● Ecology
● Soil & Wetland Studies
● Water Quality Monitoring ● GPS
● Environmental Planning & Management
● Ecological Restoration & Habitat Mitigation
● Aquatic, Wildlife and Listed Species Surveys
● Application Reviews ● Permitting & Compliance

March 30, 2016

Town of Mansfield
Inland Wetlands Agency
14 Park Place
Mansfield, CT 06226-2217

Re: **WETLANDS ASSESSMENT-SUPPLEMENTAL: VERNAL POOL INVESTIGATION**
Storrs Lodges, Connecticut, Hunting Lodge Road, Mansfield, CT

REMA Job No.: 15-1860-MNS18

Dear Agency Members:

REMA ECOLOGICAL SERVICES, LLC (REMA) is providing herein the results of a breeding season, vernal pool investigation conducted at Wetland A, at the above-referenced site on March 24th, 2016. Attached to this report please find a Vernal Pool Characterization Form (Draft-USACE), and several annotated photographs taken on the day of the survey.

In total, sixty-seven (67) wood frog egg masses were observed, most of which (i.e. 62) were found together in one "raft" or grouping, and in about 12 inches of water.

Respectfully submitted,

REMA ECOLOGICAL SERVICES, LLC

Sigrun N. Gadwa, MS, PWS
Professional Wetland Scientist
Registered Soil Scientist

George T. Logan, MS, PWS, CE
Professional Wetland Scientist
Registered Soil Scientist, Certified Senior Ecologist

VIA E-MAIL & HAND-DELIVERY

Attachments: Vernal Pool Characterization Form; Photos 1 to 5

US Army Corps of Engineers - New England District
DRAFT Vernal Pool Characterization Form

Project File # 15-1860-MNS18 Project Name Lodgee at Storrs, a proposed Residential/Student Community Pool ID WA-VP
Observer George T. Logan, MS, PWS, CSE Phone or E-mail rema8@aol.com
Landowner/Applicant Ponde Place, LLC/Storrs Lodges, LLC Phone or E-mail
Address Hunting Lodge Road City Mansfield State CT Zip
Location of vernal pool: City/State Mansfield, CT
Survey date(s) 3-24-16
Longitude/Latitude (in decimal degrees) 41.8086 -72.2755

A. VERNAL POOL CHARACTERISTICS (fill in all information known):

1. Landscape setting (check all that apply):

☐ Upland depression (4 pts; if this is also in a floodplain, use 2 pts)
☒ Pool part of wildlife corridor (4 pts)
☐ Pool part of a pool complex (within 1000 feet of one or more other vernal pools) (NA)
☒ Pool within larger wetland system (4 pts; if this is also in a floodplain, use 2 pts)
☐ Other:_____(variable pts)

2. Vernal pool condition:

Describe any recent modifications to the pool and associated landscape: Pool within forested swamp was created when fill for a road (later abandoned) was placed in wetland between 1965 and 1970, hydrologically isolating its western most lobe, allowing water to pond.

3. Parent material:

☐ Glacial fluvial ("outwash")
☐ Loose till
☐ Peat
☒ Dense till
☐ Alluvium
☐ Coastal marine sediments

4. Aquatic resource type that best applies to this pool (choose dominant):

☒ Forested wetland (4 pts)
☐ Herbaceous wetland (4 pts)
☐ Floodplain (overflow/oxbow) (3 pts)
☐ Shrub wetland (4 pts)
☐ Open water (2 pts)
☐ Other:_____(variable points)
☐ Peatland (acidic fen or bog) (4 pts)
☐ Intermittent stream reach (2 pts)

5. Pool canopy cover (%): ~85

6. Predominant substrate:

☒ Mineral soil
☐ Organic matter (peat/muck) Depth _____ Sampling location (e.g., deepest zone, edge, etc.)_____

7. Pool size:

a. Approximate dimensions of pool (at maximum capacity; include units): Length _____ Width _____
Area: 9,280

b. Maximum depth at deepest point at time of survey (include units): 15 inches

8. Hydrology:

a. Estimated hydroperiod (unless actual, observed hydroperiod value(s) is(are) known, use the presence of these example indicator species to best predict the expected hydroperiod of the pool):

☒ Dries between early March and early July (e.g., *Thelypteris palustris, Carex stricta, Impatiens capensis, Ilex verticillata*) (6 pts)
☐ Dries between early July and early September (e.g., *Sagittaria latifolia, Scirpus cyperinus, Dulichium arund., Cephalanthus occ.*) (8 pts)
☐ Dries between early September and early November (e.g., *Eleocharis palustris, Glyceria cana., Utricularia* spp., *Decodon vert.*) (8 pts)
☐ Dries between early November and late December, or intermittently exposed (e.g., *Nuphar* spp., *Potamogeton* spp.) (2 pts)

b. Inlet/outlet (pick one):

☒ No inlet/outlet (8 pts)
☐ Permanent inlet or outlet (channel with well-defined banks and permanent flow) (2 pts)
☐ Temporary inlet/outlet (6 pts)

9. Water quality:

☐ Clear
☐ High turbidity
☐ High algae content
☒ Tannic

26 **TOTAL for Pool Characteristics (out of 28 max.)**

B. VERNAL POOL ENVELOPE (100 ft) AND CRITICAL HABITAT AREA (100-750 ft) CHARACTERISTICS (fill in all information known):

1. Landuse type and approximate percentage within the 100-ft vernal pool envelope:

☒ Forested 99.0 % (16 pts) ☐ Open (e.g., meadow, agriculture, golf course) ____ % (4 pts)

☐ Shrub ____ % (10 pts) ☒ Developed 1.0 % (0 pts)

2. Landuse type and approximate percentage within the 100 - 750-ft vernal pool critical terrestrial habitat:

☒ Forested 93.8 % (16 pts) ☐ Open (e.g., agriculture, golf course) ____ % (4 pts)

☐ Shrub ____ % (10 pts) ☒ Developed 6.2 % (0 pts)

☐ Are there one or more barriers to vernal pool fauna movement within the envelope and/or critical terrestrial habitat? If so, check here and see directions for explanation of how to incorporate this information.

Based on: ☐ Field estimate ☐ GIS ☐ Aerial photo estimate

31 **TOTAL for Pool Envelope and Critical Terrestrial Habitat Area (out of 32 max.)**

C. SPECIES PRESENT IN VERNAL POOL

INDICATOR SPECIES	DATE	EGG MASSES (#)	TADPOLES/LARVAE
Wood Frog (*Lithobates sylvaticus*)	3/24/16	67	
Spotted Salamander (*Ambystoma maculatum*)			
Blue-spotted Salamander (*Ambystoma laterale*)			
Jefferson's Salamander (*Ambystoma jeffersonianum*)			
Marbled Salamander (*Ambystoma opacum*)			
Fairy Shrimp (*Eubranchipus* spp.)		**PRESENT/ABSENT**	**ABUNDANCE:**
OTHER SPECIES	**DATE**	**PRESENCE/ABSENCE**	**FEW/COMMON/MANY**
Facultative Species (e.g., Spring Peeper (*Pseudacris crucifer*), Gray Tree Frog (*Hyla versicolor*), Caddisflies (Limnephilidae, Phryganeidae), American Toad (*Anaxyrus americanus*), Eastern Spadefoot Toad (*Scaphiopus holbrookii*), Fowler's Toad (*Anaxyrus fowleri*), Fingernail Clams (Sphaeriidae, Pisidiidae))(list):	3/24/16	Spring Peeper	FEW
Rare Species (list):			
Predator Species (e.g., Bullfrog/Green frog tadpoles, Fish) (list):			
Other species (e.g., Ducks, Turtles, etc.)(list):			

Presence of Indicator Species ☒ Yes ☐ No

SUMMARY:

26 **TOTAL for Pool Characteristics** 31 **TOTAL for Pool Envelope and Critical Terrestrial Habitat Area**

Other comments (append photographs, additional notes, sketch of pool and surrounding landscape):

On April 20, 2007, 53 wood frog, and four spotted salamander egg masses were observed in the pool by Edward M. Pawlak, MS, PWS

"*Storrs Lodges*," a Proposed Residential Community, Hunting Lodge Road, Mansfield, CT
Photos taken March 24th, 2016, by REMA Ecological Services, LLC

Photo 1: Wetland A (with embedded vernal pool habitat); facing northerly

Photo 2: Wetland A; vernal pool, near location of wood frog egg mass raft; facing southerly

"*Storrs Lodges*," a Proposed Residential Community, Hunting Lodge Road, Mansfield, CT
Photos taken March 24th, 2016, by REMA Ecological Services, LLC

Photo 3: Wetland A (with embedded vernal pool habitat); shallow non-productive portion; facing westerly

Photo 4: Wood frog egg mass

Photo 5: Wood frog egg mass raft