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ATTORNEYS AT LAW

October 12, 2018

Mr. Robert Stein, Chairman
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

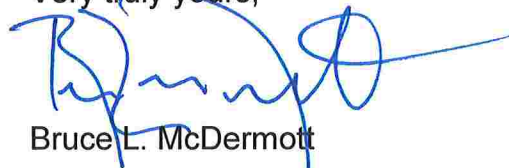
Re: Petition No. 1347 – Interrogatories in Connection with Petition of GRE
GACRUX LLC

Dear Chairman Stein:

I enclose an original and fifteen (15) copies of Save the River - Save the Hills, Inc.'s Response to First Set of Interrogatories for GRE GACRUX LLC in connection with the above Petition for submission to the Connecticut Siting Council ("Council").

Should the Council have any questions regarding these responses, please do not hesitate to contact me.

Very truly yours,



Bruce L. McDermott

Enclosures

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GRE GACRUX LLC PETITION FOR A :
DECLARATORY RULING, PURSUANT :
TO CONNECTICUT GENERAL :
STATUTES §4-176 AND §16-50K, FOR :
THE PROPOSED CONSTRUCTION, :
MAINTENANCE AND OPERATION OF A :
16.78-MEGAWATT AC SOLAR :
PHOTOVOLTAIC ELECTRIC :
GENERATING FACILITY LOCATED AT :
117 OIL MILL ROAD AND ASSOCIATED :
ELECTRICAL INTERCONNECTION TO :
EVERSOURCE ENERGY'S EXISTING :
SUBSTATION AT 325 WATERFORD :
PARKWAY NORTH IN WATERFORD, :
CONNECTICUT :

PETITION NO. 1347

October 12 , 2018

**SAVE THE RIVER - SAVE THE HILLS, INC.
RESPONSE TO
GRE GACRUX LLC'S FIRST SET OF INTERROGATORIES**

1. Please produce every document read, relied on, or referred to by Trinkaus Engineering, LLC to form its opinion in this matter.

ANSWER:

Trinkaus Engineering's opinion is based upon the site plans and stormwater management report prepared by BL Companies and submitted to the Connecticut Siting Council ("Council").

2. Please state each opinion Trinkaus Engineering was retained to provide, the factual basis of that opinion, and its scientific basis, if applicable.

ANSWER:

Trinkaus Engineering was retained to review the site plans and stormwater management report submitted to the Council and provided a review of these documents for compliance with the CT DEEP 2004 Storm Water Quality Manual, CT DEEP 2002 Guidelines for Soil Erosion and Sediment Control and to evaluate whether the proposed stormwater and erosion control measures are sufficient to prevent adverse environmental impacts.

3. Did any member of Save the Rivers-Save the Hills visit the Site in question?

ANSWER:

Save the River - Save the Hills Inc. (“STR-STH”) objects to this interrogatory on the grounds that it is overly broad, fails to state a relevant time period and seeks information that is not relevant or material to the Council’s consideration of the Petition. Notwithstanding this objection, STR-STH responds that it has over 350 members, most of whom live locally in Waterford and in East Lyme. It is very possible that a member has visited the Site at some time during their life as the forested area has trails that have been used for years for hiking and other recreational activities. STR-STH can state that no member has visited the Site under direction from the current STR-STH Board.

4. Did any member of Trinkaus Engineering, LLC visit the Site in question before preparing the August 18, 2018 report?

ANSWER:

No, Trinkaus Engineering did not visit the Site.

5. Are the conclusions in the August 18, 2018 report based on personal observations of the Site?

ANSWER:

No, see response to Interrogatory 4 above.

6. If a representative of Trinkaus Engineering, LLC did not personally observe the conditions at the Site, identify what information was provided to Trinkaus Engineering, LLC to form its opinion in this matter.

ANSWER:

Trinkaus Engineering formed its opinion on this matter based on the site plans and stormwater management plans filed by the Petitioner with the Council as well as observations using Google Earth Pro.

6A. Did Trinkaus Engineering, LLC verify the accuracy of said information? If so, how was such information verified?

ANSWER:

See response to Interrogatory 1 above. The information that was submitted to the Council was signed and sealed by a Professional Engineer from BL Companies and it is the responsibility of the party who signed and sealed the plans to verify the accuracy of the information in the site plans and stormwater management report.

FORESTRY ISSUES

7. Explain the environmental impacts to the Site that would be anticipated to occur as a result of the harvesting of trees on the Site by the current owner, the bulk of which has already been completed.

ANSWER:

Trinkaus Engineering has not inspected the Site to view the status of the timber harvest. A proper timber harvest will result in positive environmental impacts as the overall health of the forest is improved. A proper timber harvest will result in the following changes to the forest:

- **Some of the larger and medium sized trees are removed for their timber value and to increase the amount of sunlight that reaches the forest floor;**
- **The upper portions of the trees and the branches (known as “slash”) are left on the ground to decompose and return nutrients to the soil;**
- **Smaller trees no longer shaded by larger trees will grow more quickly as there is more sunlight reaching them;**
- **As the tree canopy is more open because of the removal of the larger trees, more sunlight reaches the ground surface and seeds in the soil, which never germinated previously because of the lack of sunlight, will now germinate; and**
- **Seeds for shrubs species will also germinate creating a lush green layer on the forest floor.**

7a: Do those environmental impacts differ in any way from those that were provided under the “Forestry Issues” section of the August 18, 2018 report?

ANSWER:

The impacts cited in the Trinkaus Report do not occur with a *proper* timber harvest as noted above. The applicant is proposing what is known as a “clear-cut,” which is the removal of all trees and vegetation, in order to develop the solar panel facility on the Site. This clear-cut will result in the adverse environmental impacts cited in the Trinkaus Report.

7b: If the environmental impacts differ, please describe how they differ.

ANSWER:

A clear-cut will result in the complete deforestation of the Site and disturbance of the soil as the stumps are removed and the litter layer (upper layer of the soil) is often removed. Based upon an aerial view of the Site using Google Earth Pro, it does not appear that the slash was left on the ground surface, which will significantly reduce the amount of nutrients that will be returned to the soil by the decomposition of the slash. Additionally, the visible logging roads were not well thought out because significant portions of the Site have been disturbed by the logging operations. It is common practice to minimize the number and location of logging roads to minimize the area of soil disturbance.

8. Explain the environmental benefits that will be lost, in quantitative terms, if the Project is completed.

ANSWER:

The environmental benefits of an undisturbed forest cited in the Trinkaus Report will not occur if there is clear-cutting of the vegetation for the solar panel facility. Quantitative impacts cannot be determined as a baseline environmental assessment of (i) the forest, and (ii) the species that reside at the Site was not done. Therefore, there is no basis for a comparison of the impacts.

Also, refer to Attachment 1, which shows where the planned solar installation is in relation to the Niantic River.

9. Explain the environmental benefits that will be lost, in quantitative terms, if the Project is not completed.

ANSWER:

If the solar panel facility is not constructed and no further removal of trees occurs, the forest will rehabilitate itself over a few years as described in the response under Interrogatory 7 above. This will allow for the a return of the breeding grounds and migratory stop-over areas for neo-tropical migratory songbirds of high conservation priority as well as other forest inhabitants. Additionally, this area would also not have the permanent impervious surface that would cause increased runoff into the two tributary brooks to the Niantic River.

10. What environmental benefits will be lost if the Site is developed as residential property, in keeping with its current zoning designation?

ANSWER:

The current zoning is RU-120 for the entire parcel and while it is not possible to determine how many lots could be developed on the parcel given the presence of wetlands and water courses, ledges, other natural features, and topographical constraints, a housing development offers considerably more habitat to many more species (i.e., more biodiversity) than would the proposed solar panel facility. While some benefits of the forest would be lost by the limited clearing of trees for a residential road and lots, this type of clearing results in the increase of forest edge and because these areas are exposed to a high amount of sunlight, there would be an increase of herbaceous and shrubs plants along this edge.

11. Explain how the environmental benefit of the Site would be maintained if the Site were developed in accordance with its permanent zoning, as opposed to a solar panel facility.

ANSWER:

See response to Interrogatory 10 above.

12. Specify which terrestrial and aquatic species currently on the Site will be adversely affected by the Project's completion. Please provide any materials relied upon in making this determination.

ANSWER:

With respect to terrestrial species, it is difficult to be very specific about any or all species that would be affected without more comprehensive information available for the site.

The following species would likely be impacted by the Project:

- **Interior forest birds would likely be impacted.**
- **Waterfowl, wood frogs, reptiles, and mole salamanders would likely be impacted.**
- **The eastern ribbon snake—a Connecticut species of special concern (SC)—was observed on the proposed solar energy Site in a wetland located along the utility right-of-way (Davison Environmental's Wetland and Biological Assessment submitted by the Petitioner ("Davison Report"), (p.5)). The eastern ribbon snake would likely be impacted.**
- **Certain bat species would likely be impacted. Both the northern longear bat (listed as Endangered in CT) and the silver-haired bat (another species of SC) use trees for roosting in summer. (Moran 2015, 2018).**
- **Another adverse effect not fully evaluated, is the impact to many mammals resulting from the 7-ft high approximately 14,500-ft long fence that would surround the solar panel arrays. This fence would act as a barrier to the movements of larger animals, such as whitetail deer, bobcat, and many others.**
- **Macroinvertebrates, which are sensitive to water pollution and habitat degradation, would likely be impacted. (The Cole Ecological, Inc. (2016) report).**
- **With respect to fish, the Davison Report (p. 9) states that based on CT DEEP data, wild brook trout are present in both Oil Mill Brook and Stony Brook. In Oil Mill Brook Cole Ecological, Inc. (2016) also collected a brown trout believed to have been produced by natural reproduction rather than from stocking. At present, both Stony Brook and Oil Mill Brook have summer water temperature regimes suitable for coldwater trout species.**

(Beauchene et al. (2014)). Care must be taken to ensure that these temperatures are not impacted by the Project.

References used in Answer to Interrogatory 12:

Beauchene, M., M. Becker, C.J. Bellucci, N. Hagstrom, and Y. Kanno. 2014. Summer thermal thresholds of fish community transitions in Connecticut streams. N. Am. J. Fish. Man. 34:119-131.

Cole Ecological, Inc. (2016). 2014-2015 Bioassessment of Streams in the Town of Waterford. 2015 Summary Report. Prepared for the Town of Waterford Connecticut by Michael Cole, Ph.D., Greenfield, MA. 46 pp.

Klemens, M.W. 1993. Amphibians and Reptiles of Connecticut and Adjacent Regions. State Geol. Nat. Hist. Surv. Conn. Bull. No. 112. 118 pp.

Milone & MacBroom, Inc. (2009). Stony Brook Watershed Management Plan. MMI#3104-01-1. Prepared for the Town of Waterford. September 25, 2009.

Moran, K. 2015. Listening to bats - a glimpse into the night. CT Wildlife November/December 2015:4-5.

Moran, K. 2018. Sparks fly for bat conservation. CT Wildlife January/February 2018:14-15.

13. Is it the installation of the solar panels or the alleged deforesting that will “eliminate significant forest habitat for terrestrial and aquatic species” as described in the August 18, 2018 report?

ANSWER:

The clear-cutting of the Site for the installation of the solar panels will result in the impacts cited in the Trinkaus Engineering letter.

Additionally, although forest logging can result in changes favoring some biota over others, in time (and assuming responsible logging practices) and if no further such logging occurs, there can be a return to the previous condition. This will, however, not occur if solar panels (and any service roads) replace the forest. It is the potential for stormwater to affect the physicochemical nature of these streams that remains a serious concern, including raising stream water temperatures and possible sedimentation.

14. Given that the land owner has already harvested trees from the proposed area and that the solar project will include planting of low growth vegetation, is there any evidence that there will be negative effects on the forestry from developing solar in compared to the current site?

ANSWER:

The planting of grass (according to submitted site plans and stormwater management report) will never equal the ability of a natural forest and undisturbed soils to sequester carbon and provide rainfall interception. The clear-cutting of the Site for the installation of the solar panels will result in the impacts cited in the Trinkaus Engineering letter. The owner has currently conducted a “timber harvest” that has left a substantial amount of trees as seen in the pictures in Attachment 2.

15. Please describe all terrestrial and aquatic species that would benefit from the installation of solar panels on the Site.

ANSWER:

The scientific literature does not provide any indication of the benefits of solar power development to any particular species. Thus, it is difficult to state what possible benefits could occur to species presently habiting the proposed Project.

However, green frogs and bullfrogs that favor warmer, more pond-like water bodies, such as those found in stormwater detention basins, may possibly benefit from the Project. This might also be true for painted and snapping turtles, although they would likely have issues accessing the Site because of the fencing. Certain bird species favoring open or edge habitats would likely replace those favoring forested areas. The Petitioner’s planned removal of the forest and plantings of a mix of native low-lying plants, shrubs, and groundcovers could favor species such as rabbits that prefer this type of habitat.

References used in Answer to Interrogatory 15:

Abbasi, S.A., and N. Abbasi. 2000. The likely adverse environmental impacts of renewable energy sources. Applied Energy 65:121-144. (Not seen, cited by Lovich and Ennen 2011).

Harte, J., and A. Jassby. 1978. Energy technologies and natural environments: the search for compatibility. Ann. Rev. Energy 3:101-146. (Not seen, cited by Lovich and Ennen 2011).

Lovich, J.E., and J.R. Ennen. 2011. Wildlife conservation and solar energy development in the desert southwest, United States. BioScience 61:982-992.

16. Describe what impact, quantitatively, the disturbance and regrading of the soil will have on the Site in question. Please provide any materials relied upon in making this determination.

ANSWER:

The removal of stumps and re-grading of the upper layers of the soil will result in the reduction of soil porosity by the movement of excavation equipment. As the soil porosity is reduced, the ability of the soil to infiltrate rainfall is also reduced as the reduction of soil porosity reduces the number and size of void spaces within the soil.

STORMWATER MANAGEMENT REPORT

17. Identify what metals will be leached from the support system of the solar panels and the quantity of metals that will be leached on an annual basis. Please provide any materials relied upon in making this determination.

ANSWER:

Because STR-STH does not know the exact compositions of the Project, it cannot make such a determination.

18. Explain, quantitatively, the extent that such metals will so leach to the wetlands and watercourses, and the impact that any such leaching will have on the environment.

ANSWER:

See response to Interrogatory 17 above.

19. Will the project be required to obtain a stormwater permit from the Connecticut Department of Energy and Environmental Protection in order to construct the project as described in this Petition?

ANSWER:

Yes.

20. Explain the basis for the contention in the August 18, 2018 report that the runoff directed to the level spreader will not infiltrate and seep into the ground.

ANSWER:

The basis for this contention is as follows: (i) no soil tests were performed in the location of the proposed level spreaders to evaluate the soils and their ability to infiltrate runoff; (ii) no infiltration testing was done to determine the infiltrative capacity of the soil in the location of the proposed level spreader; and (iii) no hydrologic modeling was done to demonstrate that the outflows from the stormwater basins will infiltrate into the soil.

21. Explain the basis for the contention in the August 18, 2018 report that none of the runoff from the solar panels to the gravel beds will seep into the ground below.

ANSWER:

See response to Interrogatory 20 above.

22. Please provide all materials relied upon for the contention in the August 18, 2018 report that all of the rain falling on the panels must be considered “runoff.”

ANSWER:

Common engineering and experience was relied upon. The solar panels are a solid structural panel, so when rain falls on it, there is no interception as would occur in a forest, nor is there any infiltration, so the drop of rain becomes a drop of runoff.

23. Please provide all stormwater calculations that were completed to form the basis of the August 18, 2018 report.

ANSWER:

No calculations were done by Trinkaus Engineering to make conclusions stated in the report. The conclusions are based upon 35 years of practice in the civil engineering field.

24. Please provide calculations demonstrating why the project will increase run off volumes as stated in storm water management section 2 on page 2 of the Trinkaus Report.

ANSWER:

In the stormwater management report, there was no evidence that any of the proposed stormwater basins would infiltrate any of the runoff directed to them. If infiltration of post-development runoff is not proven, then there will be increases of runoff volume. Runoff volumes can only be reduced by the infiltration of runoff into the ground.

25. Refer to section 7 on page 3 of the Trinkaus Report. Please provide documentation and evidence as to what causes higher peak rates and run off volumes, and what those higher peak rates and run off volumes will be.

ANSWER:

There are several factors that result in increased rates of runoff and increases of runoff volume. These factors are: (i) removal of natural vegetation and the addition of impervious surfaces; (ii) the disturbance of the natural soils, which reduces the natural porosity of the soil and thus reduces the ability of the soil to infiltrate runoff; and (iii) the creation of smooth surfaces (solar panels, gravel driveways and disturbed soil conditions with grass), which result in shorter flow paths and thus shorter times of concentration. Shorter times of concentration result in higher peak rates of runoff.

26. Refer to section 8 on page 3 of the Trinkaus Report. That section mentions that changing of soil classification depends on grading. Was the project grading taken into account in the analysis that results in higher peak rates and run off volumes? Does state building code prescribe change of soiling classifications?

ANSWER:

The State Building Code has no bearing on the opinion of Trinkaus Engineering regarding increasing the rate and runoff after development. The opinion stated in the report is based on 35 years of experience in the land development field. The extent of disturbance and proposed grading shown on the submitted plans were also considered in the development of this opinion.

27. Refer to the ground cover ratio required by CT DEEP stormwater regulations. Given the current design of the Project, which has a distance between rows of panels of 14.5 feet, and that the panel heights will be less than 14.5 feet, explain why the current design is not considered 100% pervious pursuant to CT DEEP stormwater requirements.

ANSWER:

A review of the CT DEEP 2004 Storm Water Quality Manual did not turn up any reference to this cited standard. In Trinkaus Engineering's professional opinion, even if the ratio is stated, it does not have any bearing on the opinions stated in the Trinkaus letter. The solar panels are hardscape features, which convert rainfall to runoff.

28. Please provide calculations that demonstrate the alleged temperature increases in storm water basins and how much of an impact that will have on nearby water temps.

ANSWER:

The solar panels are orientated to maximize their exposure to the sun and are dark colored and absorb thermal energy from the sun. When rainfall falls on a dark, heated surface, the absorbed heat from the dark surface is transferred to the rainwater as it becomes runoff, and thus raises the thermal temperature of the runoff. The proposed stormwater basins are also exposed to the sun, so accumulated runoff in the basins will be heated by the sun and then discharged. Aquatic species in first order streams, which are typically cold water streams, are highly susceptible to increases in water temperature, so when runoff is discharged with a higher temperature to a first order stream, the temperature of the water in the stream will also increase.

29. Explain, quantitatively, how much higher the peak rate and runoff volume will be than is currently indicated in the stormwater management report, and the extent to which the proposed stormwater basins are therefore undersized.

ANSWER:

It will be substantially higher than what is cited in the stormwater report by BL companies because the Runoff Curve Number for impervious surfaces is 98. Instead, the Petitioner used a Runoff Curve Number of 61 (grass in good condition on a Class B soil). This is a substantial difference. Trinkaus Engineering has not performed a detailed calculation as there is insufficient data in the stormwater management report to do so.

30. What percentage of the Class B soil is it claimed will act as Class C or D soil, and quantitatively, how will such claimed alteration affect runoff volumes?

ANSWER:

Any Class B soil that is being disturbed by the removal of stumps and organic debris or is being graded would be subject to being considered a Class C or Class D soil, and the degree of change is a function of the extent of soil disturbance and grading. Class C and Class D soils in their natural

state have a lower infiltrative capacity than Class B soils, so more runoff would be generated.

31. Please provide all specific examples of any instances of non-compliance with the Project as designed and the requirements of the CT DEEP Stormwater Quality Manual.

ANSWER:

The following parameters from the CT DEEP 2004 Storm Water Quality Manual have not been provided:

- a. Water Quality Volume,**
- b. Groundwater Recharge Volume,**
- c. Channel Protection Volume,**
- d. Proposed stormwater basins do not have forebays, and**
- e. Proposed stormwater basins do not contain required components such as high and low marsh areas, micro pools, long flow paths which are necessary to address water quality.**

32. Please provide a list of all projects constructed by GRE or a subsidiary of Greenskies which have had instances of non-compliance with stormwater requirements other than the project located in East Lyme, Connecticut.

ANSWER:

STR-STH is not aware of such projects, however, it is STR-STH's understanding that the contractor that was selected by Greenskies for the East Lyme project, Centerplan Construction Company, has been involved in a number of problematic projects in Connecticut, including the East Lyme project, which caused a silt plume in the Niantic River and resulted in a lawsuit by downstream property owners.

MEMBERSHIP

33. Please identify, by name and town, all members of Save the Rivers-Save the Hills, Inc.

ANSWER:

STR-STH objects to this interrogatory on the grounds that seeks information that is not relevant or material to the Council's consideration of the Petition. Notwithstanding this objection, STR-STH responds providing the number of our members, and the percent per town. STR-STH has approximately 350 members: 47% are East Lyme residents; 40% are Waterford residents; and 13% are residence of other towns.

34. Please provide a list of all employees, officers and directors of Save the Rivers-Save the Hills, Inc.

ANSWER:

STR-STH organization is a non-profit 501(c)(3) grassroots environmental organization based on the Niantic River Estuary in Waterford & East Lyme, Connecticut. Our organization is dedicated to preserving the health of the Niantic River Estuary, its Watershed and the natural beauty of the Oswegatchie Hills. STR-STH has no employees. Our website (<http://www.savetheriversavethehills.org>) is public and lists our Board Members as follows: President: Fred Grimsey, Waterford; VP: Deb Moshier-Dunn, Waterford; Treasurer: Liz Caruso, East Lyme; Membership, Legislative Liaison & Fundraising Chair: Eileen O'Pasek, Waterford; "Save Oswegatchie Hills" Coalition Coordinator: Suzanne Thompson, Old Lyme; Members at Large: Petie Reed, East Lyme; Mark Sperry, Waterford; David Robinson, Waterford.

35. Please provide copies of all correspondence in the last five years between Save the Rivers-Save the Hills and John Bialowans of East Lyme, Connecticut.

ANSWER:

STR-STH has had no written (either online or hard copy) contact with John Bialowans.

36. Please provide the amount of any donations made by John Bialowans to Save the Rivers-Save the Hills in the last two years.

ANSWER:

STR-STH has no record of donations coming from any Bialowans in the last 2 years.

Respectfully submitted,

Save the River - Save the Hills, Inc.



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Samuel R. Volet
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Attachment 1:

(Depiction of Niantic River Watershed area with proposed solar panel installation showing proximity to the Niantic River.)



Attachment 2:

(Overhead drone pictures of property post Timber Harvest (taken 9/30/2018) with Google Map showing approximately where drone was when pictures were taken):

[DJ1_0007JPG looking South]



[DJ1_0009JPG – looking South]



[Google Maps Diagram of Two Photos]

