



## **WETLAND & VERNAL POOL ANALYSIS**

**May 7, 2018**

**Verizon Wireless  
20 Alexander Drive  
Wallingford, CT 06492**

**APT Project No.: CT1418180**

**Re: Proposed Pomfret Center CT  
72 Ragged Hill Road  
Pomfret, Connecticut**

Verizon Wireless (“Verizon”) proposes the development of a wireless telecommunications facility (“Facility”) on a ±627-acre undeveloped forested parcel at 72 Ragged Hill Road in Pomfret, Connecticut (“Host Property”). On behalf of Verizon, All-Points Technology Corporation, P.C. (“APT”) evaluated three optional locations proposed for accommodating the Facility with respect to wetland and vernal pool resources.

The three optional locations (identified herein as Sites A, B, and C) are situated in the western portion of the Host Property, all of which can be accessed from Swedetown Road. The Facility is proposed to be located within upland forest habitat primarily consisting of oak-eastern white pine. Development of a Facility at all of the optional locations would consist of a monopole and associated ground equipment located within a 50-foot by 50-foot gravel compound area surrounded by an exterior chain-link fence. Access would be provided by existing woods roads that require improvements to establish a 12-foot wide gravel access drive. Tree management activities associated with the access road improvements would be limited in area and primarily confined to trimming with minimal tree removal.

APT has completed an assessment of potential impacts to wetlands and vernal pool habitats located on the Host Property which may be affected by proposed construction activities at each of the optional locations. This evaluation is based on field inspections performed on September 12, 2016, December 5, 2017 and May 5, 2018 by APT, along with a review of site plans prepared by On Air Engineering, LLC (latest revision date 03/06/18).

### **Introduction**

APT wetland scientists conducted inspections of the Host Property on September 12, 2016 to confirm the presence and extent of wetlands and watercourses within approximately 200 feet of the proposed Site A, which was identified as the initial Facility location. Two alternate Facility locations were presented later, resulting in a subsequent wetland inspection (performed on December 5, 2017) to identify wetlands and watercourses within approximately 200 feet of proposed Sites B and C. Details of APT’s wetland investigation are provided under separate cover; a Wetland Inspection Map is enclosed for reference. During this later wetland inspection, six (6) potential vernal pool habitats were identified mainly in proximity to an existing woods road that would be used to access Site C. A summary of our findings is provided below.

## Wetlands

No direct wetland impacts would occur from development of the proposed compound areas and access roads at Sites A or B. Site A is located  $\pm 160$  feet from the nearest wetland (Wetland 1 to the southeast compound corner) and Site B is located  $\pm 140$  feet from the nearest wetland (Wetland 2 to the east side of the compound). Provided erosion and sedimentation controls are installed and maintained during construction in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sedimentation Control, no likely adverse impact to these nearby wetland resources would be anticipated from the proposed development activities at either Site A or B.

No direct wetland impacts would occur from development of the proposed Site C compound. Site C is located  $\pm 90$  feet from the nearest wetland (Wetland 3 to the east side of the proposed compound area). Provided erosion and sedimentation controls are installed and maintained during construction in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sedimentation Control, no likely adverse impact to this nearby wetland resource would be anticipated from the proposed compound development activities at Site C.

The existing woods road that would be improved with a 12-foot wide gravel surface to access Site C includes an existing crossing of Wetland 2. A culvert is located at the eastern edge of Wetland 2 conveying flows under the existing woods road; proposed road improvement activities are not anticipated to disturb this culvert, which conveys flows from Vernal Pool 1 (see subsequent Vernal Pool section). The western end of the existing wetland crossing contains minimal fill material such that a portion of the woods road is still classified as a wetland under Connecticut statutes. This portion of the woods road is characterized by a seasonally wet surface and tire ruts. Although no significant erosion or sediment release was observed, due to the unstable condition of this portion of the woods road there is a potential for sediment release into the adjoining wetlands located to either side of the road.

Developing the Facility at Site C will require temporary and permanent impacts to wetland resources to gain access, as described in the following section.

*Temporary Wetland Impacts* - Temporary, indirect wetland impacts associated with the proposed access drive improvements including installation of erosion controls and human activity in proximity to wetlands during the construction phase of the project. Once established, the Facility generates very limited traffic (limited to regular maintenance visits, approximately once per month) resulting in minimal long-term indirect wetland impacts.

Improvements to the existing woods road to accommodate a 12-wide gravel drive will provide for long term stability of the access road and minimize future wetland impacts (current conditions are resulting in rutting and potential for release of sediment to adjacent resources). At the western end of the existing wetland crossing, a French Mattress would be installed to maintain existing subsurface hydraulic flow to wetland areas located on either side of the woods road. The French Mattress would include the installation of coarse stone and gravel material wrapped in a geotextile fabric for the road subbase to allow for hydraulic connection between the wetland areas on either side of the woods road. This design avoids concentrating flows (which could occur if a culvert design was used) or adversely effecting wetland hydrology conditions to either upslope or downslope resources.

In all areas where temporary disturbance of wetlands is likely to occur, the limit of work will be marked with erosion control barriers. These measures will prevent sedimentation into the wetland from disturbed or exposed areas and accidental incursion by vehicles or equipment. Such areas will be permanently stabilized with a seed mix containing various native grasses and forbs.

*Permanent Wetland Impacts* – As introduced above, the proposed improvements to the woods road will require minor direct wetland impact ( $\pm 1,500$  SF) to existing developed/disturbed wetland areas in Wetland 2, resulting from installation of the proposed French Mattress and a stable 12-foot wide gravel road base. Considering this is a disturbed

wetland crossing, the permanent wetland impacts are not significant, and could be considered an improvement to current conditions (e.g., eliminates potential erosion hazard). Therefore, no mitigation is proposed.

### **Vernal Pool Survey and Analysis**

A total of six potential vernal pools (“PVP”) were identified on the Host Property during the wetland investigation, five of which (PVPs 1 through 5) are clustered near the southern side of the existing woods road wetland crossing that is proposed to access Site C. PVP 6 is located over 250 feet southwest of Site C. No vernal pools would be directly impacted by proposed development activities associated with either Sites A, B or C.

PVPs 1, 2 and 3 are man-made features created by excavations within Wetland 2 immediately adjacent to the south side of the wetland crossing. The hydrology for these three PVPs has been artificially created by the excavations and altered by the existing woods road and an adjacent drainage ditch. This drainage ditch flows to the east eventually draining into PVP 1, which during high water conditions flows to the north through a culvert under the woods road. PVP 2 is hydraulically isolated with no surface outlet. It should be pointed out that due to their anthropogenic nature, the hydroperiods for PVPs 1, 2 and 3 may be insufficient to support amphibian breeding to juvenile development during some years and may actually serve as a ‘decoy’ pool<sup>1</sup>. However, a long-term study monitoring the duration of sustained inundation and metamorph development would be required to confirm or deny this hypothesis, which is beyond the scope of this analysis. PVPs 4, 5 and 6 have considerably less anthropogenic influence and are more typical of ‘cryptic’ style potential vernal pool habitat.

A vernal pool field survey was conducted May 5, 2018 by an APT wetland scientist to confirm breeding activity by vernal pool indicator species. Survey techniques included visual surveys, call surveys and dip netting. Vernal pool indicator species breeding was observed in PVPs 1, 2, 3 and 5; wood frog (*Rana sylvatica*; newly hatched tadpoles) and spotted salamander (*Ambystoma maculatum*; egg masses) were observed in each of these pools. Hereinafter, these four pools will be referenced as verified vernal pools (“VP”). Other amphibians observed include spring peeper (*Pseudacris crucifer*; adults chorusing) and green frog (*Rana clamitans*; both adults and overwintered tadpoles [only in VP 1]). PVPs 4 and 6 did not contain any vernal pool indicator species, likely a result of shallow inundation observed in these pools and the resulting inability of these features to sustain hydrology for successful amphibian breeding. Considering the close proximity of these vernal pools, this analysis assumes there is a potential one or more of these habitats could be supporting a metapopulation of amphibians, particularly since they are all located within the same wetland system. Please refer to the enclosed Vernal Pools Map and photo documentation.

### ***Physical Impact to Vernal Pools and Surrounding Terrestrial Habitat Conservation Zones***

This section details a recognized scientific method for analyzing the potential impact a project may have on a particular vernal pool and its surrounding upland habitat.

Construction and operation of the Facility at either Sites A, B or C would not result in direct physical impact to the identified vernal pools. It is widely documented that vernal pool dependent amphibians are not only solely dependent upon the actual vernal pool habitat for breeding and egg and juvenile development but require surrounding upland habitat for most of their adult lives. Studies recognized by various local, state and federal agencies recommend protection of adjacent habitat up to 750 feet from the vernal pool edge for obligate pool-breeding amphibians.<sup>2</sup>

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<sup>1</sup> temporary pools of water that result in a biological “sink” as breeding amphibians deposit eggs into a water body without the necessary hydraulic period to allow for successful development of the eggs into juveniles

<sup>2</sup> Calhoun, A.J.K. and M.W. Klemens. 2002. Best Development Practices (BDPs): Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States. WCS/MCA Technical Paper No. 5.

In order to evaluate potential impacts to the verified vernal pools and their surrounding upland habitat, the pools were assessed using methodology developed by Calhoun and Klemens (2002; known as the “BDP”). This methodology assesses vernal pool ecological significance based on two parameters: 1) biological value of the vernal pool, and 2) conditions of the critical terrestrial habitat. The biological rating is based on the presence of federal or state-listed species and abundance and diversity of vernal pool indicator species. The terrestrial habitat is assessed based on the integrity of the vernal pool envelope (within 100 feet of the pool’s edge; “VPE”) and the critical terrestrial habitat (within 100-750 feet of the pool’s edge; “CTH”). A priority rating of Tier I was assigned to all of the verified vernal pools, due to breeding activity by two obligate vernal pool species and relatively intact terrestrial habitat<sup>3</sup> (Tier II and III pools represent lower amphibian productivity and fragmented terrestrial habitat). Pools with 25% or less developed areas in the critical terrestrial habitat are identified as having high priority for maintaining less than 25% development within this terrestrial habitat, including site clearing, grading and construction<sup>1</sup>. All of the pools verified in this study qualify for this conservation priority guidance recommendation.

The four vernal pools evaluated in this assessment were rated based on these criteria for both the existing condition and the proposed condition to determine if Verizon’s proposed development would result in a reduction in the tier rating system or reduce the terrestrial habitat integrity below the critical 75% non-development criterion.

*Vernal Pool Envelope* - The proposed development at any of the three Sites would not result in further degradation of the existing tier rating or terrestrial habitat integrity of the vernal pools due to the small amount of disturbance associated with constructing the Facility.

The VPE will not be impacted by the proposed compound development at Sites A, B or C. In addition, the proposed access roads to Sites A and B would not encroach into the VPE. The nearest compound development activity to a verified vernal pool is as follows:

- Site A is located ±380 from VP 2
- Site B is located ±390 feet from VP 2
- Site C is located ±420 feet from VP 5

A portion of the proposed access to Site C is located within the VPE associated with anthropogenic VPs 1, 2 and 3. Considering the proposed development activities are intended as improvements to a poorly functioning condition, upgrading the existing woods road to access Site C would not result in a likely adverse impact to amphibian populations due to the relatively short construction window and subsequent very low maintenance traffic (average is once per month, typically during daylight hours). Potential for short-term impacts associated with upgrading the existing access to Site C is addressed in the subsequent Best Management Practices (“BMPs”) section of this document.

*Critical Terrestrial Habitat* - The total area of CTH associated with the four verified vernal pools is ±58 acres, which consists largely of undeveloped and primarily forested land. The vernal pools’ CTH has less than 1% development under existing conditions (Swedetown Road) resulting in compliance with the 75% non-development criterion and conservation priority ranking. The proposed Facility and access development activities located within the CTH would be as follows for the three optional site locations:

- Site A = ±0.14 acre
- Site B = ±0.26 acre
- Site C = ±0.62 acre

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<sup>3</sup> Vernal Pool Assessment Sheet (source: Calhoun and Klemens 2002)

This would result in an increase of developed CTH for the three locations as follows:

- Site A =  $\pm 0.24\%$
- Site B =  $\pm 0.45\%$
- Site C =  $\pm 1.07\%$

Therefore, the proposed Verizon development represents a de minimis increase in development of the vernal pool's CTH for any of the three potential Facility locations. Considering the existing condition of the CTH is well below the 75% non-development criterion<sup>4</sup> and the relatively small area of new development proposed (up to an additional  $\pm 1.07\%$ ), the Facility would not result in a likely adverse impact to existing amphibian productivity nor would it result in long-term adverse impact to the terrestrial habitat. This assessment is further supported considering a minimum  $\pm 380$ -foot non-disturbance vegetated buffer would remain between any of the vernal pools and all three possible Facility compound locations. Any improvements to access roads would result in minimal tree clearing and would primarily be isolated to tree trimming work due to the existing cleared limits of the woods road.

The potential exists for possible short-term impact to herpetofauna using nearby vernal pool habitat due to possible encounters with migrating and basking individuals that may intercept the proposed development footprint during construction. Potential short-term impacts associated with the proposed development within the terrestrial habitat proximate to vernal pools would be minimized by the proper installation and maintenance of erosion and sedimentation controls in accordance with *2002 Connecticut Guidelines For Soil Erosion and Sediment Control*. Vernal pool BMPs are recommended to avoid/minimize potential short-term impact to herpetofauna during construction, discussed at the end of this document.

### ***Hydraulic Alterations***

Land-use changes (i.e., clearing, increases in impervious surface) can increase surface runoff in the watershed of a vernal pool. Direct inputs of stormwater flows into a pool may produce sudden water level increases in a short period of time and may lengthen the duration of flooding (hydroperiod). Diversion of stormwater flows past a pool may have the opposite effect of decreasing water levels and shortening the pool's hydroperiod. In addition, stormwater features that create temporary pools of water can result in a biological "sink" as breeding amphibians deposit eggs into a water body without the necessary hydraulic period to allow for successful development of the eggs into juveniles (a/k/a, decoy pools).

The proposed development at any of the three possible locations would not alter existing surface or subsurface flow conditions or directions. Site clearing and grading activities will not de-water nearby potential vernal pools or alter surface water drainage patterns associated with any of the six potential vernal pools. Impervious surfaces associated with the proposed Project have been minimized with the use of a gravel surface within the Project area to support infiltration and local groundwater recharge. Proposed improvements to the existing crossing of Wetland 2 would not alter the hydrology of nearby VPs 1, 2 or 3. The proposed French Mattress (located between VPs 2 and 3) does not have a surface hydraulic connection to either VP 2 (hydraulically isolated) or VP 3 (connects to the drainage ditch along the south side of the woods road and drains east into VP 1). A culvert currently drains VP 1 to the north under the existing woods road; proposed access road improvements would not disturb this existing culvert. Therefore, the proposed development at either Sites A, B or C would not alter the hydrology of nearby vernal pools. In addition, no stormwater management features (temporary or permanent) are proposed that would result in creation of a

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<sup>4</sup>This threshold is generally used for prioritizing vernal pool conservation efforts: Calhoun, A.J.K. and M.W. Klemens. 2002. Best Development Practices (BDPs): Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States. WCS/MCA Technical Paper No. 5. Pg. 10.

temporary 'decoy' pool and 'sink' features, which could potentially affect breeding amphibians intercepted on their migration to nearby vernal pools.

***Vernal Pool Recommended Best Management Practices***

As a result of the proposed development's location in a vernal pool CTH at any of the optional Facility locations, BMPs are recommended to both protect the nearby wetland resources from temporary impacts and avoid unintentional impact or mortality to vernal pool herpetofauna (i.e., wood frog, salamanders, snakes, turtles, etc.) during construction activities. The vernal pool BMPs would be implemented during peak amphibian movement periods (early spring breeding [March 1st to May 15th] and late summer dispersal [July 15th to September 15th]) while the wetland BMPs would be implemented regardless of time of year. Details of the recommended wetland and vernal pool protection plan are enclosed. Provided the wetland and vernal pool protection plan is properly implemented during construction activities, it is APT's opinion the proposed development will not result in a likely adverse impact to nearby vernal pool or wetland resources.

If you have any questions regarding the above-referenced information, please feel free to contact me by telephone at (860) 663-1697 ext. 201 or via email at [dgustafson@allpointstech.com](mailto:dgustafson@allpointstech.com).

Sincerely,

All-Points Technology Corporation, P.C.

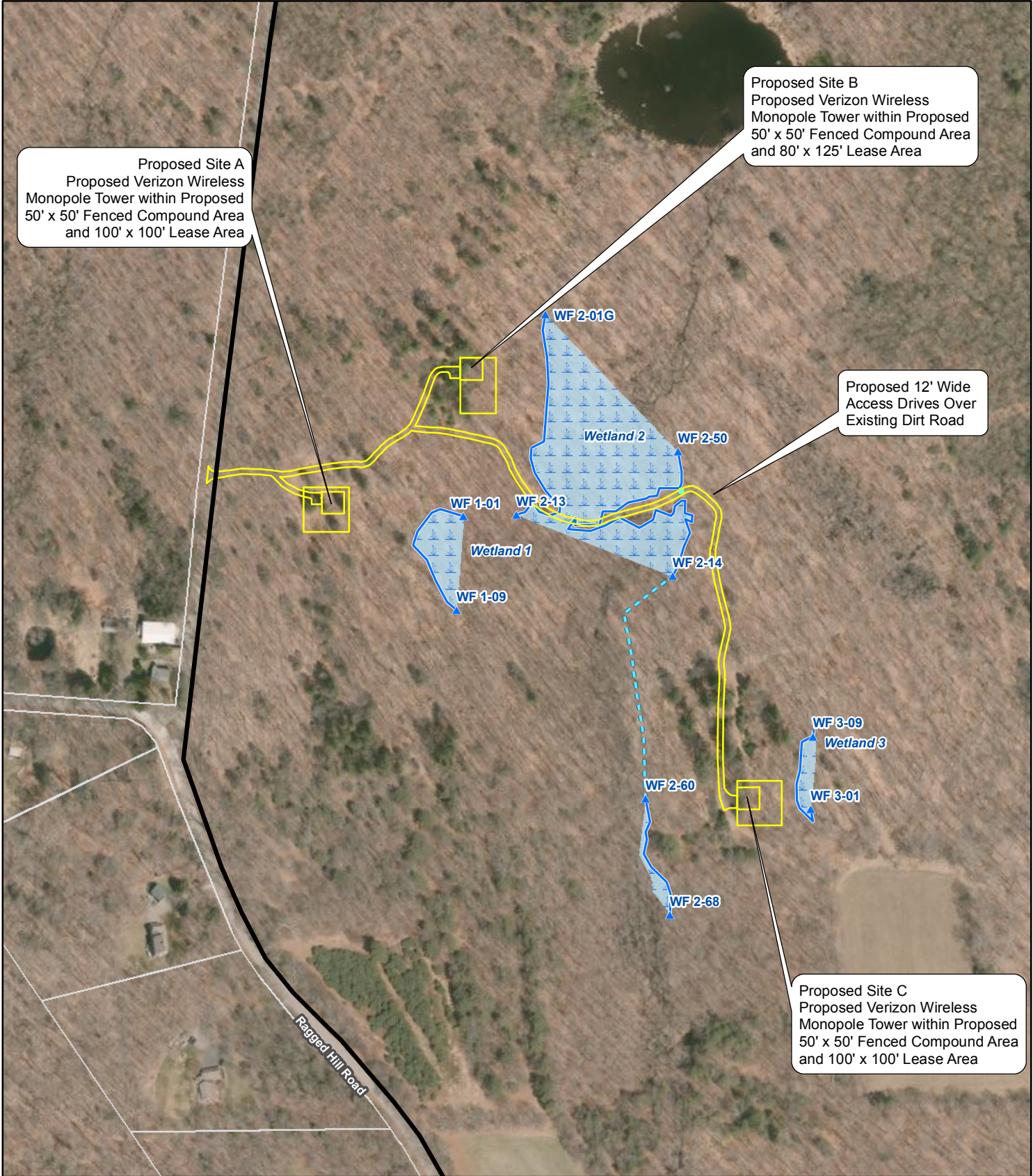


Dean Gustafson  
Senior Wetland Scientist

Enclosures

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# **Wetland Inspection Map and Vernal Pools Map**



Proposed Site A  
Proposed Verizon Wireless  
Monopole Tower within Proposed  
50' x 50' Fenced Compound Area  
and 100' x 100' Lease Area

Proposed Site B  
Proposed Verizon Wireless  
Monopole Tower within Proposed  
50' x 50' Fenced Compound Area  
and 80' x 125' Lease Area

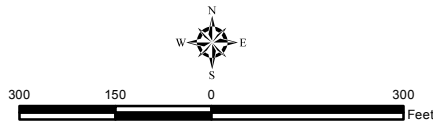
Proposed 12' Wide  
Access Drives Over  
Existing Dirt Road

Proposed Site C  
Proposed Verizon Wireless  
Monopole Tower within Proposed  
50' x 50' Fenced Compound Area  
and 100' x 100' Lease Area

**Legend**

- Proposed Verizon Wireless Facility Layout (Sites A, B, and C)
- Subject Property
- ▲ Wetland Flag
- Field Identified Approximate Wetland Boundary
- Delineated Wetland Boundary
- Approximate Wetland Area
- Existing Culvert
- Approximate Parcel Boundary (CTDEEP)

**Map Notes:**  
Base Map Source: 2016 Aerial Photograph (CTECO)  
Map Scale: 1 inch = 300 feet  
Map Date: May 2018

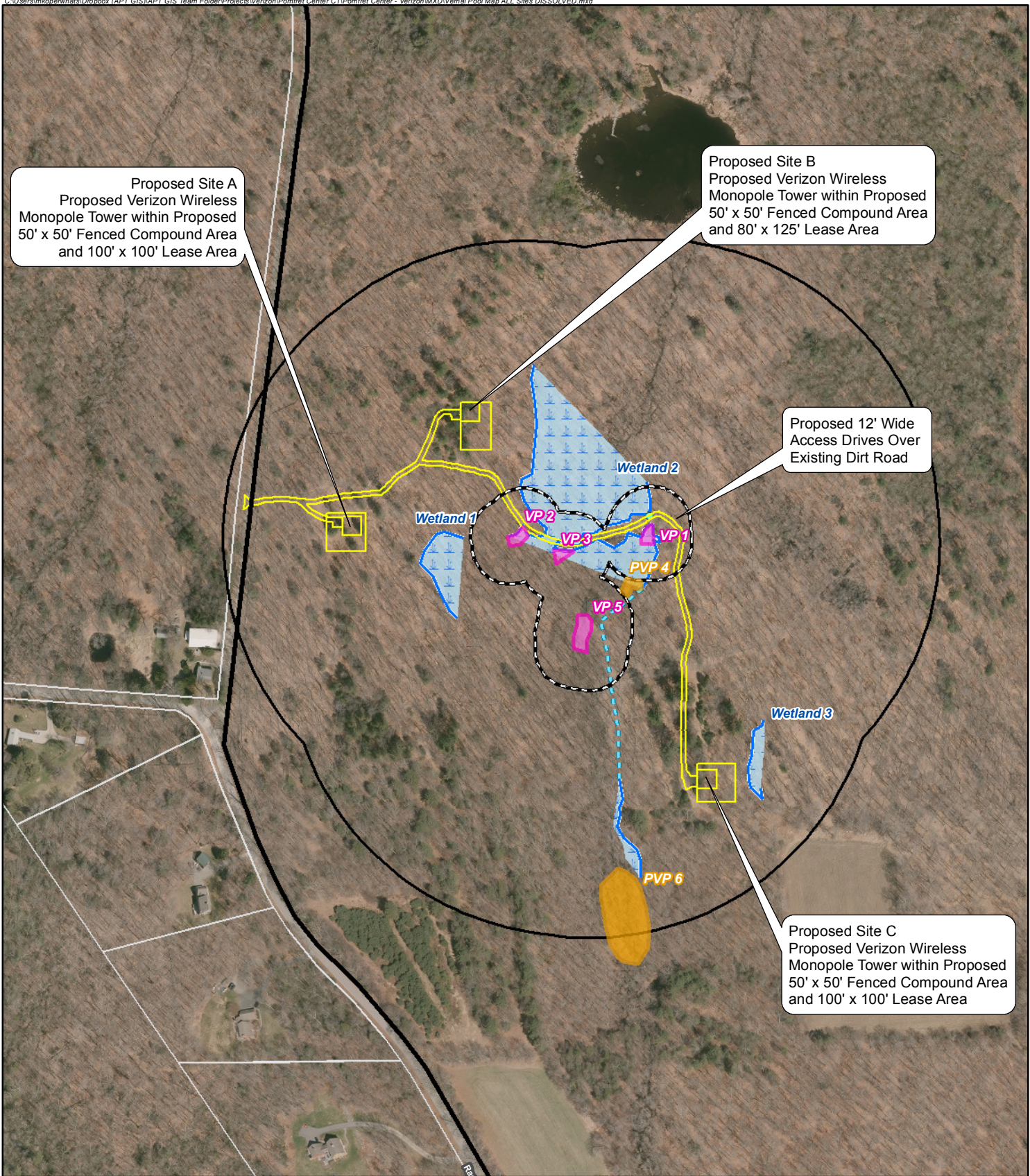


**Wetland Inspection Map**

Proposed Wireless  
Telecommunications Facility  
Pomfret Center CT  
72 Ragged Hill Road  
Pomfret Center, Connecticut



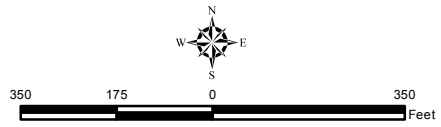




**Legend**

- Proposed Verizon Wireless Facility Layout (Sites A, B, and C)
- Potential Vernal Pool
- Verified Vernal Pool
- 100' Vernal Pool Envelope
- 100'-750' Critical Terrestrial Habitat
- Delineated Wetland Boundary
- Field Identified Approximate Wetland Boundary
- Approximate Wetland Area
- Existing Culvert
- Subject Property
- Approximate Parcel Boundary (CTDEEP)

**Map Notes:**  
 Base Map Source: 2016 Aerial Photograph (CTECO)  
 Map Scale: 1 inch = 350 feet  
 Map Date: May 2018



**Potential Vernal Pools Map**

Proposed Wireless Telecommunications Facility  
 Pomfret Center CT  
 72 Ragged Hill Road  
 Pomfret Center, Connecticut



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# Photo Documentation

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Photo 1: View of north end of Wetland 1 looking southwest.



Photo 2: View of Wetland 2 existing 'wet' woods road crossing looking northwest.



Photo 3: View of south end of Wetland 3 looking north.



Photo 4: View of Vernal Pool 1 looking south; deepest inundation 12-16”.



Photo 5: View of Vernal Pool 1 spotted salamander egg masses.



Photo 6: View of Vernal Pool 1 overwintered green frog tadpole.



Photo 7: View of Vernal Pool 2 looking west; deepest inundation 12-14”.



Photo 8: View of Vernal Pool 3 looking east with woods road in background; pool drains east into drainage ditch located along south side of woods road.



Photo 9: View of Vernal Pool 3 newly hatched wood frog tadpoles.



Photo 10: View of Potential Vernal Pool 4 looking southwest; deepest inundation 8-10".  
No obligate vernal pool species observed.



Photo 11: View of Vernal Pool 5 looking southwest; deepest inundation 14-16”.



Photo 12: View of Vernal Pool 5 spotted salamander egg mass on dead branch attachment site.





Photo 13: View of Vernal Pool 5 newly hatched wood frog tadpoles.



Photo 14: View of Potential Vernal Pool 6 looking southwest; deepest inundation 6-10" with small 12' diameter area 16" inundation. No obligate vernal pool species observed.

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# Wetland and Vernal Pool Protection Plan

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## **ENVIRONMENTAL NOTES**

### **WETLAND AND VERNAL POOL PROTECTION PLAN**

As a result of the Verizon Wireless project's location in the vicinity of wetland resources and vernal pool habitat, the following Best Management Practices ("BMPs") shall be implemented by the Contractor to avoid unintentional impacts to proximate wetland resources or mortality to vernal pool herpetofauna (i.e., wood frog, salamanders, turtles, etc.) during construction activities. The vernal pool specific BMPs shall be implemented should construction activities occur during peak amphibian movement periods (early spring breeding [March 1<sup>st</sup> to May 15<sup>th</sup>] and late summer dispersal [July 15<sup>th</sup> to September 15<sup>th</sup>]). BMP's associated with the protection of wetlands will be implemented regardless of the time of year.

It is of the utmost importance that the Contractor complies with the requirement for the installation of protective measures and the education of its employees and subcontractors performing work on the project site. All-Points Technology Corporation, P.C. ("APT") will serve as the Environmental Monitor for this project to ensure that these protection measures are implemented properly and will provide an education session on the project's proximity to sensitive wetland resources and associated herpetofauna prior to the start of construction activities. The Contractor shall contact Dean Gustafson, Senior Environmental Scientist at APT, at least 5 business days prior to the pre- construction meeting. Mr. Gustafson can be reached by phone at 663-1697 ext. 201 or via email at dgustafson@allpointstech.com.

The proposed wetland and vernal pool protection program consists of several components including: installation of erosion controls; periodic inspection and maintenance of isolation structures; herpetofauna sweeps; education of all contractors and sub-contractors prior to initiation of work on the site; protective measures; and, reporting.

#### **1. Erosion and Sedimentation Controls**

- a. Plastic netting used in a variety of erosion control products (i.e., erosion control blankets, fiber rolls [wattles], reinforced silt fence) has been found to entangle wildlife, including reptiles, amphibians, birds and small mammals. No permanent erosion control products or reinforced silt fence will be used on the project. Temporary erosion control products that will be exposed at the ground surface and represent a potential for wildlife entanglement will use either erosion control blankets and fiber rolls composed of processed fibers mechanically bound together to form a continuous matrix (netless) or netting composed of planar woven natural biodegradable fiber to avoid/minimize wildlife entanglement.
- b. Installation of erosion and sedimentation controls, required for erosion control compliance and creation of a barrier to possible migrating/dispersing herpetofauna, shall be performed by the Contractor. The Environmental Monitor will inspect the work zone area prior to and following erosion control barrier installation. In addition, work zones in proximity to vernal pool resources will be inspected prior to and following erosion control barrier installation to ensure the area is free of herpetofauna and satisfactorily installed. The intent of the barrier is to segregate the majority of the work zone from migrating/dispersing herpetofauna. Oftentimes complete isolation of a work zone is not feasible due to accessibility needs and locations of staging/material storage areas, etc. In those circumstances, the barriers will be positioned to deflect migrating/dispersal routes away from the work zone to minimize potential encounters with herpetofauna at the discretion of the Environmental Monitor. Also, use of a 'syncopated' style of silt fence that allows for wildlife openings while still providing erosion and sedimentation control may be used in areas proximate to vernal pools to avoid interrupting herpetofauna movements. Any such areas will be identified by the Environmental Monitor prior to erosion and

sedimentation control installation activities and discussed with the Contractor at the pre-construction meeting.

- c. No equipment, vehicles or construction materials shall be stored within 100 feet of wetland resources.
- d. All silt fencing or other potential barriers to safe herpetofauna migration shall be removed within 30 days of completion of work and permanent stabilization of site soils so that reptile and amphibian movement between uplands and wetlands is not restricted.

## **2. Contractor Education:**

- a. Prior to work on site and initial deployment/mobilization of equipment and materials, the Contractor shall attend an educational session at the pre-construction meeting with APT. This orientation and educational session will consist of information such as, but not limited to: identification of wetland resources proximate to work areas, representative photographs of typical herpetofauna that may be encountered, Connecticut and Federal listing status of species that could be encountered, typical species behavior, and proper procedures if species are encountered. The meeting will further emphasize the non-aggressive nature of these species, the absence of need to destroy such animals and the need to follow Protective Measures as described in Section 4 below. The Contractor will designate one of its workers as the "Project Monitor", who will receive more intense training on the identification and protection of herpetofauna.
- b. The Contractor will designate a member of its crew as the Project Monitor to be responsible for the periodic "sweeps" for herpetofauna within the construction zone each morning and for any ground disturbance work. This individual will receive more intense training from APT on the identification and protection of herpetofauna in order to perform sweeps. Any herpetofauna discovered would be translocated outside the work zone in the general direction the animal was oriented.
- c. The Contractor's Project Monitor will be provided with cell phone and email contacts for APT personnel to immediately report any encounters with herpetofauna. Educational poster materials will be provided by APT and displayed on the job site to maintain worker awareness as the project progresses.
- d. APT will also post Caution Signs throughout the project site for the duration of the construction project providing notice of the environmentally sensitive nature of the work area, the potential for encountering various amphibians and reptiles and precautions to be taken to avoid injury to or mortality of these animals.

## **3. Petroleum Materials Storage and Spill Prevention**

- a. Certain precautions are necessary to store petroleum materials, refuel and contain and properly clean up any inadvertent fuel or petroleum (i.e., oil, hydraulic fluid, etc.) spill due to the project's location in proximity to wetland resources.
- b. A spill containment kit consisting of a sufficient supply of absorbent pads and absorbent material will be maintained by the Contractor at the construction site throughout the duration of the project. In addition, a waste drum will be kept on site to contain any used absorbent pads/material for proper and timely disposal off site in accordance with applicable local, state and federal laws.
- c. The following petroleum and hazardous materials storage and refueling restrictions and spill response procedures will be adhered to by the Contractor.

- i. Petroleum and Hazardous Materials Storage and Refueling
  - 1. Refueling of vehicles or machinery shall occur a minimum of 100 feet from wetlands or watercourses and shall take place on an impervious pad with secondary containment designed to contain fuels.
  - 2. Any fuel or hazardous materials that must be kept on site shall be stored on an impervious surface utilizing secondary containment a minimum of 100 feet from wetlands or watercourses.
- ii. Initial Spill Response Procedures
  - 1. Stop operations and shut off equipment.
  - 2. Remove any sources of spark or flame.
  - 3. Contain the source of the spill.
  - 4. Determine the approximate volume of the spill.
  - 5. Identify the location of natural flow paths to prevent the release of the spill to sensitive nearby waterways or wetlands.
  - 6. Ensure that fellow workers are notified of the spill.
- iii. Spill Clean Up & Containment
  - 1. Obtain spill response materials from the on-site spill response kit. Place absorbent materials directly on the release area.
  - 2. Limit the spread of the spill by placing absorbent materials around the perimeter of the spill.
  - 3. Isolate and eliminate the spill source.
  - 4. Contact the appropriate local, state and/or federal agencies, as necessary.
  - 5. Contact a disposal company to properly dispose of contaminated materials.
- iv. Reporting
  - 1. Complete an incident report.
  - 2. Submit a completed incident report to the Connecticut Siting Council.

#### **4. Protective Measures**

- a. A thorough cover search of the construction area will be performed by APT's Environmental Monitor for herpetofauna prior to and following installation of the silt fencing barrier to remove any species from the work zone prior to the initiation of construction activities. Any herpetofauna discovered would be translocated outside the work zone in the general direction the animal was oriented. Periodic inspections will be performed by APT's Environmental Monitor throughout the duration of the construction.
- b. Should Site C be selected by the Connecticut Siting Council, the following protective measures will be implemented.
  - i. The Environmental Monitor will inspect construction activities associated with the improvements to the existing Wetland 2 crossing to ensure adjacent wetlands are minimally impacted and no physical or hydraulic impacts occur to nearby vernal pools.
  - ii. The Environmental Monitor will inspect the French Mattress installation when rough grading is completed and during construction of the French Mattress to ensure hydraulic connection between the adjoining wetlands is provided.
- c. Any stormwater management features, ruts or artificial depressions that could hold water created intentionally or unintentionally by site clearing/construction activities will be properly filled in and permanently stabilized with vegetation to avoid the creation of vernal pool "decoy pools" that could intercept amphibians moving toward

the vernal pools. Stormwater management features such as level spreaders will be carefully reviewed in the field to ensure that standing water does not endure for more than a 24-hour period to avoid creation of decoy pools and may be subject to field design changes. Any such proposed design changes will be reviewed by the design engineer to ensure stormwater management functions are maintained.

- d. Erosion control measures will be removed no later than 30 days following final site stabilization so as not to impede migration of herpetofauna or other wildlife.

**5. Herbicide and Pesticide Restrictions**

- a. Contractors will avoid the use of herbicides and pesticides at the facility.

**6. Reporting**

- a. Daily Compliance Monitoring Reports (brief narrative and applicable photos) documenting each APT inspection will be submitted to Verizon Wireless for compliance verification.
- b. Following completion of the construction project, APT will provide a Compliance Monitoring Summary Report to Verizon Wireless documenting implementation of the wetland and vernal pool protection program and monitoring observations. Verizon Wireless will provide a copy of the Compliance Monitoring Summary Report to the Connecticut Siting Council for compliance verification.
- c. Any observations of rare species will be reported to CTDEEP by APT, with photo-documentation (if possible) and with specific information on the location and disposition of the animal.