FILED IN EAST LYME
CONNECTICUT
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Lesley A Blais
EAST LYME TOWN CLERK

EAST LYME INLAND WETLANDS AGENCY
SHOW CAUSE HEARING
Monday, MAY 5th, 2014
MINUTES

The East Lyme Inland Wetlands Agency held a Show Cause Hearing on the Cease, Desist & Correct Order issued to GRE 314 East Lyme, LLC & Centerplan Construction Co. for property located at 20 Farm Meadow Road, Assessor's Map #52.0, Lot #126, on May 5, 2014 at Town Hall, 108 Pennsylvania Ave., Niantic, CT. Chairman Lozanov opened the Show Cause Hearing and called it to order at 7:04 PM.

P PRESENT: Cheryl Lozanov, Chairperson, Chuck Reluga, Vice-Chair, Norm Bender, Phyllis Berger, Harry Clarke, Keith Hall, Joe Mingo

ALSO PRESENT: Attorney Theodore Harris, Representing the Owner
Michael Klein, Soil & Professional Wetland Scientist
Bob Landino, Principal, B & L Company
Ryan McNamara, Project Mgr., Centerplan Construction
Kevin Seery, Ex-Officio - Board of Selectmen
Gary Goeschel, Inland Wetlands Agent
Kim Barber Bradley, Alternate
Karen Zmitruk, Recording Secretary

ABSENT: No One

Call to Order
Ms. Lozanov called this Show Cause Hearing to order at 7:04 PM and introduced the members seated, Inland Wetlands Agent and Recording Secretary.

Pledge of Allegiance
The Pledge was observed.

Show Cause Hearing

1. **Cease, Desist & Correct Order Issued to GRE 314 East Lyme, LLC, Owner of 20 Farm Meadow Road, East Lyme, CT and Centerplan Construction Company for the pollution of an onsite inland wetlands and watercourse. More specifically, the deposition of sedimentation within an onsite wetlands and watercourse as a result of storm water management system failures and failures of erosion and sedimentation controls associated with the construction of a solar field/array on property located at 20 Farm Meadow Road, Assessor's Map #52.0, Lot #126, East Lyme, CT.**

Ms. Lozanov asked for an update on this.

Attorney Harris, place of business 351 Main Street, Niantic, CT said that this is regarding the solar farm located on Walnut Hill & Grassy Hill Roads and is with regard to the restoration. He noted that they were before this agency a month ago and recalled the events that had led up to this. He said that they had repaired the site itself and added further Soil & Erosion (S & E) controls and have been moving forward on the site to fully stabilize it. They expect it to be fully vegetated, top soiled and seeded in the very near future. This past Saturday on the site walk, they saw the additional S & E controls. He added that the Siting council were also out to the site and were pleased with the controls in place.
He then introduced Michael Klein, Biologist and Soil Scientist from West Hartford, CT to address them with respect to the assessment of the impacts associated with the recent breach of the erosion and sedimentation control measures and a remediation plan.

Michael Klein, Biologist & Soil Scientist, Environmental Planning Services LLC, West Hartford, CT said that he was called in to assess the impacts associated with the recent breach and that he has developed a remediation plan for the impacted wetland areas. (Copy attached)
He said that 1.08" of rain fell on the 29th followed by 3.6" of rain that fell on the 30th in less than 8 hours time. The total rainfall in a 32 hour period was 4.75". He explained how the property slopes from west to east and the heterogeneous nature of the flow and the run-off.
In Areas 1 & 2 (to the north) the sediments were shallower; in Areas 3 to 5 where the slopes were steeper, there was more sediment and in Area 6 – the channel there was no sediment of any amount in that feature. In assessing the effect of this on the wetland and remedial measures - in Areas 1 & 2 – the shallower areas – while they are unsightly, they are not detrimental. In Areas 3 to 5 where it is deeper – the sediment should and will be removed with the question being how to do it without causing more issues. He said that they are working with the B & L engineers on this. There are vacuum devices to pick up a lot of the sediment with the rest being done by hand. He suggested that the work should be done in the summer when it is drier so that they can assess the growth. Shade tolerant seed mixture and live plugs will be planted. He said that they would also stabilize some areas of the stream bank that have been undercut.

Mr. Clarke asked about the vacuum removal and how they would get the equipment in.
Mr. Klein said that it would come down the old road and they would use a vacuum truck – when the area is dry. Sediment control devices will keep anything further out of the stream.

Mr. Mingo asked how far down Cranberry Brook they investigated as it was down to the fish ladder from what he had seen.
Mr. Klein said that they have been down beyond the southern area of the property line but have no means of access further.

Mr. Mingo said that there is an area of property with a conservation easement that has been breached.
Attorney Harris said that he believes that he is confusing the areas as there are two areas and they have stayed away from the easement. They are outside of the conservation easement.

Mr. Mingo said that they built a basin on the Land Trust Property.
Attorney Harris said that design was entirely outside of the conservation easement.

Ms. Lozanov asked Mr. Klein about the sediment around the trees and if they anticipated any die-back.
Mr. Klein said that they do not anticipate any and that they should be okay.

Ms. Lozanov said that as the ground was frozen – which is why this happened – if it was the timing of working on this development that caused all of this to happen.
Bob Landino, B & L Companies said that they take this all very seriously and that they had buttoned up the site before the rain event. The initial rain event saturated the top and all of the extra heavy rain just washed it down. He said that they immediately notified people and also hired an outside engineering firm to see if the design had followed best management practices and they said that it had. Further all of this happened on a weekend when workers were not on the site – however they reacted immediately to it.

Mr. Hall said that Mr. Klein had made some recommendations that are not totally reflected in the letter – such as: areas with less than 3" of sediment will have it left in place – which represents Areas 1 & 2 –
Mr. Klein said yes, in general that is correct.

Mr. Hall asked what happens to the letter and if the Siting council gets it.
Mr. Landino said that the Siting Council was out to the site this past Friday and was complimentary on the remediation measures that had been done.
Attorney Harris said that in terms of the remediation – it falls back here and that he would be happy to forward the Siting Council a copy of the remediation letter.

Mr. Hall suggested that they correlate where the photos were taken and from what angle they were taken.

Ms. Lozanov asked Mr. Goeschel if he had any comments.
Mr. Goeschel said that regarding the location that there is work that has to be done in the 100' area.

Attorney Harris said that he does not think that there is work to be done in the Land Trust area however if there is – they would request permission to correct it.

Ryan McNamara, Project Manager, Centerplan Construction said that he was not aware of any basin that was at full capacity prior to the rain event.
Mr. Mingo asked about plans for the pond.
Mr. Klein said that his recommendation from an ecological stand point for the sediment would be to take it and put it back into the pond to make it more of a wetland and vernal pool. He cautioned that it is only his recommendation as they had asked and that it is not a part of this plan.

Mr. Clarke asked what storm event this was designed for.
Mr. Klein and Mr. Landino said that typically the DEEP standards on first flush are for up to a 10 year storm. They are designed on the State guidelines which are taken from the Federal guidelines. They noted that this is a very infrequent event and it was a confluence of things that caused it.

Mr. Clarke said that when they were on the site walk – there is a berm of top soil – which served as an E & S measure – he asked what the post construction plan was for it.
Mr. McNamara said that the first thing would be to have a surveyor come back out to re-survey the area and go from there.
Mr. Goeschel noted that he has spoken with Mr. McNamara about the site and flocking for the pond.
Mr. McNamara said that he contacted a person regarding storm control polymers to enable cleaner water discharge.
Mr. Klein said that it has been his experience that the polymers have been very effective at blocking fine silt from glacial till soils which is what they have here.

Ms. Lozanov asked the life of the polymer.
Mr. Klein said that it dissolves in the swale and once it performs a 'flock' it stays in the sediment – then it eventually dissolves and is gone.
Ms. Lozanov asked how often it has to be replaced.
Mr. Klein said that each manufacturer has a maintenance schedule that they can provide.

Mr. Mingo said he wants to hire an engineer at Centerplan's expense.
Ms. Lozanov said that she thinks that they want to work with them on getting this stabilized as soon as possible.
Attorney Harris said that they are prepared to get to work on this once the area is dry enough. He noted to Mr. Clarke that there are copies of the E & S plan on file with the Town and that they have been on file however they will provide another copy. He added that they would be happy to revise the report as earlier discussed and also that the property was staked prior to any work being done.

Mr. Hall asked for a copy of the third party peer review.
Mr. Landino said that he would provide it and that they would also have the property re-staked.
Attorney Harris noted that they do not have to lift the Cease, Desist & Correct to do the remediation work as they are working on it. The next regular meeting in June would be fine to report back and would give them the time to get things done.

It was asked if they could determine how far down the stream the sediment went.
Mr. Landino said that coarse sand leaves the site in extreme events. They would be happy to walk the stream bed but there is no 'DNA' on this and with nearly 6" of rain in two days time – it is unlikely that it came from the site.

Ms. Lozanov adjourned this hearing at 8:24 PM and continued it to June 9, 2014 at 7 PM.

Respectfully submitted,

Karen Zmitruk,
Recording Secretary
(Note: A brief break was taken here)

5/5/2014 - To be updated to reflect comments made back on June 9th mtg.

Environmental Planning Services, LLC *Wetland, Biological and Soil Sciences*

April 30, 2014

Ryan C. McNamara
Project Manager
CENTERPLAN Construction Company
10 Main Street, Suite D
Middletown, CT 06457

RE: Antares Solar Farm
Grassy Hill Road, East Lyme

At your request, Environmental Planning Services (EPS) has assessed the impacts associated with a recent breach of the erosion and sedimentation control measures and has developed a remediation plan for impacted wetland areas. The site is currently under construction as a solar array field situated within former agricultural fields. The site's erosion and sedimentation control measures, illustrated on plan sheet EC-O Initial Overall Erosion Control and Demolition Plan by BL Companies (dated 10-9-12) had been installed according to plan, but as a result of the high intensity rainfall event that occurred on March 29 - 30, 2014, the perimeter erosion controls on the easterly side of the site failed, resulting in sediment discharges to a downstream wooded swamp and perennial stream. During that storm, 1.08" of rain fell on the 29th, followed by 3.6" of rain fell in less than 8 hours on the 30th. The total rainfall during a 32 hour period totaled 4.75".

The site slopes from west to east towards a broad sloping forested wetland which contains an embedded perennial stream that flows in a southerly direction. The stream is a 1st-order stream that drains to Cranberry Meadow Brook. The wetland ranges from gently to steeply sloping with pit and mound micro-topography including a number of shallow braided flow paths where groundwater discharges downslope towards the stream. The soil surface contains numerous stones and boulders.

EPS Certified Professional Wetland Scientists visited the site on several occasions in early April. During those field visits the locations and extent of sediment discharges were mapped using GPS and plotted on the attached Figure 1. Sediment breached the perimeter erosion controls at six discrete locations. Sediment depths were highly variable within these each area, ranging from less than one inch to eight inches. The attached annotated photographs illustrate the sediment conditions at several locations within the wetland and stream.

There was also significant flow velocity associated with the storm event, as evidenced by wrack deposits suspended in vegetation above the stream channel, streambank down-cutting and the presence of sediment bars above the banks of the stream. A small vernal pool that EPS had previously identified adjacent to the stream was breached by storm flows and no longer

Attachment - IWA mtg. 5/5/14 5pgs.

contained standing water. It is not possible to separate out some of these "typical" impacts from a high intensity, short duration rainfall event from the impacts associated with the sediment and water discharged from your site.

The sediment thickness varies significantly as a result of the wetland micro-topography. In general, shallower sediment is present in areas 1 and 2, and these areas had minimal or no sediment flow into the stream. Deeper sediment deposits are present in areas 3-5, and at these locations the sediment was carried into the stream. Area 6 is located on a steeply sloping hillside and as a result no sediment settled on the slope.

Shallower sediments of approximately three inches or less are not likely to cause significant smothering of vegetation, and spring emerging herbaceous plants such as skunk cabbage were observed emerging through these shallower sediments. Deeper sediment deposits in the range of three to eight inches in depth may have resulted in some damage to the herbaceous plant layer at several locations. These thicker sediments are also less stable; with concentrated surface flows and groundwater seepage carving small rivulets through the sediment.

EPS, working together with BL Companies, has developed a plan to remediate wetland impacts resulting from these sediment discharges. Proposed restoration measures are as follows:

Stabilization Measures:

1. The stabilization of existing sediment now present within the wetland is critical in order to prevent additional downstream sediment migration. To that end, EPS along with the site engineer will assess the need for perimeter erosion control measures at the downslope terminus of the existing sediment plumes. This is likely to be necessary only at areas 3, 4 and 5, as these are deeper deposits that flowed into the stream. These measures should be installed immediately and left in place until sediment removal is complete and adequate vegetated cover has been established either through planting or natural re-vegetation as discussed below.

Sediment Removal and Restoration of Vegetation:

1. Deeper sediment deposits, on the order of three to eight inches in depth, should be removed from the wetland to the maximum extent practicable. To the extent feasible removal should be accomplished by vacuum or suction technology, although in some cases hand work may be required. Sediment removal should be conducted during the dry season (July-August) when the sediment deposits are de-watered. Once removed these areas will be lightly raked to match the grade of the adjacent wetland.

2. Planting will take place during the late summer-fall, after final sediment removal has been completed. Re-planting of impacted wetland areas will occur as follows:

    a. Sediment removal areas will be seeded with a shade tolerant native wetland seed mix and/or planted with wetland herbs (live plugs) per attached list. Plant quantities shall be determined in the field by an EPS wetland scientist.

b. In shallower sediment deposition areas (less than 3 inches) that are left in place, areas that do not show natural re-vegetation by the time the sediment removal is completed will be re-planted in the same manner as the sediment removal areas using a seed mix or live plants

3. Sediment bars along the banks of the stream will be removed by hand or suction methods as determined by the extent of the deposit and the effectiveness of the method.

4. Areas of undercut banks on the stream will be stabilized with brush wattles, live stakes, or coir logs depending on the vertical and horizontal extent of the stabilization required.

The work will be supervised in the field by a wetland scientist. Access to the area with machinery should be via a wood chip surfaced extension of the existing wood road at the north end of the site. Low ground pressure equipment may be required in some areas.

Please feel free to contact me if any of our findings or recommendations require further clarification.

Yours truly,

Michael S. Klein, Principal
Soil Scientist
Professional Wetland Scientist

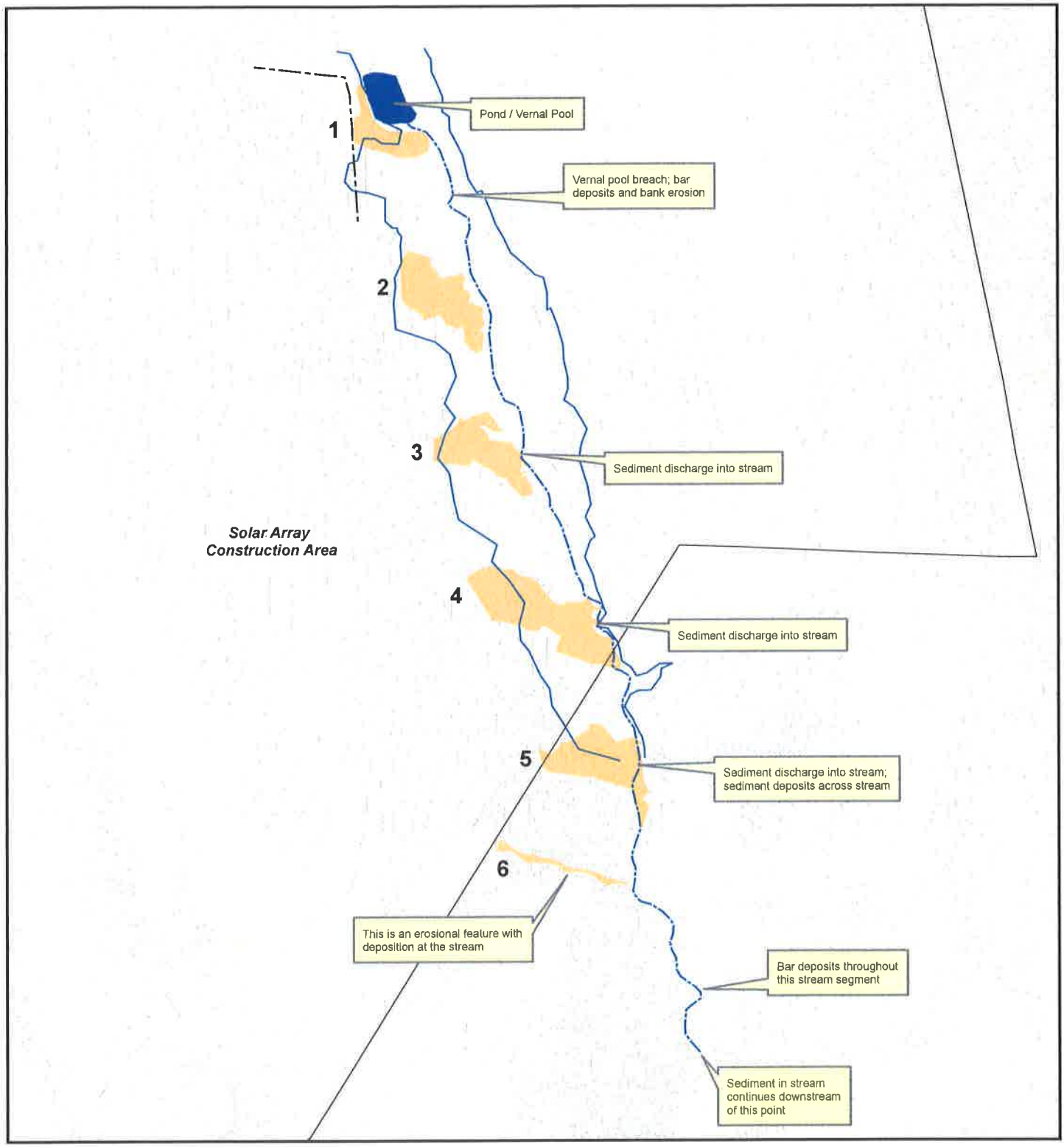

FIGURE 1
Extent of Sediment
Antares Solar Farm
East Lyme

Legend

- Sediment Discharge Locations 1-6 (extent recorded using GPS on 4-11-14)
- Stream
- Existing Contours (2000 LIDAR data)
- Wetland Boundary
- Site Boundary
- Existing Woods Road to be Extended Along Contour

SCALE
0 150 300 Feet
N

Environmental Planning Services
89 Belknap Road
West Hartford, CT 06117
860-236-1578
www.epsct.com

WETLAND RESTORATION PLANT LIST
Antares
East Lyme, CT

Herbs			2" plugs
	Caltha palustris	Marsh Marigold	
	Carex crinita	Fringed Sedge	
	Carex lurida	Lurid Sedge	
	Carex stricta	Tussock Sedge	
	Carex vulpinoidea	Fox Sedge	
	Chelone glabra	White Turtlehead	
	Cinna arundinacea	Stout Wood-Reedgrass	
	Elymus riparius	Riverbank Wild Rye	
	Glyceria striata	Fowl Manna Grass	
	Iris versicolor	Blue Flag	
	Lobelia cardinalis	Cardinal Flower	
	Packera aurea	Golden Ragwort	
	Zizia aurea	Golden Alexanders	
Ferns			
	Onoclea sensibilis	Sensitve Fern	
	Osmunda cinnamomea	Cinnamon Fern	
Wetland Shade Seed Mix (custom)			
	Agrostis stolonifera	Creeping Bentgrass	25%
	Cinna arundinacea	Stout Wood-Reedgrass	15%
	Glyceria striata	Fowl mannagrass	10%
	Onoclea sensibilis	Sensitve Fern	15%
	Poa trivialis	Rough Bluegrass	35%

Final seeding rates to be determined by supplier.