCH) 12 copies**

- Fee of $250 per lot (min. $1,000) paid
- Drawn to scale not over 200 feet to the inch
- Proposed layout of lots
- Proposed layout of streets
- Proposed layout of drainage ditches
- Proposed reserved land
- Historical preserves
- Trees of unusual size or interest
- Show acreage range of lots
- Anticipated price range of structures with land, well and sewage.

6.1.7 Applicant shall notify all property owners within 500 feet of the perimeter of the proposed development within 7 days after submitting preliminary plan as per requirements of this section.

**Section 6.2.1 Preliminary Plan (12 copies 24’ x 36’)**

1. Name, title, town, date, scale, North arrow.
2. Name address of owner, sub-divider, soil scientist, designer, engineer and surveyor.
3. Number of acres, location of property lines, existing easements, buildings, watercourses, etc.
4. Names of subdivisions, abutting property owners, including directly across the street, streams or rights of way.

Rev March 2021
|   | Subdivision Name: Waterboro Woodyards  
Map / Lot #: Map 14, Lot 44T  
Owner: Climate Forest, LLC | Submitted By Applicant | Request For Waiver | Not Applicable | Meets standard per Town Planner | Accepted By Board | Waived By Board |
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<td>5.</td>
<td>Provisions of zoning ordinance applicable to the area being divided and any zoning district boundary lines affecting the subdivision.</td>
<td>✓</td>
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<td>6.</td>
<td>Location and size of proposed or existing sewers, water mains, culverts or drains, swampy areas, brooks, springs and natural drainage ditches.</td>
<td>✓</td>
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<td>7.</td>
<td>Locations, names and present widths of existing and proposed streets, easements, building lines, parks and other open spaces.</td>
<td>✓</td>
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<td>8.</td>
<td>Width and location of any streets or other public ways shown on the official map and comprehensive plan within the area to be subdivided and width, location, size, grades and profiles of all public ways proposed.</td>
<td>✓</td>
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<td>9.</td>
<td>Contour lines at such intervals as the board may require</td>
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<td>Log of on-site soils investigations by a registered soil scientist for 2 test pits per lot separated by a minimum of 50 feet, location of which to be clearly delineated on preliminary and final plans, also the sewage disposal system recommended for each lot.</td>
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<td>Deed description and plan of perimeter survey of tract being divided, by a certified land surveyor and tied to permanent reference points, reference to a lot number or numbers as shown on tax maps, book and page for the tract being divided</td>
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<td>12.</td>
<td>Connection with existing public or private community water supply.</td>
<td>✓</td>
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<td>13.</td>
<td>Connection with existing public or private community sanitary sewerage system.</td>
<td>✓</td>
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<td>15.</td>
<td>Preliminary designs for any bridges including size and location</td>
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<td>16.</td>
<td>Proposed lot lines with approximate dimensions, lot numbers, approximate lot acreage and suggested location of buildings.</td>
<td>✓</td>
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<td>18.</td>
<td>Show all parcels of land to be dedicated to public or community use with a statement of conditions of dedication.</td>
<td>✓</td>
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Rev March 2021
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<td><strong>Soil erosion and sediment control plan endorsed by York County Soil and Water Conservation District or the Maine Soil and Water Conservation District.</strong></td>
<td>✓</td>
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<td><strong>Location map showing geographical location of the subdivision within the town.</strong></td>
<td>✓</td>
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**Final Plan requirements Section 7.1**

1. All the information presented on Preliminary plan transferred to final.
2. Name, registration number and seal of land surveyor, architect, engineer, and soil scientist involved.
3. Street names and lines, pedestrian ways, lots, easements and areas to be reserved or dedicated to public or community use.
4. Sufficient data acceptable to the board to readily determine the location, bearing and length of every street line, lot line, boundary line and to reproduce such lines upon the ground. Where practical these should be tied to reference points previously established.
5. The length of all straight lines, the deflection of angles of all curves, tangent distances and tangent bearings for each street.
6. By proper designation, all public and/ or community open space for which offers of cession were made by the sub-divider and those spaces to which title is reserved by him.
7. Lots and blocks in the subdivision numbered according to local practice.
### General Requirements

**Section 8.1 proposed public sites and open spaces**

1. Board may require the developer to provide up to ten percent or not less than 10,000 square feet of his total area for recreation. Such area shall be in one parcel and reasonably accessible from all lots within the subdivision.

2. Land reserved for park or recreation shall be of a character suitable for the use intended.

3. If the subdivision has any kind of water body for 200 feet or more the Board may require a reasonable area with shore frontage be preserved as open space.

4. The Board may require the developer to provide space for future municipal use, in accordance with the comprehensive plan, on a reimbursable basis with a five year option after which the space may be sold for other development.

**Section 8.2 non buildable land**

1. The Board shall not approve for building sites portion of the subdivision that are commonly recognized as wetlands which must be filled or drained or land created by diverting brooks streams or rivers or is obtained by filling or draining any portion of any water body.

2. Wherever located in whole or in part within 100 feet of any brook, stream, river, pond, or lake, no dwellings or part of any sewage disposal system or roads shall be installed or constructed within 100 feet of the normal high water line.

**Section 8.3.1** Minimum lot sizes shall conform to local, county and state regulations the most restrictive taking precedence.
| Subdivision Name: **Waterboro Woodyards**  
Map / Lot #: Map 14, Lot 44T  
Owner: Climate Forest, LLC | Submitted By Applicant | Request For Waiver | Not Applicable | Meets standard per Town Planner | Accepted By Board | Waived By Board |
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<td><strong>Section 8.4</strong> Drainage easements; where a subdivision is traversed by a natural water course, drainage way, channel or stream, there shall be provided a stormwater drainage right of way conforming with the lines of such water course not less than thirty feet wide.</td>
<td>✓</td>
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<td><strong>Section 8.5 Utilities.</strong> The size, type and location of public utilities such as street lights, electric, telephone and gas lines, fire hydrants, etc. shall be approved by the Board.</td>
<td>✓</td>
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| **Section 8.6 required improvements and inspection**  
1. Required improvements include: monuments, street signs, streets, sidewalks, water supply lines, sewage lines, storm drainage culverts. | ✓ | | | | | |
| 2-4 see regulations – refers to inspection requirements of improvements. | ✓ | | | | | |
| 5. Sub-divider shall be required to maintain all streets, culverts and drainage ditches and provide for snow removal and sanding on streets until acceptance of improvements by legislative body. | ✓ | | | | | |
| **Section 8.7 Fire protection** Residential sprinkler in every home or hydrant hooked up to town water system. | ✓ | | | | | |
| **Section 8.8 Green belts**  
1. If subdivision abuts Routes 5 or 202 and all state-aid roads, a strip of land not less than (25) feet and not more than (100) feet in width running along said highway may be required to be set aside as a green belt. Must be shown on prelim, and final plans | ✓ | | | | | |
| 2. If subdivision abuts a town road, a strip of land not less than (25) or greater than (50) feet adjacent to said road may be required to be set aside as a green belt and be shown on prelim. And final plan. | ✓ | | | | | |
| **Section 8.9 Access streets** Where there is an existing or proposed arterial street abutting or in the subdivision, the Board may require marginal access streets. | | ✓ | | | | |
Subdivision Name: Waterboro Woodyards  
Map / Lot #: Map 14, Lot 44T  
Owner: Climate Forest, LLC

### Section 9 Design Standards

#### Section 9.1 Monuments

1. Permanent monuments shall be set at all corners and angle points and at corners of each lot, also at all street intersections and points of curvature.  
   - [✓]  
   - [Not Applicable]

2. Monuments shall be stone, metal or concrete located in the ground at final grade and indicated on final plan.  
   - [Not Applicable]

#### Section 9.2 Street signs

1. Streets which join or align with abutting or neighboring properties shall bear the same name. New street names shall not duplicate nor bear resemblance of existing street names and shall be subject to approval by the E911 coordinator.  
   - [✓]

2. Street signs shall be furnished and installed by the sub-divider. The type, size and location shall be approved by the Board.

#### Section 9.3 Streets

1. Proposed streets shall conform to comprehensive plan prior to submission of preliminary plan.  
   - [✓]

2. Dead end streets may require the reservation of a (50) foot wide easement in the line of the street or in any practical direction to provide for continuation of utilities or access of pedestrian traffic to the next street.  
   - [✓]

3. Construction of streets, sidewalks, bridges, culverts and drainage systems shall conform to applicable standards. See Street Design Standards Ordinance.  
   - [✓]

4. Grades of all streets shall conform in general to the terrain and shall not be less than ½ of 1 percent nor more than 10 percent in residential areas, but in no case more than 3 percent within 50 feet of any intersection.  
   - [✓]

5. Intersections of streets shall be at angles as close to 90 degrees as possible and in no case shall 2 streets intersect at an angle smaller than 60 degrees.  
   - [✓]

5. Where one street intersects another at 60-90 degrees the former street should be curved approaching the intersection.  
   - [✓]
### Subdivision Name: Waterboro Woodyards

**Map / Lot #:** Map 14, Lot 44T  
**Owner:** Climate Forest, LLC

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Submitted By Applicant</th>
<th>Request For Waiver</th>
<th>Not Applicable</th>
<th>Meets standard per Town Planner</th>
<th>Accepted By Board</th>
<th>Waived By Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. A dead end or cul-de-sac shall not exceed 1500 feet in length and shall have a turnaround at the closed end in which the radius of the traveled way shall not be less than 75 feet.</td>
<td>✓</td>
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<td>7. Streets shall be provided with an adequate drainage facility having year round effectiveness.</td>
<td>✓</td>
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<td>8. Reserved right of way for all residential streets shall not be less than 50 feet in width and the paved surface shall not be less than 24 feet; the centerline of the pavement and right of way shall coincide.</td>
<td>✓</td>
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<tr>
<td>9. Side slopes of filled roads shall not be steeper than 1 vertical foot for every 3 horizontal feet. (1 to 3 or 33 and 1/3 percent). They shall be smoothly graded, loamed and seeded to prevent erosion.</td>
<td>✓</td>
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**Section 9.4 Cutting and Removal of Natural Vegetation**

1. Trees, natural undergrowth, topsoil and gravel or other soils shall remain in their natural state at the time of the pre-application inspections by the board.  
2. Cutting is restricted according to this section and required deed restrictions are perpetual. Applies to slopes of 10% or greater.  

**Section 9.5 Storm Water Management Design Standards**

Storm water management plan designed by a registered professional engineer.  
Sent to Southern Maine Regional for final plan submittal requirements  
Peer Review as determined by the planning board.  
Peer review invoiced to applicant.  
All fees owed to the town paid, (peer review, filing fees… etc.)  

**Title 30A MRSA 4404 State Requirements**

1. Will not cause water or air pollution  
2. There is sufficient water supply to support development  
3. Will not cause unreasonable burden on municipal water supply.  
4. Will not cause undue soil erosion  
5. Will not cause unreasonable highway or public road congestion  
6. Will provide for adequate sewage disposal and will not cause a burden on municipal services.  
7. Will not cause a burden on municipal waste disposal

---

Rev March 2021
Subdivision Name: Waterboro Woodyards  
Map / Lot #: Map 14, Lot 44T  
Owner: Climate Forest, LLC

<table>
<thead>
<tr>
<th></th>
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<td>10</td>
<td>Will not have an adverse effect on scenic view or natural beauty of the area.</td>
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<td>11</td>
<td>Conforms with local ordinances and regulations</td>
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<tr>
<td>12</td>
<td>The sub-divider has financial capability and capacity to meet the standards of this section.</td>
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<tr>
<td>13</td>
<td>Will not adversely affect the quality of the water or the shoreline within the watershed of any shoreland zoned property</td>
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<tr>
<td>14</td>
<td>Will not adversely affect the quality or quantity of ground water.</td>
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<td>15</td>
<td>If any of the building lots are within the 100 year flood plain a note must be added to the plan that states any construction will be a minimum of 1 foot above the 100 year flood elevation.</td>
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<td>16</td>
<td>All freshwater wetlands within the subdivision have been identified</td>
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<td>17</td>
<td>Any river, stream or brook within the subdivision has been identified</td>
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<td>18</td>
<td>Will provide for adequate storm water management</td>
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<td>19</td>
<td>Spaghetti lots prohibited within the shoreland zone.</td>
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<td>20</td>
<td>The long term effects will not unreasonably increase the phosphorous content of a great pond</td>
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<td>For any proposed subdivision that crosses town boundaries will not cause unreasonable congestion or unsafe conditions to the use of existing public ways in an adjoining municipality.</td>
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<td></td>
<td>Tax/tree growth information from town Assessor on subject property</td>
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</table>

Notes:
To Whom It May Concern,

By this letter, the undersigned authorizes Berry Huff McDonald Milligan Inc. (BH2M) to act as the agent for the undersigned, Waterboro Woodyards, LLC in the preparation and submission of all Federal, State, and Local permit applications and relevant documents and correspondence for all necessary permits for the construction of a residential subdivision on the Town of Waterboro Assessors Map 14 Lot 44T in Waterboro, ME, to attend meetings and site visits; to appear before all boards, commissions, and committees, and to provide such other services as are necessary and appropriate in furtherance of the aforementioned project.

Sincerely,

[Signature]

[Printed Name and Title]

[Date]
ATTACHMENT 1

FIGURES (USGS, TAX, & FEMA Maps)
ATTACHMENT 2
PARCEL DEED &
PURCHASE AND SALE
AGREEMENT
LES BOIS CARTHAGE, INC., a Canadian corporation with an address of 103 Russell Road, Madison, Maine 04950, for consideration paid, grants to CLIMATE FOREST, LLC, a Maine limited liability company with an address of 28 Turkey Lane, Porter, Maine 04068, with QUITCLAIM COVENANTS, those parcels of woodlands located in the Town of Waterboro, County of York and State of Maine, described below. References here to “JGS” shall mean James G. Simonds, to “JPS” shall mean Joan P. Simonds, and to the “Simonds Trust” shall mean the Trust under the Will of James P. Simonds. Record references are to the York County Registry of Deeds.

The North Waterboro Tract, being one contiguous tract (save as divided by roads) lying on the southerly side of Little Ossipee River, on the easterly side of the Emery Road, on the northwesterly side of the Chadbourne Ridge Road, on the westerly side of the Edgecomb Bridge Road, and also including: (a) those several contiguous lots lying on the westerly side of the Edgecomb Bridge Road and the northerly side of the Old Portland Road, and (b) the parcel enclosed within the triangle within the roads at the junction of the Chadbourne Ridge Road, the Old Portland Road, and the Edgecomb Bridge Road; being all of item XIV, all of item XV, all of item XVI and part of item XVII, and all of item XIX in deed to the Simonds Trust from the Estate of JGS 12-8-77, Book 2293, Page 150; and further identified as the parcels conveyed to JGS by the following deeds, namely: (a) from Ida M. Cressy, 3-27-54, Book 1242, Page 578; (b) from Frank E. Kennett et al., 5-4-55, Book 1288, Page 163 as corrected by curative deed, 9-23-66, Book 1740, Page 110; less those portions conveyed by JGS in three deeds, one to Jonathan Simonds et al., 12-28-66, Book 1751, Page 38; the second to Jonathan Simonds, et al., 1-4-67, Book 1752, Page 390; and the third to Lake Arrowhead Estates, Inc., 12-12-69, Book 1861, Page 424; (c) from Frank B. Johnson et al., 11-24-52, Book 1220, Page 566; (d) from John E. Hanscom, 12-12-52, Book 1222, Page 1; (e) from the Town of Waterboro, 12-15-51 as the 2nd parcel in Book 1230, Page 110; (f) from Austin B. Carpenter et al., 3-2-53, Book 1236, Page 556, less that portion of the second parcel therein located southerly of the Chadbourne Ridge Road and the Old Portland Road (the same being included in the Lewis Tract of Simonds Trust); (g) from Otto H. Brandt, 8-3-53, Book 1246, age 277; (h) from Lewis Lumber Co., 4-6-54, Book 1260, Page 7; (i) from Jesse L. Day, et al., 7-13-54, Book 1262, Page 150; (j) from Luella H. Allen, 7-26-54, Book 1262, Page 230; less those portions and/or easements conveyed by JGS in the following three deeds — the first to Central Maine Power Co., 9-13-54, Book 1278, Page 264, the second to Jonathan Simonds, et al., 12-28-66, Book 1751, Page 38, the third to Jonathan Simonds, et al., 1-4-67, Book 1752, Page 390; (k) from Etta W. Scammon, 5-24-56, Book 1312, Page 271; (l) from W. Leslie Goodwin, 10-11-58, Book 1381, page 104; (m) from Wilbur L. Durgin, et al., 4-17-53, as the first, third and part of the second parcels in Book 1231, Page 119, less the portion thereof conveyed by JGS to Lake Arrowhead Estates, Inc., 12-12-69, Book 1861, Page 424; (n) from Donald Kennedy, et al., 2-1-60, as the second parcel in Book 1424, Page 367; (o) from Ansel S. Davis, 10-5-62, Book 1508, Page 5, less that portion thereof conveyed by JGS to Lake Arrowhead Estates, Inc., 12-12-69, Book 1861, Page 424; (p) from John E. Hanscom, 7-
15-66, Book 1731, Page 287; (q) from L.L. Bradbury Corp. by two deeds, the first 12-26-67, Book 1796, Page 532 and the second 12-4-69, Book 1861, Page 180; (r) from L.L. Bradbury Corp. as the third, fourth and sixth items in deed dated 2-29-68, Book 1800, Page 163; (s) see also tax release to JGS covering part of said North Waterboro Tract from the Town of Waterboro, 12-5-69, Book 1861, Page 422. Said North Waterboro Tract also includes that parcel Conveyed to the Simonds Trust by deed of JPS, 12-4-80, Book 2738, Page 289.

THE above described premises are subject to flowage and other rights as set forth in deed dated November 2, 1922 and recorded in Book 710, Page 182 and flowage and other rights as set forth in deed dated May 4, 1955 and recorded in Book 1288, Page 163.

The above described premises are subject to rights and privileges reserved by Jeremiah M. Mason in deed dated September 18, 1880 and recorded in Book 377, Page 206.

The above described premises are subject to flowage rights granted to Central Maine Power Company by deed dated July 22, 1954 and recorded in Book 1278, Page 5.

The above described premises are subject to flowage rights granted to Central Maine Power Company in deed dated September 13, 1954 and recorded in Book 1278, Page 264.

The Lewis Tract, being one contiguous tract (save as divided by roads) lying on the southeasterly side of the Chadbourne Ridge Road, on the southerly side of the Old Portland Road, on both sides of Lewis Lane, and on the northerly side of the road from the Gray Meeting House to West Buxton, and being part of item XVII and all of item XVIII in deed to the Simonds Trust from the Estate of JGS, 12-8-77, Book 2293, Page 150; and further identified as the parcels conveyed to JGS by the following deeds, namely: (a) from Alfred Whitehouse, 4-26-52, Book 1211, Page 97; (b) from Edna L. Ham, 8-14-51, Book 1201, Page 470; (c) from Nettie V. Johnson, et al., 11-16-51, as the second parcel in Book 1197, Page 346; (d) from the Assignees of L.L. Clark Lumber Co., 12-12-51, Book 1205, Page 135; (e) from the Trustee u/w of Edward B. Eames, 1-8-52, Book 1205, Page 191; (f) from Byron Dodge, 9-17-52, Book 1216, Page 520 (see also corrective deed from L.L. Bradbury Corp., 12-4-69, Book 1861, Page 181); (g) from Wilbur L. Durgin, et al., 4-17-53, as part of the second parcel in Book 1231, Page 119; (h) from Etta W. Seammon, 4-18-53, Book 1231, Page 174; (i) from Philip N. Bean, 3-9-56, Book 1312, Page 54; (j) from W. Leslie Goodwin, et al., 9-25-56, Book 1320, Page 128; (k) from Otto H. Brandt, 6-13-58, Book 1372, Page 98; (l) from Diamond Gardner Corp., 8-28-58, Book 1388, Page 40; (m) from Donald Kennedy, et al., 2-1-60, as the first and third parcels in Book 1424, Page 367; (n) from John E. Hanscom, 9-7-62, Book 1522, Page 105; (o) from L.L. Bradbury Corp., 8-16-63, Book 1562, Page 123; (p) from L.L. Bradbury Corp., 2-29-68, as the first, second (both parts) and fifth parcels in Book 1800, Page 163; (q) see also tax release covering parts of the Lewis Tract from the Town of Waterboro, 12-5-69, Book 1861, Page 422. The Lewis Tract also includes that portion of the second parcel acquired by JGS from Austin B. Carpenter, et al., by deed dated 3-2-53, Book 1236, Page 556, which lies southerly of the Chadbourne Ridge Road and the Old
Portland Road (the remainder of said second parcel being included in the North Waterboro Tract of Simonds Trust).

The above described premises are also subject to the burying ground and easement thereto reserved in deed dated July 31, 1920 and recorded in Book 745, Page 339.

The above described premises are also subject to a right of way reserved in deed dated May 2, 1928 and recorded in Book 787, Page 429.

Washout Tract, being one contiguous tract lying southerly of the road from the Gray Meeting House to West Buxton, on both sides of the New Orchard Road and on the northerly side of the Power Line Road, being all of item XX in deed to the Simonds Trust from the Estate of JGS, 12/8/77, Book 2293, Page 150; and further identified as the parcels conveyed to JGS by the following deeds; namely: (a) from the Assignees of L.L. Clark Lumber Co., 11-8-51, Book 1192, Page 551; (b) from Nettie V. Johnson, et al., 11-16-51, as the first parcel in Book 1197, Page 346; (c) from John E. Hanscom, 12-7-51, Book 1201, Page 561; (d) from Nettie V. Johnson, et al., 4-23-52, Book 1205, Page 570; (e) from Amy P. Roberts, et al., 8-6-52, Book 1214, Page 258; (f) from Theodore A. Plummer; 8-2-54, Book 1260, Page 347; (g) from L.L. Bradbury Corp., 12-11-51, Book 1199, Page 467; (h) from Joyce Carll, et al., 3-1-56, Book 1312, Page 456; (i) from Florence W. Martin, 1-23-63, Book 1537, Page 481; (j) from Clinton H. Wakefield, 5-25-65, Book 1531, Page 326; (k) see also tax release covering part of the above from the Town of Waterboro, 12-5-69, Book 1861, Page 422. Excepting from said Washout Tract the premises conveyed by RII Timberland Partners 2, L.P. to Stephen M. Kasprzak by deed dated December 27, 1995 and recorded in the York County Registry of Deeds in Book 7674, Page 37.

**Excepting and reserving from this conveyance the following out conveyances:**

Deed from Les Bois Carthage, Inc. to Michelle Millette and Tyson Millette dated June 23, 2021 and recorded in the York County Registry of Deeds in Book 18714 at Page 42.

Deed from Les Bois Carthage, Inc. to Shawn P. Bull and Rachel A. Bull dated June 22, 2021 and recorded in the York County Registry of Deeds in Book 18713 at Page 92

Deed from Les Bois Carthage, Inc. to Gary Grandstaff and Leah Grandstaff dated June 29, 2007 and recorded in the York County Registry of Deeds in Book 15266 at Page 617.

Deed from Les Bois Carthage, Inc. to Normand Berube Builders, Inc. dated August 20, 2004 and recorded in the York County Registry of Deeds in Book 14200 at Page 689.

Deed from Les Bois Carthage, Inc. to Victor Arredondo dated June 16, 2003 and recorded in the York County Registry of Deeds in Book 13040 at Page 293.
Also excepting and reserving the following described parcel of land from this conveyance:

A 5.04 acre parcel of land located on the easterly side of Chadbourne Ridge Road, said parcel being located northerly of, but not adjacent to, the Lords Road, which parcel is further described as follows: Commencing at an iron pin set in the easterly sideline of the Chadbourne Ridge Road, which pin is set in a stone wall; thence S 59° 13’ 11” E a distance of 726.00 feet to a point; thence N 20° 47’ 45” E a distance of 304.61 feet to a point; thence N 59° 13’ 11” W a distance of 403.25 feet to a point which is marked by a 1” galvanized pipe standing 2 ½ feet tall; thence continuing N 59° 13’ 11” W a distance of 322.75 feet to an iron pin set in the easterly sideline of the Chadbourne Ridge Road; thence S 24° 27’ 16” W a distance of 181.36 feet to a point; thence S 15° 26’ 81” W a distance of 124.16 feet to the point of beginning. Specifically included in this reserved parcel is all land, if any, located between the westerly sideline of the above described parcel and the center line of the Chadbourne Ridge Road. Reference is made to a “Detail Sheet and Boundary Survey” dated July 20, 1995 and prepared by Sebago Technics.


WITNESS my hand this 13th day of June, 2022.

Les Bois Carthage, Inc.

By Paul Fortin
Vice President

STATE OF MAINE
COUNTY OF SOMERSET

July 13, 2022

Personally appeared the above named Paul Fortin, Vice President of Les Bois Carthage, Inc. and
acknowledged the above instrument to be his free act and deed in said capacity and the free act and deed of said corporation.

Before me,

[Signature]

Maine Attorney at Law

Philip G. Mohlar, Bar # 7093
Type or print name
AGREEMENT FOR THE PURCHASE AND SALE OF REAL ESTATE

AGREEMENT made and entered into this 28 day of November, 2023, by and between Climate Forest, LLC, a Maine Limited Liability Company with a mailing address of 6 Cumberland Street, Brunswick, ME 04011 ("Seller") and Waterboro Woodyards, LLC of 28 Wild Turkey Lane, Porter Maine 04068 ("Buyer").

WITNESSETH AS FOLLOWS:

1. PURCHASE AND SALE. Seller agrees to sell and Buyer agrees to buy, on the terms and conditions hereinafter set forth certain real estate with buildings and improvements thereon in the approximate amount of 40 +/- acres located in Waterboro, Maine, all as more particularly described as a portion of the attached Exhibit A (hereinafter the “Premises”). All day count calculations and representations are expressed in calendar days unless otherwise specified. The Parties are currently permitting the Premises for an expected subdivision. The parties hereto understand the final acreage to be conveyed and related purchase price will be adjusted once the final acreage of the subdivision is finalized.

2. PURCHASE PRICE. Subject to any adjustments and prorations hereinafter described, Buyer agrees to pay for the Premises the sum of $74,080.00. The Purchase Price shall be adjusted depending on the final acreage of the approved subdivision.

The purchase price shall be paid to Seller at closing in immediately available funds by certified check or checks or by wire transfer in accordance with wiring instructions provided by Seller.

3. TITLE. Seller shall convey the Premises at the closing to Buyer by Quit Claim Deed with Covenant, free and clear of all title defects, liens and encumbrances. Seller shall convey all leases, personal property upon the real estate, rentals and related income by proper bill of sale and assignment thereof. Buyer prior to closing shall give Seller written notice of any alleged title defects in the Premises and any unacceptable liens, easements or encumbrances affecting the Premises. Seller shall, in good faith, undertake to clear any alleged title defects, unacceptable liens, easements and encumbrances identified by Buyer. In the event that Seller is unable to cure any such title defects within thirty (30) days after written notice from Buyer, it shall so notify Buyer and continue its good faith efforts to clear any title defects. Seller shall up to an additional ninety (90) days to clear title. Every day it takes Seller to clear title beyond the initial thirty (30) day period shall be added to the Due Diligence Period. At any time following the initial thirty (30) day title cure period this contract may be terminated by Buyer by giving Seller written notice and the Deposit shall be returned to Buyer and neither party shall have any further obligation hereunder. Buyer has the right to accept title uncured if the Seller can not clear the identified title defect.

4. CLOSING. The closing shall take place at a mutually convenient place and time thirty (30) days following Buyer’s notification to Seller that it is waiving rights under Section 10.1 of this
Agreement, or if the Buyer and the Seller shall mutually agree in advance and in writing, to another date, time and place. At the closing, Seller shall execute and deliver to Buyer, against payment of the purchase price, a Quit Claim Deed with Covenant to the Premises in accordance with Maine law (the "Deed").

Seller further agrees to execute and deliver to Buyer at the closing the following documents: (i) a Certificate of Non-Foreign Status (as required by Internal Revenue Service regulations); (ii) a title insurance "Seller's Affidavit" regarding mechanics liens and persons in possession; (iii) an affidavit regarding underground storage tanks (as required by Maine Law) and (iv) any other documents required by Maine law and custom.

5. **RISK OF LOSS, DAMAGE AND INSURANCE.**

(a) All risk of loss to the Premises prior to the closing shall be borne by Seller, except and unless the loss was caused by Buyer. Seller shall keep the Premises insured against fire and other extended coverage risks until the closing.

6. **INSPECTION/DELIVERY OF INFORMATION.** Buyer may enter on to the Premises at reasonable times prior to the closing in order to inspect the Premises, conduct surveys, engineering studies and test borings and to do such things as are reasonably necessary, including pre-closing marketing with respect to its due diligence and acquisition of the Premises. In the event Buyer does not purchase the Premises it agrees to provide copies of all surveys, studies and inspections to Seller and not to disclose the results thereof to any third party except to prospective lenders and professionals working with the Buyer and except as may be required by applicable law. Buyer agrees to and does hereby indemnify and hold harmless Seller against any loss, cost, damage, claims or expense which may arise from Buyer’s activities at the Premises.

7. **POSSESSION OF THE PREMISES.** The Premises shall be delivered to the Buyer at the time of the closing free and clear of all tenancies or occupancies by any person or entity.

8. **REPRESENTATIONS OF SELLER.** Seller represents to Buyer the following:

(a) Seller has not received any notices of any violation at the Premises of any applicable laws, ordinances, or environmental regulations.

(b) All outstanding bills and/or accounts payable concerning the Premises are either paid or will be paid prior to or at the time of closing.

(c) Buyer acknowledges that except as specifically set forth in this paragraph, Seller makes and has made no covenant, representation or warranty as to the suitability of the Premises for any purpose whatsoever or as to the physical condition of the Premises. Seller is not aware of any environmental contamination of the Premises.
9. **DEFAULT AND REMEDIES.** In the event that Buyer fails to close hereunder for a reason other than the default of Seller, Seller's sole remedy shall be the termination of this Agreement. In the event that Seller fails to close hereunder for a reason other than the default of Buyer, Buyer's sole remedy shall be the termination of this Agreement.

10. **CONDITIONS PRECEDENT TO BUYER'S OBLIGATION TO CLOSE.** The obligation of Buyer to close is subject to the satisfaction at or before the closing of all of the following conditions:

   (a) Buyer shall obtain confirmation satisfactory in the sole discretion of Buyer that the Premises will support both financially and physically its proposed development and that there are no environmental concerns.

   (b) The Premises shall be in the same or better condition at the time of closing as it is in as of the date of this Agreement, normal wear and tear excepted.

   (c) Title to the Premises is free and clear of all title defects, liens and encumbrances.

10.1. **DUE DILIGENCE AND CONTINGENCY PERIODS.** Buyers obligations to close are contingent upon gaining approval from the Town of Waterboro for their proposed subdivision and its satisfactory due diligence concerning all aspects of the property and potential subdivision.

11. **BROKERAGE.** Seller and Buyer represent, warrant and acknowledge neither Seller nor Buyer have engaged the services of a real estate broker.

12. **ADJUSTMENTS, PRORATIONS AND CLOSING COSTS.**

   (a) Real estate taxes, assessments, rentals, common area maintenance charges and utilities shall be prorated as of the closing.

   (b) The Maine real estate transfer tax shall be shared equally by Buyer and Seller.

   (c) The recording fee for the deed of conveyance will be paid by Buyer.

   (d) A portion of the purchase price shall be withheld at the closing by Buyer if required by 36 M.R.S.A. § 5250-A.

13. **GENERAL PROVISIONS.** This instrument may be executed in multiple originals and electronic versions and is to be construed under the laws of Maine. The use of the masculine gender shall include the feminine and neuter where appropriate. If two or more persons are named herein as Buyer, their obligations hereunder shall be joint and several. Time is of the essence of this Agreement. This Agreement is binding upon and inures to the benefit of the parties hereto, their respective heirs, successors and assigns, and may be canceled, modified, or amended only by a
writing executed by the parties hereto or their legal representatives. Buyer may assign this Agreement. All notices, demands and other communications hereunder shall be in writing and shall be deemed to have been duly given on the date of service if served personally on the party to whom notice is to be given or on the date of mailing if mailed by first class mail. If mailed, all notices are to be sent by first class mail, postage prepaid, certified, return receipt requested, addressed as follows:

TO SELLER:
Climate Forest, LLC
6 Cumberland Street
Brunswick Maine 04011

TO BUYER:
Waterboro Woodyards, LLC
28 Wild Turkey Lane
Porter Maine 04068

Either party may change its address for purposes of this paragraph by giving the other party notice of the new address in the manner described herein. If any provision of this Agreement is determined to be invalid or unenforceable, it shall not affect the validity and enforcement of the remaining provisions hereof. This Agreement sets forth the entire agreement between the parties and there are no other representations, agreements or understandings with respect to the subject matter of this Agreement.

14. EFFECTIVE DATE OF AGREEMENT. The Effective Date of this Agreement shall be the date last signed below by the Buyer or Seller. Buyer's offer to purchase the Premises under the terms as set forth in this Agreement may be withdrawn unless both Seller executes the Agreement within three (3) days of the date signed by Buyer.

IN WITNESS WHEREOF, Seller and Buyer have executed this Agreement as of the date first above written.

WITNESS:

SELLER

[Signature]
Date: 11/28/2023
By: 
Its:

BUYER

[Signature]
Date: 11/28/2023
By: 
Its:
SCHEDULE OF EXHIBITS
Exhibit A – Legal Description
ATTACHMENT 3
ABUTTER’S LIST
ABOUDE MICHAEL R    PO BOX 371    NORTH WATERBORO, ME  04061
CHAIDBOURNE EARLENE AHLQUI    C/O ADAM COTE    14 WINDY RIDGE LN    SPRINGVALE, ME  04083
DUBOVK MELISSA A    PO BOX 422    N WATERBORO, ME  04061

ALLAIRE ANTHONY B & APRIL    PO BOX 24665    W PALM BEACH, FL  33146
CHEVALIER JOSHUA E & JULI    171 BEAVER DAM ROAD    NORTH WATERBORO, ME  04061
DUMOND, CYNTHIA A    371 CHAIDBOURNE RIDGE ROAD    NORTH WATERBORO, ME  04061

ALLEN FRANK R    PO BOX 25    NORTH WATERBORO, ME  04061
CLIMATE FOREST LLC    117 MAIN STREET    CORNISH, ME  04020
FAGNANT, DAVID    64 HEARN ROAD    SCARBOROUGH, ME  04074

AZZARATTA, MELISSA M    12 ALPINE TERR    N WATERBORO, ME  04061
CURRIER BRIAN A    141 BEAVER DAM RD    N WATERBORO, ME  04061
FECTEAU KARA    57 NORTHLAND RD    N WATERBORO, ME  04061

BILBREY TARON A    18 HIDEAWAY CIRCLE    NORTH WATERBORO, ME  04061
DAMON, CRAIG M    PO BOX 562    WATERBORO, ME  04087
FRAZIER RAYMOND JR    PO BOX 357    NORTH WATERBORO, ME  04061

BRAGDON HARRY R JR    32 ALPINE TERRACE    NORTH WATERBORO, ME  04061
DAVISON LINDA E    81 BEAVER DAM ROAD    NORTH WATERBORO, ME  04061
GAGNON CHRISTOPHER J    11 SUNRISE LANE    NORTH WATERBORO, ME  04061

BROTE KIRSTIE A    2821 BOTTICELLI DR    HENDERSON, NV  89052-3109
DEMERITT, WILLIAM A    390 WATER VILLAGE ROAD    OSSIPPEE, NH  03864
GAGNON, ASHLEY M    158 BEAVER DAM ROAD    NORTH WATERBORO, ME  04061

BURNS, CHELSI    PO BOX 376    NORTH WATERBORO, ME  04061
DICENTES JON M    147 BEAVER DAM ROAD    NORTH WATERBORO, ME  04061
GAUER PAUL E    85 BEAVER DAM ROAD    NORTH WATERBORO, ME  04061

CAFFARELLA ARTHUR F    37 HESPER STREET    SAUGUS, MA  01906
DOLLOFF, DONALD T JR    56 BRADEEN ROAD    NORTH WATERBORO, ME  04061
GONDEK, JENNIFER L    32 BRADEEN ROAD    NORTH WATERBORO, ME  04061

CARMONA, MARIANO    48 BEAVER DAM ROAD    NORTH WATERBORO, ME  04061
DONAHOE KEVIN J    63 BEAVER DAM ROAD    NORTH WATERBORO, ME  04061
GRANDSTAFF GARY D    427 CHAIDBOURNE RIDGE ROAD    N WATERBORO, ME  04061
HALL NATHAN W
PO BOX 14
WATERBORO, ME  04087

KANE, KRISTEN M
73 BEAVER DAM RD
N WATERBORO, ME  04061

MASALSKY, DENISE, TRUSTEE
528 CIRCLEWOOD DRIVE
VENICE, FL  34293

HALL NATHAN W & TAMMY M
7255 BAYMEADOWS WAY
JACKSONVILLE, FL  32256

KILMAS, DEBORAH S
61 NORTHLAND ROAD
NORTH WATERBORO, ME  04061

MCFARLAND TIMOTHY
129 TEN HILLS RD
SOMERVILLE, MA  02145

HAMPTON, SARA F
64 BEAVER DAM RD
NORTH WATERBORO, ME  04061

LAMB, STEPHANIE
2 HIDEAWAY CIRCLE
NORTH WATERBORO, ME  04061

MCLAUGHLIN DANIEL W
395 WHITMAN STREET
HANSON, MA  02341

HANSCOM LINDA M
265 CHADBOURNE RIDGE RD
NORTH WATERBORO, ME  04061

LAROCHE DONALD
59 WASHINGTON ST
RUMFORD, ME  04276-1923

MCMANN KATHERINE M
161 BEAVER DAM ROAD
N WATERBORO, ME  04061

HASSELSTROM RUSSELL E
35 DAWSON ROAD
WORCESTER, MA  01602

LENZEN WILLIAM J
15 SUNRISE LANE
NORTH WATERBORO, ME  04061

MINOR JAMES
152 BEAVER DAM RD
N WATERBORO, ME  04061

HERRICK, ANGELINE T
151 BEAVER DAM ROAD
NORTH WATERBORO, ME  04061

LEPROHON, ANDREW J
16 LORDS ROAD
NORTH WATERBORO, ME  04061

OHARA SHANE P (JT)
97 BEAVER DAM RD
NORTH WATERBORO, ME  04061

HERRIN THOMAS R
119 MAYFAIR WAY
N WATERBORO, ME  04061

LES BOIS CARTHAGE INC
103 RUSSELL RD
MADISON, ME  04950

OHMAN SCOTT D
359 CHADBOURNE RIDGE RD
N WATERBORO, ME  04061

JELLISON PATRICIA J (JT)
387 CHADBOURNE RIDGE RD
NORTH WATERBORO, ME  04061

LIBBY LINDA J
122 MAYFAIR WAY
NORTH WATERBORO, ME  04061

PAGE CATHY A
165 BEAVER DAM ROAD
NORTH WATERBORO, ME  04061

JONES GREGORY B
500 CHADBOURNE RIDGE ROAD
NORTH WATERBORO, ME  04061

LIBBY WARREN I
399 CHADBOURNE RIDGE ROAD
NORTH WATERBORO, ME  04061

PARADIS KAREN M
14 LORDS ROAD
NORTH WATERBORO, ME  04061

JUNTURA BERNABE W
144 BEAVER DAM ROAD
N WATERBORO, ME  04061

LUMB WILLIAM
PO BOX 632
SACO, ME  04072

PELCHAT FAMILY LIVING TRU
352 CHADBOURNE RIDGE ROAD
NORTH WATERBORO, ME  04061
PHELPS AIMEE C
135 BEAVER DAM ROAD
NORTH WATERBORO, ME 04061

WINSLow STEPHEN C
43 BEAVER DAM ROAD
NORTH WATERBORO, ME 04061

PIERCE CHERYL L (JT)
8 HIDEAWAY CIRCLE
NORTH WATERBORO, ME 04061

WO0D, BRITTANI L
12 SUNRISE LANE
NORTH WATERBORO, ME 04061

REARDON, WHITNEY N
59 BEAVER DAM RD
N WATERBORO, ME 04061

WYMAN JACOB D (JT)
14 HIDEAWAY CIRCLE
NORTH WATERBORO, ME 04061

ROCHE, STEPHEN P
138 BEAVER DAM ROAD
NORTH WATERBORO, ME 04061

STOCCARD ANDREW M
113 ROSEMONT AVE
NO WATERBORO, ME 04061

SULLIVAN THOMAS E
11 HIGHLAND STREET
HOPKINTON, MA 01748

TOWNSEND MARTIN J (JT)
15 BRADEEN RD
N WATERBORO, ME 04061

VENTURO ROBYN E
155 BEAVER DAM ROAD
NORTH WATERBORO, ME 04061

WHITAKER, SAMUEL A
101 BROOK STREET, APT B
SANFORD, ME 04073

WILDER JANIS C
PO BOX 133
NORTH WATERBORO, ME 04061
ATTACHMENT 4
LETTER OF GOOD STANDING
Information Summary

This record contains information from the CEC database and is accurate as of: Tue Oct 24 2023 16:22:47. Please print or save for your records.

<table>
<thead>
<tr>
<th>Legal Name</th>
<th>Charter Number</th>
<th>Filing Type</th>
<th>Status</th>
</tr>
</thead>
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<tr>
<td>WATERBORO WOODYARDS, LLC</td>
<td>20246209DC</td>
<td>LIMITED LIABILITY COMPANY (DOMESTIC)</td>
<td>GOOD STANDING</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Filing Date</th>
<th>Expiration Date</th>
<th>Jurisdiction</th>
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<tbody>
<tr>
<td>05/12/2023</td>
<td>N/A</td>
<td>MAINE</td>
</tr>
</tbody>
</table>

Other Names (A=Assumed ; F=Former)

NONE

Clerk/Registered Agent

PAUL E. PECK, ESQ.
C/O DRUMMOND & DRUMMOND, LLP
ONE MONUMENT WAY
PORTLAND, ME 04101

Click on a link to obtain additional information.

List of Filings
Obtain additional information:

Certificate of Existence

View list of filings

Short Form without amendments ($30.00)
Long Form with amendments ($30.00)

You will need Adobe Acrobat version 3.0 or higher in order to view PDF files. If you encounter problems, visit the troubleshooting page.

If you encounter technical difficulties while using these services, please contact the Webmaster. If you are unable to find the information you need through the resources provided on this web site, please contact the Division of Corporations, UCC & Commissions Reporting and Information Section at 207-624-7752 or e-mail.

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ATTACHMENT 5
WETLAND STUDY BY FLYCATCHER
MEMO

Date: June 4, 2023  
To: Steve Blake (BH2M)  
From: Rodney Kelshaw (Flycatcher LLC)  
CC: Meg Thurrell (Flycatcher LLC)  
Subject: Chadbourne Ridge Road, Waterboro – Natural Resources Delineation Results

In April of 2023, scientists from Flycatcher LLC (Flycatcher) completed a wetland and waterbody sketch and vernal pool survey on approximately 110 acres off Chadbourne Ridge Road in Waterboro, Maine (Figure 1, Attachment 1). Based on the results of the initial survey effort the focus area was narrowed down to the southern portion of the property along Chadbourn Ridge Road, encompassing approximately 34.5 acres (the Survey Area). Flycatcher completed a more detailed wetland and waterbody survey within this Survey Area. The attached Delineated Natural Resources Map (Figure 2, Attachment 1) depicts both the entire parcel (in purple) and wetland delineation Survey Area (in yellow) boundaries, and results of our survey. Photographs of representative mapped natural resources are presented in Attachment 2. Attachment 3 contains the Maine State Vernal Pool Assessment Forms.

Methods

Wetlands
Wetland delineations were conducted in accordance with the US Army Corps of Engineers (USACE) Wetland Delineation Manual1 and the Northcentral and Northeast Regional Supplement (Version 2.0).2 The manual and supplement provide a repeatable methodology to identify wetland areas and are the accepted wetland delineation methodology of the Maine Department of Environmental Protection (MDEP) and the USACE.

The Survey Area was investigated by wetland scientists via a meander survey. When a location appeared to have the requisite three factors that constitute a wetland (i.e., hydrophytic vegetation, indicators of hydrology, and the presence of hydric soils) an investigation was undertaken. The scientist analyzed site-specific data to determine if the area met the criteria to be considered a wetland. When wetlands were identified, the boundaries of the wetlands were marked with pink survey flagging with the word “Wetland Delineation” and numbered in sequential order.

Watercourses
Watercourse identification followed the Natural Resources Protection Act (NRPA) definition of a “river, stream or brook” (Section 480-B).3 If a watercourse meeting the above definition was observed, blue survey

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flagging was hung along the centerline (for watercourses less than six feet in width) or along the top of the bank (for watercourses six feet or wider).

**Vernal Pool Survey**

To survey for vernal pools, the definitions provided in Chapter 335 of the NRPA\(^4\) and the USACE Maine General Permit\(^5\) were used. Vernal pools are temporarily/seasonally flooded wetlands that provide the primary breeding habitat for vernal pool indicator species, and a host of secondary faunal species. Wood frogs (*Lithobates sylvaticus*) spotted salamanders (*Ambystoma maculatum*), blue spotted salamanders (*Ambystoma laterale*), and fairy shrimp (*Eubranchipus spp.*) are vernal pool indicator species that depend on vernal pools to complete their life cycle. Productivity of breeding vernal pool species is the primary metric used by regulatory authorities to assess vernal pool quality; thus, vernal pools must be assessed during the breeding season (generally mid-April to late-May).

In Maine, a subset of vernal pools that exhibit a high level of breeding productivity are regulated as “Significant Vernal Pools” and are afforded protection under the Natural Resource Protection Act (NRPA). If a project triggers United States Army Corps of Engineers (USACE) jurisdiction, the USACE may regulate vernal pool habitats.

Vernal pool surveys were completed during the spring amphibian breeding season in accordance with the Maine Association of Wetland Scientists (MAWS) Vernal Pool Technical Committee Vernal Pool Survey Protocol (April 2014)\(^6\). For each vernal pool habitat, the location of the spring high water line was geolocated and biologists collected photos and completed the State of Maine Vernal Pool Assessment Form. Due to the timing of amphibian breeding (salamanders tend to breed slightly later than wood frogs), two site visits to each pool were completed to accurately assess pool productivity.

**GPS Location**

Features (e.g., wetland boundaries) were geolocated using a mapping grade global positioning system (“GPS”) unit (Juniper Systems’ Geode GPS Antenna and ESRI’s ArcGIS Collector software). The data were collected using real-time correction and standards specified by the manufacturer to achieve sub-meter accuracy. The data was exported to CAD drawing file format (.dwg) and provided to you via email.

**Results**

The Survey Area is located northwest of Chadbourne Ridge Road and northeast of Bradeen Road in Waterboro, Maine. The survey area is forested. Topography on-site does not change drastically; however it is highest along Chadbourne Ridge Road and slopes downwards as the Survey Area progresses north.

**Wetlands**

Five (5) wetlands were mapped within the Survey Area. Summary descriptions of wetlands are provided in Table 1, below. The location of wetlands mapped within the Survey Area are depicted on Figure 2, in Attachment 1. An Army Corps of Engineers paired data plot is also included as Attachment 4.

**Watercourses**

Six (6) watercourses were mapped within the Survey Area. Summary descriptions are provided in Table 2 below. The location of each watercourse is depicted on Figure 2, in Attachment 1.

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\(^4\) MEDEP. *Significant Wildlife Habitat.* Chapter 335, Section 9.


**Vernal Pools**

Ten vernal pools were mapped within the 110 acre parcel. Two (2) of the ten vernal pools were within the refined Survey Area. A summary description of each vernal pool is provided in Table 3 below and the Maine State Vernal Pool Assessment Forms and photos are provided in Attachment 3. The location of each vernal pool is depicted on Figure 2, in Attachment 1.

Thank you for the opportunity to assist you with natural resource identification for this project. If you have any questions regarding the results provided in this report, please do not hesitate to contact me.

Sincerely,

Rodney Kelshaw

Managing Partner/Scenario Scientist
<table>
<thead>
<tr>
<th>Resource ID</th>
<th>Cowardin Classification</th>
<th>Hydrology Indicators</th>
<th>Dominant Vegetation</th>
<th>Hydric Soil Indicators</th>
<th>WoSS²</th>
<th>Description &amp; Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>W-CWF-1</td>
<td>PFO</td>
<td>Surface Water (A1), High Water Table (A2), Saturation (A3), Sediment Deposits (B2), Water-Stained Leaves (B9), Drainage Patterns (B10), Geomorphic Position (D2), Shallow Aquitard (D3)</td>
<td>Red maple (<em>Acer rubrum</em>), balsam fir (<em>Abies balsamea</em>), black ash (<em>Fraxinus nigra</em>), yellow birch (<em>Betula alleghaniensis</em>), eastern hemlock (<em>Tsuga canadensis</em>), eastern white pine (<em>Pinus strobus</em>), American elm (<em>Ulmus americana</em>), speckled alder (<em>alnus incana</em>), highbush blueberry (<em>Vaccinium corymbosum</em>), broad-leaf meadowsweet (<em>Spirea latifolia</em>), sensitive fern (<em>Onoclea sensibilis</em>), cinnamon fern (<em>Osmundastrum cinnamomeum</em>), eastern marsh fern (<em>Thelypteris palustris</em>), bluejoint (<em>Calamagrostis canadensis</em>), eastern rough sedge (<em>Carex scabrata</em>)</td>
<td>Black Histic (A3), Depleted Below Dark Surface (A11)</td>
<td>Yes, Contains significant wildlife habitat and portions within 25 ft of a watercourse. Large, forested swale complex that extends through lowlands within the Survey area and continues across a portion of the remaining property as sketched wetland. A primary hydrology source is side slope groundwater discharge. Contains vernal pools and several watercourses.</td>
<td></td>
</tr>
<tr>
<td>W-MFT-1</td>
<td>PFO</td>
<td>Surface Water (A1), High Water Table (A2), Saturation (A3), Water-Stained Leaves (B9), Drainage Patterns (B10), Geomorphic Position (D2), Shallow Aquitard (D3), Microtopographic relief (D4)</td>
<td>Red maple, yellow birch, American elm, swamp white oak (<em>Quercus bicolor</em>), green ash (<em>Fraxinus pennsylvanica</em>), white ash (<em>Fraxinus americana</em>), eastern white pine, highbush blueberry, broad-leaf meadowsweet, sensitive fern, cinnamon fern, royal fern (<em>Osmunda claytoniana</em>), eastern marsh fern, New York fern (<em>Parathelypteris noveboracensis</em>), lamp rush (<em>Juncus effusus</em>), false lily-of-the-valley (<em>Maianthemum canadense</em>), uptight sedge (<em>Carex stricta</em>)</td>
<td>Thick Dark Surface (A12)</td>
<td>Yes, portions within 25 ft of a watercourse. Forested wetland with side slope groundwater discharge, located in the Survey Area southeast corner and extends outside the parcel to the east.</td>
<td></td>
</tr>
<tr>
<td>W-MFT-3</td>
<td>PEM/PSS</td>
<td>High Water Table (A2), Water-Stained Leaves (B9), Drainage Patterns (B10)</td>
<td>Eastern white pine, cinnamon fern, carex spp.</td>
<td>Redox Dark Surface (F6)</td>
<td>No</td>
<td>Small, isolated depression located in the central portion of the Survey Area.</td>
</tr>
<tr>
<td>W-MFT-4</td>
<td>PSS</td>
<td>High Water Table (A2), Saturation (A3), Water-Stained Leaves (B9), Drainage Patterns (B10), Geomorphic Position (D2), Shallow Aquitard (D3), Microtopographic relief (D4)</td>
<td>Red maple, eastern hemlock, striped maple (<em>Acer pensylvanicum</em>), yellow birch, cinnamon fern, New York fern, Eastern marsh fern, sensitive fern</td>
<td>Dark Surface (S7)</td>
<td>No</td>
<td>Drainage depression that extends outside the Survey Area onto the remaining parcel to the north.</td>
</tr>
<tr>
<td>--------</td>
<td>-----</td>
<td>---------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>-----------------</td>
<td>----</td>
<td>---------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>W-MFT-5</td>
<td>PEM/PFO</td>
<td>High Water Table (A2), Saturation (A3), Water-Stained Leaves (B9), Drainage Patterns (B10), Geomorphic Position (D2), Shallow Aquitard (D3), Microtopographic relief (D4)</td>
<td>Red maple, eastern hemlock, striped maple, yellow birch, cinnamon fern, New York fern, Eastern marsh fern, sensitive fern</td>
<td>Sandy Redox (S5)</td>
<td>No</td>
<td>Part of a larger forested wetland complex on the remaining parcel to the north.</td>
</tr>
</tbody>
</table>


2. WoSS determinations based on review of on-site features; for a full WoSS determinations, the Maine Department of Inland Fisheries and Wildlife (MDIFW) and Maine Natural Areas Program (MNAP) should be consulted regarding the presence of known significant wildlife habitat or mapped natural communities.
<table>
<thead>
<tr>
<th>Resource ID</th>
<th>Flow Regime</th>
<th>Flow Direction</th>
<th>Dominant Substrates</th>
<th>Approximate Width (ft)</th>
<th>Approximate Water Depth (in)</th>
<th>Associated Resources</th>
<th>Description &amp; Notes</th>
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<tbody>
<tr>
<td>S-CWF-1</td>
<td>Intermittent</td>
<td>North</td>
<td>Silt, gravel, cobble</td>
<td>3 to 5</td>
<td>1 to 3</td>
<td>W-CWF-1</td>
<td>Small intermittent drainage within a larger forested wetland.</td>
</tr>
<tr>
<td>S-CWF-2</td>
<td>Intermittent</td>
<td>North</td>
<td>Silt, gravel, cobble</td>
<td>3 to 5</td>
<td>1 to 3</td>
<td>W-CWF-1</td>
<td>Small intermittent drainage within a larger forested wetland.</td>
</tr>
<tr>
<td>S-CWF-3</td>
<td>Intermittent</td>
<td>North</td>
<td>Silt, gravel, cobble</td>
<td>3 to 5</td>
<td>1 to 3</td>
<td>W-CWF-1</td>
<td>Small intermittent drainage within a larger forested wetland.</td>
</tr>
<tr>
<td>S-CWF-4</td>
<td>Intermittent</td>
<td>North</td>
<td>Silt, gravel, cobble</td>
<td>3 to 5</td>
<td>1 to 3</td>
<td>W-CWF-1</td>
<td>Small intermittent drainage within a larger forested wetland.</td>
</tr>
<tr>
<td>S-MFT-1</td>
<td>Intermittent</td>
<td>North</td>
<td>Silt, gravel, cobble</td>
<td>2 to 5</td>
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<td>W-CWF-1</td>
<td>Small intermittent drainage within a larger forested wetland.</td>
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<tr>
<td>S-MFT-2</td>
<td>Intermittent</td>
<td>Northeast</td>
<td>Silt, gravel, cobble</td>
<td>2 to 5</td>
<td>1 to 5</td>
<td>W-MFT-1</td>
<td>Small intermittent drainage within a larger forested wetland.</td>
</tr>
</tbody>
</table>
Table 3. Vernal Pool Summary

<table>
<thead>
<tr>
<th>Resource ID</th>
<th>Pool Origin</th>
<th>Wood Frog Egg Masses</th>
<th>Spotted Salamander Egg Masses</th>
<th>Blue Spotted Salamander Egg Masses</th>
<th>Fairy Shrimp or RTE</th>
<th>NRPA Significant*</th>
<th>USACE Regulated**</th>
<th>Description</th>
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<tr>
<td>SVP-CWF-1</td>
<td>Natural</td>
<td>3</td>
<td>3</td>
<td>27</td>
<td>33</td>
<td>0</td>
<td>Yes</td>
<td>Yes Significant pool in forested wetland. W-CWF-1.</td>
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<tr>
<td>VP-CWF-2</td>
<td>Natural</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>No</td>
<td>Yes Natural pool in forested wetland, W-CWF-2.</td>
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<tr>
<td>VP-CWF-3</td>
<td>Natural</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>No</td>
<td>Yes Natural pool in larger forested wetland.</td>
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<td>VP-CWF-4</td>
<td>Natural</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>No</td>
<td>Yes Natural pool in larger forested wetland.</td>
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<tr>
<td>VP-CWF-5</td>
<td>Natural modified</td>
<td>1</td>
<td>1</td>
<td>13</td>
<td>13</td>
<td>0</td>
<td>No</td>
<td>Yes Natural modified pool in larger forested wetland.</td>
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<tr>
<td>VP-CWF-6</td>
<td>Human-made</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>4</td>
<td>0</td>
<td>No</td>
<td>Yes Skid rut vernal pool.</td>
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<tr>
<td>VP-CWF-7</td>
<td>Natural modified</td>
<td>12</td>
<td>8</td>
<td>11</td>
<td>11</td>
<td>0</td>
<td>No</td>
<td>Yes Natural modified pool in small, isolated wetland.</td>
</tr>
<tr>
<td>SVP-CWF-8</td>
<td>Natural</td>
<td>50</td>
<td>4</td>
<td>148</td>
<td>160</td>
<td>0</td>
<td>Yes</td>
<td>Yes Significant pool in larger forested wetland.</td>
</tr>
<tr>
<td>VP-CWF-9</td>
<td>Natural</td>
<td>0</td>
<td>0</td>
<td>16</td>
<td>4</td>
<td>0</td>
<td>No</td>
<td>Yes Natural pool in larger forested wetland.</td>
</tr>
<tr>
<td>VP-CWF-10</td>
<td>Natural</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>1</td>
<td>0</td>
<td>No</td>
<td>Yes Oxbow pool in forested floodplain.</td>
</tr>
</tbody>
</table>

*Vernal pool significance determined in breeding season by the criteria found in: MEDEP. Significant Wildlife Habitat. Chapter 335, Section 9.

**Based on best professional judgement.
ATTACHMENT 1

1. Survey Area Location Map
2. Delineated Wetland, Watercourse, and Vernal Pool Map
BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

BH2M
CHADBOURNE ROAD
WATERBORO, YORK COUNTY, MAINE

FIGURE 1

LEGEND:

- WETLAND SURVEY AREA
- PARCEL BOUNDARY
- USGS 7.5-MINUTE QUADRANGLE BOUNDARY

MAINE OVERVIEW

SITE LOCATION

RECEIVED BY: D. KENWORTHY
CHECKED BY: R. KELSHAW
MONTH: JUNE
YEAR: 2023
PROJ. NO.: 22O-8
CLIENT: BH2M

C:/FLYCATCHER/Projects/BH2M/BH2M_22O8_WaterboroChadbourne_Delin_Fig1_USGS_8x11P.mxd – Saved By: DREWKENWORTHY on 6/3/2023, 03:25:51 AM
ATTACHMENT 2

Representative Photographs
Wetland W-CWF-1 and VP-CWF-2.

Wetland W-CWF-1 and SVP-CWF-1.
Wetland W-CWF-1.

Wetland W-MFT-1 and watercourse S-MFT-2.
Wetland W-MFT-3.

Wetland W-MFT-4.
Wetland W-MFT-5.

Watercourse S-MFT-1.
Watercourse S-CWF-1 within W-CWF-1.

Watercourse S-CWF-2 within W-CWF-1.
Watercourse S-CWF-3 within W-CWF-1.

Watercourse S-CWF-4 within W-CWF-1.
ATTACHMENT 3

Maine State Vernal Pool Assessment Forms
**INSTRUCTIONS:**
- Complete all 3 pages of form thoroughly. Most fields are **required** for pool registration.
- Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are **required** for all observers.

Observer's Pool ID: SVP-CWF-1  MDIFW Pool ID:________________________

1. PRIMARY OBSERVER INFORMATION
   a. Observer name: Chuck Ferris
   b. Contact and credentials previously provided? ☐ No (submit Addendum 1) ☐ Yes

2. PROJECT CONTACT INFORMATION
   a. Contact name: ☐ same as observer ☐ other Rodney Kelshaw
   b. Contact and credentials previously provided? ☐ No (submit Addendum 1) ☐ Yes
   c. Project Name: Waterboro Chadbourne Ridge Road

3. LANDDOWNER CONTACT INFORMATION
   a. Are you the landowner? ☐ Yes ☐ No  If no, was landowner permission obtained for survey? ☐ Yes ☐ No
   b. Landowner’s contact information (required)
      Name: Brent Day (Waterboro Woodyards)  Phone: (207) 756-5645  E-mail: brent@daylogging.com
      Street Address: 117 Main Street  City: Cornish  State: ME  Zip: 04020
   c. ☐ Large Projects: check if separate project landowner data file submitted

The Maine Department of Environmental Protection will e-mail official status letters to the project contact and landowner. Please check these data for completeness and accuracy to prevent delay in mailings. E-mail is the preferred method of notification; please provide e-mail addresses for the project contact and the landowner when available.

4. VERNAL POOL LOCATION INFORMATION
   a. Location  Township: Waterboro
      Brief site directions to the pool (using mapped landmarks):
      Turn right off Lords road onto Chadbourne Ridge Road and drive 0.1 miles. Pool is approximately 100 feet into the woods to the northwest.

   b. Mapping Requirements
      i. USGS topographic map OR aerial photograph with pool clearly marked.
      ii. GPS location of vernal pool (use Datum NAD83 / WGS84)
         Longitude/Easting: -70.7115746422222  Latitude/Northing: 43.6389642011111
         Coordinate system: NAD 83
         Check one: ☐ GIS shapefile
                     - send to VernalPool.MDIFW@maine.gov; observer has reviewed shape accuracy
                     ☐ (Best) The pool perimeter is delineated by multiple GPS points. (Excellent)
                     - Include map or spreadsheet with coordinates.
                     ☐ The above GPS point is at the center of the pool. (Good)
5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): ______________

b. Wetland habitat characterization

[ ] Choose the best descriptor for the landscape setting:
  ○ Isolated depression
  ○ Floodplain depression
  ○ Other: ________________________________

[ ] Check all wetland types that best apply to this pool:
  ○ Forested swamp
  ○ Shrub swamp
  ○ Peatland (fen or bog)
  ○ Emergent marsh
  ○ Wet meadow
  ○ Lake or pond cove
  ○ Abandoned beaver flowage
  ○ Active beaver flowage
  ○ Slow stream
  ○ Floodplain
  ○ Mostly unvegetated pool
  ○ ATV or skidder rut
  ○ Dug pond or borrow pit
  ○ Roadside ditch
  ○ Other: ________________________________

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):
  ○ No inlet or outlet
  ○ Intermittent inlet or outlet
  ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
  ○ Other or Unknown (explain): ________________________________

[ ] Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin:  ○ Natural  ○ Natural-Modified  ○ Unnatural  ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

[ ] Select the pool's estimated hydroperiod AND provide rationale in box (required):
  ○ Permanent
  ○ Semi-permanent
  ○ Ephemeral
  ○ Unknown

  Explain: Depth of 12 inches in sandy soils, likely dries out most years.

[ ] Maximum depth at survey:  ○ 0-12" (0-1 ft.)  ○ 12-36" (1-3 ft.)  ○ 36-60" (3-5 ft.)  ○ >60" (>5 ft.)

[ ] Approximate size of pool (at spring highwater): Width: ____________ m  ____________ ft  Length: ____________ m  ____________ ft

[ ] Predominate substrate in order of increasing hydroperiod:
  ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
  ○ Mineral soil (sphagnum moss present)
  ○ Organic matter (peat/muck) shallow or restricted to deepest portion
  ○ Organic matter (peat/muck) deep and widespread

[ ] Pool vegetation indicators in order of increasing hydroperiod (check all that apply):
  ○ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
  ○ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
  ○ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
  ○ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
  ○ Sphagnum moss (anchored or suspended)

[ ] Faunal indicators (check all that apply):
  ○ Fish
  ○ Bullfrog or Green Frog tadpoles

  ○ Other: ________________________________
c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>Method of Verification*</th>
<th>CL**</th>
<th>SPECIES</th>
<th>Method of Verification*</th>
<th>CL**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blanding’s Turtle</td>
<td>☐ ☐ ☐</td>
<td>☐</td>
<td>Wood Turtle</td>
<td>☐ ☐ ☐</td>
<td>☐</td>
</tr>
<tr>
<td>Spotted Turtle</td>
<td>☐ ☐ ☐</td>
<td>☐</td>
<td>Ribbon Snake</td>
<td>☐ ☐ ☐</td>
<td>☐</td>
</tr>
<tr>
<td>Ringed Boghaunter</td>
<td>☐ ☐ ☐</td>
<td>☐</td>
<td>Other:</td>
<td>☐ ☐ ☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1 = <60%, 2 = 60-95%, 3 = >95%

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ☐ Yes ☐ No
- Was the entire pool surveyed for egg masses? ☐ Yes ☐ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

<table>
<thead>
<tr>
<th>INDICATOR SPECIES</th>
<th>Egg Masses (or adult Fairy Shrimp)</th>
<th>Tadpoles/Larvae</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Visit #1</td>
<td>Visit #2</td>
</tr>
<tr>
<td>Wood Frog</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Spotted Salamander</td>
<td>27</td>
<td>33</td>
</tr>
<tr>
<td>Blue-spotted Salamander</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fairy Shrimp</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: VernalPool.MDIFW@maine.gov

NOTE: Digital submissions are preferred but if not possible, please mail to:
Maine Department of Inland Fisheries and Wildlife
Attn: Vernal Pools
106 Hogan Road, Suite 1
Bangor, ME 04401

For MDIFW use only

Reviewed by MDIFW Date: Initials:

This pool is: ☐ Significant ☐ Potentially Significant but lacking critical data ☐ Not Significant due to: ☐ does not meet biological criteria. ☐ does not meet MDEP vernal pool criteria.

Comments:
Vernal pool SVP-CWF-1 within wetland W-CWF-1.

Wood frog egg mass within SVP-CWF-1.
Spotted salamander egg mass within SVP-CWF-1.
INSTRUCTIONS:
- Complete all 3 pages of form thoroughly. Most fields are required for pool registration.
- Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.

Observer's Pool ID: SVP-CWF-8

1. PRIMARY OBSERVER INFORMATION
   a. Observer name: Chuck Ferris
   b. Contact and credentials previously provided?  ○ No (submit Addendum 1)  ○ Yes

2. PROJECT CONTACT INFORMATION
   a. Contact name:  ○ same as observer  ○ other Rodney Kelshaw
   b. Contact and credentials previously provided?  ○ No (submit Addendum 1)  ○ Yes
   c. Project Name: Waterboro Chadbourne Ridge Road

3. LANDOWNER CONTACT INFORMATION
   a. Are you the landowner?  ○ Yes  ○ No  If no, was landowner permission obtained for survey?  ○ Yes  ○ No
   b. Landowner’s contact information (required)
      Name: Brent Day (Waterboro Woodyards)  Phone: (207) 756-5645  E-mail: brent@daylogging.com
      Street Address: 117 Main Street  City: Cornish  State: ME  Zip: 04020
   c. □ Large Projects: check if separate project landowner data file submitted

The Maine Department of Environmental Protection will e-mail official status letters to the project contact and landowner. Please check these data for completeness and accuracy to prevent delay in mailings. E-mail is the preferred method of notification; please provide e-mail addresses for the project contact and the landowner when available.

4. VERNAL POOL LOCATION INFORMATION
   a. Location  Township: Waterboro
      Brief site directions to the pool (using mapped landmarks):
      Turn right off Lords road onto Chadbourne Ridge Road and drive 0.1 miles. Pool is approximately 4,050 feet into the woods to the northwest.
   b. Mapping Requirements
      i. USGS toposgraphic map OR aerial photograph with pool clearly marked.
      ii. GPS location of vernal pool (use Datum NAD83 / WGS84)
         Longitude/Easting: -70.716014  Latitude/Northing: 43.649559
         Coordinate system: NAD 83
         Check one:  ○ GIS shapefile
             - send to VernalPool.MDIFW@maine.gov; observer has reviewed shape accuracy
             ○ (Best) The pool perimeter is delineated by multiple GPS points. (Excellent)
                 - Include map or spreadsheet with coordinates.
             ○ The above GPS point is at the center of the pool. (Good)
5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3):

b. Wetland habitat characterization

 Choose the best descriptor for the landscape setting:

- Isolated depression
- Pool associated with larger wetland complex
- Floodplain depression
- Other: ____________________________

 Check all wetland types that best apply to this pool:

- Forested swamp
- Shrub swamp
- Peatland (fen or bog)
- Emergent marsh
- Wet meadow
- Lake or pond cove
- Abandoned beaver flowage
- Active beaver flowage
- Slow stream
- Floodplain
- Mostly unvegetated pool
- ATV or skidder rut
- Roadside ditch
- Other: ____________________________

iii. Inlet/Outlet Flow Permanency

 Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
- Intermittent inlet or outlet
- Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Other or Unknown (explain): ____________________________

ii. Pool Hydrology

 Select the pool's estimated hydroperiod AND provide rationale in box (required):

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years)
- Ephemeral (drying out completely in most years)
- Unknown

 Explain: ____________________________

 Depth of 18 inches, likely dries out most years.

 Maximum depth at survey:

- 0-12" (0-1 ft.)
- 12-36" (1-3 ft.)
- 36-60" (3-5 ft.)
- >60" (>5 ft.)

 Approximate size of pool (at spring highwater):
 Width: 140 m 15 ft  Length: 285 m 10 ft

 Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- Mineral soil (sphagnum moss present)
- Organic matter (peat/muck) shallow or restricted to deepest portion
- Organic matter (peat/muck) deep and widespread

 Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- Sphagnum moss (anchored or suspended)

- Wet site nonvascular spp. (e.g. mosses, liverworts)
- Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- Wet site graminoids (e.g. bluejoint grass, tussock sedge, cattail, bulrushes)
- Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- No vegetation in pool
- Other: ____________________________

iii. Faunal indicators (check all that apply):

- Fish
- Bullfrog or Green Frog tadpoles
- Other: ____________________________

Maine State Vernal Pool Assessment Form
6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2023-04-20 & 2023-05-02

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ☐ Yes ☐ No
- Was the entire pool surveyed for egg masses? ☐ Yes ☐ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

<table>
<thead>
<tr>
<th>INDICATOR SPECIES</th>
<th>Egg Masses (or adult Fairy Shrimp)</th>
<th>Tadpoles/Larvae</th>
<th>Visit #1</th>
<th>Visit #2</th>
<th>Visit #3</th>
<th>Confidence Level</th>
<th>Egg Mass Maturity</th>
<th>Observed</th>
<th>Confidence Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood Frog</td>
<td>50</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>H</td>
<td>A/H</td>
<td>X</td>
<td>X</td>
<td>3</td>
</tr>
<tr>
<td>Spotted Salamander</td>
<td>148</td>
<td>160</td>
<td>3</td>
<td>3</td>
<td>F/M</td>
<td>M/A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blue-spotted Salamander</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fairy Shrimp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
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</table>

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>Method of Verification*</th>
<th>CL**</th>
<th>SPECIES</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Blanding’s Turtle</td>
<td>☐</td>
<td>☐</td>
<td>Wood Turtle</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Spotted Turtle</td>
<td>☐</td>
<td>☐</td>
<td>Ribbon Snake</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Ringed Boghaunter</td>
<td>☐</td>
<td>☐</td>
<td>Other:</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1 = <60%, 2 = 60-95%, 3 = >95%

d. Optional observer recommendation:

☐ SVP  ☐ Potential SVP  ☐ Non Significant VP  ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: VernalPool.MDIFW@maine.gov

NOTE: Digital submissions are preferred but if not possible, please mail to: Maine Department of Inland Fisheries and Wildlife
Attn: Vernal Pools
106 Hogan Road, Suite 1
Bangor, ME  04401

For MDIFW use only

Reviewed by MDIFW  Date:  Initials:

This pool is: ☐ Significant ☐ Potentially Significant but lacking critical data ☐ Not Significant due to: ☐ does not meet biological criteria. ☐ does not meet MDEP vernal pool criteria.

Comments:  

DEPLW0897-82008  04/26/2022
Vernal pool SVP-CWF-8.

Spotted salamander egg mass within SVP-CWF-8.
INSTRUCTIONS:
- Complete all 3 pages of form thoroughly. Most fields are required for pool registration.
- Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.

Observer's Pool ID: VP-CWF-2

MDIFW Pool ID: __________________________

1. PRIMARY OBSERVER INFORMATION
   a. Observer name: Chuck Ferris
   b. Contact and credentials previously provided? ○ No (submit Addendum 1) ○ Yes

2. PROJECT CONTACT INFORMATION
   a. Contact name: ○ same as observer ○ other Rodney Kelshaw
   b. Contact and credentials previously provided? ○ No (submit Addendum 1) ○ Yes
   c. Project Name: Waterboro Chadbourne Ridge Road

3. LANDOWNER CONTACT INFORMATION
   a. Are you the landowner? ○ Yes ○ No
      If no, was landowner permission obtained for survey? ○ Yes ○ No
   b. Landowner’s contact information (required)
      Name: Brent Day (Waterboro Woodyards) Phone: (207) 756-5645 E-mail: brent@daylogging.com
      Street Address: 117 Main Street City: Cornish State: ME Zip: 04020
   c. Large Projects: check if separate project landowner data file submitted

The Maine Department of Environmental Protection will e-mail official status letters to the project contact and landowner. Please check these data for completeness and accuracy to prevent delay in mailings. E-mail is the preferred method of notification; please provide e-mail addresses for the project contact and the landowner when available.

4. VERNAL POOL LOCATION INFORMATION
   a. Location Township: Waterboro
      Brief site directions to the pool (using mapped landmarks):
      Turn right off Lords road onto Chadbourne Ridge Road and drive 200 feet. Pool is approximately 100 feet into the woods to the northwest.

   b. Mapping Requirements
      i. USGS topographic map OR aerial photograph with pool clearly marked.
      ii. GPS location of vernal pool (use Datum NAD83 / WGS84)
         Longitude/Easting: -70.712362 Latitude/Northing: 43.637936
         Coordinate system: NAD 83
         Check one: ○ GIS shapefile
                   - send to VernalPool.MDIFW@maine.gov; observer has reviewed shape accuracy
                   ○ (Best) The pool perimeter is delineated by multiple GPS points. (Excellent)
                   - Include map or spreadsheet with coordinates.
                   ○ The above GPS point is at the center of the pool. (Good)
5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3):

b. Wetland habitat characterization

- Choose the best descriptor for the landscape setting:
  - Isolated depression
  - Floodplain depression
  - Other:

- Check all wetland types that best apply to this pool:

  - Forested swamp
  - Shrub swamp
  - Peatland (fen or bog)
  - Emergent marsh

- Permanent/Semi-permanent
  - Pool associated with larger wetland complex

- Ephemeral
  - Mostly unvegetated pool
  - ATV or skidder rut

- Other:

- Select the pool's estimated hydroperiod AND provide rationale in box (required):

  - Permanent
  - Semi-permanent (drying partially in all years and completely in drought years)
  - Ephemeral (drying out completely in most years)
  - Unknown

  Explain:

  - Depth of 12 inches, likely dries out in most years.

- Maximum depth at survey:
  - 0-12" (0-1 ft.)
  - 12-36" (1-3 ft.)
  - 36-60" (3-5 ft.)
  - >60" (>5 ft.)

- Approximate size of pool (at spring highwater): Width: 40 m 40 ft Length: 48 m 48 ft

- Predominate substrate in order of increasing hydroperiod:
  - Mineral soil (bare, leaf-litter bottom, or upland mosses present)
  - Mineral soil (sphagnum moss present)
  - Organic matter (peat/muck) shallow or restricted to deepest portion
  - Organic matter (peat/muck) deep and widespread

- Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

  - Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
  - Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
  - Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
  - Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
  - Sphagnum moss (anchored or suspended)
  - Wet site ferns (e.g. royal fern, marsh fern)
  - Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
  - Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
  - Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
  - Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
  - No vegetation in pool

- Faunal indicators (check all that apply):
  - Fish
  - Bullfrog or Green Frog tadpoles
  - Other:

iii. Inlet/Outlet Flow Permanency

- Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):
  - No inlet or outlet
  - Intermittent inlet or outlet
  - Permanent inlet or outlet (channel with well-defined banks and permanent flow)
  - Other or Unknown (explain):
### 6. VERNAL POOL INDICATOR INFORMATION

**a. Indicator survey dates:** 2023-04-20 & 2023-05-02

**b. Indicator abundance criteria and pool survey effort**
- Is pool depression bisected by 2 ownerships (straddler pool)? ☐ Yes ○ No
- Was the entire pool surveyed for egg masses? ☐ Yes ○ No; what % of entire pool surveyed? 50%
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

<table>
<thead>
<tr>
<th>INDICATOR SPECIES</th>
<th>Visit #1</th>
<th>Visit #2</th>
<th>Visit #3</th>
<th>Confidence Level</th>
<th>Egg Mass Maturity</th>
<th>Tadpoles/Larvae</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood Frog</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spotted Salamander</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>Blue-spotted Salamander</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Fairy Shrimp§</td>
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1. Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2. Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3. Fairy shrimp: X = present
4. Tadpoles/larvae: X = present

**c. Rarity criteria**
- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

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<tr>
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<td>☐</td>
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*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1 = <60%, 2 = 60-95%, 3 = >95%

**d. Optional observer recommendation:**
☐ SVP   ☐ Potential SVP   ☐ Non Significant VP   ☐ Indicator Breeding Area

**e. General vernal pool comments and/or observations of other wildlife:**

Pool straddles property line - thus it is estimated that only 50% of the entire pool was surveyed.

Send completed form and supporting documentation to: VernalPool.MDIFW@maine.gov

NOTE: Digital submissions are preferred but if not possible, please mail to: Maine Department of Inland Fisheries and Wildlife
Attn: Vernal Pools
106 Hogan Road, Suite 1
Bangor, ME 04401

---

For MDIFW use only

Reviewed by MDIFW Date: ___________ Initials: ___________

This pool is: ☐ Significant    ☐ Potentially Significant but lacking critical data    ☐ Not Significant due to: ☐ does not meet biological criteria. ☐ does not meet MDEP vernal pool criteria.

Comments: ____________________________________________________________
Vernal pool VP-CWF-2 within wetland W-CWF-1.

Spotted salamander egg mass within VP-CWF-2.
Maine State Vernal Pool Assessment Form

INSTRUCTIONS:
- Complete all 3 pages of form thoroughly. Most fields are required for pool registration.
- Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.

Observer's Pool ID: VP-CWF-3
MDIFW Pool ID: ____________________________

1. PRIMARY OBSERVER INFORMATION
   a. Observer name: Chuck Ferris
   b. Contact and credentials previously provided? ☐ No (submit Addendum 1) ☐ Yes

2. PROJECT CONTACT INFORMATION
   a. Contact name: ☐ same as observer ☐ other Rodney Kelshaw
   b. Contact and credentials previously provided? ☐ No (submit Addendum 1) ☐ Yes
   c. Project Name: Waterboro Chadbourne Ridge Road

3. LANDOWNER CONTACT INFORMATION
   a. Are you the landowner? ☐ Yes ☐ No If no, was landowner permission obtained for survey? ☐ Yes ☐ No
   b. Landowner's contact information (required)
      Name: Brent Day (Waterboro Woodyards) Phone: (207) 756-5645 E-mail: brent@daylogging.com
      Street Address: 117 Main Street City: Cornish State: ME Zip: 04020
   c. ☐ Large Projects: check if separate project landowner data file submitted

The Maine Department of Environmental Protection will e-mail official status letters to the project contact and landowner. Please check these data for completeness and accuracy to prevent delay in mailings. E-mail is the preferred method of notification; please provide e-mail addresses for the project contact and the landowner when available.

4. VERNAL POOL LOCATION INFORMATION
   a. Location Township: Waterboro
      Brief site directions to the pool (using mapped landmarks):
      From the intersection of Lords and Chadbourne Ridge Road, drive 0.3 miles north on Bradeen Road. Pool is approximately 2,225 feet into the woods to the northeast.
   b. Mapping Requirements
      i. USGS topographic map OR aerial photograph with pool clearly marked.
      ii. GPS location of vernal pool (use Datum NAD83 / WGS84)
         Longitude/Easting: -70.7122821133333 Latitude/Northing: 43.64267965444444
         Coordinate system: NAD 83
         Check one: ☐ GIS shapefile
                    - send to VernalPool.MDIFW@maine.gov; observer has reviewed shape accuracy
         ☐ (Best) The pool perimeter is delineated by multiple GPS points. (Excellent)
                    - Include map or spreadsheet with coordinates.
         ☐ The above GPS point is at the center of the pool. (Good)
5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _______________________

b. Wetland habitat characterization

Choose the best descriptor for the landscape setting:

- Isolated depression
- Floodplain depression
- Other: _______________________

Check all wetland types that best apply to this pool:

- Forested swamp
- Shrub swamp
- Peatland (fen or bog)
- Emergent marsh
- Wet meadow
- Lake or pond cove
- Abandoned beaver flowage
- Active beaver flowage
- Slow stream
- Floodplain
- Mostly unvegetated pool
- ATV or skidder rut
- Roadside ditch
- Other: _______________________

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin:  
- Natural
- Natural-Modified
- Unnatural
- Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

Select the pool's estimated hydroperiod AND provide rationale in box (required):

- Permanent
- Semi-permanent
- Ephemeral
- Unknown

(drying partially in all years and completely in drought years)

(drying out completely in most years)

Explain:

Depth of 8 inches, pool likely dries out in most years.

Maximum depth at survey:  
- 0-12" (0-1 ft.)
- 12-36" (1-3 ft.)
- 36-60" (3-5 ft.)
- >60" (>5 ft.)

Approximate size of pool (at spring highwater): Width: ______ m ______ ft Length: ______ m ______ ft

Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- Mineral soil (sphagnum moss present)
- Organic matter (peat/muck) shallow or restricted to deepest portion
- Organic matter (peat/muck) deep and widespread

Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- Sphagnum moss (anchored or suspended)

Faunal indicators (check all that apply):

- Fish
- Bullfrog or Green Frog tadpoles
- Other: _______________________

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
- Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Other or Unknown (explain): _______________________

- Intermittent inlet or outlet
6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2023-04-20 & 2023-05-02

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)?  ○ Yes  ○ No
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106 Hogan Road, Suite 1
Bangor, ME 04401

For MDIFW use only

This pool is: ☐ Significant  ☐ Potentially Significant but lacking critical data  ☐ Not Significant due to: ☐ does not meet biological criteria.  ☐ does not meet MDEP vernal pool criteria.

Comments:

DEPLW0897-82008 04/26/2022
Vernal pool VP-CWF-3.
Spotted salamander egg mass within VP-CWF-3.
Maine State Vernal Pool Assessment Form

INSTRUCTIONS:
- Complete all 3 pages of form thoroughly. Most fields are required for pool registration.
- Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.

Observer's Pool ID: VP-CWF-4  MDIFW Pool ID: 

1. PRIMARY OBSERVER INFORMATION
   a. Observer name: Chuck Ferris
   b. Contact and credentials previously provided? Yes

2. PROJECT CONTACT INFORMATION
   a. Contact name: Rodney Kelshaw
   b. Contact and credentials previously provided? Yes
   c. Project Name: Waterboro Chadbourne Ridge Road

3. LANDOWNER CONTACT INFORMATION
   a. Are you the landowner? Yes
   b. Landowner's contact information (required)
      Name: Brent Day (Waterboro Woodyards)  Phone: (207) 756-5645  E-mail: brent@daylogging.com
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  - Pool associated with larger wetland complex
  - Floodplain depression
  - Other: __________________________

- Check all wetland types that best apply to this pool:
  - Forested swamp
  - Wet meadow
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  - Peatland (fen or bog)
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  - Emergent marsh
  - Active beaver flowage
  - Slow stream
  - Floodplain
  - Mostly unvegetated pool
  - ATV or skidder rut
  - Roadside ditch
  - Other: __________________________

- Permanent
- Semi-permanent
- Ephemeral
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6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2023-04-20 & 2023-05-02

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- Was the entire pool surveyed for egg masses?  ☑ Yes  ☐ No; what % of entire pool surveyed? ______
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Comments: _____________________________________________________________
Vernal pool VP-CWF-4.

Spotted salamander egg mass within VP-CWF-4.
Contact and credentials previously provided? ☐ No (submit Addendum 1)  ☑ Yes

Latitude/Northing:
Longitude/Easting:
Coordinate system:

Observer's Pool ID: VP-CWF-5

1. PRIMARY OBSERVER INFORMATION
   a. Observer name: Chuck Ferris
   b. Contact and credentials previously provided? ☐ No (submit Addendum 1)  ☑ Yes

2. PROJECT CONTACT INFORMATION
   a. Contact name: ☑ same as observer  ☐ other Rodney Kelshaw
   b. Contact and credentials previously provided? ☐ No (submit Addendum 1)  ☑ Yes
   c. Project Name: Waterboro Chadbourne Ridge Road

3. LANDOWNER CONTACT INFORMATION
   a. Are you the landowner? ☑ Yes  ☐ No
      If no, was landowner permission obtained for survey?  ☑ Yes  ☐ No
   b. Landowner’s contact information (required)
      Name: Brent Day (Waterboro Woodyards)  Phone: (207) 756-5645  E-mail: brent@daylogging.com
      Street Address: 117 Main Street  City: Cornish  State: ME  Zip: 04020
   c. ☐ Large Projects: check if separate project landowner data file submitted

The Maine Department of Environmental Protection will e-mail official status letters to the project contact and landowner. Please check these data for completeness and accuracy to prevent delay in mailings. E-mail is the preferred method of notification; please provide e-mail addresses for the project contact and the landowner when available.

4. VERNAL POOL LOCATION INFORMATION
   a. Location  Township: Waterboro
      Brief site directions to the pool (using mapped landmarks):
      From the intersection of Lords and Chadbourne Ridge Road, drive approximately 0.3 miles north on Bradeen Road. Pool is approximately 380 feet into the woods to the north.
   b. Mapping Requirements
      i. USGS topographic map OR aerial photograph with pool clearly marked.
      ii. GPS location of vernal pool (use Datum NAD83 / WGS84)
         Longitude/Easting: -70.716065858333  Latitude/Northing: 106.286666666667
         Coordinate system: NAD 83
         Check one: ☑ GIS shapefile
                     - send to VernalPool.MDIFW@maine.gov; observer has reviewed shape accuracy
                     ☑ (Best) The pool perimeter is delineated by multiple GPS points. (Excellent)
                     ☑ - Include map or spreadsheet with coordinates.
                     ☑ The above GPS point is at the center of the pool. (Good)
5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3):

b. Wetland habitat characterization

- Choose the best descriptor for the landscape setting:
  - Isolated depression
  - Floodplain depression
  - Other:

- Check all wetland types that best apply to this pool:
  - Forested swamp
  - Shrub swamp
  - Peatland (fen or bog)
  - Emergent marsh
  - Wet meadow
  - Lake or pond cove
  - Abandoned beaver flowage
  - Active beaver flowage
  - Slow stream
  - Floodplain
  - Mostly unvegetated pool
  - ATV or skidder rut
  - Roadside ditch
  - Other:

iii. Inlet/Outlet Flow Permanency

- Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):
  - No inlet or outlet
  - Intermittent inlet or outlet
  - Permanent inlet or outlet (channel with well-defined banks and permanent flow)
  - Other or Unknown (explain):

- Predominate substrate in order of increasing hydroperiod:
  - Mineral soil (bare, leaf-litter bottom, or upland mosses present)
  - Mineral soil (sphagnum moss present)
  - Organic matter (peat/muck) shallow or restricted to deepest portion
  - Organic matter (peat/muck) deep and widespread

- Pool vegetation indicators in order of increasing hydroperiod (check all that apply):
  - Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
  - Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
  - Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
  - Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
  - Sphagnum moss (anchored or suspended)
  - Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
  - Wet site ferns (e.g. royal fern, marsh fern)
  - Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
  - Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
  - Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
  - Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
  - No vegetation in pool
  - Other:

- Faunal indicators (check all that apply):
  - Fish
  - Bullfrog or Green Frog tadpoles
  - Other:

- Pool Origin:
  - Natural
  - Natural-Modified
  - Unnatural
  - Unknown
  - If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

- Pool Hydrology

- Select the pool's estimated hydroperiod AND provide rationale in box (required):
  - Permanent
  - Semi-permanent (drying partially in all years and completely in drought years)
  - Ephemeral (drying out completely in most years)
  - Unknown

  Explain:

  Depth 12 inches, likely dries out most years.

- Maximum depth at survey:
  - 0-12" (0-1 ft.)
  - 12-36" (1-3 ft.)
  - 36-60" (3-5 ft.)
  - >60" (>5 ft.)

- Approximate size of pool (at spring highwater):
  - Width: 50 m 0 ft
  - Length: 100 m 0 ft

- Other:

- Depth 12 inches, likely dries out most years.
6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2023-04-20 & 2023-05-02

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ☐ No
- Was the entire pool surveyed for egg masses? ○ Yes ○ No; what % of entire pool surveyed?_____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

<table>
<thead>
<tr>
<th>INDICATOR SPECIES</th>
<th>Egg Masses (or adult Fairy Shrimp)</th>
<th>Tadpoles/Larvae&lt;sup&gt;h&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Visit #1</td>
<td>Visit #2</td>
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</tr>
<tr>
<td>Spotted Salamander</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Blue-spotted Salamander</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fairy Shrimp&lt;sup&gt;j&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2. Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3. Fairy shrimp: X = present
4. Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

<table>
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<tr>
<th>SPECIES</th>
<th>Method of Verification&lt;sup&gt;*&lt;/sup&gt;</th>
<th>CL**</th>
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<td>☐</td>
<td>Ringed Boghaunter</td>
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<td>☐</td>
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<tr>
<td>Ringed Boghaunter</td>
<td>☐</td>
<td>☐</td>
<td>Other:</td>
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<td>Other:</td>
<td>☐</td>
<td>☐</td>
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</tr>
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</table>

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1 = <60%, 2 = 60-95%, 3 = >95%

d. Optional observer recommendation:

- ☐ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

```
This pool is: ☐ Significant ☐ Potentially Significant but lacking critical data ☐ Not Significant due to: ☐ does not meet biological criteria.
☐ does not meet MDEP vernal pool criteria.
Comments:
```

Send completed form and supporting documentation to: VernalPool.MDIFW@maine.gov

NOTE: Digital submissions are preferred but if not possible, please mail to: Maine Department of Inland Fisheries and Wildlife
Attn: Vernal Pools
106 Hogan Road, Suite 1
Bangor, ME 04401

For MDIFW use only

<table>
<thead>
<tr>
<th>Reviewed by MDIFW</th>
<th>Date:</th>
<th>Initials:</th>
</tr>
</thead>
</table>

This pool is: ☐ Significant ☐ Potentially Significant but lacking critical data ☐ Not Significant due to: ☐ does not meet biological criteria.
☐ does not meet MDEP vernal pool criteria.

Comments:
Vernal pool VP-CWF-5.

Spotted salamander egg mass within VP-CWF-5.
Wood frog egg mass within VP-CWF-5.
Maine State Vernal Pool Assessment Form

INSTRUCTIONS:
- Complete all 3 pages of form thoroughly. Most fields are required for pool registration.
- Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.

Observer's Pool ID: VP-CWF-6  MDIFW Pool ID:

1. PRIMARY OBSERVER INFORMATION
   a. Observer name: Chuck Ferris
   b. Contact and credentials previously provided?  ○ No (submit Addendum 1)  ○ Yes

2. PROJECT CONTACT INFORMATION
   a. Contact name:  ○ same as observer  ○ other Rodney Kelshaw
   b. Contact and credentials previously provided?  ○ No (submit Addendum 1)  ○ Yes
   c. Project Name: Waterboro Chadbourne Ridge Road

3. LANDOWNER CONTACT INFORMATION
   a. Are you the landowner?  ○ Yes  ○ No  If no, was landowner permission obtained for survey?  ○ Yes  ○ No
   b. Landowner’s contact information (required)
      Name: Brent Day (Waterboro Woodyards)  Phone: (207) 756-5645  E-mail: brent@daylogging.com
      Street Address: 117 Main Street  City: Cornish  State: ME  Zip: 04020
   c.  □ Large Projects: check if separate project landowner data file submitted

   The Maine Department of Environmental Protection will e-mail official status letters to the project contact and landowner. Please check these data for completeness and accuracy to prevent delay in mailings. E-mail is the preferred method of notification; please provide e-mail addresses for the project contact and the landowner when available.

4. VERNAL POOL LOCATION INFORMATION
   a. Location  Township: Waterboro
      Brief site directions to the pool (using mapped landmarks):
      From the intersection of Lords and Chadbourne Ridge Road, drive approximately 0.3 miles north on Bradeen Road. Pool is approximately 380 feet into the woods to the north.
   b. Mapping Requirements
      i. USGS topographic map OR aerial photograph with pool clearly marked.
      ii. GPS location of vernal pool (use Datum NAD83 / WGS84)
         Longitude/Easting: -70.7156987861111  Latitude/ Northing: 43.6419507894445
         Coordinate system: NAD 83
         Check one:  ○ GIS shapefile
                     - send to VernalPool.MDIFW@maine.gov; observer has reviewed shape accuracy
                     ○ (Best) The pool perimeter is delineated by multiple GPS points. (Excellent)
                     - include map or spreadsheet with coordinates.
                     ○ The above GPS point is at the center of the pool. (Good)
5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): ________________

b. Wetland habitat characterization

- Choose the best descriptor for the landscape setting:
  - Isolated depression
ty Neighborhood depression
  - Floodplain depression
ty Other:

- Check all wetland types that best apply to this pool:

  - Forested swamp
  - Wet meadow
  - Shrub swamp
  - Lake or pond cove
  - Peatland (fen or bog)
  - Abandoned beaver flowage
  - Emergent marsh
  - Active beaver flowage
  - Slow stream
  - Floodplain
  - Mostly unvegetated pool
  - Dug pond or borrow pit
  - ATV or skidder rut

  Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
- Intermittent inlet or outlet
- Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Other or Unknown (explain):

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
- Intermittent inlet or outlet
- Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Other or Unknown (explain):

DEPLW0897-82008 04/26/2022 Page 2 of 3
6. VERNAL POOL INDICATOR INFORMATION

**a. Indicator survey dates:** 2023-04-20 & 2023-05-02

**b. Indicator abundance criteria and pool survey effort**

- Is pool depression bisected by 2 ownerships (straddler pool)? ☐ Yes ☑ No
- Was the entire pool surveyed for egg masses? ☐ Yes ☑ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

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</tr>
<tr>
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<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Blue-spotted Salamander</td>
<td></td>
<td></td>
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<td>Fairy Shrimp</td>
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1. Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2. Egg mass maturity: F = Fresh (<24 hrs), M = Mature (round embryos), A = Advanced (loose matrix, curved embryos), H = Hatched or Hatching
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**c. Rarity criteria**

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

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<td>☐</td>
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*Method of verification: P = Photographed, H = Handled, S = Seen
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**d. Optional observer recommendation:**

☐ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

**e. General vernal pool comments and/or observations of other wildlife:**

Send completed form and supporting documentation to: VernalPool.MDIFW@maine.gov

NOTE: Digital submissions are preferred but if not possible, please mail to: Maine Department of Inland Fisheries and Wildlife
Attn: Vernal Pools
106 Hogan Road, Suite 1
Bangor, ME 04401

For MDIFW use only

Reviewed by MDIFW Date: ___________ Initials: ___________

This pool is: ☐ Significant ☐ Potentially Significant but lacking critical data ☐ Not Significant due to: ☐ does not meet biological criteria. ☐ does not meet MDEP vernal pool criteria.

Comments: ___________
Vernal pool VP-CWF-6.

Spotted salamander egg mass within VP-CWF-6.
Maine State Vernal Pool Assessment Form

INSTRUCTIONS:
- Complete all 3 pages of form thoroughly. Most fields are required for pool registration.
- Clear photographs of a) the pool AND b) the indicators (one example of each species: egg mass) are required for all observers.

Observer's Pool ID: VP-CWF-7
MDIFW Pool ID: 

1. PRIMARY OBSERVER INFORMATION
   a. Observer name: Chuck Ferris
   b. Contact and credentials previously provided? Yes

2. PROJECT CONTACT INFORMATION
   a. Contact name: Rodney Kelshaw
   b. Contact and credentials previously provided? Yes
   c. Project Name: Waterboro Chadbourne Ridge Road

3. LANDOWNER CONTACT INFORMATION
   a. Are you the landowner? Yes
   b. Landowner's contact information (required): Brent Day (Waterboro Woodyards)
      Phone: (207) 756-5645
      E-mail: brent@daylogging.com
      Street Address: 117 Main Street
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   c. Large Projects: check if separate project landowner data file submitted

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4. VERNAL POOL LOCATION INFORMATION
   a. Location Township: Waterboro
      Brief site directions to the pool (using mapped landmarks):
      From the intersection of Lords and Chadbourne Ridge Road, drive approximately 0.3 miles north on Bradeen Road. Pool is approximately 650 feet into the woods to the north-northeast.
   b. Mapping Requirements
      i. USGS toposraphic map OR aerial photograph with pool clearly marked.
      ii. GPS location of vernal pool (use Datum NAD83 / WGS84)
         Longitude/Easting: -70.7167861677778 Latitude/Northing: 43.6423879877778
         Coordinate system: NAD 83
         Check one:
         - send to VernalPool.MDIFW@maine.gov; observer has reviewed shape accuracy
         - (Best) The pool perimeter is delineated by multiple GPS points. (Excellent)
         - Include map or spreadsheet with coordinates.
         - The above GPS point is at the center of the pool. (Good)
5. **VERNAL POOL HABITAT INFORMATION**

a. Habitat survey date (only if different from indicator survey dates on page 3): 

b. Wetland habitat characterization

- Choose the best descriptor for the landscape setting:
  - Isolated depression
  - Floodplain depression
  - Other:

- Check all wetland types that best apply to this pool:
  - Forested swamp
  - Shrub swamp
  - Peatland (fen or bog)
  - Emergent marsh
  - Wet meadow
  - Floodplain
  - Lake or pond cove
  - Abandoned beaver flowage
  - Lost forested beaver flowage
  - Pond associated with larger wetland complex
  - Other:

- **Pool Origin:**
  - Natural
  - Natural-Modified
  - Unnatural
  - Unknown
  
  If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. **Pool Hydrology**

- Select the pool's estimated hydroperiod AND provide rationale in box (required):
  - Permanent
  - Semi-permanent (drying partially in all years and completely in drought years)
  - Ephemeral (drying out completely in most years)
  - Unknown

  Explain:
  
  Depth 24 inches, likely dries out most years.

- Maximum depth at survey:
  - 0-12" (0-1 ft.)
  - 12-36" (1-3 ft.)
  - 36-60" (3-5 ft.)
  - >60" (>5 ft.)

- Approximate size of pool (at spring highwater):
  - Width: 8 m  ft
  - Length: 40 m  ft

- Predominate substrate in order of increasing hydroperiod:
  - Mineral soil (bare, leaf-litter bottom, or upland mosses present)
  - Organic matter (peat/muck) shallow or restricted to deepest portion
  - Mineral soil (sphagnum moss present)
  - Organic matter (peat/muck) deep and widespread

- Pool vegetation indicators in order of increasing hydroperiod (check all that apply):
  - Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
  - Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
  - Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
  - Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
  - Sphagnum moss (anchored or suspended)
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  - Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
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  - No vegetation in pool
  - Other:

iii. **Inlet/Outlet Flow Permanency**

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
- Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Intermittent inlet or outlet
- Other or Unknown (explain):

---

[The rest of the form contains sections for additional data and notes, which are not transcribed here.]
6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2023-04-20 & 2023-05-02

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ☐ Yes ☐ No
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<td>Confidence Level</td>
<td>Egg Mass Maturity</td>
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<td>Wood Frog</td>
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<td>11</td>
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<td>3</td>
<td>F</td>
<td>M</td>
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<tr>
<td>Blue-spotted Salamander</td>
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<td></td>
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<td></td>
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c. Rarity criteria

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For MDIFW use only

Reviewed by MDIFW Date: Initials:

This pool is: ☐ Significant ☐ Potentially Significant but lacking critical data ☐ Not Significant due to: ☐ does not meet biological criteria. ☐ does not meet MDEP vernal pool criteria.

Comments:
Vernal pool VP-CWF-7.

Spotted salamander egg masses within VP-CWF-7.
Wood frog egg mass within VP-CWF-7.
Maine State Vernal Pool Assessment Form

INSTRUCTIONS:
- Complete all 3 pages of form thoroughly. Most fields are required for pool registration.
- Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.

Observer's Pool ID: VP-CWF-9
MDIFW Pool ID:

1. PRIMARY OBSERVER INFORMATION
   a. Observer name: Chuck Ferris
   b. Contact and credentials previously provided? ☐ No (submit Addendum 1) ☐ Yes

2. PROJECT CONTACT INFORMATION
   a. Contact name: ☐ same as observer ☐ other Rodney Kelshaw
   b. Contact and credentials previously provided? ☐ No (submit Addendum 1) ☐ Yes
   c. Project Name: Waterboro Chadbourne Ridge Road

3. LANDOWNER CONTACT INFORMATION
   a. Are you the landowner? ☐ Yes ☐ No
   b. Landowner’s contact information (required)
      Name: Brent Day (Waterboro Woodyards) Telephone: (207) 756-5645
      Street Address: 117 Main Street City: Cornish State: ME Zip: 04020
   c. ☐ Large Projects: check if separate project landowner data file submitted

The Maine Department of Environmental Protection will e-mail official status letters to the project contact and landowner. Please check these data for completeness and accuracy to prevent delay in mailings. E-mail is the preferred method of notification; please provide e-mail addresses for the project contact and the landowner when available.

4. VERNAL POOL LOCATION INFORMATION
   a. Location Township: Waterboro
      Brief site directions to the pool (using mapped landmarks):
      Turn right off Lords road onto Chadbourne Ridge Road and drive 0.1 miles. Pool is approximately 3,900 feet into the woods to the northwest.

   b. Mapping Requirements
      i. USGS topographic map OR aerial photograph with pool clearly marked.
      ii. GPS location of vernal pool (use Datum NAD83 / WGS84)
         Longitude/Easting: -70.715895 Latitude/Northing: 43.648822
         Coordinate system: NAD 83
         Check one: ☐ GIS shapefile
            - send to VernalPool.mdifw@maine.gov; observer has reviewed shape accuracy
            ☐ (Best) The pool perimeter is delineated by multiple GPS points. (Excellent)
               - Include map or spreadsheet with coordinates.
            ☐ The above GPS point is at the center of the pool. (Good)
5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): ____________________

b. Wetland habitat characterization

Choose the best descriptor for the landscape setting:

- Isolated depression
- Floodplain depression
- Other: ____________________

Check all wetland types that best apply to this pool:

- Forested swamp
- Shrub swamp
- Peatland (fen or bog)
- Emergent marsh
- Wet meadow
- Lake or pond cove
- Abandoned beaver flowage
- Active beaver flowage
- Slow stream
- Floodplain
- Mostly unvegetated pool
- ATV or skidder rut
- Roadside ditch
- Other: ____________________

Choose the best descriptor for the landscape setting:

- Isolated depression
- Floodplain depression
- Other: ____________________

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: 

- Natural
- Natural-Modified
- Unnatural
- Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

Select the pool's estimated hydroperiod AND provide rationale in box (required):

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years)
- Ephemeral (drying out completely in most years)
- Unknown

Explain:

Depth of 6 inches, likely dries out most, if not all, years.

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
- Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Intermittent inlet or outlet
- Other or Unknown (explain): ____________________
6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2023-04-20 & 2023-05-02

b. Indicator abundance criteria and pool survey effort
   ■ Is pool depression bisected by 2 ownerships (straddler pool)?  ○ Yes  ☐ No
   ■ Was the entire pool surveyed for egg masses?  ○ Yes  ☐ No; what % of entire pool surveyed? ______
   ■ For each indicator species, indicate the exact number of egg masses, confidence level for species
determination, and egg mass maturity. Separate cells are provided for separate survey dates.

c. Rarity criteria
   ■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>Method of Verification*</th>
<th>CL**</th>
<th>SPECIES</th>
<th>Method of Verification*</th>
<th>CL**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blanding’s Turtle</td>
<td>☐ ☐ ☐</td>
<td></td>
<td>Wood Turtle</td>
<td>☐ ☐ ☐</td>
<td></td>
</tr>
<tr>
<td>Spotted Turtle</td>
<td>☐ ☐ ☐</td>
<td></td>
<td>Ringed Boghaunter</td>
<td>☐ ☐ ☐</td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td>☐ ☐ ☐</td>
<td></td>
<td></td>
<td>☐ ☐ ☐</td>
<td></td>
</tr>
</tbody>
</table>

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1 = <60%, 2 = 60-95%, 3 = >95%

d. Optional observer recommendation:
   ☐ SVP  ☐ Potential SVP  ☐ Non Significant VP  ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: VernalPool.MDIFW@maine.gov

NOTE: Digital submissions are preferred but if not possible, please mail to: Maine Department of Inland Fisheries and Wildlife
Attn: Vernal Pools
106 Hogan Road, Suite 1
Bangor, ME 04401

For MDIFW use only

Reviewed by MDIFW Date: ______ Initials: ______

This pool is: ☐ Significant  ☐ Potentially Significant but lacking critical data  ☐ Not Significant due to: ☐ does not meet biological criteria.
                                                                ☐ does not meet MDEP vernal pool criteria.

Comments: ______
Vernal pool VP-CWF-9.

Spotted salamander egg mass within VP-CWF-9.
**Maine State Vernal Pool Assessment Form**

**INSTRUCTIONS:**
- Complete all 3 pages of form thoroughly. Most fields are **required** for pool registration.
- **Clear photographs** of a) the pool AND b) the indicators (one example of each species egg mass) are **required** for all observers.

<table>
<thead>
<tr>
<th>Observer's Pool ID:</th>
<th>VP-CWF-10</th>
<th>MDIFW Pool ID:</th>
</tr>
</thead>
</table>

1. **PRIMARY OBSERVER INFORMATION**
   a. Observer name: Chuck Ferris
   b. Contact and credentials previously provided? ☐ No (submit Addendum 1) ☑ Yes

2. **PROJECT CONTACT INFORMATION**
   a. Contact name: ☑ same as observer ☐ other Rod Kelsaw
   b. Contact and credentials previously provided? ☐ No (submit Addendum 1) ☑ Yes
   c. Project Name: Waterboro Chadbourne Ridge Road

3. **LANDOWNER CONTACT INFORMATION**
   a. Are you the landowner? ☑ Yes ☐ No
   b. Landowner’s contact information (required)
      - Name: Brent Day (Waterboro Woodyards)
      - Street Address: 117 Main Street
      - Phone: (207) 756-5645
      - City: Cornish
      - State: ME
      - Zip: 04020
      - E-mail: brent@daylogging.com
   c. ☐ Large Projects: check if separate project landowner data file submitted

   *The Maine Department of Environmental Protection will e-mail official status letters to the project contact and landowner. Please check these data for completeness and accuracy to prevent delay in mailings. E-mail is the preferred method of notification; please provide e-mail addresses for the project contact and the landowner when available.*

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   a. Location Township: Waterboro
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        Turn right off Lords road onto Chadbourne Ridge Road and drive 0.1 miles. Pool is approximately 3,600 feet into the woods to the northwest.
   b. Mapping Requirements
      i. USGS topographic map OR aerial photograph with pool clearly marked.
      ii. **GPS location of vernal pool (use Datum NAD83 / WGS84)**
         - Longitude/Easting: -70.7150888
         - Latitude/Northing: 43.6469480
         - Coordinate system: NAD 83
         - Check one: ☑ GIS shapefile
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- Other:

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- Forested swamp
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- Wet meadow
- Lake or pond cove
- Abandoned beaver flowage
- Active beaver flowage
- Slow stream
- Floodplain
- Mostly unvegetated pool
- ATV or skidder rut
- Roadside ditch
- Other: Oxbow

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
- Intermittent inlet or outlet
- Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Other or Unknown (explain): _

iii. Pool Hydrology

Select the pool’s estimated hydroperiod AND provide rationale in box (required):

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years)
- Ephemeral (drying out completely in most years)
- Unknown

Explain:

Depth of 12 inches, likely dries out most years. Stream oxbow in floodplain.

Maximum depth at survey:

- 0-12” (0-1 ft.)
- 12-36” (1-3 ft.)
- 36-60” (3-5 ft.)
- >60” (>5 ft.)

Approximate size of pool (at spring highwater):

Width: ___ m ___ ft
Length: ___ m ___ ft

Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- Organic matter (peat/muck) shallow or restricted to deepest portion
- Organic matter (peat/muck) deep and widespread

- Mineral soil (sphagnum moss present)
- Sphagnum moss (anchored or suspended)

- Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- Wet site ferns (e.g. royal fern, marsh fern)
- Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- No vegetation in pool
- Other:

iii. Pool Vegetation Indicators

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- Sphagnum moss (anchored or suspended)

- Faunal indicators (check all that apply):
  - Fish
  - Bullfrog or Green Frog tadpoles
  - Other:

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

- Predominant substrate in order of increasing hydroperiod:
  - Mineral soil (bare, leaf-litter bottom, or upland mosses present)
  - Organic matter (peat/muck) shallow or restricted to deepest portion
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   - For each indicator species, indicate the exact number of egg masses, confidence level for species
determination, and egg mass maturity. Separate cells are provided for separate survey dates.

| INDICATOR SPECIES | Egg Masses (or adult Fairy Shrimp) | Tadpoles/Larvae
|-------------------|------------------------------------|-----------------
|                   | Visit #1 | Visit #2 | Visit #3 | Confidence Level | Egg Mass Maturity | Observed | Confidence Level |
| Wood Frog         | 0        | 0        | 0        | 0              | 0                | 0        | 0                |
| Spotted Salamander| 10       | 1        | 0        | 3              | 3                | F        | M                |
| Blue-spotted      |          |          |          |                |                  |          |                  |
| Salamander        |          |          |          |                |                  |          |                  |
| Fairy Shrimp      |          |          |          |                |                  |          |                  |

1. Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2. Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3. Fairy shrimp: X = present
4. Tadpoles/larvae: X = present

c. Rarity criteria
   - Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

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<tr>
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Comments:
Vernal pool VP-CWF-10.

Spotted salamander egg mass within VP-CWF-10.
ATTACHMENT 4

Army Corps of Engineers Paired Data Plot Forms
WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Chadbourne Ridge Road
Applicant/Owner: Brent Day (Waterboro Woodyards)
State: ME
Sampling Date: 5/17/23

Investigator(s): Meg Thurrell and Chuck Ferris
Landform (hillside, terrace, etc.): Hillside
Local relief (concave, convex, none): Concave
Slope %: 5

Subregion (LRR or MLRA): LRR R
Lat: 43.641173
Long: -70.712552
Datum: NAD83

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>X</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>X</td>
<td>No</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>X</td>
<td>No</td>
</tr>
</tbody>
</table>

Is the Sampled Area within a Wetland? Yes _____ No _____
If yes, optional Wetland Site ID: __________________________

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

<table>
<thead>
<tr>
<th>Primary Indicators (minimum of one is required; check all that apply)</th>
<th>Secondary Indicators (minimum of two required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water (A1)</td>
<td>Surface Soil Cracks (B6)</td>
</tr>
<tr>
<td>High Water Table (A2)</td>
<td>Water-Stained Leaves (B9)</td>
</tr>
<tr>
<td>Saturation (A3)</td>
<td>Aquatic Fauna (B13)</td>
</tr>
<tr>
<td>Water Marks (B1)</td>
<td>Drainage Patterns (B10)</td>
</tr>
<tr>
<td>Sediment Deposits (B2)</td>
<td>Hydrogen Sulfide Odor (C1)</td>
</tr>
<tr>
<td>Drift Deposits (B3)</td>
<td>Water Marks (B1)</td>
</tr>
<tr>
<td>Algal Mat or Crust (B4)</td>
<td>Oxidized Rhizospheres on Living Roots (C3)</td>
</tr>
<tr>
<td>Iron Deposits (B5)</td>
<td>Drift Deposits (B3)</td>
</tr>
<tr>
<td>Inundation Visible on Aerial Imagery (B7)</td>
<td>Presence of Reduced Iron (C4)</td>
</tr>
<tr>
<td>Sparsely Vegetated Concave Surface (B8)</td>
<td>Saturation Visible on Aerial Imagery (C9)</td>
</tr>
</tbody>
</table>

Field Observations:

| Surface Water Present?    | Yes | ______ | No | X | Depth (inches): |
| Water Table Present?      | Yes | ______ | No | X | Depth (inches): |
| Saturation Present?       | Yes | ______ | No | X | Depth (inches): |

(includes capillary fringe)

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
**VEGETATION** – Use scientific names of plants.

### Sampling Point:

- Plot size:
  - Tree Stratum: 60' diameter
  - Sapling/Shrub Stratum: 30' diameter
  - Herb Stratum: 10' diameter
  - Woody Vine Stratum: 60' diameter

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: 60' diameter)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Acer rubrum</td>
<td>30</td>
<td>Yes</td>
<td>FAC</td>
</tr>
<tr>
<td>2. Tsuga canadensis</td>
<td>20</td>
<td>Yes</td>
<td>FACU</td>
</tr>
<tr>
<td>3. Betula alleghaniensis</td>
<td>20</td>
<td>Yes</td>
<td>FAC</td>
</tr>
<tr>
<td>4. Pinus strobus</td>
<td>15</td>
<td>No</td>
<td>FACU</td>
</tr>
<tr>
<td>5. Fagus grandifolia</td>
<td>15</td>
<td>No</td>
<td>FACU</td>
</tr>
</tbody>
</table>

### Sapling/Shrub Stratum (Plot size: 30' diameter)

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: 30' diameter)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pinus strobus</td>
<td>20</td>
<td>Yes</td>
<td>FACU</td>
</tr>
<tr>
<td>2. Fagus grandifolia</td>
<td>20</td>
<td>Yes</td>
<td>FACU</td>
</tr>
</tbody>
</table>

### Herb Stratum (Plot size: 10' diameter)

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 10' diameter)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Osmundastrum cinnamomeum</td>
<td>20</td>
<td>Yes</td>
<td>FACW</td>
</tr>
<tr>
<td>2. Parathelypteris noveboracensis</td>
<td>20</td>
<td>Yes</td>
<td>FAC</td>
</tr>
<tr>
<td>3. Trientalis borealis</td>
<td>5</td>
<td>No</td>
<td>FAC</td>
</tr>
</tbody>
</table>

### Woody Vine Stratum (Plot size: 60' diameter)

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: 60' diameter)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

### Absolute % Cover

- 100 = Total Cover
- 40 = Total Cover
- 45 = Total Cover

### Absolute % Cover & Dominant Species

- Total % Cover of:
  - OBL species: 0 = Total Cover
  - FACW species: 20 = Total Cover
  - FAC species: 75 = Total Cover
  - FACU species: 90 = Total Cover
  - UPL species: 0 = Total Cover
  - Column Totals: 185 = Total Cover

### Prevalence Index worksheet:

- Prevalence Index = $\frac{B}{A} = 3.38$

### Hydrophytic Vegetation Indicators:

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≤3.0
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. Problematic Hydrophytic Vegetation (Explain)

### Definitions of Vegetation Strata:

- **Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- **Sapling/shrub** - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
- **Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- **Woody vines** - All woody vines greater than 3.28 ft in height.

### Remarks:

- Include photo numbers here or on a separate sheet.
### Profile Description:
(Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Color (moist)</td>
<td>%</td>
</tr>
<tr>
<td>0-8</td>
<td>10YR 2/1</td>
<td></td>
</tr>
<tr>
<td>8-14</td>
<td>2.5Y 4/1</td>
<td>70</td>
</tr>
</tbody>
</table>

### Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

### Restrictive Layer (if observed):

- Type: Rock
- Depth (inches): 14

### Hydric Soil Present?
- Yes
- No

### Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)
W-CWF-1 upland plot.
HYDROLOGY

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</tr>
<tr>
<td>X High Water Table (A2)</td>
<td>Aquatic Fauna (B13)</td>
</tr>
<tr>
<td>X Saturation (A3)</td>
<td>Marl Deposits (B15)</td>
</tr>
<tr>
<td>Water Marks (B1)</td>
<td>Hydrogen Sulfide Odor (C1)</td>
</tr>
<tr>
<td>X Sediment Deposits (B2)</td>
<td>Oxidized Rhizospheres on Living Roots (C3)</td>
</tr>
<tr>
<td>Drift Deposits (B3)</td>
<td>Presence of Reduced Iron (C4)</td>
</tr>
<tr>
<td>Algal Mat or Crust (B4)</td>
<td>Recent Iron Reduction in Tilled Soils (C6)</td>
</tr>
<tr>
<td>Iron Deposits (B5)</td>
<td>Thin Muck Surface (C7)</td>
</tr>
<tr>
<td>Inundation Visible on Aerial Imagery (B7)</td>
<td>Other (Explain in Remarks)</td>
</tr>
<tr>
<td>Sparsely Vegetated Concave Surface (B8)</td>
<td>X Geomorphic Position (D2)</td>
</tr>
<tr>
<td>X Shallow Aquitard (D3)</td>
<td>X Microtopographic Relief (D4)</td>
</tr>
<tr>
<td>FAC-Neutral Test (D5)</td>
<td></td>
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</tbody>
</table>

Field Observations:

| Surface Water Present? | Yes X No | Depth (inches): | 2 |
| Water Table Present? | Yes X No | Depth (inches): | 0 |
| Saturation Present? | Yes X No | Depth (inches): | 0 |

Wetland Hydrology Present? Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
### VEGETATION – Use scientific names of plants.

**Tree Stratum**  
(Plot size: 60' diameter)

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acer rubrum</td>
<td>30</td>
<td>Yes</td>
<td>FAC</td>
</tr>
<tr>
<td>Betula alleghaniensis</td>
<td>25</td>
<td>Yes</td>
<td>FAC</td>
</tr>
<tr>
<td>Tsuga canadensis</td>
<td>10</td>
<td>No</td>
<td>FACU</td>
</tr>
<tr>
<td>Pinus strobus</td>
<td>5</td>
<td>No</td>
<td>FACU</td>
</tr>
</tbody>
</table>

**Sapling/Shrub Stratum**  
(Plot size: 30' diameter)

<table>
<thead>
<tr>
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<th>Absolute Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acer rubrum</td>
<td>20</td>
<td>Yes</td>
<td>FAC</td>
</tr>
<tr>
<td>Abies balsamea</td>
<td>5</td>
<td>No</td>
<td>FAC</td>
</tr>
<tr>
<td>Tsuga canadensis</td>
<td>5</td>
<td>No</td>
<td>FACU</td>
</tr>
<tr>
<td>Pinus strobus</td>
<td>5</td>
<td>No</td>
<td>FACU</td>
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</table>

**Herb Stratum**  
(Plot size: 10' diameter)

<table>
<thead>
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<th>Species</th>
<th>Absolute Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thelypteris palustris</td>
<td>30</td>
<td>Yes</td>
<td>FACW</td>
</tr>
<tr>
<td>Onoclea sensibilis</td>
<td>20</td>
<td>Yes</td>
<td>FACW</td>
</tr>
<tr>
<td>Carex stricta</td>
<td>10</td>
<td>No</td>
<td>OBL</td>
</tr>
<tr>
<td>Juncus effusus</td>
<td>5</td>
<td>No</td>
<td>OBL</td>
</tr>
<tr>
<td>Equisetum fluviatile</td>
<td>5</td>
<td>No</td>
<td>OBL</td>
</tr>
<tr>
<td>Rubus pubescens</td>
<td>5</td>
<td>No</td>
<td>FACW</td>
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</tbody>
</table>

**Woody Vine Stratum**  
(Plot size: 60' diameter)

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<thead>
<tr>
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<th>Dominant Species?</th>
<th>Indicator Status</th>
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</thead>
</table>

**Prevalence Index worksheet:**

<table>
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<tr>
<th>Species</th>
<th>% Cover</th>
<th>Multiply by</th>
</tr>
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<tbody>
<tr>
<td>OBL</td>
<td>20</td>
<td>1 = 20</td>
</tr>
<tr>
<td>FACW</td>
<td>55</td>
<td>2 = 110</td>
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<tr>
<td>FAC</td>
<td>80</td>
<td>3 = 240</td>
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<tr>
<td>FACU</td>
<td>20</td>
<td>4 = 80</td>
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<tr>
<td>UPL</td>
<td>0</td>
<td>5 = 0</td>
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</table>

<table>
<thead>
<tr>
<th>Column Totals</th>
<th>(A)</th>
<th>(B)</th>
</tr>
</thead>
</table>

**Hydrophytic Vegetation Indicators:**

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index ≤3.0
4. Morphological Adaptations

**Definitions of Vegetation Strata:**

- **Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- **Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
- **Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- **Woody vines** – All woody vines greater than 3.28 ft in height.

**Remarks:** (Include photo numbers here or on a separate sheet.)
### Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix Color (moist)</th>
<th>%</th>
<th>Redox Features Color (moist)</th>
<th>%</th>
<th>Type¹</th>
<th>Loc²</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>10YR 2/1</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Muck</td>
<td></td>
</tr>
<tr>
<td>5-8</td>
<td>10YR 2/1</td>
<td>50</td>
<td>5Y 6/1</td>
<td>50</td>
<td>D</td>
<td>M</td>
<td>Mucky Sand</td>
<td></td>
</tr>
<tr>
<td>8-14</td>
<td>5Y 6/1</td>
<td>95</td>
<td>7.5YR 5/6</td>
<td>5</td>
<td>C</td>
<td>M</td>
<td>Sandy</td>
<td></td>
</tr>
</tbody>
</table>

1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

#### Hydric Soil Indicators:
- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulphide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

#### Indicators for Problematic Hydric Soils³:
- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

#### Restrictive Layer (if observed):
- Type: Compaction
- Depth (inches): 14
- Hydric Soil Present? Yes

#### Remarks:

---

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
W-CWF-1 wetland plot.
ATTACHMENT 6
PRELIMINARY SITE EVALUATION
BY MARK HAMPTON ASSOCIATES, INC.
September 29, 2023

Mr. Steve Blake
BH2M
380B Maine Street
Gorham ME, 04038

Re: Preliminary soil evaluation, 11 proposed lots on 29+ acres off of Chadbourne Ridge Road, Waterboro

Dear Steve,

I have completed a preliminary soil evaluation on the 11 lots in the proposed subdivision off Chadbourne Ridge Road in Durham for Climate Forest, LLC. The soil evaluation was conducted in accordance with the Maine Subsurface Wastewater Disposal Rules dated September 2023, as amended. I evaluated two hand excavated test pits on each lot. The soils found on the upland portions of the lots are moderately well drained glacial till soils, with a limiting factor at approximately 16 to 22 inches.

The soils as evaluated meet the minimum requirements of the state rules. In my opinion, there are suitable soils and enough area on each lot for a septic system. A disposal bed for a 3-bedroom home could be a 20 feet wide by 45 feet long stone and pipe bed, or 20 Eljen In-drain GSF units comprising an area of 15 feet wide by 20 feet long. Septic designs can be completed at some time in the future.

If you have any questions or require additional information, please contact me.

Sincerely,

Mark J. Hampton L.S.E., C.S.S.
Licensed Site Evaluator #263
Certified Soil Scientist #216
### Soil Profile / Classification Information

**Project Name:** Chadbourne Ridge Subdivision  
**Applicant Name:** Climate Forest LLC  
**Project Location (municipality):** Waterboro

#### Exploration Symbol # TP-1
- **Organic horizon thickness:** 0
- **Ground surface elev.:** 0
- **Depth of exploration or to refusal:**
  - Sandy Loam
    - **Texture:** Friable
    - **Consistency:** Dark Brown

#### Exploration Symbol # TP-2
- **Organic horizon thickness:** 0
- **Ground surface elev.:** 0
- **Depth of exploration or to refusal:**
  - Sandy Loam
    - **Texture:** Friable
    - **Consistency:** Brown

#### Exploration Symbol # TP-3
- **Organic horizon thickness:** 0
- **Ground surface elev.:** 0
- **Depth of exploration or to refusal:**
  - Sandy Loam
    - **Texture:** Friable
    - **Consistency:** Olive

#### Exploration Symbol # TP-4
- **Organic horizon thickness:** 0
- **Ground surface elev.:** 0
- **Depth of exploration or to refusal:**
  - Sandy Loam
    - **Texture:** Friable
    - **Consistency:** Common

---

### Investigator Information and Signature

**Signature:** [Signature]

**Name Printed:** Mark Hampton  
**Cert/Lic/Reg. #:** 216/263  
**Date:** 9/29/23
### Soil Profile / Classification Information

**Project Name:** Chadbourne Ridge Subdivision  
**Applicant Name:** Climate Forest LLC  
**Project Location (municipality):** Waterboro

#### Exploration Symbol # TP-5  
- **Test Pit**  
- **Boring**

<table>
<thead>
<tr>
<th>Depth below mineral soil surface (inches)</th>
<th>Texture</th>
<th>Consistency</th>
<th>Color</th>
<th>Motting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Sandy</td>
<td>Friable</td>
<td>Dark Brown</td>
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</tr>
<tr>
<td>6</td>
<td>Sandy</td>
<td>Friable</td>
<td>Brown</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Sandy</td>
<td>Firm</td>
<td>Olive</td>
<td>Common and Distinct</td>
</tr>
</tbody>
</table>

#### Exploration Symbol # TP-6  
- **Test Pit**  
- **Boring**

<table>
<thead>
<tr>
<th>Depth below mineral soil surface (inches)</th>
<th>Texture</th>
<th>Consistency</th>
<th>Color</th>
<th>Motting</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Sandy</td>
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<td>Dark Brown</td>
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</tr>
<tr>
<td>6</td>
<td>Sandy</td>
<td>Friable</td>
<td>Brown</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Sandy</td>
<td>Firm</td>
<td>Olive</td>
<td>Common and Distinct</td>
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</tbody>
</table>

#### Exploration Symbol # TP-7  
- **Test Pit**  
- **Boring**

<table>
<thead>
<tr>
<th>Depth below mineral soil surface (inches)</th>
<th>Texture</th>
<th>Consistency</th>
<th>Color</th>
<th>Motting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Sandy</td>
<td>Friable</td>
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<tr>
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<td>Friable</td>
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</tr>
<tr>
<td>12</td>
<td>Sandy</td>
<td>Firm</td>
<td>Olive</td>
<td>Common and Distinct</td>
</tr>
</tbody>
</table>

#### Exploration Symbol # TP-8  
- **Test Pit**  
- **Boring**

<table>
<thead>
<tr>
<th>Depth below mineral soil surface (inches)</th>
<th>Texture</th>
<th>Consistency</th>
<th>Color</th>
<th>Motting</th>
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<tr>
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<tr>
<td>18</td>
<td>Sandy</td>
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<td>Olive</td>
<td>Common and Distinct</td>
</tr>
</tbody>
</table>

### Investigator Information and Signature

**Signature:** [Signature]  
**Date:** 9/29/23  
**Name Printed / Typed:** Mark Hampton  
**Cert/Lic/Reg. #:** 216/263  
**Title:** Licensed Site Evaluator

*affix professional seal*
**SOIL PROFILE / CLASSIFICATION INFORMATION**

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<td>X</td>
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<td><strong>Boring</strong></td>
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**Organic horizon thickness**

- Depth of exploration or refusal

<table>
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<tr>
<th>Texture</th>
<th>Consistency</th>
<th>Color</th>
<th>Mottling</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
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<tr>
<td>Loam</td>
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<td>Common</td>
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<tr>
<td>Loam</td>
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<td>and Distinct</td>
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**Depth below mineral soil surface (inches)**

<table>
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<th>Mineral soil surface</th>
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</table>

**Soil Details by**

<table>
<thead>
<tr>
<th>S.E.</th>
<th>S.S.</th>
</tr>
</thead>
</table>

**Soil series/phase name:**

- Hydric
- Non-hydric
- Hydrologic
- Soil Group

**INVESTIGATOR INFORMATION AND SIGNATURE**

- **Signature:** Mark Hampton
- **Date:** 9/29/23
- **Cert/LicReg. #:** 216/263
- **Title:** Licensed Site Evaluator, Certified Soil Scientist
- **Affix professional seal**
### Soil Profile / Classification Information

**Project Name:** Chadbourne Ridge Subdivision  
**Applicant Name:** Climate Forest LLC  
**Project Location (municipality):** Waterboro

#### Exploration Symbol # TP-17  
- **Texture:** Sandy Loam  
- **Consistency:** Friable  
- **Color:** Dark Brown  
- **Depth:** Below mineral soil surface (inches)  
- **Soil Series/phase name:** Common

#### Exploration Symbol # TP-18  
- **Texture:** Sandy Loam  
- **Consistency:** Friable  
- **Color:** Brown  
- **Depth:** Below mineral soil surface (inches)  
- **Soil Series/phase name:** Common

#### Exploration Symbol # TP-19  
- **Texture:** Sandy Loam  
- **Consistency:** Friable  
- **Color:** Olive  
- **Depth:** Below mineral soil surface (inches)  
- **Soil Series/phase name:** Common

#### Exploration Symbol # TP-20  
- **Texture:** Sandy Loam  
- **Consistency:** Friable  
- **Color:** Olive  
- **Depth:** Below mineral soil surface (inches)  
- **Soil Series/phase name:** Common

---

**Investigator Information and Signature**

- **Signature:**
- **Date:** 9/29/23
- **Name Printed/Typed:** Mark Hampton
- **Cert/Lic/Reg. #:** 216/263
- **Title:** Licensed Site Evaluator, Certified Soil Scientist, Certified Geologist

*Affix professional seal*
### Soil Profile / Classification Information

**Project Name:** Chadbourne Ridge Subdivision  
**Applicant Name:** Climate Forest LLC  
**Project Location (municipality):** Waterboro

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<th>Ground surface elev.</th>
<th>Depth of exploration or to refusal</th>
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<tbody>
<tr>
<td>Texture</td>
<td>Sandy</td>
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<table>
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### Detailed Description of Subsurface Conditions at Project Sites

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<tbody>
<tr>
<td>Texture</td>
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</thead>
<tbody>
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### Investigator Information and Signature

**Signature:** [Signature]  
**Date:** 9/29/23  
**Cert/Lic/Reg. #:** 216/263  
**Title:** Licensed Site Evaluator, Certified Soil Scientist, Professional Engineer
ATTACHMENT 7
HIGH INTENSITY SOILS
BY MARK HAMPTON ASSOCIATES, INC.
Legend for Soil Maps

1. Drainage Class

- Excessively Well Drained: EWD
- Well Drained: WD
- Moderately Well Drained: MWD
- Somewhat Poorly Drained: SPD
- Poorly Drained: PD
- Very Poorly Drained: VPD

2. Slope Designation

- 0-3%: A
- 3-8%: B
- 8-15%: C
- 15-25%: D
- >25%: E

3. Note: High Intensity Soil Survey has been prepared by Mark Hampton Associates, Inc. in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, and the Maine Board of Certification of Geologists and Soil Scientists.
Soil Narrative Report

DATE: Soil Profiles observed on September 21, 2023

BASE MAP: Base plan provided by BH2M, Scale 1 inch equals 100 feet and two foot contours.

GROUND CONTROL: Soil survey boundaries located by Mark Hampton Associates, Inc. for Class B Soil Survey

Class B-High Intensity Soil Survey (Minimum Standards)

Mapping units of 1 acre or less.
Scale of 1"= 200 feet or larger.
Up to 25% inclusions in mapping units of which no more than 15% may be dissimilar soils.
Ground Control – test pits located by means of compass by chaining, pacing, or taping from known survey control points
Base Map –5 foot contour intervals

Provided:

Mapping units of 1 acre or less
Base map scale of 1"= 100 feet.
Up to 25 percent inclusions in mapping units of which no more than 15 percent is dissimilar soils.
Baseline information and test pits located by pacing and taping from know survey control points.
Ground topographic survey with one foot contours and ground control provided.
The accompanying soil profile descriptions, soil map, and this soil narrative report were done in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, and the Maine Board of Certification of Geologists and Soil Scientists.

Mark J. Hampton

C.S.S. #216, L.S.E. #263

Date: Oct 7, 2023
7627

Chadbourne Ridge Road
Waterboro, ME
Climate Forest LLC

Skerry
(Aquic Haplorthods)

SETTING

PARENT MATERIAL:
LANDFORM:
POSITION IN LANDSCAPE:
SLOPE GRADIENT RANGES:

Derived from compact loamy glacial till.
Till plains, hills and ridges.
Plains and middle levels.
(A) 0-3%, (B) 3-8%, (C) 8-15%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS:

Moderately well drained

TYPICAL PROFILE:

Surface Layer: Gray (10YR 6/1), fine sandy loam, 0-7
Subsurface Layer: Dark reddish brown (5YR 3/3), fine sandy
loam, 7-20"
Subsoil Layer: Yellow brown (10YR 5/4), stony fine sandy
loam 20-28"
Substratum: Olive brown (2.5Y5/4), stony fine sandy loam,
28-65"

HYDROLOGIC GROUP:
SURFACE RUNOFF:
PERMEABILITY:
DEPTH TO BEDROCK:
HAZARD TO FLOODING:

Group C
Moderately Rapid
Moderate in solum, slow in substratum
Greater than 65 inches
None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING:

Brayton, Brayton

USE AND MANAGEMENT

Development: The limiting factor for building development is wetness due to the presence of a seasonally
high water table on top of dense glacial basal till for a portion of the year. Proper foundation drainage or
site modifications are recommended.
Colonel
(Aquic Haplorthods)

SETTING

PARENT MATERIAL: Derived from dense, loamy glacial till
LANDFORM: Drumlins and Sideslopes of glaciated uplands
POSITION IN LANDSCAPE: Mid-positions on landform
SLOPE GRADIENT RANGES: (A) 0-3%, (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Somewhat poorly drained with a perched watertable from 1.0 to 2.0 feet below the surface at some time from October to May or during periods of heavy precipitation.

TYPICAL PROFILE:
Surface Layer: Dk gray brown, stony sandy loam 0-3"
Subsurface Layer: Dark Brown, stony sandy loam, 3-12"
Subsoil Layer: Olive Brown, stony sandy loam, 12-18"
Substratum: Olive, stony, sandy loam, 18-65"

HYDROLOGIC GROUP: Group C
SURFACE RUNOFF: Moderate to moderately slow
PERMEABILITY: Moderate and moderately slow
DEPTH TO BEDROCK: Greater than 65 inches
HAZARD TO FLOODING: None

INCLUSIONS

(Within Mapping Unit)
CONTRASTING: Skerry, Brayton

USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of a high watertable for a portion of the year. Proper foundation drainage or site modification is recommended.
Brayton
(Aeric Epiaquepts)

SETTING

PARENT MATERIAL:
Derived from dense glacial till

LANDFORM:
Toeslopes and depressions in glaciated uplands

POSITION IN LANDSCAPE:
Lower positions on landform

SLOPE GRADIENT RANGES:
(A) 0-3%, (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS:
Poorly drained with a perched watertable from 0.0 to 1.0 feet below the surface at some time from October to May or during periods of heavy precipitation.

TYPICAL PROFILE:
Surface Layer: Dk gray, fine sandy loam 0-5"
Subsurface Layer: Gray fine sandy loam, 5-15"
Subsoil Layer: Grayish brown fine sandy loam, 15-24"
Substratum: Olive fine sandy loam, 24-65"

HYDROLOGIC GROUP:
Group C

SURFACE RUNOFF:
Moderate to moderately slow

PERMEABILITY:
Moderate and moderately slow

DEPTH TO BEDROCK:
Greater than 65 inches

HAZARD TO FLOODING:
None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING:
Colonel, Skerry,

USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of an extremely high watertable for a portion of the year. This soil is not suitable for development without alteration, which may require additional permitting.
### Soil Profile / Classification Information

**Project Name:** Cluster Subdivision  
**Applicant Name:** Forest Climate LLC  
**Project Location (municipality):** Waterboro

#### Exploration Symbol # SS-1
- **Horizon:** Ap  
- **Color:** Dark Brown  
- **Texture:** Sandy  
- **Structure:** Very Friable  
- **Consistency:**  
- **Redox:**  
- **Depth:**  

#### Exploration Symbol # SS-2
- **Horizon:** Ap  
- **Color:** Black  
- **Texture:** Sandy  
- **Structure:** Weak  
- **Consistency:** Friable  
- **Redox:**  
- **Depth:**  

#### Exploration Symbol # SS-3
- **Horizon:** Ap  
- **Color:** Brown  
- **Texture:** Sandy  
- **Structure:** Fine  
- **Consistency:** Granul  
- **Redox:** Friable  
- **Depth:**  

#### Exploration Symbol # SS-4
- **Horizon:** Ap  
- **Color:** Black  
- **Texture:** Sandy  
- **Structure:** Fine  
- **Consistency:** Granul  
- **Redox:** Friable  
- **Depth:**  

---

**SOIL SCIENTIST INFORMATION AND SIGNATURE**

**Signature:** Mark J. Hampton  
**Date:** 9/21/2023  
**SS License No.:** 216

---

**MARK J. HAMPTON #216**
### SOIL PROFILE / CLASSIFICATION INFORMATION

#### Exploration Symbol # SS-5
- **Color**: Dark Brown
- **Texture**: Loam
- **Structure**: Firm
- **Consistency**: Firm
- **Redox**: Firm
- **Horizon**: Ap
- **Depth**: 0 ft

#### Exploration Symbol # SS-6
- **Color**: Brown
- **Texture**: Loam
- **Structure**: Firm
- **Consistency**: Firm
- **Redox**: Firm
- **Horizon**: Bg
- **Depth**: 10 ft

#### Exploration Symbol # SS-7
- **Color**: Black
- **Texture**: Sandy
- **Structure**: Fine
- **Consistency**: Friable
- **Redox**: Friable
- **Horizon**: Ap
- **Depth**: 15 ft

#### Exploration Symbol # SS-8
- **Color**: Dark Brown
- **Texture**: Sandy
- **Structure**: Fine
- **Consistency**: Friable
- **Redox**: Friable
- **Horizon**: Ap
- **Depth**: 20 ft

---

### SOIL SCIENTIST INFORMATION AND SIGNATURE

**Signature**: Mark J. Hampton  
**Date**: 9/21/2023  
**SS License No.:** 216
### Soil Profile / Classification Information

**Project Name:** Cluster Subdivision  
**Applicant Name:** Forest Climate LLC  
**Project Location (municipality):** Waterboro

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- **Soil Series/Phase Name:** Skerry  
- **Limiting Factor:** Groundwater  
- **Hydrologic:** Yes

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- **Soil Series/Phase Name:** Skerry  
- **Limiting Factor:** Groundwater  
- **Drainage Class:** ED  
- **Hydrologic:** Yes

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- **Soil Series/Phase Name:** Skerry  
- **Limiting Factor:** Groundwater  
- **Drainage Class:** ED  
- **Hydrologic:** Yes

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- **Soil Series/Phase Name:** Colonel  
- **Limiting Factor:** Groundwater  
- **Drainage Class:** ED  
- **Hydrologic:** Yes

---

**Soil Scientist Information and Signature**

**Signature:**  
Mark J. Hampton  
**Date:** 9/21/2023  
**License No.:** SS-216

---

**Mark J. Hampton**

**9/21/2023**

**216**
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**Soil Series/Phase Name:** Colonel
**Limiting Factor:** Groundwater
**Drainage Class:** ED, ESED, WD, MWD, SP, PD, VPD
**Slope:** 3/12
**Hydraulic:** No
**Hydrologic:** Yes

**Soil Series/Phase Name:** Brayton
**Limiting Factor:** Groundwater
**Drainage Class:** ED, ESED, WD, MWD, SP, PD, VPD
**Slope:** 2
**Hydraulic:** No
**Hydrologic:** Yes

**Signature:**
Mark J. Hampton
9/21/2023
Date
216
SS License No.
ATTACHMENT 8
HYDROGEOLOGIC ASSESSMENT
BY MARK CENCI GEOLOGIC, INC.
Hydrogeologic Assessment of the
Climate Forest, LLC Subdivision
Chadbourne Ridge Road, Waterboro

Date: November 1, 2023

Summary of the Assessment:

The proposed subdivision of eleven residential lots satisfies the requirements of the Town of Waterboro Subdivision Ordinance regarding effects on ground water quality and quantity.

Purpose of the Assessment:

The purpose of the assessment is to predict the locations and possible effects on groundwater from septic systems and water wells planned for the project to satisfy the requirements of the Waterboro Subdivision Ordinance Article 6.2.24.

Information used:

Information used in this assessment include the Sketch Plan 11 Lot Cluster Subdivision by BH2M, dated June 2023, soil log information and a wetland delineation by Mark Hampton, LSS, LSE and library research of published geologic, hydrogeologic and soils information.

Project summary:

The project is a subdivision of eleven residential lots on 29.27 acres. The residences will be single family homes, served by individual subsurface wastewater disposal systems and private, drilled bedrock water wells. The homes are assumed to be four-bedrooms in size.
Summary of geology:

The property is located on the dissected northwesterly side of Chadbourne Ridge (see Figure 1). The land slopes northerly, with an elevation change of approximately 70 feet over approximately 1200 feet. Drainage is northerly to an unnamed brook which flows to Arrowhead Lake.

The site is mapped (see Figure 2) as a deposit of glacial till without shallow bedrock on the Surficial Geology of the Limington 7.5 minute quadrangle, York and Cumberland Counties, Maine by Andres Meglioli and Woody Thompson (ME Geol. Surv. Open-File Report 99-121).

The area is depicted as an association of Skerry fine sandy loam and Skerry stony fine sandy loam (see Figure 3) on the National Cooperative Soil Survey. These mapping results agree with the soil investigation results of Hampton.

Bedrock was not found in the soil pits of Hampton. The bedrock is mapped as schist, migmatitie and granofels metamorphic rocks (See Figure 4) by Henry Berry and Arthur Hussey on the Bedrock Geology of the Portland 1:100,000 Quadrangle, Maine and New Hampshire (ME Geol. Surv, Geologic Map 98-1).

 Depths to bedrock are reported from water wells near the property to be 8 to 24 feet below the surface.

Summary of hydrogeology:

The property is not mapped as a Significant Sand and Gravel Aquifer by the Maine Geological Survey.

The source of ground water on this site is precipitation. Precipitation falling on this site seeps into the soil and descends until restrictive soil layers, the water table or bedrock is encountered. On this site the soils are sandy loam to loamy sand in texture. Surface slopes are moderate. Soil recharge is average on the property.

The ground water flow directions on this property were determined by analysis of the surface topographic contours. Monitoring wells are not generally used on hillsides of glacial till soils.

The estimated hydraulic conductivity (K) of the soils is based on the soil descriptions of
Hampton. K is assumed to be 8 feet per day. The hydraulic gradients are estimated to be 3%, based on surface slopes. The effective porosity is assumed to be 25%. This gives a groundwater seepage velocity of 1 foot per day.

**Impact on ground water quality:**

Nitrate-nitrogen is the chemical to assess for the impact on ground water. Nitrate-nitrogen (NO3-N) is generated by septic systems. It is a conservative contaminant, meaning it does not readily degrade in ground water, nor does it attach to soil particles. NO3-N is limited to 10 mg/liter in public drinking water supplies by the Primary Drinking Water Standard. The Waterboro Subdivision Ordinance requires the ground water to not exceed 5 mg/liter at the project property lines.

The analysis of NO3-N impacts was calculated by SOLUTRANS, a 32-bit Windows program for modelling three-dimensional solute transport written by Dr. Charles R. Fitts, of Fitts Geosolutions and the University of Southern Maine. The program is based on the analytical solutions of Liej *et al.* (1991 and 1993). The solutions in SOLUTRANS all assume a uniform one-dimensional flow field, and allow three-dimensional dispersion, retardation and first-order decay. SOLUTRANS is not a Mass-Balance Dilution model, so drought conditions are considered.

Variables entered into the calculations include a seepage velocity of 1 foot per day, a hydraulic gradient of 3% and an effective porosity of 25%. Other assumed variables include an initial wastewater concentration of 40 mg/liter NO3-N, a retardation of 1, a decay constant of zero and longitudinal, lateral and vertical dispersivities of 24, 8 and 0.8 feet, respectively. Flows of 360 gallons per day per residence were assumed for the homes on the proposed lots.

Calculations were made and reveal a typical 5 mg/liter NO3-N plume from a single-family septic system will be no more than 150 feet in length. The curve of the calculated results is attached. All the 5 mg/liter mg/liter NO3-N plumes remain on the development parcel.

The plumes from Lots 2, 3, 4, 5, 6, 7, 8, 10 and 11 will move into wetlands located on the property. In wetlands conditions the near surface groundwater containing the elevated nitrogen will encounter carbon-rich anoxic conditions. The nitrates will biochemically be changed to nitrogen gas carbon dioxide and water, where not first taken up by the hydrophytic vegetation as nutrients. This natural wetland treatment helps reduce the nitrogen to very low concentrations.
Impact on ground water quantity:

An estimated 4,400 gallons of water will be removed from the bedrock aquifer per day, assuming each of the single-family residences uses 400 gallons per day.

Water occurs in fractures and partings in a rock body. The openness and spacing of the fractures and partings differs from rock body to rock body and within the rock body as well. It is extremely difficult to predict the well yield and well depth at any specific location, but general trends can be discerned by looking at well drilling results.

There are two variables to consider when evaluating a water well. One is the depth of the borehole into the rock and the other is the amount of water that can be delivered to the borehole from the bedrock fractures. Where the yield of the well is low, a deep borehole can act as a storage container. The typical drilled, bedrock water well in Maine is 300 feet deep and has a yield of 3 gallons per minute.

To investigate the capacity of the site to deliver water from the bedrock aquifer to the proposed homes, while complying with the Ordinance, research of existing published information was made.

No test wells were drilled and evaluated on the property, but the Maine Water Well Database of the Maine Geological Survey provides published information of existing water wells that are searchable. These are presented in a map format (see Figures 5 and 6).

Thirteen bedrock wells drilled into the same Rindgemere Formation as underlies the project within one mile of the subject property were tallied regarding depth and yield of well. Well depths range from 145 feet to 500 feet deep. The average well depth is 345 feet, and the median well depth is 330 feet deep. Well yields range from 1.5 gpm to 30 gpm. The average yield is 8 gpm and the median is 5 gpm. These results suggest the Rindgemere Formation in this area is a body of rock offering above average well yield characteristics and deeper than average depths.

To better understand the capacity of the bedrock aquifer to deliver the quantity of water required by eleven new homes, without affecting the neighborhood, an analysis of the recharge capacity of the property was made.

Precipitation recharges the bedrock aquifer, and typical rates of recharge are known from studies of bedrock in Maine. Rocks like the Rindgemere Formation typically recharge 9 inches (0.75
feet) of precipitation per year into the bedrock. This is regardless of drought conditions.

A simple Mass-Balance equation can be done to evaluate the capacity of the subject property to supply sufficient water to the bedrock aquifer. Calculations are attached as Table 1 and indicate the property itself supplies more water to the bedrock than will be withdrawn by the new wells.

Conclusions:

The proposed plan for 11 residential dwellings meets the requirements of the Town of Waterboro regarding the quality and quantity of ground water. All 5 mg/liter plumes remain of the property and do not degrade the ground water of the neighborhood.

The bedrock aquifer recharge capacity of the parcel is greater than the groundwater withdrawal from the new water wells. The metamorphic rocks of the Rindgemere Formation beneath the site is a good bedrock aquifer, as shown by a review of the nearest bedrock water wells in the Maine Water Well Database.

Mark Cenci, LG # 467
TABLE 1

Bedrock Aquifer Mass-Balance Calculations

Assumptions:
29-acre parcel
11 single family residences pumping 400 gallons per day (4,400 gpd)
4 feet per year of total precipitation
9 inches recharge (0.75 ft) to the bedrock per year, at a recharge rate of 21%

Calculations:
29 acres x 43,540 sq ft/acre x 0.75 ft/ year x 7.481 gal/sq ft / 365 days per year = 19,418 gallons per day, average, recharged into the bedrock aquifer on this parcel.

Conclusions:
Recharge to the bedrock aquifer on the property exceeds the withdrawal from the combined total of existing and new wells.
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
- Streams and Canals
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

AERIAL PHOTOGRAPHY

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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: 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: York County, Maine
Survey Area Data: Version 21, Aug 30, 2022

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

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 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

<table>
<thead>
<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>AdC</td>
<td>Adams loamy sand, 8 to 15 percent slopes</td>
<td>3.7</td>
<td>0.8%</td>
</tr>
<tr>
<td>BcB</td>
<td>Becket fine sandy loam, 3 to 8 percent slopes</td>
<td>74.0</td>
<td>16.9%</td>
</tr>
<tr>
<td>BcC</td>
<td>Becket fine sandy loam, 8 to 15 percent slopes</td>
<td>2.8</td>
<td>0.6%</td>
</tr>
<tr>
<td>BeB</td>
<td>Becket fine sandy loam, 0 to 8 percent slopes, very stony</td>
<td>22.6</td>
<td>5.2%</td>
</tr>
<tr>
<td>BeC</td>
<td>Becket fine sandy loam, 8 to 15 percent slopes, very stony</td>
<td>80.9</td>
<td>18.5%</td>
</tr>
<tr>
<td>BeD</td>
<td>Becket fine sandy loam, 15 to 25 percent slopes, very stony</td>
<td>0.3</td>
<td>0.1%</td>
</tr>
<tr>
<td>BsB</td>
<td>Brayton and Westbury very stony fine sandy loams, 0 to 8 percent slopes</td>
<td>71.8</td>
<td>16.4%</td>
</tr>
<tr>
<td>Ch</td>
<td>Chocorua peat</td>
<td>1.7</td>
<td>0.4%</td>
</tr>
<tr>
<td>CrB</td>
<td>Croghan loamy fine sand, 0 to 8 percent slopes, wooded</td>
<td>5.4</td>
<td>1.2%</td>
</tr>
<tr>
<td>HmD</td>
<td>Hermon sandy loam, 15 to 35 percent slopes, very stony</td>
<td>11.6</td>
<td>2.7%</td>
</tr>
<tr>
<td>Sa</td>
<td>Saco mucky silt loam</td>
<td>8.8</td>
<td>2.0%</td>
</tr>
<tr>
<td>SkB</td>
<td>Skerry fine sandy loam, 0 to 8 percent slopes</td>
<td>55.3</td>
<td>12.6%</td>
</tr>
<tr>
<td>SrB</td>
<td>Skerry fine sandy loam, 0 to 8 percent slopes, very stony</td>
<td>82.8</td>
<td>18.9%</td>
</tr>
<tr>
<td>SrC</td>
<td>Skerry fine sandy loam, 8 to 15 percent slopes, very stony</td>
<td>15.7</td>
<td>3.6%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td><strong>437.4</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>
Concentration of NO3-N vs Distance from Source
ATTACHMENT 9
STORMWATER REPORT NARRATIVE
STORMWATER MANAGEMENT REPORT

Waterboro Woodyards
Chadbourne Ridge Road
Waterboro, Maine

Submitted by:

Waterboro Woodyards, LLC
117 Main Street
Cornish, Maine

Prepared by:

Date:
November 2023
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1.6 GENERAL STANDARDS .......................................................................................... 5
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1.8 URBAN IMPAIRED STREAM STANDARD ............................................................. 5
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APPENDIX B SOILS REPORT
APPENDIX C PRE DEVELOPMENT CALCULATIONS
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APPENDIX E WATER QUALITY & SIZING CALCULATIONS
APPENDIX F INSPECTION AND MAINTENANCE MANUAL
1.0 INTRODUCTION

Waterboro Woodyards, LLC is looking to construct an 11-lot cluster subdivision on a parcel (Tax Map 14 Lot 44T) off Chadbourne Ridge Road in Waterboro. This parcel to be developed is approximately 33.72 acres and is mostly wooded. The development will be accessed by a 24’ wide roadway (approximately 700 linear feet) with underground electric. Each lot will be served by private wells and individual subsurface disposal systems.

The scope of work includes but is not limited to:

- Tree clearing and grubbing
- Stump and boulder removal
- Construction of a 20’ wide paved access with 2’ gravel shoulders
- Installation of underground electric and communications conduit
- Installation of storm drain system including two soil filters

Development of the proposed roadway infrastructure and stormwater BMP’s will create approximately 17,887 sf of impervious area and 36,142 sf of newly vegetated area totaling 54,029 sf (1.24 acres). In order to adequately size the stormwater infrastructure for the project, allocations of impervious and newly vegetated areas have been considered for the development of each lot. These allocations are detailed on Sheet B of the plan set. Since the applicants intend to sell lots, these allocations have not been counted towards the 1-acre threshold for stormwater permitting.

The Stormwater Management Plan has been prepared to satisfy the requirements of the Maine Department of Environmental Protections “Stormwater Management Rules” Chapters 500, 501 and 502 as well as the most recent version of the “Maine Stormwater Best Management Practices Manual”.

The Stormwater Management BMP’s have also been designed in conformance with the Town of Waterboro Land Use Ordinance and Subdivision Regulations.

1.1 OVERVIEW OF MODELING METHODOLOGY AND SOURCE INFORMATION

Hydrologic Analysis: The pre- and post-development conditions have been modeled using modeling software (Hydrocad Version 10) which is based upon the methodology contained within the USDA Soil Conservation Service Technical Release 55. Type III 24-hour storm distributions for York County were used for the analysis. The following return periods and 24-hour rainfall depths were used for the analysis:
Soils: The soils used for the stormwater analysis were digitized from the Natural Resource Conservation Service (NRCS), web soil survey website. The source of the data is the York County Soil Survey (Class D). Refer to the following for additional documentation regarding the soils used for modelling:

- Appendix B of this Report
- Pre and Post Development Watershed Plans (Sheets A and B)

The soils include:

<table>
<thead>
<tr>
<th>Soil Map Unit</th>
<th>Unit Description</th>
<th>Hydrologic Soil Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>BcB, BcC</td>
<td>Becket fine sandy loam, 3-15% slopes</td>
<td>C</td>
</tr>
<tr>
<td>BeB, BeC</td>
<td>Becket fine sandy loam, 0-15% slopes, very stoney</td>
<td>C</td>
</tr>
<tr>
<td>BrB</td>
<td>Brayton &amp; Westbury fine sandy loams, 0-8% slopes</td>
<td>D</td>
</tr>
<tr>
<td>BsB</td>
<td>Brayton &amp; Westbury fine sandy loams, 0-8% slopes</td>
<td>D</td>
</tr>
<tr>
<td>CrB</td>
<td>Croghan loamy fine sand, 0-8% slopes</td>
<td>A</td>
</tr>
<tr>
<td>Sa</td>
<td>Saco mucky silt loam</td>
<td>B/D*</td>
</tr>
<tr>
<td>SkB</td>
<td>Skerry fine sandy loam, 0-8% slopes</td>
<td>C/D*</td>
</tr>
<tr>
<td>SrB, SrC</td>
<td>Skerry fine sandy loams, 0-15% slopes, very stoney</td>
<td>C/D*</td>
</tr>
</tbody>
</table>

*Assumed D in areas of known wetlands

Topography: LIDAR data from the Maine Office of GIS

1.2 DESCRIPTION OF POINTS OF ANALYSIS

The watershed model analyzes the discharge of runoff at two Analysis Points as described below:

Analysis Point #1
Description: Flow to stream at western property line.
Pre Development Tributary Drainage Areas: 168.20 ac
Post Development Tributary Drainage Areas: 167.57 ac
Analysis Point #2
Description: Flow to low point at western property line.
Pre Development Tributary Drainage Areas: 71.97 ac
Post Development Tributary Drainage Areas: 72.60 ac

1.3 PRE DEVELOPMENT CONDITIONS

The Existing Conditions are shown on Sheet 2 and Sheet A of the accompanying plans. The parcel to be developed encompasses an area of approximately 33.72 acres and is located off Chadbourne Ridge Road in Waterboro. The parcel is primarily wooded and lies within the Lake Arrowhead Watershed.

The watershed that was analyzed for this project is approximately 240.17 acres. The analysis points are described in Section 1.2 of this report.

The Pre-Development Watershed Map is included as Sheet A of the accompanying plans and the Calculations are attached as Appendix C.

The Pre-Development Watershed Model predicts the following peak flow rates:

<table>
<thead>
<tr>
<th>Analysis Point</th>
<th>2-Year</th>
<th>10-Year</th>
<th>25-Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP-1</td>
<td>88.54</td>
<td>200.61</td>
<td>302.59</td>
</tr>
<tr>
<td>AP-2</td>
<td>35.70</td>
<td>80.96</td>
<td>122.03</td>
</tr>
</tbody>
</table>

1.4 POST DEVELOPMENT CONDITIONS

The proposed project will include the construction of a paved roadway and two soil filters intended to serve the 11 single family homes. Since the applicants intend to sell lots, the allocations of impervious and newly vegetated area for each lot have not been counted towards the 1-acre threshold for stormwater permitting.

Below is a summary of the proposed developed areas associated with construction of the project:

- Proposed Impervious Area = 17,887 sf
- Proposed Landscaped Area = 36,142 sf
- Proposed Developed Area = 54,029 sf

The proposed project will utilize the two soil filters to provide attenuation of peak flows and treatment of stormwater runoff.

The Post Development Watershed Map is included as Sheet B of the accompanying plan set and the Calculations are attached as Appendix D.
The Post-Development Watershed Model predicts the following peak flow rates:

<table>
<thead>
<tr>
<th>Analysis Point</th>
<th>2-Year</th>
<th>10-Year</th>
<th>25-Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP-1</td>
<td>88.21</td>
<td>199.87</td>
<td>301.47</td>
</tr>
<tr>
<td>AP-2</td>
<td>34.44</td>
<td>80.79</td>
<td>121.23</td>
</tr>
</tbody>
</table>

1.5 **BASIC STANDARDS**

The proposed project is required to meet the Basic Standards. To meet the Basic Standards the project design must demonstrate that the erosion and sedimentation control, inspection and maintenance, and housekeeping standards specified in Appendices A, B, and C of 06-096 Chapter 500 are met, and that the grading or other construction activity will not impede or otherwise alter drainageways so as to have an unreasonable adverse impact on a wetland or waterbody, or an adjacent downslope parcel.

The proposed project will provide temporary (during construction) BMP’s and post-construction BMP’s. Refer to Sheet 4 of the Project Plans for erosion and sedimentation control narratives and details. The project requirements for inspection and maintenance during construction and post-construction are described in the Erosion and Sedimentation Control - Inspection and Maintenance Plan found in Appendix F of this Report. The housekeeping standards can also be found in the Inspection and Maintenance Plan.

1.6 **GENERAL STANDARDS**

The proposed project is not required to meet the General Standards for the Maine DEP.

1.7 **PHOSPHORUS STANDARD**

The proposed project is located in the Lake Arrowhead Watershed. The proposed project is not located within the direct watershed of a lake or lake most-at-risk listed in 06-096 Chapter 502. The Phosphorus Standard does not apply to this project.

1.8 **URBAN IMPAIRED STREAM STANDARD**

The proposed project is located in the Lake Arrowhead Watershed. Lake Arrowhead is not listed in 06-096 Chapter 502 as an Urban Impaired Stream. The Urban Impaired Stream Standard does not apply to this project.
1.9 **FLOODING STANDARD**

The proposed project is required to meet the Flooding Standards for the Town of Waterboro. To meet the Flooding Standard, the project design must demonstrate that the stormwater management systems will accomplish the following:

a) The system must detain, retain, or result in the infiltration of stormwater from 24-hour storms of the 2-year, 10-year, and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project.

b) The design of piped or open channel systems must be based on a 10-year, 24-hour storm without overloading or flooding beyond channel limits.

c) The areas expected to be flooded by runoff from a 10-year or 25-year, 24-hour storm must be defined, and no buildings or other similar facilities may be planned within such areas.

d) Runoff from the project may not flood the primary access road to the project and any public roads bordering the project as a result of a 25-year, 24-hour storm.

The following Table compares the Pre and Post Development peak flow rates for the 2-year, 10-year, and 25-year return periods. Refer to Appendix C for the Pre-Development model and Appendix D for Post Development model.

<table>
<thead>
<tr>
<th>Analysis Point</th>
<th>2-Year Pre</th>
<th>2-Year Post</th>
<th>10-Year Pre</th>
<th>10-Year Post</th>
<th>25-Year Pre</th>
<th>25-Year Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP-1</td>
<td>88.54</td>
<td>88.21</td>
<td>200.61</td>
<td>199.87</td>
<td>302.59</td>
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</tr>
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<td>35.70</td>
<td>34.44</td>
<td>80.96</td>
<td>80.79</td>
<td>122.03</td>
<td>121.23</td>
</tr>
</tbody>
</table>

As illustrated in the table above, development of the proposed project will create a condition where peak flows of stormwater from the proposed project site are maintained or reduced from the peak flows of stormwater prior to undertaking the project at all analysis points for all storm events. No adverse impacts will be created to the downstream conditions.

1.10 **CLOSURE**

The proposed stormwater management facilities have been designed to mitigate stormwater impacts associated with development of the proposed project. The proposed stormwater management facilities have been designed to meet the Basic, General and Flooding Standards required by Chapter 500.
Appendix C
Pre Development Calculations
Appendix D
Post Development Calculations
Appendix E
Water Quality & Sizing Calculations
Appendix E
Inspection and Maintenance Manual