In The Matter Of:

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Docket No. 1310

October 17, 2017

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STATE OF CONNECTICUT

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Docket No. 1310

Quinebaug Solar, LLC petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed construction, maintenance and operation of a 50 megawatt AC solar photovoltaic electric generating facility located on approximately 561 acres comprised of 29 separate and abutting privately-owned parcels located generally north of Wauregan Road in Canterbury and south of Rukstela Road and Allen Hill Road in Brooklyn, Connecticut.

Continued Public Hearing held at the Connecticut Siting Council, Ten Franklin Square, New Britain, Connecticut on Tuesday, October 17, 2017, beginning at 11 a.m.

H e l d B e f o r e:

ROBERT STEIN, Chairman

A p p e a r a n c e s:

Council Members:

SENATOR JAMES J. MURPHY, JR.,
Vice Chairman
ROBERT HANNON
MICHAEL HARDER
DR. MICHAEL W. KLEMENS
LARRY P. LEVESQUE, ESQ.
DANIEL P. LYNCH, JR.
ROBERT SILVESTRI

Council Staff:

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Executive Director and
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MICHAEL PERRONE
Siting Analyst

For the Applicant:

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Hartford, Connecticut 06103
BY: DAVID W. BOGAN, ESQ.

THE CHAIRMAN: Good morning, ladies and gentlemen. I'd like to call to order this meeting of the Connecticut Siting Council and this hearing on Petition Number 1310, today, Tuesday, October 17, 2017 at approximately 11 a.m. My name is Robin Stein. I'm chairman of the Connecticut Siting Council.

This evidentiary session is a continuation of a public hearing that was held on September 19, 2017, at the Brooklyn Community Center in Brooklyn, Connecticut, as opposed to the other Brooklyn. It is held pursuant to the provisions of Title 16 of the Connecticut General Statutes and of the Uniform Administrative Procedure Act upon a petition from Quinebaug Solar, LLC for a declaratory ruling that no certificate of environmental compatibility and public need is required for the construction, maintenance and operation of a 50 megawatt solar facility located on approximately 561 acres comprised of 29 separate and abutting privately-owned parcels located generally north of Wauregan Road in Canterbury, Connecticut and south of Rukstela Road and Allen Hill Road in Brooklyn, Connecticut. This petition was received by the

Council on June 15, 2017.

A verbatim transcript will be made of this hearing and deposited with the Town Clerk's Offices in the Brooklyn, Canterbury and Plainfield Town Halls for the convenience of the public.

We will proceed in accordance with the prepared agenda, copies of which are available here.

I wish to call your attention to those items shown on the hearing program marked as Roman numeral I.D, Items 1 through 122.

Does the petitioner, or any party or intervenor, have any objection to the addition of Items 20, 62, 63, 112 and 113 that the Council has administratively noticed?

(No response.)

THE CHAIRMAN: Hearing and seeing none, they will be administratively noticed by the Council.

We'll begin with the appearance of the petitioner. Do you have new witnesses to be sworn, Attorney Bogan?

MR. BOGAN: Yes. Good morning, Mr. Chairman. For the record, David Bogan on behalf of the petitioner, Quinebaug Solar, LLC. We do

have two additional witnesses. To your left, nearest the bench, Paul Callahan; and to your far left, Thomas Ericco.

I would indicate that the submission to the Council also indicated that we would have a third witness, Kevin Ryan, but Mr. Ryan had a conflict, and therefore will not be appearing as a witness on behalf of the petitioner. So if the Chair would swear in those two witnesses, I think we'd be all set. The balance of the panel has already been sworn.

P A U L C A L L A H A N,

T H O M A S E R I C C O,

having been first duly sworn by Ms. Bachman, were examined and testified on their oaths as follows:

D A V I D C O O K,

B R I O N Y A N G U S,

A A R O N S V E D L O W,

D A L E K N A P P,

having been previously duly sworn, were examined and testified further on their oaths as follows:

MS. BACHMAN: Thank you.

MR. BOGAN: If the Chair would like, I

can have the remaining witnesses authenticate the interrogatory responses?

THE CHAIRMAN: Yes, please.

DIRECT EXAMINATION

MR. BOGAN: Starting with you, Mr. Cook, did you assist in the preparation of the responses to certain interrogatories propounded by the Council designated as CSC-78 through 119?

THE WITNESS (Cook): I did.

MR. BOGAN: Ms. Angus?

THE WITNESS (Angus): I did.

MR. BOGAN: Mr. Svedlow?

THE WITNESS (Svedlow): I did.

MR. BOGAN: And Mr. Knapp?

THE WITNESS (Knapp): I supported the response.

MR. BOGAN: And do you have any changes to make to any of those responses? Mr. Cook?

THE WITNESS (Cook): No.

MR. BOGAN: Ms. Angus?

THE WITNESS (Angus): No.

MR. BOGAN: Mr. Svedlow?

THE WITNESS (Svedlow): No.

MR. BOGAN: Mr. Knapp?

THE WITNESS (Knapp): No.

MR. BOGAN: And is the information contained in those responses true and accurate to the best of your knowledge and belief? Mr. Cook?

THE WITNESS (Cook): Yes.

MR. BOGAN: Ms. Angus?

THE WITNESS (Angus): Yes.

MR. BOGAN: Mr. Svedlow?

THE WITNESS (Svedlow): Yes.

MR. BOGAN: Mr. Knapp?

THE WITNESS (Knapp): Yes.

MR. BOGAN: And do you adopt that as your testimony in this proceeding? Mr. Cook?

THE WITNESS (Cook): Yes.

MR. BOGAN: Ms. Angus?

THE WITNESS (Angus): Yes.

MR. BOGAN: Mr. Svedlow?

THE WITNESS (Svedlow): Yes.

MR. BOGAN: Mr. Knapp?

THE WITNESS (Knapp): Yes.

MR. BOGAN: I'd offer the responses as full exhibits. And the witnesses are available for cross-examination.

THE CHAIRMAN: Does any party or intervenor have any objection?

(No response.)

THE CHAIRMAN: If not, the petitioner's exhibits are admitted.

(Applicant's Exhibit II-B-5: Received in evidence - described in index.)

THE CHAIRMAN: We'll now continue with cross-examination. We'll start with staff, Mr. Perrone.

MR. PERRONE: Thank you, Mr. Chairman.

CROSS-EXAMINATION

MR. PERRONE: I'd like to begin with the topic of site alternatives. Given the size of this project, were any other raw land site areas consistent with the RFP requirements considered?

THE WITNESS (Svedlow): As part of our siting process, we did look at properties that were adjacent to existing electrical infrastructure in Connecticut. There are a few properties that are contiguous of this size. So we did look at alternatives, but did not explore them extensively in the process.

Further, this property was being specifically solicited by the landowner for solar development. So combined with our siting process and his desire to host a solar project, that's how we landed at this property. But we did look at

alternatives sites in general, but they are few and far between of this size.

MR. PERRONE: Could you tell us generally where the alternatives were, at least the region or area?

THE WITNESS (Svedlow): Not to get into too many details about our siting process, but essentially we look at parcels larger than 50 or 100 acres within one mile of existing electrical transmission systems of a certain size, 115 kV typically, so essentially the entire state.

MR. PERRONE: And this was the only area where you could find willing landowners in close proximity to the electrical infrastructure?

THE WITNESS (Svedlow): Yeah, that's generally correct.

MR. PERRONE: In your site search, did you also look at any possible brownfield sites?

THE WITNESS (Svedlow): We have done some work to look at brownfield sites in Connecticut as part of our general prospecting. Typically brownfield sites are not large enough to host projects of this size. And often you don't find them in as close proximity to electrical infrastructure as this site.

MR. PERRONE: Okay. And this is just as an update. I understand that the state historic preservation office was reviewing the scope of work for the Phase 1B study. What is the current status of that?

THE WITNESS (Angus): We have not received feedback from the SHPO on the Phase 1B scope yet.

MR. PERRONE: So the 1B study would not commence until you receive that feedback?

THE WITNESS (Angus): Correct.

MR. PERRONE: As far as the solar panels, as they age, does your power output degrade over time?

THE WITNESS (Svedlow): Certainly, yes.

MR. PERRONE: Do you know ballpark, 1 percent a year, or --

THE WITNESS (Cook): I think it's approximately half a percent per year would be typical degradation.

MR. PERRONE: As far as the power wattage goes?

THE WITNESS (Cook): Correct.

THE WITNESS (Svedlow): Typically manufacturers make some sort of maximum

degradation, I won't say guarantee, but estimate.

MR. PERRONE: And I understand that there was -- and we discussed this before -- there was pending review by the ISO New England Reliability Committee regarding possible impacts to the transmission system. Do you have any updates on that review?

THE WITNESS (Svedlow): We're in the late stages of our LGIA, Large Generation Interconnection Agreement, negotiations, so I don't have any updates on that right now, but it's still ongoing.

MR. PERRONE: And this is kind of a broad general question. Could the project itself be reduced in size -- and I mean physical size in megawatts -- so you can increase your wetland buffers beyond 50 feet, reduce your critical terrestrial habitat development, and avoid incidental take of Eastern Spadefoot Toad and Blue-spotted Salamander?

THE WITNESS (Svedlow): So there's a number of competing factors at any project site for reducing impacts, so residential areas, so visibility from public rights-of-way, impacts to wetlands and rare, threatened or endangered

species are all considered as part of that. We also have a commitment to the utilities of Connecticut and the people of Connecticut to provide so much power as part of this project and our power purchase agreement. So we feel that we've done our best to balance all of those competing constraints to arrive at a project size that meets the objectives of Connecticut's utilities and ratepayers.

I think that as we proceed today, there are some things that we can agree to, for avoidance measures, to minimize and avoid potential impacts to species, amphibian species, in particular. I think that our current project design right now does the best that we are currently able to do to minimize potential impacts to wetlands and including buffers.

MR. PERRONE: Okay. I'd like to delve more into any possible constraints you may have on the power output and such. Is the petitioner able to reduce the size of the project in terms of capacity, or are you tied to 50 megawatts exactly, or are you tied on the energy end and the kilowatt hours?

THE WITNESS (Svedlow): Our PPA, our

power purchase agreement, is directly tied to the nameplate capacity of the facility, which is technically just under 50 megawatts delivery at the point of interconnection. So we have a commitment as part of our power purchase agreement to deliver on that size facility.

MR. PERRONE: Okay. And I understand how it's tied to the PPA. Is the size, approximately 50 megawatts, also constrained by the RFP award?

THE WITNESS (Svedlow): I'm not sure I understand the question.

MR. PERRONE: In other words, as far as the participation in the Tristate Clean Energy RFP, does that also tie into the size of the project?

THE WITNESS (Svedlow): Correct. I mean, the project was selected at the size that it is, 50 megawatts. And we then negotiated the power purchase agreements with the utilities that reflect that size.

MR. PERRONE: And I understand that the project was partially qualified for the forward capacity auction based on about 28.7 megawatts. Could you explain why it's about 28.7 versus the

50?

THE WITNESS (Svedlow): Right, good question. That's typical for the forward capacity market is ISO New England will qualify you for a certain percentage of your nameplate capacity during the summertime. I'm not sure of all the specifics there, but that's very typical of the forward capacity market.

MR. PERRONE: And is that something they do for solar?

THE WITNESS (Svedlow): Correct, yes. We're eligible for a certain percentage of our nameplate capacity for summer capacity.

MR. PERRONE: And just to finish off that topic, is that based on the system peak perhaps happening at a different hour than your solar peak?

THE WITNESS (Svedlow): I can't speak to that. I'm not sure why they come to that decision.

MR. PERRONE: Okay. That's all right.

At the last hearing there was testimony that in order to be sensitive to the neighbors, the petitioner could potentially use the northern construction access, at least partially. So, if

you were to do that, would that reduce the amount of construction traffic along the main access road to the south and near the Sposato residence?

THE WITNESS (Svedlow): Our expectation is that it would, that's correct.

MR. PERRONE: Next, I'd like to turn to the comments from Department of Agriculture. They were received on July 17th. I understand that the petitioner did respond to those with an August 1st document. I'd like to look at this a little bit more.

On the second page of the comments from agriculture, there's three points. I believe the first one was covered in here. But point number two, there's discussion about soil testing. Is the petitioner planning to do soil testing at the time of construction or stockpiling the soil?

THE WITNESS (Svedlow): Could you clarify that a little bit specifically? I just don't have that letter in front of me. Specifically it was like pesticide testing --

MR. BOGAN: I have it, Mr. Perrone. (Handing.)

MR. PERRONE: Okay. Sure.

THE WITNESS (Svedlow): Thank you. I'm

not sure that's something that we intend to do, that additional soil testing. We may consider some additional soil testing for purposes of stormwater design.

MR. PERRONE: And then moving on to point three where the Department of Agriculture notes that -- refers to impacts from heavy equipment, holes from the posts, and possible negative consequences resulting from that, could the petitioner respond to that point three?

THE WITNESS (Svedlow): Yes, I'll start, and then I'll ask Dale Knapp to provide some additional clarification. So a large portion of the site is in what I would consider intensive agricultural use. This is not organic farming. This is farming for silage. There's a lot of heavy equipment out there currently, and applications of pesticides and nutrient enhancements.

So our expectation is that by converting those areas to essentially meadow for the solar project, our overall impacts on the soil quality, as compared to the current use for agriculture, would actually improve soil quality over a period of time by allowing the soils to

stay fallow. There would be a short duration during the construction period where there will be primarily tracked vehicles, but some wheeled vehicles as well, moving in those areas, but that's a short period of time. And after construction essentially those areas will just be mowed for the life of the project. So our expectation is we will not have the level of impact that's indicated in the letter by the Department of Agriculture.

I don't know if, Dale, you want to speak to that at all.

THE WITNESS (Knapp): Yes. If I could just sort of jump in here really quickly. The way that this question reads, I think that some of it may be relevant to the size of the project. And so I think Briony has provided in the past sort of the acreages of the impacts that they're looking at. In relation to the larger projects, it's very small. So they're using higher flotation equipment. And for the majority of the project area it's passive, and so the soil would not be disturbed, altered or removed in the nature that's being described here.

Briony, do you have that number?

THE WITNESS (Angus): No.

THE WITNESS (Knapp): I think that's certainly relevant to respond to this comment. And it may be in our responses. I just don't have it in front of me.

MR. PERRONE: And you had mentioned high flotation equipment?

THE WITNESS (Knapp): Sure. So low pressure ground equipment, tracked vehicles that aren't going to be rutting, disturbing, or sort of mixing soil.

MR. PERRONE: So they spread out the weight more so there's less pressure on the ground?

THE WITNESS (Knapp): Correct.

MR. PERRONE: And I have one last question. On the topic of the size of the project, I understand that there's a 15-foot spacing between the rows of the solar panels, and that's to address shading and access and maintenance. Is that 15-foot spacing the minimum required to address shading, access and maintenance?

THE WITNESS (Svedlow): Yeah. Based on the topography of the site, that's the minimum

spacing.

MR. PERRONE: Would there be any way to place the panels closer together to reduce the footprint?

THE WITNESS (Svedlow): In general, that will affect the production of the facility. And again, we have a nameplate requirement, but we also have a production goal, obviously, for the facility. It's possible that in some discrete areas that could be evaluated, but my understanding is, based on the topography of the site, anything tighter than 15 would cause shading during large portions of the year and reduce output.

THE CHAIRMAN: Mr. Silvestri has a follow-up to that point.

MR. SILVESTRI: On the 15-foot part of it, at what point would the angle of the sun be at such a point that it's not conducive to solar production?

THE WITNESS (Svedlow): I'll defer to the engineers a little bit on this. But when we look at designing a solar facility, we take into account the tilt of the panel, as well as the spacing of the panels. Typically, NextEra's

facilities are designed to maximize output throughout the year, so it's sort of an average, good output no matter what the angle of the sun is.

Now, certainly solar facilities can be designed to optimize summer production with very flat panels, and they could be optimized to get winter production with very steep angled panels. So a design like this sort of is an average approach to maximizing production throughout the year.

MR. SILVESTRI: I'm not sure if that answers my question.

THE WITNESS (Svedlow): Yeah. I mean, on December 21st you're going to have, you know, lower production than you would if you maximized your angle to capture the sun during that period. I'm not sure if I'm understanding your question.

MR. SILVESTRI: Let me try to phrase it another way. What I'm looking at, you have the 25-degree tilt, two panels high, I believe, and 15-foot spacing between probably measured from plane to plane.

THE WITNESS (Svedlow): Edge to edge, yes. Correct.

MR. SILVESTRI: What I'm looking at is, if the sun gets down to about a 25-degree angle from the horizon, you won't have any shading. Anything above that, you won't have any shading. So below 25 degrees you're going to have shading, but there's got to be a point that the sun is not going to reach your panels. And that's the point I'm looking for, to really say is 25 degrees the cutoff on the shading part of it? Do you expect that the sun would be at a lower angle and still produce, and that's why you're looking at the 15 feet? I'm trying to get some rationale between angle of the sun, shading, and distance between the panels.

THE WITNESS (Svedlow): Dave or Paul, you guys have any thoughts on that?

THE WITNESS (Callahan): I mean, we have shading, you know, morning and afternoons in the winter. The sun is going to be at all different angles, so we will have some shading at certain points in time. But for the winter months, you know, from peak times from 9 to 3, or so, we like to have, you know, no shading.

THE WITNESS (Svedlow): So we model this, essentially. We model the angle of the sun

at different times of year, and then we come up with our spacing and our tilt. But there will be certain times of the year that there will be shading, absolutely.

MR. SILVESTRI: Because, again, there's going to be shading not from panel to panel -- or there will be, but there also will be from whatever topography is outside the panel area, and that's kind of what I'm looking for.

THE WITNESS (Svedlow): Yeah, that's a good point. And that comes into play with, you know, vegetation setbacks, right, and how far we are from existing vegetation that we can't clear or manage, so that affects spacing as well. It's all, essentially, a compromise to make sure that we're getting the best average production all year.

MR. SILVESTRI: Thank you, Mr. Chairman.

MR. PERRONE: One last question. Does the petitioner believe that it has minimized the land area necessary to achieve its electrical capacity target?

THE WITNESS (Svedlow): Yes.

MR. PERRONE: Thank you. That's all I

have.

THE CHAIRMAN: Now we'll continue with cross-examination by panel members.

Mr. Silvestri.

MR. SILVESTRI: Thank you, Mr. Chairman.

Going back, if this is approved and constructed, how will you manage maintenance between the panels? How are you going to access the rows between the panels?

THE WITNESS (Svedlow): Paul, do you want to address that at all?

THE WITNESS (Callahan): Yeah, sure. So we'll have some access roads on the site, and then lawn mowing equipment can access from our main rows in between the 15 to 15 foot in between the panels. And depending upon the end of the rows, we'll select particular lawn mowing equipment that can make zero turn radius or drive through and mow the site.

MR. SILVESTRI: So do you need pickup trucks, or anything like that, to come in to service these panels at any point in time?

THE WITNESS (Callahan): So generally we'll have some roads that will get us to our

inverter equipment, but not for the panels necessarily. We may have some little buggies, but not necessarily pickup trucks.

MR. SILVESTRI: I wanted to get back to the question that Michael had posed on testing for herbicides and pesticides. How would you know if the soils are suitable for handling transport, stockpiling, reuse if you didn't do any testing?

THE WITNESS (Svedlow): I think we're looking at the materials of the soils and keeping them on site. The suitability of the soil for construction purposes, or if it's an existing farm agricultural soil, it was our intention to minimize impacts to those by doing some stockpiling.

THE WITNESS (Knapp): If I could jump onto that really quickly. I think it just applies to where the roads would be constructed, so where that disturbance is actually produced by the project. And so in a number of those areas, if you look at the mapping provided, those fall within some of the forested areas on the site, and that was definitely included in the application.

THE WITNESS (Svedlow): So there's a total of 6.2 acres of agricultural soils that

would be disturbed. And it's likely that some of them have been treated. I'm not totally familiar with the history of the treatments on the property.

MR. SILVESTRI: But you wouldn't do any testing?

THE WITNESS (Svedlow): I don't think we're opposed to it. I mean, I don't think we're opposed to testing for herbicides or pesticides. I'm not sure the value of it necessarily. The soils are on site, and will be kept on site.

MR. SILVESTRI: Let me move on. And I want to touch on, again, another question that Michael had posed to you about alternative sites. My understanding is that you folks had also looked into a potential solar installation somewhere around the Enfield, Somers area. Was that considered as an alternative site, or was that something totally separate as an RFP submittal?

THE WITNESS (Svedlow): We have a project in Enfield currently.

MR. SILVESTRI: That's the 20 megawatt?

THE WITNESS (Svedlow): It's a 20-megawatt project, correct.

MR. SILVESTRI: Thank you. A couple

other quick questions. The project, if approved, would generate about 109,500 megawatt hours of electricity. Is that an overall average for the life of the project on an annual basis?

THE WITNESS (Svedlow): Yes, there would be certain error bars around that, but that's our sort of average output estimate, yes.

MR. SILVESTRI: Okay. And I think one last question. Are you aware of any deer wintering areas within the footprint of the proposed project?

THE WITNESS (Knapp): No.

MR. SILVESTRI: Actually, I do have one more. Back when we had our field review on September 19th, I had posed the question there, but I want to pose it again for the record. How do you handle site security during construction?

THE WITNESS (Svedlow): Paul or Dave, do you want to address that?

THE WITNESS (Cook): The construction contractor will have on-site security to monitor the site 24 hours, 7 days.

MR. SILVESTRI: All right. Thank you. Thank you, Mr. Chairman.

THE CHAIRMAN: Thank you.

Mr. Lynch? Because you're going to be out this afternoon, so I'll give you a chance.

MR. LYNCH: Just to follow up to Mr. Silvestri. Is it common for construction companies to have on-site security during the development of a project?

THE WITNESS (Cook): It is for us, yes.

MR. LYNCH: That answers the question.

A couple other questions involving security, you know, once the facility is in place. Are there any plans involved for working with the local fire departments and rescue on training for if there should be a fire inside your facility? Are you going to offer any training or any special equipment they may need for the project?

THE WITNESS (Svedlow): Yes. I mean, the risk of fire hazard within the facility is fairly minimal. We do typically coordinate with the fire departments to provide Knox boxes, or some other type of locked box, so that they have access to the facility outside of our personnel.

MR. LYNCH: Now that box would turn off the power within the facility?

THE WITNESS (Svedlow): I'm just talking about like a gate key, essentially, yes.

MR. LYNCH: Now, my question would be, even though it gets turned off, the sun is still out, say, in the middle of the afternoon, would those panels still be hot, or would the electricity be off?

THE WITNESS (Svedlow): There are disconnect switches associated with the inverters typically. The panels themselves don't get hot, and the voltage that's coming from the panels individually is fairly low, and then all of the collector lines at a higher voltage going to the inverters is typically underground.

MR. LYNCH: Would they have to be turned off individually or -- you have to educate me. Is there one box that turns off everything?

THE WITNESS (Svedlow): Dave?

THE WITNESS (Callahan): No, there's not one box that turns off everything.

MR. LYNCH: All right. Then educate me. How do we turn the power off if there is a -- whether it be a fire, or an incident within the facility, you know, how do we get EMS out of there without getting electrocuted?

THE WITNESS (Svedlow): So I think one of the parts of this question is, would EMS be in

there to address any issues. And there's typically no risk to human health or safety posed by a fire at one of these inverters. Essentially the approach is let it burn and make sure it doesn't spread outside that area.

Now, that said, there are disconnect switches at each inverter. So there's the ability to turn off the power to the entire facility if one went to each inverter to turn them off.

MR. LYNCH: And I'm going to go back to the start of my original -- these are primarily volunteer fire departments?

THE WITNESS (Svedlow): Yes.

MR. LYNCH: Would they need any type of special equipment or apparatus if something happened?

THE WITNESS (Callahan): I don't believe so.

THE WITNESS (Svedlow): No. I mean, other projects, like ours, including ours in other parts of the country, don't require any special apparati, no.

MR. LYNCH: And I'm going to ask you a question I asked at the last hearing. And it's not a set-up question because I already know the

answer, so I'm going to ask for a comment. During the hurricanes in Florida, I mentioned if you knew of any damage that happened. Now, my friends from National Grid who were down there restoring power have talked to me about it. Any comments you want to make on damage to solar panels during a hurricane?

THE WITNESS (Svedlow): I did get some feedback from some of our folks in Florida. I don't know if you heard the same thing, but it was very minimal. It was a handful of panels, I mean, in the single digits of panels that were affected by the hurricane. That's what I heard from some of our staff down there.

MR. LYNCH: I'm just going to do a little follow-up. The National Grid guys were telling me that most of the damage to the panels was by projectiles, you know, whether it be a branch, or something there, or a screen that's going at 120 miles an hour in the wind. Would that be a safe assumption that that could cause a lot of damage?

THE WITNESS (Svedlow): I don't know what happened to the panels that were damaged. Again, it was a handful, single digits. I'm not

sure how they were damaged. I'm sure that's possible.

MR. LYNCH: Okay. Now, this is just another comment I want to get from you. Your panels are coming from China?

THE WITNESS (Svedlow): We haven't selected our panel manufacturer to date for this. Typically most of our panels come from other sources, Malaysia, South Korea. Really we look at all panel manufacturers and pick the best for the site.

MR. LYNCH: And the reason I mention it, just a general question, is because reading in the Washington Post a couple months back about China dumping, trying to get -- and this includes panels and, you know, televisions, whatever, you know, garments that China is trying to get over here before our president decides he's going to have a new tariff. So I'm just wondering whether that would impact your project at all.

THE WITNESS (Svedlow): No. I mean, obviously this is something our company has been paying close attention to, as it's unfolding. We are very confident that the solar market, the solar panel market, will remain strong regardless

of any potential tariffs. NextEra has already purchased a number of panels for certain projects, not this one, but our expectation is that will not affect our ability to deliver on this project or any other projects.

MR. LYNCH: And one last question. With regards to federal tax credits -- I might have asked you this before, but if I did, you know, we'll put it on the record again -- I know that the maximum credits will expire -- not expire, but start to decrease after 2018, up to 2022, or '24, something like like. Now my question really is, in order to get the maximum credit by the end of 2018, do you have to be up and operating or just under construction?

THE WITNESS (Svedlow): Yeah, there's a start of construction clause, essentially. You have to have invested so much money into the construction of a facility. I believe it's 2019, actually.

MR. LYNCH: Okay. I'll accept that.

THE WITNESS (Svedlow): Yeah, but it's the start of construction.

MR. LYNCH: The start of construction. So you don't have to be up and operating?

THE WITNESS (Svedlow): You don't have to be what we call "COD'd" or completed.

MR. LYNCH: Okay.

Thank you, Mr. Chairman. That's all.

THE CHAIRMAN: Thank you.

We'll go to Dr. Klemens.

DR. KLEMENS: Thank you, Mr. Chairman.

Mr. Svedlow, you answered Mr. Perrone's question about your duty to the ratepayers of Connecticut quite eloquently. What do you feel that your duty is to the natural resources of the site, is it the same as to the ratepayers, a lesser duty, or greater duty, or an equivalent duty?

THE WITNESS (Svedlow): Sure. That's a good question, and a tough question. We need to balance our potential impact on natural resources while also maintaining our commitment to the ratepayers of Connecticut. So I would say it's a balance. I'm not sure I would weight it necessarily.

I would also say that there's a cumulative effect to renewable energy in that this project will have substantial positive effects on greenhouse gas emissions, and I think that, with

the exception of some other threats to wildlife in this country, and globally, you know, climate change is a primary threat, and this project is making steps towards mitigating the effects of climate change.

DR. KLEMENS: Thank you. You have the transcript from the last evidentiary hearing?

THE WITNESS (Svedlow): Yes, sir.

DR. KLEMENS: I'd like to direct your attention to that transcript. On pages 58, lines 5 to 7, Mr. Knapp testified that he didn't personally conduct vernal pool studies or report to them.

And on page 60, line 25; and page 61, line 1, you, Mr. Svedlow, stated. "Yeah. I mean, I can get the original contractor, certainly."

And you continued on page 65, lines 24 to 25; and page 66, line 1, elaborating on Mr. Knapp's response and stated, and I quote, "That it was important for us to get the firm here to talk to you and answer those questions."

So my question to you, sir, is the person who conducted these vernal pool analyses that you have put into your application present as a witness here today to be cross-examined by the

Council?

THE WITNESS (Svedlow): Yes. Mr. Ericco was involved with the surveys themselves. I would like to caveat that a little bit. Verdanterra, the original contractor for the vernal pool surveys, is essentially defunct as a company operating in the northeast. Mr. Ericco was an assistant biologist on the survey. The lead field biologist is in Ohio and was not able to attend. And the overseeing principal biologist, let's call him, was also not able to attend. So Mr. Ericco was on the ground and involved with the surveys, but he did not lead the efforts. So I apologize for not having the lead biologist, but we did the best we could getting the guys that were in the field here.

DR. KLEMENS: So Mr. Ericco was on the site conducting the surveys. But did he make any of the decisions about how the survey should be conducted, duration and intensity?

THE WITNESS (Knapp): I can jump in and try to answer that.

DR. KLEMENS: I was asking Mr. Ericco, actually.

Can you respond to that, please?

THE WITNESS (Ericco): No, not really.

DR. KLEMENS: Thank you, sir.

Let's move to CSC Interrogatory 91, please. The table of effort expended that you provided in the response list five vernal pools, three in Brooklyn, and two on the Brooklyn/Canterbury line. Yet, examination of the vernal pool analyses maps submitted as part of CSC Interrogatory 103, shows these five pools, as well as three additional pools in Canterbury, which are not included in this table of effort. And I ask the question why?

THE WITNESS (Knapp): I think I can respond. I believe the initial efforts by Verdanterra covered a larger portion of property controlled by the project, and so several of the pools that occur in the northwest fringe that are shown on the map occur well outside of the footprint of the project. So their work was more extensive than the area of development. So we were focused on pools that would be reviewed by yourself, and others, in relation to the 25 percent best management practice development envelope.

DR. KLEMENS: I'm trying to understand

this.

THE WITNESS (Knapp): Sure.

DR. KLEMENS: If I find the maps. You're telling me that these three pools that you prepared, and you prepared responses to them under Interrogatory 103, are really not of concern, your project is not on the footprint of those three pools in Canterbury?

THE WITNESS (Knapp): I'm going to have to check. Do you have numbers that you could reference?

DR. KLEMENS: It's a very complicated taxonomy that you have for the pools. Yes, the pools that apparently you have mapped but don't have effort is VP01-1, VP02-1, VP03-1. Those are the three that you have mapped and don't have effort. You have VP04-1, VP05-1, VP03-2, VP04-2, VP06-2, those five pools you've mapped and you have effort for.

THE WITNESS (Angus): We're suffering from a bit too much paper. Hold on.

THE WITNESS (Knapp): It was in the second tab of the spreadsheet.

(Off the record discussion.)

THE WITNESS (Knapp): Right. Dr.

Klemens, if you could, I guess, allow me a bit of time to pull up an Excel spreadsheet on my laptop, it may have been an inadvertent admission in our interrogatory response.

DR. KLEMENS: So those pools are within the footprint of your project?

THE WITNESS (Knapp): I'd have to look at a map separately to look at the number. I guess I'm trying to cover your first question, which related to the time spent in each pool, and encompassing, excuse me, the whole project area. I misspoke earlier.

DR. KLEMENS: I guess we can move on and get back to that. Okay. I'm going to move on now. I'll leave my other questions on Interrogatory 91, and I'll come back to them while you figure that out.

Let's move to Interrogatory Number 92, please. Are you aware that the CAWS Vernal Pool Monitoring Protocol has been administratively noticed by the CSC and will be incorporated into this cross-examination?

THE WITNESS (Knapp): Yes.

DR. KLEMENS: Do you have a copy of that protocol?

THE WITNESS (Knapp): We do.

DR. KLEMENS: You stated in your response that your surveys followed those protocols?

THE WITNESS (Knapp): Yes. I mean, Mr. Ericco performed the surveys, but my understanding in talking with him, as well as reviewing Verdanterra's materials, they followed the CAWS protocol, as well as other regional protocols that are in place for identifying and mapping vernal pool habitats.

DR. KLEMENS: Let's begin with the CAWS protocol, which seems to be the one that you have cited repeatedly. Let's go to Protocol Number 13, which refers to the timing of inspections. When did the wood frogs begin calling at the site this year, and why is that important?

THE WITNESS (Knapp): We didn't perform full vernal pool surveys this year, but it is important because it's an indicator of when they've initiated the process to start toward breeding and laying eggs in the pools.

DR. KLEMENS: So these vernal pool surveys are from 2016. Correct?

THE WITNESS (Knapp): Yes.

DR. KLEMENS: Okay. So do you know when the wood frogs began calling at the site in 2016?

THE WITNESS (Knapp): I'll allow Mr. Ericco to respond, if he can.

THE WITNESS (Ericco): I'm not sure.

DR. KLEMENS: Sir, could you speak up?

THE WITNESS (Ericco): I said I'm not sure.

DR. KLEMENS: And why is it important to understand the CAWS protocols? Why it is important to know when the wood frogs begin breeding at the site?

THE WITNESS (Knapp): Because it starts sort of the time clock in terms of series of when different indicator species would be present within those pools.

DR. KLEMENS: Correct. So if you don't know when they started calling at the site in the survey year, how do we know that that survey was appropriately constructed to maximize the detection of those vernal pool species?

THE WITNESS (Knapp): I can't speak specifically to Verdanterra's work in this process.

DR. KLEMENS: Why don't we have Verdanterra speak to it?

THE WITNESS (Knapp): I was going to answer sort of in general based on his last response is that sort of regionally a number of us, as wetland scientists and field biologists, track the initiation of breeding activities and wood frog calling as the season starts to emerge across all of New England. And so a number of web sites, including CAWS, track that activity. So we all, as a community of scientists, have that data available, so we don't have to visit the site four times so we can track that as it moves across the region. That's relatively common practice, but I'll let Thomas speak to it, if he has anything to add.

THE WITNESS (Ericco): I think that covers it pretty well.

MR. LYNCH: I can't hear you.

THE WITNESS (Ericco): I think Dale did a good job describing it.

DR. KLEMENS: Are you aware of the regional variability in a place like Connecticut, particularly in a low-lying corridor like the Quinebaug Valley, is it the same as other higher

elevation areas within a few miles of that?

THE WITNESS (Knapp): Yes. There is tremendous seasonal variability across all of New England, but I think Thomas could speak maybe some to the results of their surveys, that what they observed in the field were indeed intact egg masses that were identifiable by species that they were able to count --

DR. KLEMENS: I'm not asking you about the egg masses. I'm asking about the timing of the survey. We're going to get to the egg masses.

THE WITNESS (Knapp): Sure.

DR. KLEMENS: Let's start. I'm trying to establish, for the record, if these surveys were begun at the correct point in time.

THE WITNESS (Knapp): Understood.

DR. KLEMENS: So it's your contention that based on the regional datasets you were examining, web sites, absent site-specific information here, that you initiated this study at the correct time period?

THE WITNESS (Knapp): I have to default to Thomas if it was --

DR. KLEMENS: It's a yes or no question.

THE WITNESS (Ericco): I believe so.

DR. KLEMENS: Thank you.

So did the first inspection of vernal pools occur approximately two weeks after the date of first wood frog calling, as required by the CAWS protocols?

THE WITNESS (Knapp): Can you answer that, Thomas?

THE WITNESS (Ericco): I don't know.

DR. KLEMENS: Thank you.

Did the second inspection for spotted salamander egg masses occur approximately three weeks after the first inspection, as required by the CAWS protocols?

THE WITNESS (Knapp): Give me just a second so we can pull his data forms.

(Pause.)

THE WITNESS (Knapp): Yes, there you go. That's the timing right there. I guess we responded to this already. CSC-93 breaks it down by dates of first and second site visits.

DR. KLEMENS: And as I am looking through your table, it appears that your second inspection occurred ten days following your first, which is half the time period of three weeks that

is required under the CAWS protocols. Is that correct?

THE WITNESS (Knapp): That is correct.

If I could just add one thing in there? I think, as you referenced earlier, there's a tremendous amount of seasonal variability, and so it can be challenging, I guess, to balance a technical protocol with an ecological process. And so I'm going to trust that the lead biologist in the field who observed the pools for the first time, judging by how advanced those egg masses were, timed the second visit based on their experience in the field better than we could in this room.

DR. KLEMENS: Let's talk about CAWS protocols are designed, are they not, to maximize the likelihood of detection of the egg masses at the egg mass -- when the most egg masses are there?

THE WITNESS (Knapp): Yes.

DR. KLEMENS: So what they have, the many, many wetland scientists that created these protocols, have stated that the optimal time to detect spotted salamander egg masses, as I'm reading the protocols, is three weeks after that

first visit triggered by the wood frog visit which is two weeks after breeding. So I'm trying to understand with a single year's worth of data whether or not these vernal pools were comprehensively assessed for the presence of these species. Because, as you know, and we discussed this earlier, the habitat is intact, fairly intact, and the only thing that's going to help us parse out the relative importance of two of those vernal pools, 5, 7, 8, whatever you have here, is going to be the biological data.

And I am very concerned, and I said that before, and I said that in the interrogatory, that you don't have a complete biological dataset for these vernal pools to make these decisions.

THE WITNESS (Svedlow): And I appreciate that. I think we all do. And I think, yes, there's likely things we could have done differently, certainly. And, you know, I think we followed what were generally the regional protocols. Again, as Dale had indicated, we have to trust that the lead biologist made some decisions in the field related to the timing of their second site visit for the surveys. I think we're confident, at a minimum, that the location

of these pools is as it is, and that the general species composition within the pools is as they suggest. But certainly there's things we could have done differently. I'm happy to concede that.

DR. KLEMENS: It's just unfortunate the lead biologist isn't here because these are certain important questions. You have to understand from the perspective of this body. We have to go what's on the record and ask these questions. I don't get any pleasure asking these questions. I'm trying to understand the impact of your project, or your proposed project, on the natural resources in the state, and this is not helping me tremendously, nor is not having answers helping me.

THE WITNESS (Svedlow): Understood. And I think, again, we apologize for not being able to get the lead biologist here for this. I will say Dale has reviewed the data. I think we're very confident in the location of these pools. We understand there may be some questions about the species composition and potential use of these pools by certain species. But again, we don't have any direct impacts to vernal pools from this project. And I'll reiterate the fact that

this project is a heavily-impacted site with two existing gravel pits and large thickets of invasive species in large areas of industrial and heavy agricultural use. So I certainly understand and want to minimize our potential impacts to vernal pools and amphibians, and I think we are certainly willing to work towards that end.

Obviously our approach was maybe not what you would have liked, and I understand that. So I think that, you know, we are more than happy to consider additional avoidance measures as part of our D&M plan as we proceed, but again, I apologize that we don't have all the answers to your questions today.

DR. KLEMENS: Sir, it's not about what I do or don't like. It's about getting the information into the record so this body can make an informed decision and do the balancing that you spoke about between what you wish to do, the ratepayers, and the natural resources, the public trust in those natural resources. This is what I'm trying to get at, and it's quite painful.

Have you gotten back to the question that we held back about how many vernal pools we're dealing with, Interrogatory 91?

THE WITNESS (Knapp): The Excel spreadsheet that Briony was able to provide didn't help me clarify the answer to that question.

Are there specific pools that you have concerns with related to impacts around them or --

DR. KLEMENS: My concern is more fundamental. I'm trying to figure out the layout of this project. You have five pools in which you have given me the effort. You have three pools I have no idea of the effort. And that's all important. Maybe after lunch, after lunchtime maybe, you'll have figured this out. I'd like to move on.

THE WITNESS (Knapp): I guess, some of it's already included in the data forms that were provided in the Siting Council application. What we tried to address through our summary, and omitted some of the data, was a table that simply pulled the timing for each separate site visit together, so providing you with a cumulative number that demonstrated the amount of time the biologist spent inside of each pool.

DR. KLEMENS: Correct. And that's what we're lacking. Because if, for example, let's say that you say that those pools are not critical,

it's even more important to understand the efforts you put in to basically reaching that determination. This should not be just based on faith.

THE WITNESS (Svedlow): Understood. And if you could allow us some time, I think these questions are very specific. And we apologize if our interrogatories were lacking the specific information you're looking for. I think that, assuming we continue after lunch, if you would allow us to just address that during lunch, and then we'll come back with very specific answers to your specific questions.

DR. KLEMENS: Is that okay to come back after lunch and answer that question, Mr. Chairman?

THE CHAIRMAN: With the caveat that today is all we've got.

THE WITNESS (Svedlow): Understood.

THE WITNESS (Knapp): I'll do my best to pull it up.

DR. KLEMENS: And I'm not looking for any Late-Files. I'm looking to get the answers from the context of today's hearing.

THE WITNESS (Svedlow): Understood,

sir. Yes, absolutely.

DR. KLEMENS: Okay. We will continue.

Are the CAWS protocols a predevelopment assessment tool, or are they a monitoring tool to follow pools over multiple years to assess post-development survivorship?

THE WITNESS (Knapp): I believe the primary purpose of the protocols is a monitoring protocol, and is a citizens' science tool to support identification of these important recourses across the landscape in Connecticut.

DR. KLEMENS: Thank you.

Okay. Let's move to Interrogatory Number 94, please. It's stated in the response that a systematic survey of vernal pools was conducted by meandering throughout the project site. Aren't meandering surveys gratuitous when compared to a systematic survey that would be structured in a grid or transect pattern?

THE WITNESS (Knapp): I'm going to pull up one quick response.

THE WITNESS (Svedlow): Tom, did you guys walk a grid?

THE WITNESS (Ericco): We roughly walked more of a grid than a meander survey.

DR. KLEMENS: Thank you.

Let's go to -- well, this is one that's, unfortunately, not going to be able to be answered. This is 95. What site-specific conditions led to the field biologist's determination that it was not necessary to use minnow traps in assessing these vernal pools?

Well, as it said in the interrogatory, the lead biologists made a decision not to use minnow traps, and I'd like to know what led to that decision, but I'm not sure you can answer that given that the lead biologist is not here.

THE WITNESS (Svedlow): I think our understanding is that minnow traps are typically an optional approach, as are dip nets.

Is that correct, Dale?

THE WITNESS (Knapp): Dip nets are to be used. But our response, again, is based on the work that was included in the Verdanterra report that we have provided excerpts from. But I don't have that lead biologist here to answer that question, so I wasn't in the field to make that determination at the time.

DR. KLEMENS: So you can't answer that question why the decision was made not to use

minnow traps in the vernal pool assessment. Correct?

THE WITNESS (Svedlow): I think that's correct. I mean, I think that we -- if what you're getting at is did we have the ability, I'm just trying to sort of get to the heart of this -- did we have the ability to assess whether or not Blue-spotted Salamanders are on site. Is that the concern?

DR. KLEMENS: We haven't come to Blue-spotted Salamanders. I'm coming to the decision about when or not to use minnow traps. I'll get to Blue-spotted Salamanders. They're going to come up. I think they come up in the 100s. We're still in the 90s here.

THE WITNESS (Svedlow): Okay. Understood. Apologies.

THE WITNESS (Knapp): My understanding is that the field biologists used dip nets during their surveys, and that minnow traps were not used by the field team.

DR. KLEMENS: Let's move to Interrogatory Number 96. Can you distinguish between an assessment of cover objects and incidental observations around a pool? This is

really something that the biologist is going to have to answer.

THE WITNESS (Knapp): Certainly. Do you want to have him sort of describe how they approached --

DR. KLEMENS: I would like to understand -- I guess I'm going to collapse these questions -- how many cover objects did you turn around each pool? Did you systematically look under cover objects around the pool, or did you just walk to the pool? What did you see?

THE WITNESS (Ericco): For each pool how we surveyed it, or --

DR. KLEMENS: How did you deal with cover objects, logs, rocks, debris?

THE WITNESS (Ericco): That was more of a random approach, but it would be upturning sticks, as you did the boundary, and took more information on the pool, and leaves and looking, you know, around moss.

DR. KLEMENS: Did you turn rocks, logs?

THE WITNESS (Ericco): Yes.

DR. KLEMENS: Did you turn all of them, a percentage of them?

THE WITNESS (Ericco): More of a

percentage, but it was not every rock or log.

DR. KLEMENS: So you can't quantify the number of cover objects that you searched around the pools? We're talking about the area, just to be clear, it's the area from the high water mark, 100 feet out, how much of those cover objects were looked under per pool -- or in a pool?

THE WITNESS (Ericco): It would have been a percentage.

DR. KLEMENS: And what do you think that percentage might have been?

THE WITNESS (Ericco): I'm not sure.

DR. KLEMENS: Thank you.

Was the time spent cover searching included in the pool assessment times included on Table 1 in the interrogatory, Table 1, CSC Interrogatory 91? Are those times inclusive of the time you spent cover searching?

THE WITNESS (Ericco): No, I don't believe so.

DR. KLEMENS: So you actually spent more time around the pools cover searching?

THE WITNESS (Ericco): Yes. The time spent in the pool was directly with the pool and delineating the boundary around it.

DR. KLEMENS: Delineating the boundary of the pool, in the pool. Then the cover searching, how did that happen, and do you have any data as to the amount of time you spent cover searching?

THE WITNESS (Ericco): No, that was done after and on the approach.

DR. KLEMENS: Was it as much time as you spent in the pool, twice as much, three times?

THE WITNESS (Ericco): Probably a little bit less than what was spent in the pool.

DR. KLEMENS: So let's take the largest pool. This one is 9,500 square feet of pool. According to what was presented in the table, a total of 40 minutes was spent in that pool. And let's say, for argument's sake, let's just, for argument's sake, double that amount of time to 80 for cover searching, 80 minutes; 40 minutes on each visit.

How comprehensive an assessment of this large pool could you do, including egg mass counts, dip netting, and cover searching, on the 9,500 square foot vernal pool in 40 minutes? You did it twice. I mean, I am troubled as a biologist who has spent their lifetime doing this

kind of work, how can you possibly complete these three discrete tasks in any comprehensive manner in a pool of this size in an abbreviated time frame such as this? You're going to have to explain this to me because I don't get it.

THE WITNESS (Svedlow): So, if I could just speak to that? And again, I'm not the biologist at all that did the work, but as I understand, the purpose of Verdanterra's survey was to identify the location of these pools, get a sample of the biological activity in the pools, and primarily understand what the boundaries of these pools were so that we were able to map them as constraints on our site plans so that we could develop our site and minimize and avoid impacts to these areas.

There are certainly -- it's certainly possible that they could have spent more time surveying the pools, but the purpose of their survey was specifically to identify the location of pools, get a sample biological activity in those pools, and was not necessarily to do a comprehensive study. And I think that the difference is a survey versus the study. I think their purpose was really to understand where these

were, understanding that there are vernal pools, generally what species are using them, and then so that we could map them as constraints.

DR. KLEMENS: What I'm trying to get is I'm not even sure, based on the information in the record, that you would know what all the species are in these pools because of the techniques that you have used, or the lack of techniques, and the lack of time. That's what I'm trying to get at. And also to assess these pools.

And why this is important, sir, is Mr. Perrone asked you a question earlier about the potential to redesign or move things around or do some mitigation. We don't have this basic information on the value that -- comparative value of these pools, the comparative importance if this pool has X, and this pool has twice as much of X. It's very hard to make informed decisions as to areas that maybe are more important, less important on the site, which affects a whole bunch of things. And so this is what -- you know, I just find the record lacking. I'm trying to get --

THE WITNESS (Svedlow): Understood.

DR. KLEMENS: I was hopeful we could

fill out the record in this cross-examination with maybe things that aren't, and I'm trying very hard to get my answers.

So yes, you have delineated the boundaries; yes, you have delineated the envelope and the critical terrestrial habitat. But, as I said earlier in the interrogatories, we have very little information on the key elements here on the biota of what are in these pools.

THE WITNESS (Svedlow): Understood. And, as I said earlier, you know, and with much deference to your knowledge and experience with these species and these resources in the state, we have the data that we have that was collected. We're doing our best to make decisions based on those data with confidence that we know the location of these pools, if not the full compliment and assemblage of species using these pools. If our methodologies were different, perhaps there would be more confidence in that, but I think, as a developer, we're fully committed to implementing avoidance measures moving forward. If we need to coordinate further with DEEP on these species and these resources specifically as we get closer to developing our D&M plan, possibly

including additional surveys this spring, I think we're happy to do that. But it's important for us to move forward in the process because of our deadline to be online to start delivering power to the ratepayers of Connecticut, but we're certainly happy to further study these issues and implement additional avoidance measures based on the results of potential surveys.

DR. KLEMENS: Don't you think that studying these issues first before you have a layout will actually help us get a good layout? I mean, let me ask you a question because this comes up. If we were, let's say, for argument's sake to approve this layout, and all of a sudden you did your surveys after the fact next spring and you started to find some of these pools to be far more productive and important than others, how would you handle this, in the D&M phase, or would you come back with another application?

THE WITNESS (Svedlow): Our expectation is we would work directly with the state agency that deals with natural resource issues, and that's how we would expect to deal with species like this that are endangered or threatened is to deal directly with the state natural resource

agency.

As I indicated before, we feel very confident, and it seems like you're somewhat comfortable -- and I don't want to put words in your mouth -- that we understand the location of these pools. And I think the question is more on the assemblage of species using these pools. I think if we just assume the presence of some of these species, I think we're comfortable with that if we can develop avoidance measures associated with that.

DR. KLEMENS: So let's move to Interrogatory 97. It noted that the CAWS protocol does not require autumn surveys. Does the CAWS monitoring program actually focus at all specifically on Marbled Salamanders?

THE WITNESS (Svedlow): I'm seeing Number 12, optional dip net procedures.

THE WITNESS (Knapp): That would be related to spring breeding. So they're in the pools prior to. So I think the dip netting, the purpose of that is to help identify whether or not Marbled Salamanders are present in the pool.

DR. KLEMENS: When you say that the CAWS monitoring protocols are tailored to the two

most widespread vernal pool species within Connecticut, spotted salamanders and wood frogs, isn't that generally what these protocols are about?

THE WITNESS (Knapp): I think the protocols are geared toward identifying all pool breeding indicator species.

DR. KLEMENS: Really? Where do you see that in the protocols?

THE WITNESS (Knapp): I don't think it's specifically mentioned, but I think the intent is to identify vernal pools, and based on some of the definitions that you've written, it encompasses more than just those two species alone.

DR. KLEMENS: But we're talking about the protocol, which I believe the CAWS protocols are used post-development, and they're used, as I believe, the two most common widespread species, that there really are not -- if you read the protocols carefully, do you see a reference to Marbled Salamander is optional? Do you see any reference to any other vernal pool species they're talking about?

THE WITNESS (Svedlow): Yes, there's

specific mention of Fairy Shrimp, along with Marbled Salamanders.

DR. KLEMENS: Correct. So on the Interrogatory Number 98, you stated that the larvae, potential for Marbled Salamander larvae, I assume, were assessed with four sweeps of the dip net. Now, the CAWS dip netting procedures call for no less than 16 dip net sweeps per pool with strict spatial arrangements. Can you explain why you only expended 25 percent of the effort required by the CAWS protocols which, by your own testimony, was the template of your study?

THE WITNESS (Knapp): I wasn't there on site at the time.

Tom, did you observe?

THE WITNESS (Ericco): I believe the four sweeps were one set for each direction.

DR. KLEMENS: So you had four sweeps per the four cardinal points of the pool?

THE WITNESS (Ericco): On the data form it would be one sweep, but it would be one of each direction.

DR. KLEMENS: One in each direction. Were there 4 sweeps or 16 sweeps?

THE WITNESS (Ericco): 16.

DR. KLEMENS: That's not clear at all on the response. So you did follow the CAWS protocol of having 4 sweeps at each cardinal point of the pool?

THE WITNESS (Ericco): Yes.

DR. KLEMENS: Thank you.

Let's get to the pools themselves. In developing these analyses in Interrogatory 103, who did that work, was that Tighe & Bond who did that analysis?

THE WITNESS (Angus): It was Tighe & Bond in conjunction with Tetra Tech, yes. The figures were actually produced in our office with input from Tetra Tech.

DR. KLEMENS: Thank you. You made distinctions between various categories of land use. Can you explain what you consider development presently on the site? Specifically, are you categorizing the gravel extraction areas as development?

THE WITNESS (Knapp): You're asking why we're considering the gravel pit as developed?

DR. KLEMENS: I'm asking you, you have areas of these vernal pool critical terrestrial upland habitat marked as developed -- or

development, and I'm asking you what is that? I'm asking, is it the gravel pit?

THE WITNESS (Knapp): That is the gravel pit, an open pit, yes.

DR. KLEMENS: Open pit, not houses, not roads, it's the gavel pit?

THE WITNESS (Knapp): Yes, an active gravel pit.

DR. KLEMENS: Likewise, what is the recreational use you have in pink on there?

THE WITNESS (Knapp): That's a maintained soccer field.

DR. KLEMENS: Do either of these uses present an obstacle to migrating amphibians, the gravel pit or the recreational fields?

THE WITNESS (Knapp): Yes.

DR. KLEMENS: How so?

THE WITNESS (Knapp): I guess based on a lot of Calhoun's recent work showing where migrating, I guess, pool breeding amphibians move when they divest themselves from a pool based on the cleared forest condition, you're going to see them preferentially use the areas that have the woody debris, the cover type that you described earlier in some of your questions, I believe,

toward Tom.

So I would posit that based on the research that I've read and the work that I've seen done, they're going to stay within those critical terrestrial habitats that more provide the habitat that they're looking for versus crossing a soccer field or meandering into a gravel pit or row corn or soybeans.

DR. KLEMENS: How much of that kind of habitat you just described is actually present on the site around these vernal pools?

THE WITNESS (Knapp): In terms of the forested or the developed?

DR. KLEMENS: Forested. I mean, is there a lot of forest there?

THE WITNESS (Knapp): There are exceptions dependent on pool type, pool location. So some of the pools are surrounded by virtually development, existing agricultural fields, gravel pits and soccer fields. Some of the pools are surrounded by more intact forest habitat.

DR. KLEMENS: Do you agree that currently the current predevelopment condition for the critical terrestrial habitat here, that seven of the eight vernal pools conform with Calhoun and

Klemens' standards for permissible development within the critical terrestrial habitat, all but one of them complies in its predeveloped state?

THE WITNESS (Knapp): If you give me just one quick look, I want to make sure that the percentages line up before I answer. Since this is part of the record, I want to make sure I give an accurate answer.

DR. KLEMENS: You'll have to look at each of your maps. I have the figures here, but I can't testify to it.

THE WITNESS (Knapp): Sure. Are you referring to the 25 percent developed and 75 percent left intact of that terrestrial habitat surrounding the pool? What specific --

DR. KLEMENS: Critical terrestrial habitat in the predeveloped condition. I'm asking you, aren't seven of the eight pools, leaving aside that you consider gravel pit development and recreational area, which I'm not going to parse out with you here, but even accepting that, seven of the eight pools are compliant with less than 25 percent development in the critical terrestrial habitat, that's the area 100 to 750 feet from these pools. Correct?

THE WITNESS (Knapp): Yes. The analysis looks like there are a number of pools that have greater than 25 percent developed surrounding them.

DR. KLEMENS: In the critical terrestrial upland habitat area?

THE WITNESS (Knapp): Are you referring to zero to 100, or the total envelope?

DR. KLEMENS: I'm referring to very specifically the critical terrestrial habitat 100 to 750. There are a series of metrics that you've given. I have them here. They range from 20 percent fractioned up to 32.54. Those are right from your maps.

THE WITNESS (Svedlow): I think the answer to the question is in most cases that's correct, but there's a lot of variability there.

DR. KLEMENS: Okay. Let's move on to the next question, which is really one that's -- to set a foundation. It seems to be difficult to do.

Do you agree that post-development, as you have proposed, all eight of these pools are now rendered noncompliant with the standards of Calhoun and Klemens with development in the

critical terrestrial habitat area ranging from a low of 25.72 percent to a high of 80.26 percent habitat loss?

THE WITNESS (Svedlow): I can't speak to those numbers specifically.

DR. KLEMENS: Well, they're your numbers, sir.

THE WITNESS (Svedlow): I'm sure they're correct.

DR. KLEMENS: So basically at the end of this project we are going to have eight vernal pools of unknown biological value which are going to be rendered noncompliant in their conservation survivorship using the standards of Calhoun and Klemens?

THE WITNESS (Svedlow): We do have impacts to the terrestrial envelopes around some of these vernal pools, absolutely. I think that we, again, are happy to continue to work with the natural resource agencies in Connecticut to avoid and, if not avoidable, mitigate those potential impacts. I've had some preliminary conversations with Connecticut Audubon to see if there's ways that we can get involved with participating in some of their funds that they have related to

vernal pool habitat conservation.

DR. KLEMENS: Again, you don't have this information at hand now for the Council on actually which pools are the most valuable and which are not?

THE WITNESS (Svedlow): I think we're willing to mitigate our impacts. Assuming --

DR. KLEMENS: What does that mean? What does that mean?

THE WITNESS (Svedlow): Compensatory mitigation to a Connecticut vernal pool conservation fund.

So again, we have no direct impacts to the pools. I understand that. We're reducing the amount of critical terrestrial habitat area around these pools because of our development. And what I'm offering is to continue to work with the state natural resource agencies in Connecticut, Audubon, to figure out ways to mitigate those potential impacts.

DR. KLEMENS: The compensation. You say you have no direct impacts to the vernal pools. Are you aware of what are the impacts to the water quality of these pools if wood frogs are eliminated from breeding within those pools? What

happens?

THE WITNESS (Knapp): Could I reel it back and get back -- I mean, could we reel it back to --

DR. KLEMENS: No. I'd like to finish the conversation. We can reel it back after that. I'd like to answer the question. Are you aware of what happens to the water quality in a vernal pool if the wood frogs are eliminated from using that pool?

THE WITNESS (Knapp): I haven't studied it myself.

DR. KLEMENS: You're not aware of anything that the River Sound court case in the Connecticut courts that actually ruled on that very issue of wood frogs?

THE WITNESS (Svedlow): I don't think we're aware of that. Apologies.

DR. KLEMENS: Very good.

Now you want to reel it back?

THE WITNESS (Knapp): Yeah. Sure. So I'm pulling up the schematics that David was able to provide to me. And, you know, given that we have the baseline vernal pool data that we're working with here today, could we kind of walk

through one of the schematics just so for the benefit of the record where we're on? We're talking about apples to apples versus discussing percentages. I'm looking at from the interrogatory response VP04 underscore 2.

And for those, I guess, as a number of you saw during the site visit --

DR. KLEMENS: Is this the one located right at the very top of the site?

THE WITNESS (Knapp): Yes. There's quite a bit of existing clearing out there, hay fields, active agriculture and gravel pits. But maybe it would be helpful to kind of walk through this. So in looking --

DR. KLEMENS: Yes. The one that's bisected by Rukstela Road?

THE WITNESS (Knapp): Correct. And just for those of you who also remember who were at the site visit in terms that being a road, not much of a road. It wasn't passable. That was where the sign was posted at the top of the hill near the silos that we stopped at.

So I guess for the purposes of the analysis here, we're looking at, again, that critical terrestrial habitat. And so what is

shown here is the existing condition in relation to the pool, and that's where the numbers come from here. So we have a small percentage development. A portion of it is forested, and a great deal of it is cleared, managed for corn and agriculture. So, as we discussed earlier, regularly managed. So we're kind of looking at that as a different condition than the forested habitat surrounding the pool, and then you can see sort of the footprint of the proposed project in relation to that.

So this pool, in particular, you know, maximizing the existing development to avoid having impacts within that critical terrestrial habitat that has that condition, existing forest, leaf litter, that would provide the opportunity for those species to carry out their life cycle upon departing the pool.

DR. KLEMENS: Let's look at this, if you want to go through this.

THE WITNESS (Knapp): Sure.

DR. KLEMENS: As I see, you have in the present condition 4.29 percent of that, that's the gravel pit that you're counting as development. Correct?

THE WITNESS (Knapp): I believe that's the road --

DR. KLEMENS: And you've got 60 percent forested, more or less, and 35, 36 percent hay field pasture?

THE WITNESS (Knapp): Correct.

DR. KLEMENS: Now, I disagree, actually. I have seen lots and lots of studies where these animals moved across corn fields, hay fields and pastures. It's about habitat integrity.

After your development, as I understand it, you're going to have 41 percent, almost 41.58 percent, developed. You will have reduced the forested area, which you claim is to be most important, by almost 20 percent, and the hay field pasture by 20 percent. So I think I understand what you have here.

THE WITNESS (Svedlow): And just a question about that. So, your point earlier was that the hay field pasture is suitable and viable habitat and is not to be considered developed. I would argue somewhat strongly that our project functions as a meadow. It is essentially a hay field. It's mowed approximately twice per year.

There are some additional roads and inverter pads associated with our project, but the vast majority of our facility is a meadow, and from a hydrological perspective functions as a meadow. So if we're considering hay fields suitable or viable habitat, I would posit that our project, with the exception of new additional roads, will function in an identical manner to a hay field.

DR. KLEMENS: With a bunch of solar panels on top shading. No, I mean, I think --

THE WITNESS (Svedlow): Understood, yeah.

DR. KLEMENS: -- that's one argument that I think could be advanced when you talk about mitigation. But we're going to talk about incidental take. We'll get to that too. Because before you have this meadow, this sort of post-development, you have to get to a development of the site, and that's, I think, where you may anticipate significant take in the course of the development.

Anyway, we're through with 103. We've gotten basically that after development you'll have altered the landscape 25.72 percent to 80.26 percent of that land that is called critical

terrestrial habitat will be in some manner altered. And certainly it's open. We can discuss what that alteration will be and its impacts. That's separate questions.

Now, we're finally going to get to the Blue-spotted Salamander because we have two species of state endangered, salamander and frog, on this site, and that is certainly of great conservation concern, at least to me, and probably a lot of other people.

So I asked for very specific responses about the search and detection for the state endangered diploid Blue-spotted salamander. And these were sort of thrown back and referred back to the general survey interrogatory responses. Correct?

THE WITNESS (Svedlow): Correct. That's my understanding.

DR. KLEMENS: Correct. So you basically -- my question about what you did specifically, you went back to the general surveys that we've just been spending a lot of time discussing. Do the CAWS protocols speak -- so I'm going back and looking at what you said and now putting it in the context of the Blue-spotted

Salamander because you basically went back and said look on Interrogatories 91 and 98.

So I'm going back to those interrogatories and asking you Blue-spotted Salamander questions based on your responses in those interrogatories. The first one being, do the CAWS protocols speak at all to this species?

THE WITNESS (Knapp): In terms of the Blue-spotted Salamander, the diploid population, or are you just talking blue spots in general?

DR. KLEMENS: Either.

THE WITNESS (Knapp): I think that their reference to the optional minnow trapping that they refer to is related to that.

DR. KLEMENS: Is the word Blue-spotted Salamander anywhere --

THE WITNESS (Knapp): It doesn't appear.

DR. KLEMENS: It doesn't appear in the CAWS protocol, does it? Does the word Blue-spotted Salamander appear?

THE WITNESS (Knapp): No, but I think --

DR. KLEMENS: So how --

THE WITNESS (Knapp): It doesn't

specifically reference minnow trapping associated with the detection of those species, so I think it's implied in the protocol.

DR. KLEMENS: I don't get it, but all right.

Describe the counting methodology that you would use for the Blue-spotted Salamander egg mass detection? Can you please explain how that would happen?

THE WITNESS (Knapp): I certainly wasn't involved with it specifically on this site, but egg mass detection for Blue-spotted Salamanders is fairly difficult. They lay single egg masses. They're very hard to find, typically attached to sticks with some snotty material around it. So I would use zipping or very carefully timing my surveys around the edges of those --

DR. KLEMENS: Dipping for what?

THE WITNESS (Knapp): Looking for egg masses.

DR. KLEMENS: With a dip net?

THE WITNESS (Knapp): Yes. Or minnow trapping, as outlined in the optional step in the protocol.

DR. KLEMENS: Well, this is what I'm getting at. I mean --

THE WITNESS (Knapp): I didn't do the -- I'm just speaking in general terms.

DR. KLEMENS: How would you be able to detect these species without using minnow traps and with the limited amount of cover searching you did? As I understand it, reading the literature, reading thesises of people that have worked on the diploid Blue-spotted Salamander, there are two ways of finding the blue-spotteds out there, or blue spotted salamander, minnow trapping or intensive cover searching. You, as I understand from the record, did neither.

THE WITNESS (Svedlow): Well, we did cover searching. And, as Tom indicated, there was some percentage cover search.

Tom, can you put a finer point on how much cover? I mean, I'm not assuming you turned over every stick in the pool, but how many sticks did you turn over roughly? I mean, you spent a fair amount of time in each pool.

DR. KLEMENS: I believe he testified already, you said 25 percent.

THE WITNESS (Ericco): Okay, 25

percent.

THE WITNESS (Svedlow): Understood. And again, as we indicated, if there -- you know, there's likely things we could have done differently.

I will note that we did not mention earlier that, you know, during the course of -- prior to conducting these surveys and prior to preparing our petition, there were a number of attempts to reach out to DEEP and NDDB staff to get additional guidance and to work with them on this. Those requests to speak with regional biologists and other folks were not successful despite repeated attempts. So without that type of guidance, we applied what we were thinking was the best approach based on general regional practices. And I understand that there's some --

DR. KLEMENS: You're basically testifying that no one at the DEEP, the wildlife people, NDDB, gave you any guidance or wanted to help you or responded to any requests?

THE WITNESS (Svedlow): We were not able to get a meeting with DEEP as part of our attempts. We were not able to meet with them, despite repeated attempts early in the process,

and then later in the process.

DR. KLEMENS: We're going to get at a whole -- that's sort of the last part of what I'm going to talk about, the DEEP, but let's continue with this, please. We're digressing.

So no minnow traps were used to look for Blue-spotted Salamanders and some limited cover searching. Is it your position that despite the abbreviated time period, not exceeding 40 minutes over two visits, at best case, and doubling that for cover searching in vernal pools, and the lack of minnow traps within these pools, was sufficient due diligence to determine with a reasonable level of confidence the absence of the state-listed endangered species? How certain and sure can you be, based on what I see is quite limited amount of field work, that you did not -- that this species does not occur on this site?

THE WITNESS (Knapp): I can't speak to that with any level of confidence that it is either present or absent.

DR. KLEMENS: And likewise, it is your position that the limited cover object sampling of terrestrial habitat within 100 feet of each vernal pool was sufficient due diligence to determine

with a reasonable level of confidence the absence of the state-listed species? Same question, basically, only first one was minnow trapping, now it's --

THE WITNESS (Knapp): Sure. I didn't perform the cover surveys. I'm going to let Tom answer that.

THE WITNESS (Ericco): I'm not sure.

DR. KLEMENS: Thank you, sir.

Let's go to 105. Is it your position that the meandering surveys, which you now said are grid surveys, to other wetlands on the site was sufficient due diligence to determine with a reasonable level of confidence the absence of the state endangered species? Because we're not just talking vernal pools. Remember, earlier in the hearing I said they could be in wooded swamps and other wetlands on site. They're not restricted to the vernal pools.

THE WITNESS (Knapp): Sure. I guess what I understand of Verdanterra's work on site is that they reviewed the entire property within the limits of ownership in a grid pattern for what they could observe in the field while following industry-accepted protocols to address the

concerns, I guess, related to vernal pools. So what they've observed has been included in that report. As you know, these critters can be really hard to detect and find.

DR. KLEMENS: They certainly are.

THE WITNESS (Knapp): Extremely hard to detect and find. So what was done here was, I guess, an honest due diligence effort by Verdanterra to give us a baseline to move forward with.

DR. KLEMENS: You see, Mr. Knapp, that's really the heart of the problem that we're facing here is that it's really quite straight forward, as you know as a biologist, to conclusively determine a presence. That's relatively straight forward. But to as close to conclusively as you can determine absence takes a huge amount of work to satisfy that standard. And do you believe that amount of work has been done on this application, on the biological work, the survey that you inherited, your firm inherited from the other firm?

THE WITNESS (Knapp): I think that there are a number of things I would have done differently, but I believe they had qualified

field staff out there doing what they could based on, as I said, the protocols they had available.

DR. KLEMENS: Thank you.

Let's move to the last one, the Spadefoot Toad. Are you aware that many of the most productive Spadefoot Toad sites in Eastern Connecticut are on agricultural lands or in active gravel extraction areas?

THE WITNESS (Knapp): I am now.

DR. KLEMENS: Are you aware that Spadefoot Toads require some level of fairly regular land use disturbance to keep the habitats they use primarily unforested?

THE WITNESS (Knapp): Yes.

DR. KLEMENS: Now let's go to the map that you've kindly prepared. Referring to the percentage of the site in Hinkley soils, there's a large area in the northwestern portion of that site in Brooklyn that is not part of the site, it's an inholding?

THE WITNESS (Knapp): Yes.

DR. KLEMENS: And the soils are not mapped in your response.

So as this is a sand and gravel extraction area, and is ringed by Hinkley soils on

the site surrounding the inholding, would it be reasonable to assume that the sand and gravel area is also in large part consisting of Hinkley soils?

THE WITNESS (Knapp): Yes, I believe that's why those gravel extraction areas are there in both the center northwestern portion of the site and then also moving further west.

DR. KLEMENS: So that being the case, wouldn't it be more accurate to characterize the site as having a large Hinkley sand and gravel deposit in the center with smaller amounts of Hinkley soils scattered throughout the site, but principally the concentration of Hinkley soils are in the western portion of the site?

THE WITNESS (Svedlow): I would say that's correct, and I think Dale would concur with me. I would also note that no development is proposed in either of those gravel areas.

DR. KLEMENS: Correct. But if there are Spadefoot Toads in those gravel areas, you would reasonably expect they could be moving beyond that into the surrounding fields. Correct?

THE WITNESS (Knapp): Correct. There could be habitat use around --

DR. KLEMENS: What I'm trying to get at

is that actually that gravel area may be the source area for the Spadefoot Toads, and they could be moving outward into your development area from the gravel deposits.

THE WITNESS (Svedlow): Understood. And we've had some conversations with a regional expert that's known to both Dale and I about potential ways we could avoid impacts to this species during construction of the project.

DR. KLEMENS: Great.

THE WITNESS (Svedlow): And our intention is to continue with those conversations and prepare an avoidance plan specifically for that species that would be implemented for construction. Some of the ideas that have been talked about include ringing some of those areas with an exclusion fence.

I don't know, Dale, do you want to provide some more details on that?

THE WITNESS (Knapp): I can jump in and try.

DR. KLEMENS: Can you identify who the biologist is you're talking to for the record?

THE WITNESS (Svedlow): Yes, Kevin Ryan.

DR. KLEMENS: Thank you.

THE WITNESS (Knapp): So after the last interrogatory, the issue was raised to us that had not necessarily come up prior I think with some of the correspondence you referenced earlier. And so there is interest within the project team to find ways to address that, because really our understanding of the species related to this site is that greater risk would be during construction. I think you mentioned that earlier.

And so the passive nature of the operation of the solar facility likely would not present a great risk. And so through the use of the CTD predictive model that we don't have access to currently, but if we did, we could use that to look at this specific site, then identify a way to create, through the use of a silt fence, an exclusionary zone, so that we knew we wouldn't have species coming into this proposed area of activity.

Within the area of proposed activity, also, we would seek to employ the skills of a qualified biologist who knows this species intimately and could detect presence or absence to the greatest of their ability within that sort of

exclusionary zone upon using pit traps, nighttime surveys, all of the things that you had referenced previously, to relocate those individuals potentially found to another location. Then when the construction is complete, the silt fence is removed, the passive nature of the solar project, we would expect, would not result in a significant disturbance.

DR. KLEMENS: You'd put them in a holding area, and then bring them back. You're not going to relocate them off the site?

THE WITNESS (Svedlow): No, I don't think that's our intention. We need to coordinate --

DR. KLEMENS: You'd have to have state permits, obviously, and have to coordinate with the DEEP.

THE WITNESS (Svedlow): I think we need to coordinate with the expert biologist that would be employed to help us with --

DR. KLEMENS: I think you also need to coordinate with the regulatory agency, and I think we need to understand what's going on there next. So that's the next segue of what I'm going to ask you next.

THE WITNESS (Svedlow): Yes, sir.

DR. KLEMENS: Okay. So public access to the Moran model is restricted. And I was going to ask you, wasn't this something you could have obtained since the last hearing through the consultation process with DEEP, which is not occurring, I guess, has not occurred?

THE WITNESS (Svedlow): The consultation process with DEEP was we filed the typical NDDB review letter. We got the results of that letter. We reached out to NDDB and DEEP. This is in 2016, so I don't have all the details. But we did reach out to them a number of times to try to get a meeting with them.

We ultimately did have a meeting, but they only allowed us to speak to their stormwater staff. Now, I'm not sure why that was the case. And I have received correspondence from them more recently. But back when we were conducting surveys and doing the heart of the site characterization work for the project, we were not able to have what I would consider a pre-ap or a planning meeting with DEEP's wildlife staff.

DR. KLEMENS: Let's go to Interrogatory 110. Does your site, or a portion of the site,

constitute arid to semi-arid lands, including fields and farmlands with sandy or loose soils?

THE WITNESS (Knapp): You say that was Question 110?

DR. KLEMENS: Interrogatory 110. I'm asking you to respond.

THE WITNESS (Knapp): Yes. I'm sorry. Yes, that's what it says in our response.

DR. KLEMENS: You basically give the DEEP definition in that response. I'm asking you is that what you have on your site?

THE WITNESS (Svedlow): Some of the project is sited in existing agricultural fields, correct.

DR. KLEMENS: Fields, farmlands, sandy or loose soils, arid, semi-arid lands?

THE WITNESS (Svedlow): I would say that some of our project explicitly is sited in farmland. I can't speak to those other items. I would say that, based on my knowledge of the site, the gravel pits would meet those criteria, but we don't have any development in those gravel pits.

THE WITNESS (Knapp): I think the key in that definition for me is the sandy or loose soils component in terms of siting panel

infrastructure on what I, as a soil scientist, would consider sandy --

DR. KLEMENS: I'm actually talking about siting Spadefoot Toads, not panels. That's what I'm talking about.

THE WITNESS (Knapp): Oh, I'm sorry.

DR. KLEMENS: What I want to know is, we're talking about Spadefoot Toad habitat here. And there was a definition given by the DEEP. And what I'm trying to understand is, leaving aside the Hinkley soils, leaving aside the fact that at least at the time you didn't understand that the Quinebaug Valley was this major hot spot for these, which I guess speaking to Dr. Ryan you now know, basically with the DEEP, do you find that the characterization that you gave in the response to Interrogatory 110 basically characterizes a portion of the habitat on your site?

THE WITNESS (Knapp): A portion, yes.

DR. KLEMENS: Thank you.

Now, Interrogatory 111. And my question is, how can you state with such certainty that the construction of this facility will not result in incidental take of Spadefoot Toads if they're present on site, specifically the

construction, excavation, installation of solar panels, creation of roads, and stormwater management structures?

THE WITNESS (Svedlow): I would say that we are going to prepare an avoidance plan so that we can avoid the potential for take during the construction period.

DR. KLEMENS: So I guess since the time that you did the interrogatory and you sit here before the Council, you have conceded the fact that your project, if not properly managed and designed, could actually create incidental take of the state-listed species?

THE WITNESS (Svedlow): I don't think I concede that. What I'm suggesting is that we are going to implement measures to avoid that.

DR. KLEMENS: Uh-huh.

THE WITNESS (Svedlow): But I don't think we have knowledge of the species occurring or not occurring on the site. So to the extent that it's prudent and precautionary, we will implement avoidance measures for the species.

DR. KLEMENS: Thank you.

THE WITNESS (Svedlow): If I could just follow up one more thing? You mentioned

excavation as part of our project. I would suggest that there really is no excavation. There will be some grading and movement of some material at fairly shallow depths in the soil.

DR. KLEMENS: How deep down does the Spadefoot Toad go?

THE WITNESS (Svedlow): I'm not aware of how deep a Spadefoot Toad goes. I'm sorry.

DR. KLEMENS: Do you think that maybe your, whatever you want to call, shallow excavation, could intersect the toad?

THE WITNESS (Svedlow): We're talking about 12 inches, maybe a little bit more?

THE WITNESS (Cook): We don't have a detailed grading plan.

DR. KLEMENS: Did Dr. Ryan tell you how deep Spadefoot Toads go in the soil?

THE WITNESS (Svedlow): I don't think we had that conversation. But I just wanted to clarify the point about excavation. To me that connotates the large removal, bulk removal of soil, which is not something we intend to --

DR. KLEMENS: To me excavation means any movement. Maybe that's a semantical issue. I consider it anything you're going to be scraping,

moving the soil in some manner. And you're also going to be driving poles, piles into the ground?

THE WITNESS (Svedlow): Correct.

DR. KLEMENS: There could be toads there too. Right?

THE WITNESS (Svedlow): Yes. And I appreciate that clarification. Thank you. And again, we intend to develop that avoidance plan, hopefully, with Dr. Ryan or another expert of equal knowledge in this area.

DR. KLEMENS: Now, I hate to ask this, but you referenced it again, and I have to now put this back in the record. Are the CAWS protocols that you reference in your response to 111 designed to monitor and detect Spadefoot Toads?

THE WITNESS (Knapp): No, they are not.

DR. KLEMENS: Thank you.

Therefore, isn't that statement that nighttime studies are not part of the CAWS protocols completely irrelevant to this discussion that concerns Spadefoot Toads?

THE WITNESS (Knapp): I think we referenced those because they're the materials that we had -- I guess that Verdanterra had available when it comes to vernal pool dependent

species as a baseline. My understanding of the behavior of the Spadefoot Toad is that they do breed in what would be a vernal pool, albeit small, maybe very ephemeral in nature. I think that's why that was referenced there.

DR. KLEMENS: Well, you just responded. The response I'm trying to get, it said nighttime studies are not required. I asked you about nighttime studies. Your response was, not part of the CAWS protocol. And so in response to my question was that not irrelevant, to say that they weren't in the CAWS -- I asked you, did you do nighttime studies, and I didn't expect to get it's not in the CAWS protocol.

Did you do nighttime studies for Spadefoot Toads?

THE WITNESS (Svedlow): No.

DR. KLEMENS: Thank you.

Okay. Let's get to Interrogatories 112 and 114 combined, please. On page 56 of the transcript, lines 19 to 23 of the evidentiary hearings of September 19, I asked whether you had received any guidance from DEEP to what they expected you to do to determine the presence or absence of the two state-listed amphibians,

Spadefoot Toad and diploid Blue-spotted Salamander, and you responded no.

Now you respond in this interrogatory that it was not the recommendation or requirement presented during agency consultation.

Furthermore -- I'm just giving you what I want you to respond to -- furthermore, the comment letter that the CSC received from Fred Riese of the DEEP on September 14, 2017, stated, the last sentence on page 2, "I should note that representatives of the petitioner are meeting with Jenny Dickson of the DEEP wildlife division today, as these comments are being submitted."

Let's try to parse this out, please. Did you meet with Ms. Dickson on September 14th or at any time during this project to obtain her guidance?

THE WITNESS (Svedlow): No, I've never heard that name before. I'm sorry.

DR. KLEMENS: So then you're saying Mr. Riese's comment that a meeting took place with Ms. Dickson, who is the senior wildlife biologist --

MR. BOGAN: If I may, Mr. Chairman? I don't have it in front of me, but I'm not sure

that's what you said, Dr. Klemens. I thought you referenced that the letter said a meeting was happening that day.

DR. KLEMENS: And I'm asking whether it did or did not.

THE WITNESS (Svedlow): I'm not aware of a meeting that happened on that day. I don't recall attending one, if I did.

DR. KLEMENS: Have you ever met with Ms. Dickson?

THE WITNESS (Svedlow): I don't believe so. I will reiterate the fact that we did try to reach out to DEEP.

DR. KLEMENS: I understand that. I heard that. You have Mr. Riese's letter in front of you?

THE WITNESS (Svedlow): Yes, sir. I do.

DR. KLEMENS: Great. So you contend that you did not meet that day with Ms. Dickson?

THE WITNESS (Svedlow): I am not aware of a meeting that happened that day with Ms. Dickson.

DR. KLEMENS: Well, who would it be in your team that would meet? It's a small team.

THE WITNESS (Svedlow): It would be me or Dale or Briony.

DR. KLEMENS: So none of you met with Ms. Dickson that day; yes or no? Were you aware of it or not aware of it; yes or no?

THE WITNESS (Svedlow): I did not meet.

DR. KLEMENS: Mr. Knapp, did you meet with her?

THE WITNESS (Knapp): I have not met with Jenny Dickson related to this project.

DR. KLEMENS: Ms. Angus?

THE WITNESS (Angus): I have not.

DR. KLEMENS: Thank you.

All right. So as to date -- and I think you've answered this, but I'm going to ask again for the record. As to date, the full extent of the consultation concerning Spadefoot Toads being a letter that you received from the NDDB that presented the list of species that are potential on the site and therefore require appropriate studies?

THE WITNESS (Svedlow): Sorry. Could you --

DR. KLEMENS: I'll do it again. I'm sorry. This is the most complicated -- it took me

a long time to wrap my head around these questions.

Has the full extent of your consultation concerning Spadefoot Toads been the letter that you received from the NDDB that presented you with a list of species that are potential on this site and require studies?

THE WITNESS (Svedlow): To my knowledge, that is the extent of the consultation with DEEP regarding this species. Our intention is to continue or actually have that conversation with DEEP as we proceed.

DR. KLEMENS: Wouldn't you assume that listing of these species by DEEP would be a requirement or recommendation that the petitioner study the site to specifically determine the presence or absence of these species and to develop a strategy to mitigate potential impacts?

THE WITNESS (Svedlow): Our plan is to develop an avoidance program for this species moving forward.

THE WITNESS (Knapp): Could I chime in quickly? Based on their response, that may not necessarily be the case. I think what's come to light in this discussion here clearly is that

there should be a more practical avenue for a project applicant to access the expectation of a natural resource when it comes to those site-specific assessments. So, for example, mussels that may be present in the Quinebaug River may not necessarily be directly related to this type of development, but they're going to show up in that NDDB response. So it's a very broad net.

And so once they cast that very broad net, from my perspective, the next logical step would be consultation with that natural resource agency, senior biologist with the agency, to present your project, then they provide you with specific feedback, and you have a better understanding of what you really need to look for in your project area.

DR. KLEMENS: It makes sense, Mr. Knapp.

Can you explain the response in Interrogatory 114 that consultation with the CT DEEP of the project to date has not identified a high level of concern or request for additional due diligence associated with the Spadefoot Toad at this site? Can you explain what that means to me? Because, as I read it, you're saying that

they haven't identified a high level of concern for this species, or asked you to do studies.

THE WITNESS (Svedlow): I would say you're correct. We did have that species on the original NDDB letter. And then the additional correspondence, to my knowledge, from DEEP does not specifically address that species, or a high concern for that species. So with the exception of our conversations, Dr. Klemens, I think that we had lumped that species in, probably incorrectly, with our other vernal pool breeding species, and that's why we're committing to doing additional avoidance or developing an avoidance program for the species moving forward and having consultations with DEEP specifically for this species.

DR. KLEMENS: So how do you reconcile your response to Interrogatory 114 with Mr. Riese's comment on page 2 of his September 14, 2017 letter to the Council as follows: "As detailed in that letter, October 7, 2016, DEEP will need to review the dates, methodologies and findings for all listed species, as well as the credentials of the biologists who performed them. Alternatively, the applicant may forego the

surveys and simply assume that the listed species may be encountered at the project site and prepare protection strategies for each species. These strategies must then be submitted to, and approved by, the NDDB biologists. To date, neither any documentation of field surveys, nor the development of protection strategies for the listed species have been submitted to the department"? This was on September 14th of this year.

Would Mr. Riese's comments apply to both the endangered Spadefoot Toad and diploid Blue-spotted Salamander?

THE WITNESS (Svedlow): I think we interpret that statement a little bit differently. The prior paragraph discussing the bat surveys that were done, and then he continues to talk about this survey has not provided the results, I think everybody is aware that we did subsequently provide the bat survey results. So I think we interpreted that as relating directly to the bat survey.

But that said, the last part of your statement I think is kind of where we're at now, where we're recognizing that it's likely that we

should have done something differently for spadefoot early on. We're assuming, I think, some level of presence, based on my conversation and Dale's conversation with Dr. Ryan, as well as your input. And what we're proposing is to do just what is suggested by DEEP here, which is to continue and enter into a conversation with them specifically about strategies to protect this species during construction. Given that the project development timeline for this facility, in particular, doesn't have start of construction until roughly the winter of 2018/2019, I think there's more than sufficient time outside of this process to develop that program and those strategies specifically with NDDB and DEEP biologists.

DR. KLEMENS: Isn't your opinion that this is all sort of kind of out of whack? Shouldn't you have come to the Council with all of this completed?

This is the trouble I'm having with this. You're saying everything that needs to be done, and I'm trying to reconcile that in my mind what needs to be done to grant you what you need from this Council.

You opted not to conduct species-specific detailed surveys, so you are now assuming presence. And following Riese's recommendation, you would then have to assume the presence and required to prepare protection strategies approved by DEEP. And these protection strategies have not been sent to DEEP, and the Council hasn't seen them. So it's kind of like this work, in my opinion -- and I'm only one member of the Council -- should have been done in hand when you came here, not coming out of cross-examination and two hearings.

THE WITNESS (Svedlow): I generally agree. I think that would be ideal. Again, I think that our communication and correspondence with DEEP was challenging initially and not particularly productive. The date of this letter is September 14, 2017. That's about a month ago.

So I would suggest that even if we were able to have developed a draft strategy for protection for spadefoot during that period, it wouldn't be completed now. And I'm suggesting that this is a specific issue for the state natural resource agency to deal with, with us as an applicant, and it's something that I'm

committing to you to do is that we will work with DEEP to address this issue and develop those strategies.

THE CHAIRMAN: I'm going to -- one, we're going to break for lunch, but obviously this whole series of cross-examination is going to be something that the Council will have to work with when we come to make a final decision, among other things, as to whether we have enough information at this point to make that decision. So that's, obviously, without continuing to belabor that, I think --

DR. KLEMENS: No. Actually I just have two. I'm at the end.

THE CHAIRMAN: Okay. I'll stop. Go ahead.

DR. KLEMENS: That's right. We have other questions after lunch, you're right. So yeah, that's fine. Thank you.

THE CHAIRMAN: And what we'll do, we'll finish that up right after lunch, and then we'll go to the appearance of the party, Sposato. I suspect you're in the audience. No?

Are you Mr. and Mrs. Sposato?

THE WITNESS (Svedlow): No, they're

with us.

MR. BOGAN: They are not.

THE CHAIRMAN: I apologize. I won't say anymore.

Well, if they appear, they will get a shot. If not, we have other members that are going to cross-examine.

So please try to get the material that Dr. Klemens requested so we can conclude with at least that portion of our cross-examination. And then, as I said, we have other members I understand who will have some additional. And we'll reconvene at 1:45.

(Whereupon, the witnesses were excused and a recess for lunch was taken at 1:03 p.m.)

AFTERNOON SESSION

1:49 P.M.

THE CHAIRMAN: I'd like to call to order the continuation of the meeting of the Siting Council. I believe Dr. Klemens had one or two more questions, and then the applicant presumably has some answers to a previous question.

Should we start seeing what they have

first?

DR. KLEMENS: Yes. I want to proceed with some things they were going to prepare over lunch.

THE WITNESS (Knapp): Sure. So I pulled together, I think you were looking for total time on pools that were not included in the interrogatory response.

DR. KLEMENS: Correct, those three pools in Canterbury.

THE WITNESS (Knapp): So I printed out the table that showed -- that added those additional survey windows into that table in the interrogatory response. So if you'd like, may I --

THE CHAIRMAN: Yes, submit it. And also, if you have any just a total for each one, or something?

THE WITNESS (Knapp): Yes. So the time is included within the table.

THE CHAIRMAN: Why don't you just put that on the verbal record.

THE WITNESS (Knapp): Sure.

So do you have the interrogatory response?

THE WITNESS (Angus): 91.
THE WITNESS (Knapp): Okay. So the pools listed in Interrogatory Question 91, and our response covers pools 3-2, 4-1, 4-2, 5-1 and 6-2. In addition to that, another pool assessed during Verdanterra's work was pool 3-1. The total time spent in that pool was 41 minutes. Pool 2-2, total time 50 minutes. And pool 1-1, total time spent in pool 22 minutes.
DR. KLEMENS: Thank you, Mr. Knapp. And those are the two visits. Correct?
THE WITNESS (Knapp): Correct.
DR. KLEMENS: Thank you.
THE CHAIRMAN: Was there another item?
THE WITNESS (Knapp): It's my understanding it was just supplementing that interrogatory response.
THE CHAIRMAN: Okay. Dr. Klemens.
DR. KLEMENS: I just have two concluding questions. So presently your mitigation plan, as I understand it, as we sit here today, is that it simply states that post-construction the habitat will be compatible with the species of concern. Is that sort of where we're at absent -- you know, you've talked

about going to DEEP, doing other things -- but as of right now from your testimony, it basically said that the habitat that you will create post-construction is compatible with Spadefoot Toads and Blue-spotted Salamanders?

THE WITNESS (Svedlow): So I'd add that our project has been designed, to the extent that we could, to minimize the impacts in the critical terrestrial habitat envelopes. We, as I indicated earlier, will develop the avoidance plan with DEEP, and we will also have committed to compensatory mitigation for impacts to the critical terrestrial envelope impacts, the direct impacts from our project, that's consistent with other types of mitigation, similar mitigation done in the state. So even though, again, I'll reiterate that we have no direct impacts to vernal pools, we concede that we have some potential impacts to the critical terrestrial envelope and are willing to mitigate those.

THE WITNESS (Knapp): If I could just jump in real quickly, I think in visiting the site, not having directly participated in the vernal pools, but reviewing Verdanterra's work, and as a number of you saw, I was a participant

and performed myself a lot of the wetland survey work on the parcel, and I think if you look at some of the guidance documents that are coming out regionally, looking at sort of these special area management plans or avoidance of higher value resources within development or adjacent to development to focus conservation efforts on those more intact contiguous habitats surrounding either the higher producing pools or the pools that have a greater biodiversity, I think that this project has met that based on the baseline data I've reviewed.

DR. KLEMENS: I wasn't going to have to say this, but you're saying around the pools that have higher biological diversity and productivity. We don't know that. So it's sort of circular.

But anyway, putting aside the vernal pools, which are your wetlands and important wetlands, there are two species that have come up repeatedly, and these are both the Spadefoot Toad and the diploid population of the Blue-spotted Salamander. And these are stated-listed endangered species. Do you anticipate that this agency, the Siting Council, will be able to approve your project absent a significant effort

to identify the presence of these species on site and to appropriately mitigate impacts?

THE WITNESS (Svedlow): Based on some of the language in the DEEP letter of September, I think we are in the position where we're assuming the presence of these species and developing plans to avoid those impacts.

So my expectation is that the Siting Council could move forward with the approval of the project with the understanding that the developer, the applicant, is taking reasonable steps with the state agency and natural resources -- the state natural resource agency, to address these issues, and those avoidance plans will be in place prior to construction.

DR. KLEMENS: And my final question is, if you're aware that a state agency, including the Siting Council, cannot permit a project that results in take or other unmitigated impacts to state-listed endangered and threatened species, that we're not allowed to permit such a project by law?

MR. BOGAN: Mr. Chairman, with all due respect to Dr. Klemens, I think that calls for a legal conclusion, and I don't know that

Mr. Svedlow is competent to respond.

DR. KLEMENS: Fair enough.

THE CHAIRMAN: Okay. That's fair.

DR. KLEMENS: Fair enough.

MR. BOGAN: Thank you.

DR. KLEMENS: I have no further questions, Mr. Chairman. Thank you.

THE CHAIRMAN: Thank you.

We'll now continue with Mr. Hannon.

MR. HANNON: Thank you, Mr. Chairman. I think I have most of the page numbers and tabs identified, so hopefully that will help if you need to look at it.

On page 3-6 you talk about the project being enclosed by a 7-foot tall fence around the perimeter with a 6-inch gap at the bottom to allow for passage of wildlife. On page 6-12 you talk about small wildlife access holes. What is it?

THE WITNESS (Angus): A 6-inch gap on the bottom of the fence. And I believe that's the detail shown in the drawings as well. So I apologize if there was an error on 6-12.

MR. HANNON: On page 6-12 it talks about small wildlife access holes. So to me, that doesn't represent a 6-inch opening across the

entire fence, but it's little openings here and there.

THE WITNESS (Angus): Consistent 6-inch gap.

MR. HANNON: Okay. Thank you.

One of the things I noticed in reading through this, there are a number of qualifiers on a lot of the comments that were made. So some of my comments are dealing with some of those qualifying words. So, for example, on page 3-6, you talk about select areas will be planted with seed mix that is supportive of pollinator species. What select areas, because I didn't see anything on any of the plans?

THE WITNESS (Svedlow): So those areas would be those areas outside of the aisles. So the aisles would be planted with a low-growing solar array mix, and then select areas along the exterior of the perimeter fence, basically not the areas between the arrays, would be planted with the pollinator mix.

MR. HANNON: Okay. Because the way that I read that is you might have some areas here, you might have some there, but that's not how I'm taking what you're saying.

THE WITNESS (Svedlow): No. I think the intention of this language is that the areas between the arrays will be the low-growing solar --

MR. HANNON: The fescue.

THE WITNESS (Svedlow): -- fescue conservation mix, and then all other areas will be the pollinator mix.

MR. HANNON: All right. Thank you.

This is something we talked about the last time, and I want to go back to it. On page 3-7 it talks about the work hours of 7 a.m. to 9 p.m. Have you had any thoughts about that? Part of the issue there is if you're pounding in some of these posts, that can be rather difficult for some of the neighbors around there. So I'm just curious if you had any second thoughts.

THE WITNESS (Svedlow): We have had some conversations. And Mr. Cook and Mr. Callahan are part of our engineering and construction team.

And if you want to address that?

THE WITNESS (Cook): Yes. I think maybe what might be a good solution is to limit the hours to perhaps 7 to 7, or not as late within certain distances of residences. That way that

work could be completed closer to normal working hours, and then beyond that would be less noticeable by those residences.

MR. HANNON: Okay. Thank you.

On page 6 it talks about sort of -- it discusses the possibility of lead contamination from concentrated discharge of firearms within the limits of one parcel in the southwest portion of the project. Are there any plans to remediate this lead?

THE WITNESS (Angus): Which page are you on? Sorry.

MR. HANNON: 6-2.

THE WITNESS (Angus): Thank you.

MR. HANNON: Bottom of the second paragraph under 6.1.2.

THE WITNESS (Svedlow): No. At this time we don't have any plans to mitigate that. That's something that was raised in the Phase 1 ESA.

MR. HANNON: Okay. That answers the question.

On page 6-3, I just want an elaboration on this. It talks about because of some of the activities there that have allowed the invasive

species populations to flourish. Can you be a little more specific about that?

THE WITNESS (Svedlow): Do you want to address that?

THE WITNESS (Knapp): Sure. So I guess through lack of control and then the practices of moving dirt around the site, active disturbance, you're opening up ground for these faster colonizing invasive species to pop up across the parcel. It was pasture land, heavily managed, and so you have barberry, multiflora rose, buckthorns. There's a lot of invasive species on site.

MR. HANNON: Rough idea, percentage wise, about how much is there?

THE WITNESS (Knapp): It is ubiquitous within the forested areas of the project, certainly not in the cultivated, cleared, and mowed, managed areas. But if you remember when we were on the site, you go through that first gate, and then you kind of come up to that corner, all of those forests there are pretty well colonized heavily with invasives.

MR. HANNON: Thank you. 6-4. I want to go back to an earlier comment about how I think somebody was talking about using equipment with

low-pressure tires, things of that nature. Here you talk about Quinebaug Solar will consider using equipment with best available controls on diesel emissions. So if the Council were to approve this project, would you have an issue with requiring you to use the equipment with best available controls for diesel emissions as a condition of approval?

THE WITNESS (Angus): For the construction period.

THE WITNESS (Svedlow): I would say that, you know, based on our greenhouse gas assessment, this project will offset somewhere in the order of magnitude of about a million metric tons of CO2. I think that if that were to be a condition that the Siting Council felt strongly about where it was applied to the project, I'm sure that we would meet that. I don't know, and I'm not sure anybody here does, and correct me if I'm wrong, but I don't know if we know enough about the availability of these.

THE WITNESS (Callahan): We don't.

MR. HANNON: It's available.

THE WITNESS (Svedlow): Okay.

THE WITNESS (Callahan): These are

fairly specialized pile drivers.

THE WITNESS (Svedlow): I think that's maybe the concern.

THE WITNESS (Callahan): I don't know.

THE WITNESS (Svedlow): With the exception of some specialized equipment, I think that might be something we'd be willing to commit to, certainly.

MR. HANNON: Sometimes the equipment can be retrofitted so that it controls some of the emissions, particularly things of that nature. Okay. Thank you.

On page 6-10, 6.14.1, the question I have is also tying in with what's in Tab N, Section 2. In 6-10 you talk about the project has been sited to avoid all wetlands, water bodies and vernal pool habitats. In Tab N, Section 2, page 2-1, it talks about wetlands being located on the site, but no wetlands will be directly impacted.

And I'm just trying to make sure I understand the philosophy. So your comment about no wetlands will be directly impacted, you're basically just stating that you will not put any of these projects within the wetlands?

THE WITNESS (Svedlow): We have no

fill, no wetland fill, or direct impacts to wetlands.

MR. HANNON: But there may be indirect impacts, but that's not where I'm going at this point in time.

On page 6-11, 6.14.2, states activities at the project site will be phased to avoid disturbance over 5 acres per DEEP general permit. That's basically what we're looking at. And this was something that was discussed the last time. I've also said that at Tab N, page 3-2 there's a statement that the project is proposed to be constructed sequencing in a single phase.

To me, this is a total contradiction, and I don't understand where you're coming from, and I don't see how that comment in Tab N even remotely comes close to what the requirements are for a stormwater general permit.

THE WITNESS (Svedlow): Without exception, we will adhere to the 5 acres at a time. I think the language in the appendix relates to just our understanding of development. We're not going to build this project in phases such that we'd have 5 megawatts come online and then 10 megawatts. But in terms of disturbance

and conversion, we will absolutely adhere to the 5 acres at a time. So 5 acres will be cleared, stabilized -- cleared and grubbed, stabilized; the next 5 acres will be cleared and grubbed, stabilized.

MR. HANNON: Okay. Keep that in mind because we'll be getting back to that a little bit later.

THE WITNESS (Svedlow): I understand.

MR. HANNON: On page 6-13, development of prime farmland for use in generating solar power would not be expected to result in a degradation of the soil quality. I mean, is this statement based on scientific fact, or is it theory?

THE WITNESS (Knapp): It's scientific study research. I'm a certified soil scientist. It's based on NRCS documents that I believe we cited in the response that was included in the petition. So it's based on science.

MR. HANNON: That's fine. I just want to verify it.

And again, I guess it's somewhat similar to what's on page 6-14, having a vegetative cover on soil surface would improve

soil health. So again, is that based on scientific study or --

THE WITNESS (Knapp): It's based on NRCS soil management principles. So when you're row cropping or you're managing cultivars on soil, often one of the best -- their best method is to maintain a vegetative cover on the soil and take it out of crop rotation to improve flocculation biota in the upper soil horizons and improve the amount of organic material which really overall is the best thing for soil health.

MR. HANNON: Thank you. Also in 6-14 I'm a little confused about this, stockpiled soils would be potentially available for local beneficial reuse. So can you please explain what you mean by they might be able to be reused locally? Because to me if that means taking soils that are here and moving them off site, then when you get to the decommissioning of this project, you can't very well put it back into the shape it was because the soils are no longer there.

THE WITNESS (Svedlow): I think that's a fair point, and that's something that we may need to reevaluate.

MR. HANNON: Because you can't have it

both ways on that.

THE WITNESS (Svedlow): I agree.

MR. HANNON: And I understand where, if you've got some valuable soils there that might be able to be used elsewhere for farmland, I can appreciate that. But then when it comes time to deconstruct this site and get it back into some reasonable semblance of preconstruction, it's not there.

THE WITNESS (Svedlow): That was an attempt by us to be sensitive to the concerns of these, albeit minimal, impacts to agricultural soils, sort of minimize those impacts somewhat by potentially putting those soils to use locally. But, understood, I mean, those soils would certainly need to be regraded back in those areas that they were removed from on site. So I think we'll need to amend our approach there and simply just stockpile them on site.

MR. HANNON: Okay.

THE CHAIRMAN: Dr. Klemens.

DR. KLEMENS: I just want to follow up on that too, because I believe earlier in questions posed by Mr. Perrone you stated earlier this morning that the soils, in respect to his

question about whether there was need to study them for pollutants, pesticides, herbicides, that they were not leaving the site. So it also contradicts that.

So is the position now that the soil is staying on the site?

THE WITNESS (Svedlow): The position now is that the soil is staying on the site.

DR. KLEMENS: Thank you.

MR. HANNON: Tab C, map G-001. Now, unless I'm missing something somewhere in this document, the only two -- I guess three -- all include the construction entrance on that. But the only two components associated -- no, it is just the two -- with erosion sedimentation control is silt fence in the construction entrance.

So if this is all that is in this plan, I have no idea how you plan on being consistent with the agency's requirement that you work in 5-acre chunks. So I just don't see how this is consistent with that philosophy.

THE WITNESS (Svedlow): Can you give us the reference to the map again?

MR. HANNON: Yes. It's Tab C, map G-001.

THE WITNESS (Angus): Certainly, the phasing and sequencing plan and the plan to show construction erosion and sedimentation control that comply with the 5-acre sequencing is something that we would typically provide in construction drawings for the project. We fully acknowledge that our permit level drawings at this point don't address construction phase sequencing. That's something --

MR. HANNON: But you also don't have anything in this application that deals with it in a narrative form. I mean, there's nothing in this application to me, other than what you're showing here for erosion sedimentation control and a couple of minor comments here and there, there is nothing that indicates to me what your plan is for dealing with the site, what type of measures may be required. There's nothing in here about temporary silt basins. There's nothing in here about level spreaders. There's nothing in here about culverts. I mean, there's nothing here. So how am I supposed to be able to review the application to see how the erosion sedimentation control plan passes muster?

THE WITNESS (Angus): I agree. That

level of detail would be provided in the Stormwater Pollution Control Prevention Plan, and certainly the applicant is well aware of the requirements for that plan and that DEEP will review it.

MR. HANNON: Okay. Staying on G-001. We have a typical AC electrical trench detail, minimum 32 inches of cover over the conduit. In Tab B, Section 3, there's a statement in there that says all underground cables above 36 inches will be removed. But I'm not sure if that statement is consistent with the detail here because are there areas where it could be more than 36 inches deep? So does that mean that that conduit and that electrical work is staying in the ground? So I'm a little confused on that, because the language isn't consistent with the depiction here.

THE WITNESS (Svedlow): Before we answer that, if we could just go back briefly to your prior statement. We do have Exhibit N, as in "Nancy," the stormwater management report, which does have a narrative on page 3-2, describing the erosion sedimentation control measures, and has a detailed hydrological and stormwater management

assessment report. Granted, this is not to the level of what would be required to actually get the stormwater permit from DEEP, but it does in fairly good detail, I think, describe the stormwater conditions and our plans for dealing with erosion prevention and sedimentation control on this site.

MR. HANNON: Okay. I'll just leave it at that.

The access road detail also on G-001 talks about the roadway being in -- nope, I take it back. It's not on that page. The access road detail, it ties in with Tab N, page 2-4. The access road is roughly 16 feet wide, 6 inches deep. Remove vegetation and native soil from road area prior to installing the geotextile material. Is that accurate, I mean, in what was being proposed there for the roadways?

THE WITNESS (Angus): Yes, that is accurate.

MR. HANNON: Okay. So then my question is, Tab N, page 2-4, talks about the access road comprised -- improve subgrade and approximately 6 inches of processed gravel will be placed above existing grade. So does that mean that the

roadway is 6 inches in gravel or 12 inches in gravel?

THE WITNESS (Angus): 6 inches. I agree that the language that says above existing grades confuses that. The detail is what is proposed.

MR. HANNON: Okay. Thank you.

And then this is just sort of a general question about stormwater. If you have a slope that's, say, sloping east to west, and you put a roadway in running north-south, so you're now intercepting the normal slope, would you expect that roadway to be going, even if it's only 6 inches deep, would you expect that roadway to be intercepting a lot of the stormwater that is actually coming down the slope going from east to west?

THE WITNESS (Angus): No, not if it is, when completed, the surface of the roadway is at existing grade.

MR. HANNON: So you're telling me that you do not believe that going in and removing 6 inches of the native soil to be able to put in the crushed stone, that will not have any impact whatsoever on the drainage patterns?

THE WITNESS (Angus): Is your question that it's increasing infiltration in the roadway?

MR. HANNON: No. It's redirecting. To me, it's redirecting the stormwater away from its natural course. And throughout this document you're talking about maintaining the natural existing flow passageways on this site. So to me, everything that I've learned in the past and what I understand on this is, if you go in and put a roadway in, or you put a trench in, you're now creating a situation where you start intercepting the overflow of water, and you can now start diverting it down that roadway. So I'm just trying to get a general response on that because that's my understanding of what happens.

THE WITNESS (Angus): And certainly the result of the stormwater analysis is that volume and rate of flows mimic existing conditions. Certainly, the location and materials of access roads in the project were considered in the stormwater analysis. I can't speak to -- and certainly the different characteristics of a gravel road compared to existing conditions are clearly included in the analysis. I can't tell you exactly what happened to the water at one

point, but I am confident it was addressed.

MR. HANNON: Because part of my concern is in looking at map C-006 and C-012, which is going around one of the wetland areas on the site. I'm concerned that what you may be doing is redirecting the water away from the wetlands, and I just want to make sure that you're not going to be creating any adverse impacts on the wetlands because of the roadways that are being proposed on site.

THE WITNESS (Svedlow): I believe that 06 and 012 are existing conditions.

MR. HANNON: But if you're going in and putting in a gravel drive, my understanding is you're taking out 6 inches of soil above the existing grade and putting in gravel. This isn't one of the bituminous roadways that has been identified on the site. I mean, it's identified as gravel. So I'm assuming that you're taking the 6 inches out and putting the gravel in.

THE WITNESS (Knapp): I've been here, and this is an existing gravel roadway. We didn't get there on the site visit. But if you look at the aerial photo of that northern portion, this is where the Rukstela Road extension, where we were

stopped by overgrowth, continues out toward the municipal landfill on the west side of the project.

MR. HANNON: Okay. Thank you. On map C-016 to me it looks like part of the proposal where some of the limits of clearing are, it looks like you're cutting into the top of the slope. So I don't know if that's going to create any potential problems with erosion. So is there any way to move that back to keep any type of clearing above the top of the slope? I don't see any reason that it would need to be destabilized.

THE WITNESS (Svedlow): I agree.

THE WITNESS (Angus): That's certainly something we can look further at.

THE WITNESS (Svedlow): The clearing would be limited. It would stop at the top of the slope.

MR. HANNON: Okay. Thank you.

Tab D. I mean, it's a one-pager, but I do have a question on that because it appears as though we're not consistent with what's here. If I'm reading this correctly, the commencement of construction is supposed to start fourth quarter of 2017 and be completed by the first quarter of

2018. So how?

THE WITNESS (Svedlow): Yeah, I think we're about a year off on that.

MR. HANNON: So are you saying that then the commencement of construction should be the fourth quarter 2018?

THE WITNESS (Svedlow): I think that's more accurate. I think these were our hopes and dreams at one point.

MR. HANNON: Okay. I'm just trying to figure this out because this does not make sense to me.

THE WITNESS (Svedlow): So again, I think these were our hopes and dreams at one point. So I stated the construction sequence earlier. I can rehash it, if it's helpful.

MR. HANNON: No. I mean, if things are off basically by a year from sort of that point down, that makes more sense.

THE WITNESS (Svedlow): Yes.

MR. HANNON: And again, part of the dialogue earlier today was whether or not the tax credits expired in 2018, 2019. So I'm just trying to figure this out because first quarter 2018 was not going to go.

THE WITNESS (Svedlow): Certainly. I agree with that. We are required to be online by the end of '19 to meet our PPA requirements. So I would basically add a year to this.

MR. HANNON: Okay. And then tying back into some of the questions I had earlier about the 5-acre sort of blocks that you would be doing, part of my issue for raising that was because I couldn't figure out how in the world you would be able to go in and do a 5-acre piece, stabilize everything, go onto the next 5-acre piece when you're talking about September to March.

THE WITNESS (Svedlow): Yeah. I think what we're talking about is clearing in the winter -- not this winter, next winter -- clearing in the winter, grubbing in the spring after things dry out a little bit, unless there's other seasonal restrictions because of some species on the site, and then sort of the installation of roads and other infrastructure later in that summer period.

I don't know if you guys want to add anything to that.

THE WITNESS (Cook): No. I think that's right. The primary construction activity,

roads and installation of piles and other equipment, would occur in the summertime into the fall.

MR. HANNON: Tab E, the decommissioning plan. And this is kind of referencing back to Tab D, the construction sequence. If it only takes two quarters to do the construction work, why does it take two years to decommission?

THE WITNESS (Svedlow): Well, I think it takes longer to do the construction than two quarters, but I understand. I think what we're trying to do here is allow ourselves some flexibility in the amount of time it takes us to decommission this. For example, if there's adverse weather conditions, or something that doesn't allow us to decommission it in one given year, I don't want us to be out of compliance basically.

MR. HANNON: And then also tying in with this, in Section 2 it talks about metals and PV facilities will be highly valued as recycled materials. What metals?

THE WITNESS (Cook): What was the question?

THE WITNESS (Svedlow): The recyclable

value of PV materials. So I think steel and aluminum and --

THE WITNESS (Cook): That's part of the decommissioning?

THE WITNESS (Svedlow): Yes.

THE WITNESS (Cook): That's correct, yes.

THE WITNESS (Callahan): Copper.

THE WITNESS (Cook): Some copper cable.

MR. HANNON: Then there was another comment that there's a likely outlet for used PV modules. What do you mean "likely," and what's the market for that?

THE WITNESS (Svedlow): I mean, I think it's hard to predict this far in advance, but there's a market now for used electrical equipment in other countries, used transformers, used inverters, that type of thing. So we're anticipating that market will still be viable in the future.

MR. HANNON: And I know that one of the things we talked about previously is the 40 years versus the 20 years, or any time in between. Given that manufacturers talk about a half a percent a year the panels degrading, if there was

a market for these used modules, would the market be higher after 20 years than 40 years simply because of how much more the panels will degrade?

THE WITNESS (Svedlow): I follow you. I guess that would be a logical conclusion of that. I mean, we're making an investment in panels, so it's important to us to maximize that investment and get the full value of them. We also have commitments for power delivery, so we need to sort of hedge both of those things in the future.

I would imagine that anything like repowering, so completely resurfacing the project, I'm not saying we want to do that, but hypothetically I would imagine that would require us to do some sort of amendment here to our petition. I'm not sure.

MR. HANNON: Say in ten years there was a major breakthrough in panels in terms of the amount of power that you could get out of them. Is that something that would be considered on the site? We realize it's a cost benefit analysis you have to do.

THE WITNESS (Svedlow): Sure. I think I've used the analogy maybe here before of buying

a laptop, you know, at some point you've got to buy that technology even though it's changing all the time. Is it going to be obsolete after a year or something, your laptop? But I think we would need to monitor the panel market and compare that investment, like you said, a cost benefit analysis. I'm not aware of really any facility repowering in such a short period of time.

THE WITNESS (Cook): No, I'm not either. Much longer periods of time, potentially, but not in that short of a time frame.

MR. HANNON: It was just an example in case somebody came up with this wonderful idea. If it was economically feasible, I'm assuming folks would look at it.

THE WITNESS (Cook): Sure.

THE WITNESS (Svedlow): Absolutely. If somebody creates a 500-watt panel that costs 10 cents a watt, we'll reconsider.

MR. HANNON: And then in Section 3 it talks about remove concrete foundations, if required. Can you explain what would happen if they were left in; and if they were left in, how would this be bringing back the land to a natural state?

THE WITNESS (Svedlow): So I think we're only talking about two areas where there could potentially be concrete foundations, is that correct, all of our inverters are skid mounted?

THE WITNESS (Cook): Correct. I believe they'll be on post foundations, not concrete.

THE WITNESS (Svedlow): So the only areas of concrete foundations would likely be associated with the substation, the project step-up transformer and the interconnection facility. So I think that is a broader conversation with the utility and ISO New England to determine whether or not it's appropriate to decommission those pieces of equipment, and whether or not they could be removed and the concrete foundations removed.

MR. HANNON: Okay. Thank you.

In Tab I, under the array cleaning procedure, you talk about not using harmful chemicals. Why don't you just say you're not using chemicals? I mean, if you're talking about using water and a soft brush, why even bring up harmful chemicals? I mean, why use any chemicals at all?

THE WITNESS (Angus): The tendency to add more words. That's truly all it is.

THE WITNESS (Svedlow): You get paid by the word. It's just water and a soft brush.

MR. HANNON: That's what I thought, so I didn't understand why you even brought up harmful chemicals. I mean, I would think you'd want to say there weren't any chemicals.

THE WITNESS (Svedlow): No chemicals, correct.

MR. HANNON: In Tab L under 3.2. you talk about the study area is currently comprised of unmanaged forest area, but at the same time there was language that had talked about forested areas are fragmented and all evidence shows disturbance and alteration, including past timber harvest. To me timber harvest is kind of associated with maybe managed, so I'm seeing a conflict with some of the language that's here.

THE WITNESS (Knapp): I guess, as you saw today, they're not actively harvesting timber on the site. That's not to say it wasn't subject to that activity in the past, nor would it be subject to that activity in the future.

Does that answer your question?

MR. HANNON: Okay. No, that's fine.

On page 4 of this I think there's a wetland section. It talks about incidental observations. What are incidental observations?

THE WITNESS (Knapp): So when we prepare to perform a wetland delineation, what we try to do is gather all publicly-known available data that we can about a site, be that potential for rare species, rare plants, a bird, an amphibian, and make sure that the delineation teams are up to speed on what may occur on the site. So they're keeping their eyes open, not just for sort of the three parameter areas that meet the jurisdictional definition of a wetland, but also looking at the trees and other portions of the site so that if they do come across something, or happen to come across something, that they're aware of it and pay attention to it.

MR. HANNON: On page 7 of 7 in this section there's a comment that wetland delineations and soil descriptions were overseen and verified by a certified professional soil scientist as per DEEP requirements. Was this somebody certified in Maine or Connecticut?

THE WITNESS (Knapp): I'm a

professional member of the Soil Science Society of Southern New England, which qualifies me to do this work.

MR. HANNON: Thank you.

Tab N, stormwater. We already talked about some of the wetlands. And when you're saying there is no impact, that's the specific construction of any type of activity within the wetlands, it's not related to any type of indirect impact. So the 50-foot buffer setback, what was the rationale for this determination?

THE WITNESS (Angus): It was a discussion amongst the project team about, again, balancing the needs of the system size, existing conditions on site, and the area we thought was required and sufficient to protect those resource areas during construction and operation of the project.

MR. HANNON: Has anybody in your group gone back and looked at any of the other solar projects that had been submitted to the Siting Council to see what the Council has typically received and looked at for wetland setbacks?

THE WITNESS (Angus): I think we've all certainly read other petitions. I couldn't rattle

off what other projects have been required to do.

MR. HANNON: Because my recollection is I'm not sure that I've seen something below 100 feet. So that's why I'm kind of concerned where this being the biggest project that we've seen is actually the closest to the wetland.

THE WITNESS (Angus): I believe Pomfret was 75 feet.

THE WITNESS (Svedlow): And we understand that. Again, I think it speaks to the unique nature of this site, that it's really one of the only parcels in Connecticut that I think could support a facility of this size without having substantial impacts on aesthetics or other things like that. So we did need to balance some of the other potential impacts as well.

MR. HANNON: Okay. 2-3 talks about the smaller subwatersheds collecting stormwater. And again, I'll go back to the comment earlier. What smaller subwatersheds? Because there's absolutely nothing in here which gives me any indication as to what those smaller subwatersheds are.

THE WITNESS (Angus): I believe those are the areas delineated on Figure 2 in the stormwater management report.

MR. HANNON: But many of those are also larger than the 5 acres. That's how I was looking at that.

THE WITNESS (Angus): Okay. So the stormwater analysis that's part of the petition is for post-construction conditions. It's not for construction period stormwater management.

MR. HANNON: This is where I'm still having a little bit of a problem because we're supposed to be phasing this project, but I don't have anything in front of me that I can look at to give me an idea of how it's being proposed. I don't know what kind of measures are going to be taken, how things are going to be stabilized. There's nothing here that identifies that. I understand you're talking about that would be something that you would submit with the D&M plan, but I'm having a hard time getting to that point without seeing something here.

THE WITNESS (Svedlow): So my understanding is there's some best management practices for erosion control prevention that would be implemented during the clearing and grubbing period. I think, you know, Briony may be able to speak to some of those things that are

typically done, silt fence, the use of the woodchips coming out of the clearing to stabilize. I don't know if there's other -- I'm not a specialist.

THE WITNESS (Angus): Sediment traps, et cetera. It's all the stuff that DEEP is familiar with seeing. I agree, there appears to be a disconnect in the level of information that is in the petition versus what we would typically provide at a more construction level design phase, and this project certainly is not there yet. You have the commitment of the applicant to comply with DEEP's requirements, and certainly the understanding of the project team, but I agree, it's not in the petition at this point.

MR. HANNON: Thank you.

Page 2-5 talks about topography of the site will not change substantially. What do you mean by "substantially"?

THE WITNESS (Angus): There's no -- the topography of the site in its existing condition is suitable for installation of the project. So there's no major earth moving activities. There's no major grading proposed. Minor undulations or minor grading in the area of access roads may

occur, but we're not regrading the site. Again, I think our use of adjectives or adverbs may be too general.

MR. HANNON: My understanding is you've got stormwater that's going to fall on the solar panels, and that will go to the edge of the panels and will drip onto the vegetated surface and flow along the existing flow paths. So I guess I'm kind of wondering -- this may go back to the fescue that you were talking about earlier -- is what vegetated surface of construction part of my question fourth quarter, the first quarter, because you're not going to grow anything at that point? You may get a little bit of growth into early November, mid November, a particularly warm winter maybe the end of November, but come December through February/March, you're not going to have anything. So again, it's a concern that I have. But again, you made the comment that the construction schedule that was actually in this application is not correct. So I'm assuming that those numbers are going to have to change in terms of when some of this work will be done so that it is consistent with the growing season to try and stabilize the area.

THE WITNESS (Svedlow): Yeah. I would argue that it is, as I described earlier, consistent with the growing season in that we'll be clearing in the winter and grubbing in the spring and stabilizing and seeding as we go about the grubbing, and this goes back to the 5 acres at a time, so as things are grubbed and taken down to bare soil.

And I should also, just to back up a little bit, a lot of our proposed development areas are in areas of pasture land or areas that are already -- you know, have meadow-type vegetation. So after grubbing, stabilization and seeding of those areas would occur fairly early in the construction season, and then any additional impacts would be seeded and stabilized throughout the construction period. Our hope is to be done with construction or ground disturbance, substantive ground disturbance, towards the end of the summer because there's a lot of commissioning and other electrical work that occurs into the fall as we connect to the grid.

MR. HANNON: I think you can understand my concern because, based on what I read in this application, that's not what the application says.

So that's what part of my concern is on this.

THE CHAIRMAN: Dr. Klemens.

DR. KLEMENS: How many acres, roughly, are you going to be developing, very roughly? What I'm grappling with is 5 acres at a time, how can you do that within the time period?

THE WITNESS (Svedlow): So it's roughly, I'm going to say, 250 acres of development area. Not all of that is area that's going to be cleared and grubbed. About 120 acres is forested that will be cleared and grubbed.

And again, back to the 5 acres. We're talking about clearing an area, and then it gets grubbed, and those 5 acres gets stabilized and erosion control measures put in place, and then the next 5 acres is grubbed, and the same thing happens.

DR. KLEMENS: Is it possible to do that 5 acres in the time within the time period you have?

THE WITNESS (Svedlow): This is a very common approach to construction. It's something I've seen done in Maine and Vermont and elsewhere. I think our E&C guys, our engineers and construction specialists, would agree with me that

that's typical and --

DR. KLEMENS: How long does it take to get it stabilized?

THE WITNESS (Svedlow): Stabilized?

DR. KLEMENS: Yes. You say you grub and stabilize it, and then you go to the next. I'm sitting here with my mind trying to figure out with your construction schedule how you do this even at 120 acres, how you get this done within your construction schedule 5 acres at a time.

THE WITNESS (Svedlow): So our erosion control specialists tell me that it's possible to do this.

DR. KLEMENS: 5 acres at a time. What's the time for restoration to stabilize it?

THE WITNESS (Svedlow): Can you define what you mean by "stabilize"?

DR. KLEMENS: I'm just trying to understand. Listening to the conversation, 5 acres. What do you define as stabilize until you move to the next one?

THE WITNESS (Svedlow): So typically that will include silt fence around that area, maybe geotextile fabric in that area, or seeding and hay or straw.

DR. KLEMENS: But it's not for the seed to grow up, just to lay the seed?

THE WITNESS (Angus): Correct. Stabilize, yes.

DR. KLEMENS: Thank you.

THE WITNESS (Svedlow): Not vegetated.

DR. KLEMENS: Thank you.

MR. HANNON: Again, staying with Tab N, 3.2, it's talking about all grading to be a maximum slope of 2.1 compacted and stabilized. Slopes greater than 3 to 1 to be stabilized with erosion control blankets. But I've got no idea where any of that is being potentially proposed on the site because, as far as I can tell, there is no grading plan associated with any of the maps that were submitted. Is that correct?

THE WITNESS (Angus): That is correct, and that's, again, a construction level detail, and partially a contractor note means a methods issue. It's more of a you shall do this.

MR. HANNON: I won't even go there.

I've got a question, for example, on the erosion control blankets. One of the things, typically you'll see details on that, but what type of mesh material are you talking about? Is

it a plastic weave, a cloth weave, so that it's biodegradable? Has any thought been given to something like that? I don't even know where you'd need it, but again, it's in the document so I'm just --

THE WITNESS (Angus): Typically we would specify a jute blanket.

MR. HANNON: Okay. A general comment I have, at least in looking at what's submitted here, going in with a single row of silt fence to me is totally inadequate. I mean, we wouldn't even allow that for something like a one-lot development in the town that I live in. So seeing 250 acres being disturbed and the proposal is for a single row of silt fence 50 feet from the wetlands, 50 feet -- or, excuse me, the perimeter of the property, that's something I think that would have to be spelled out much more clearly in terms of what happened, assuming this get approved and you submit a D&M plan because that's just unacceptable.

THE WITNESS (Svedlow): Sure. I think our understanding was in the one meeting I did have with DEEP was with their stormwater folks, and they specifically indicated that once we were

through the Siting Council process we would then apply for a stormwater permit through DEEP.

Is that correct, Briony?

THE WITNESS (Angus): Yes.

THE WITNESS (Svedlow): So our expectation was we would provide sufficient information to inform the Council about these issues, but then we would be working sort of on the details with DEEP specifically. And they had mentioned some measures such as silt fence which is typical to be installed as part of the project.

MR. HANNON: Again, sticking with Tab N, page 3-1, a portion of the solar panels in each drainage area were considered impervious for assessing peak discharge rates, but they've been excluded from the computations. Why?

THE WITNESS (Angus): So there is a -- that's also described on 2-7. The stormwater analysis assumes that the most hydrologically remote row of panels is impervious. And then once precipitation hits that panel, it's going underneath all the other panels and infiltrating into the ground. So that's the logic behind that analysis. That's been scientifically assessed. It's a sort of common methodology for ground

mounted solar in New England. So that's the logic behind that.

MR. HANNON: Thank you. And it also talks about the proposed project does not include any BMPs that require a water quality flow rate for design purposes, therefore this calculation was not performed. But I thought that I heard somebody earlier talking about some best management practices on site. So I'm a little confused.

THE WITNESS (Angus): So that's again in the post-construction condition, no structural stormwater best management practices are proposed. It's certainly the expectation that during the construction period there may need to be BMPs, such as sediment traps or basins, et cetera, but those would be for the construction period only. So in the analysis in the petition that calculation was not addressed.

MR. HANNON: So the last couple of comments that I was asking about, those are more related to post-construction?

THE WITNESS (Angus): Correct.

MR. HANNON: And on page 3-1 and 3.13 what's country drainage?

THE WITNESS (Angus): Swales.

MR. HANNON: Okay. I just haven't heard that term.

THE WITNESS (Angus): Nonstructural BMPs, so not formal stormwater basins or retention basins, you know, a more low-impact development approach to stormwater management.

MR. HANNON: I don't know if you can answer -- if anybody here can answer this next question because I don't know when you got involved with this project. So my question is, when submitting this proposal in response to the RFP, were environmental considerations evaluated in the site selection process prior to selecting the site, or was the environmental review initiated after the project was selected?

THE WITNESS (Svedlow): So I can speak to that directly. I prepared the proposal to the tristate RFP review committee on behalf of Ranger Solar, the original owner of the project. We did conduct environmental assessments prior to selection or proposing, I should say, this project for the tristate RFP. I'd have to look at the timing of things, but at a minimum, we did desktop analyses of the occurrence of artemi (phonetic)

species, and other publicly-available information about the site. So yes, we did at least some level of environmental assessment prior to proposing this to the tristate RFP.

MR. HANNON: Thank you. I don't have anything else.

THE CHAIRMAN: Follow up.

MR. SILVESTRI: I want to go back to the 5-acre issue. You have 250 acres that would be worked on. And if I divide 5 into 250, I come up with 50, say, individual intervals that you would have clearing, grading and stabilization that would occur. You with me so far?

THE WITNESS (Svedlow): Yes, I am. I think there's maybe still some confusion about this. The 5 acres is talking about stabilization, right, so the installation of construction period, erosion prevention measures. And it's my understanding that that's mostly focused on the 120 acres or so of forested habitat that would be cleared. And our plan with that is such that there's not more than five acres of soil exposed without controls around it at any one time.

MR. SILVESTRI: The point I'm getting at is that if you call those intervals, okay,

5-acre intervals, how long does it take, on average, to address a 5-acre interval from clearing to stabilization?

THE WITNESS (Svedlow): In my experience, it's a matter of a day or two. I mean --

THE WITNESS (Cook): For 120 acres?

THE WITNESS (Angus): 5 acres.

THE WITNESS (Svedlow): 5 acres.

MR. SILVESTRI: Just for 5 acres. What I'm trying to do is to do some math and come up with a time frame at the site, it's going to take five months, or whatever, maybe to do that?

THE WITNESS (Svedlow): No, no. It's more or less a continuous process. And again, the point is, there's not going to be more than 5 acres exposed at any one time as part of the clearing. And it's just helpful to think about it in terms of we clear, we grub 5 acres, so there's soil disturbance, there's removal of stumps, et cetera, from that area. Basically as that process is going on, there's maybe silt fence, or whatever is recommended, installed around it, erosion control mix, and then the stabilization materials are installed on that exposed soil following the

equipment that's grubbing it essentially. So the intention is no more than 5 acres of exposed soil at any given time as the project is cleared and prepared for installation of infrastructure.

MR. SILVESTRI: That was my related question. So you have stabilization for the 120 or 250 acres, whatever number you want to use. Is that all stabilized and then you go back and put your equipment, or is there another point in time that you would somewhere along the line go back earlier to install equipment?

THE WITNESS (Svedlow): No. I think the intention is that equipment infrastructure is installed after things are stabilized, and I'm not talking about vegetated. I mean controlled for erosion purposes those areas are stabilized before the crew comes in to set posts.

MR. SILVESTRI: But your feeling is you would stabilize all the acres and then go back and set posts?

THE WITNESS (Angus): I think just that it naturally occurs in more of a flow, like they're working across the site, and as they get here, this is stabilized before this, so then they come back like that. They don't stop and wait for

all 5-acre chunks to get stabilized. So yes, the 5-acre portion will be stabilized before they're working on it, but this one won't.

THE WITNESS (Cook): I think our construction contractor will develop the most efficient method to go about doing this. So if that means the best thing to do is to clear and stabilize everything before he starts the installation of equipment, then he may do that, but if he feels it's necessary to start installing equipment before everything is completely clear and stabilized, again, he would only work into areas that have been cleared and stabilized. Then he would develop whatever plan allows him the most efficient way to complete the construction.

MR. SILVESTRI: Thank you.

Thank you, Mr. Chairman.

MR. CHAIRMAN: Mr. Hannon.

MR. HANNON: Just one follow-up question. I forget to ask it earlier. The September 14, 2017 letter to the Council that was submitted by Fred Riese. At the back of that there's Stormwater Management at Solar Farm Construction Projects, dated September 8, 2017. If this project were approved by the Council, is

this something that you can live with as a condition of approval?

THE WITNESS (Svedlow): Yes. It's our expectation that we would have to be held to that. And, yes, we will.

MR. HANNON: Well, you don't have to be. You just have to come in for an individual permit.

THE WITNESS (Svedlow): No, we're committed, so absolutely.

MR. HANNON: Thank you.

THE CHAIRMAN: Dr. Klemens.

DR. KLEMENS: Two very quick questions. As the site is so large, wouldn't it almost point to the need for larger wetland buffers just because of the sheer amount of land that is disturbed and being used? It seems almost backward from a precautionary point of view that, as Mr. Hannon said, the largest site that we're developing for solar has the smallest wetland buffers. It seems almost that it would be more precautionary, if anything, to have larger wetland buffers here than smaller. Can you respond to that?

THE WITNESS (Svedlow): Is that --

DR. KLEMENS: It's a wetland protection question about the amount of open developed area juxtaposed with the rather narrow modest wetland buffers.

THE CHAIRMAN: I guess the question is do you agree with the statement?

THE WITNESS (Svedlow): I think generally, no, we disagree. We plan to install appropriate erosion control and prevention measures.

I don't know if you want to speak to anything else.

THE WITNESS (Knapp): As a number of you probably saw, when we were at the site -- and you can look at sort of the topographic breaks associated with the wetlands here -- if you're closing off those level areas and you're really making sure that you're containing stormwater runoff, you're not putting those resources adjacent to the site at risk. I think it relates directly to some of Commissioner Hannon's questioning about what detail goes into that erosion control plan. So it's specifying it based on DEEP's standards. But then also if you truly do have that vegetation here, having vegetation

covering the soil surface is the best thing you can have to infiltrate stormwater. So once that meadow is established, I think that it poses a very low risk to the wetland resources once it's passively operational. The key is really during the construction phase that would need to be addressed.

DR. KLEMENS: Here's my second question: How are you going to manage for the passage of wildlife in and out of those wetlands with all this silt fencing, single row of silt fencing? Have you considered ways to break the silt fence to allow for passage of wildlife such as syncopated silt fencing, or silt fencing interspersed with chip berms? Somehow these animals are going to have to get back and forth into these wetlands.

THE WITNESS (Svedlow): You're talking about the silt fencing proposed during the construction period?

DR. KLEMENS: Correct. The animals will be -- unless you're not going to do any silt fencing or construction during the animals' activity time, you're going to have to figure out how that silt fence, arguably a very good wetland

protection for sediment and pollutants into wetlands, also has a negative impact by -- I see Mr. Knapp understands exactly what I'm saying --

THE WITNESS (Knapp): Barrier movement.

DR. KLEMENS: -- a barrier for the movement and dispersal in and out of the wetlands by amphibians. What mechanisms will you use to counteract that? There are mechanisms. I mentioned two of them.

THE WITNESS (Svedlow): If those are recommendations that you're making we employ, I think we will bring them up with DEEP as we proceed with our stormwater permitting process and employ them. I think there's also some talk about excluding areas of the project from any amphibian movement to protect those amphibians. So I think we need to evaluate that with DEEP further.

DR. KLEMENS: Mr. Knapp, do you agree that those two techniques I discussed might be useful?

THE WITNESS (Knapp): I do. And I think that, based on the condition of the site and the construction sequencing, it's worth exploring additional options.

DR. KLEMENS: Thank you.

THE CHAIRMAN: Okay. I think everybody but the Chair has had a chance either at this meeting or the prior one to ask questions, but I'll just quickly --

Mr. Harder, do you have anything else?

MR. HARDER: Yes, follow-up on a couple of questions that were raised, Mr. Chairman.

Going back to Mr. Perrone's questions earlier, my understanding is what we have now, what we're considering now, and what was the case when you submitted the original petition is, is the proposal for a 50-megawatt facility. And that's a contractual number that's in there, you're obligated to provide a system for the project that produces 50 megawatts of power.

One question I have is, does the contract allow, or are there any conditions in there, should the Council or for whatever reason you make a decision to -- result in you making a decision to reduce the power being produced by that system? Are there any allowances for that without you suffering any penalty or without the project going away?

THE WITNESS (Svedlow): There are penalties associated with reducing project size

past a certain point.

MR. HARDER: But there's no allowance for reductions without penalty?

THE WITNESS (Svedlow): There is an allowance for a slight reduction without penalty. I don't know what that number is offhand, but I don't think it's a substantial reduction.

MR. HARDER: Okay. Would you describe, I guess it's kind of from the beginning, and I'm not sure what really I mean by beginning, but the beginning for you folks when the project was initiated, could you kind of step us through the process, and also describe what might have been anticipated initially for the power to be produced by the system, how the process went through, any reductions that might have occurred in the power output from that initial level of production that was anticipated to today, and rough time frames and, you know, what the reasons were for those reductions?

THE WITNESS (Svedlow): I'm not sure I completely follow on the reduction front. Can you explain what you mean by that? I mean, this project --

THE CHAIRMAN: Did you start with 49

point something and end up with 49, or did you start with 60 or something?

THE WITNESS (Svedlow): Oh.

THE CHAIRMAN: What were the reasons?

THE WITNESS (Svedlow): Sure. I mean, as a solar developer, we always try to maximize, to the extent practical, a piece of land and build the largest project. I think it reduces impacts overall if you concentrate solar development in a single area.

During the course of designing -- so during the course of the site characterization process and designing the facility, you know, at one point there were hopes that it would be a larger facility, more in the order of magnitude of 65 megawatts AC. That would have required substantial impacts to some of the sensitive resources we've discussed today. So eventually it was downsized, and the size that fit, and the size that was ultimately proposed in the RFP, was a 50-megawatt AC project.

MR. HARDER: And that's what you're contractually obligated to --

THE WITNESS (Svedlow): We're contractually obligated to 49 point something,

49.6. And what that number is, is the facility of 50 megawatts AC, and then some line losses and interconnection losses to the point of delivery at the interconnection point. So there's some losses associated with moving that power from the generation to the point of interconnection. So our contract is 49.4 or 6. I'd have to look that up.

MR. HARDER: Obviously, one of the difficulties we have is you submitted an application for a certain power output, and you really don't have much, if any, wiggle room. And that's before we have reviewed and made comments and perhaps put you in the position where, you know, to meet our concerns, you may have to reduce the power outage or make changes that would go in that direction.

THE WITNESS (Svedlow): Uh-huh.

MR. HARDER: And, as Mr. Hannon said, you've got the largest system proposed in the state so far with some of the closest, if not the closest, separating distances to wetlands. So we're in kind of a difficult position here, and you're in a difficult position also.

THE WITNESS (Svedlow): Sure.

MR. HARDER: Anyway, that's where I'm coming from on a lot of this.

A couple of other related questions to issues that were raised. Mr. Hannon I think also raised the question about potential lead contamination that was identified from firearms discharge. And I'm wondering, I think to the text of the petition it says that the Phase 1 reached the conclusion that potential lead contamination from what was described as concentrated discharge of firearms was de minimis. My understanding is that Phase 1 typically does not include sampling.

So my question is, how could you reach the conclusion that the contamination was de minimis with no sampling? What information did you have?

THE WITNESS (Svedlow): I didn't prepare the Phase 1. I'd have to look back at the document. My guess is there's a location where people were shooting guns on the site bright and early, and there's a pile of shells at that location, as happens with these open gravel pits occasionally that are publicly accessible. We can delve into that a bit further and see if there's some simple way to mitigate that effect, the

location of the shell casings.

Do you have a copy of Phase 1?

THE WITNESS (Knapp): I don't have it with me.

THE WITNESS (Svedlow): I don't think we have it with us right now.

MR. HARDER: I understand what you're saying. Understand from our perspective a couple guys going out on a weekend and shooting into a gravel bank is one thing. A gun club is something else. We have experience with gun clubs, and there's serious lead contamination. And so that's why I asked the question, how much can you tell from the Phase 1.

THE WITNESS (Svedlow): Any gun shooting back there would not have been associated with a gun club. It would have been basically just people out there shooting shotguns or whatever on the weekends.

THE WITNESS (Knapp): Yes. I spent a good deal of time on site, and I think there was one pit where we observed a handful of shell casings. We were out there a lot. I didn't perform the Phase 1. That's just incidental observation.

MR. HARDER: Okay. The last question concerns the issue raised on stormwater, getting to the 5 acre and the 250 acres and stabilizing. I guess taking that to its conclusion, you could end up with 20, 30, 40 acres in what you call the stabilized condition with little or no vegetative growth that would be exposed in that condition, you know, that would be subject to significant storm events. And, I mean, I guess I'm -- the term stabilize is throwing me off a little bit. When I think of stabilize, I think of something that's going to be able to withstand a storm event. I understand what you're saying is your definition of stabilize. I guess one question I have is, is your definition the same as the DEEP's definition of stabilize in the context of their stormwater roles?

THE WITNESS (Angus): Yes, I believe it is. And certainly during the construction phase not only will we have the Stormwater Pollution Control Prevention Plan, there will be DEEP required inspections after storm events. So there's -- I feel fairly confident there are enough safeguards in place through stabilization, inspections and monitoring, that even though there

may be a large number of 5-acre segments that are in some stage of stabilization, that through compliance with DEEP requirements, impacts, sedimentation impacts will be controlled.

MR. HARDER: Okay. Thank you. No more questions.

THE CHAIRMAN: Mr. Levesque, do you have anything?

MR. LEVESQUE: Yes. In your contract for selling the electricity, is there clauses about production, or getting approved for a site that's able to produce even less power and you just get paid less? What's the actual minimum?

THE WITNESS (Svedlow): I don't have the contract in front of me, but it is based on what was termed a megawatt hour per hour maximum, which is the nameplate of 49.6, or whatever. There are clauses in there that require liquidated damages and penalties if we don't deliver on something very close to that.

MR. LEVESQUE: But you're not willing to give us a number today?

THE WITNESS (Svedlow): I honestly just don't know offhand. I mean, I think --

MR. LEVESQUE: Can you get a deal with

45 megawatts or 47 megawatts?

THE WITNESS (Svedlow): That's a major business decision that I would have to talk to my management about. I mean, we're proposing a 49.6 or 50 megawatt project that has no direct impacts on wetlands or vernal pools. I understand that there's some concerns about the buffers, you know, and --

MR. LEVESQUE: We're trying to help you here. If you make the buffers a little bigger but --

THE WITNESS (Svedlow): It's the difference between --

MR. LEVESQUE: One of the issues.

THE WITNESS (Svedlow): If it's the difference between you guys approving a project at 50 and saying, hey, come back to me with an increased buffer and reduce to 48.5, I think that's something we're happy to consider, but that's a challenging decision to make on the spot without communication with my business management.

MR. LEVESQUE: Sure.

MR. BOGAN: If I may, Mr. Chairman? It's actually, I think, potentially more complicated than even that, Mr. Levesque, because

remember, this whole project was the result of the tristate RFP. So we'd have to go back and look at the original legislation, what was deemed to be the objective in terms of procurement for each of the three states, particularly Connecticut, and then go back and look at the PURA decision that approved the contracts. Because I know, for example, having been involved in that proceeding, on other projects they had to go back for erratas after the PURA approval because, as I recall, the actual output was going to be less than what was stated in the PURA decision, and they needed PURA approval, subject to check and correction because I'm wrong half the time. They needed to go back to PURA for approval of that change in the output.

THE WITNESS (Svedlow): If I could just add, this project is helping contribute to Connecticut's energy needs. There's a substantial risk of retirement and lack of energy generation in the region. About 4,200 megawatts of summertime capacity will be retiring in the next handful of years. So, you know, reducing the size of this project and not, you know, approving other projects of this type would affect our ability to cope with just generation in general. Regardless

of whether it's renewable or not, there's a need for generation to meet our power appetite in this region.

THE CHAIRMAN: I have some -- go ahead.

MR. PERRONE: Just a couple last questions, Mr. Chairman.

As far as the retirement of 4,200 megawatts, do you know roughly when, 2025 or low 2020s?

THE WITNESS (Svedlow): So mid 2019 Pilgrim, coal fired; Mount Tom station, coal fired and oil fired; Salem and Brayton Point stations. So in the next handful of years.

MR. PERRONE: And just one last thing. On the visibility topic, the planning and zoning commission comments of September 19th, there's some mention of Route 169. Route 169 is off to the west. Correct?

THE WITNESS (Angus): Correct.

MR. PERRONE: Is it also correct to say that's a state-designated scenic road?

THE WITNESS (Angus): Yes.

MR. PERRONE: Because of the distance, would the project be visible from Route 169?

THE WITNESS (Angus): We have a

rendering in the petition of that area, and it's actually -- it's really difficult to see the project. There is a portion of the project that, due to topography, you're going to see it. It's to the west of the two silos. As the hill slopes down from east to west direction, you can see -- that hillside is currently visible from Route 169. So it will have panels on it. You'll be able to see them. They won't be facing Route 169. So all that appears to the eye is almost like a smudge.

THE WITNESS (Svedlow): How many miles is that from 169?

THE WITNESS (Angus): I do not know how many miles it is. We can look it up. So you can see the hillside. You'll be able to see that the project is there. Given the distance, I don't think the visual impact will be that significant.

MR. PERRONE: Thank you. That's all I have.

THE CHAIRMAN: The Chairman has a couple of questions. First, I guess it's more of a comment, but you can just ponder, if you want. You raise the issue about these plants that may be closing down, or whatever that large number you gave. We had not too long ago, and it may come

back again, an opportunity to provide -- well, it was a proposal of over 500 megawatts on 30 acres. It happened to be dual fuel. So if we're just playing that numbers game, renewables are going to lose every time. So just be careful about that.

We have other reasons, to me, even broader than Connecticut's need, I think something called the planet's need, and I think you mentioned that briefly in the beginning. But there is a reason we're going through this instead of doing the easy way, which would be -- and those are very clean, those plants, as you know, but they're not -- they're still fossil fuel.

So I just -- I don't know if you want to comment on that, but that number, again, is not going to win points for this particular project because 50 on 500 acres versus -- or whatever it is -- versus 500 plus on 30 acres. So I just caution if that's going to be your pitch, that doesn't -- it's only a partial sale.

THE WITNESS (Svedlow): I appreciate that. And Connecticut has clearly defined goals for renewable energy. I completely concede that traditional generation is more space efficient. That's actually one of the biggest issues with

renewables is they take up space. But we're talking about a very different order of magnitude in producing the same amount of energy from a combined-cycle plant or some other natural gas facility from a solar project in terms of the amount of greenhouse gas emissions, about a million metric tons over the 20-year period.

So yes, I understand where you're coming from. But just to further elaborate on that, this shortfall in energy of 4,200 megawatts potentially upcoming needs to be met in a variety of ways, and Connecticut, along with other states in the region, have clearly indicated they want to meet that shortfall with renewables. And we believe that this project, as well as our other projects, are well sited and in a position to help meet those regional and state goals.

THE CHAIRMAN: Okay. That's fine. I was actually trying to get that out of you. I would say, though, to me probably the most important one, which is neither of the two, is energy efficiency and conservation measures, but let's not get into that discussion.

A couple of quick things. Site search. It was a tristate RFP. So does that mean you

could have also looked and found a site in one of the other states, it didn't have to be in Connecticut for Connecticut to still get the --

THE WITNESS (Svedlow): Correct. And four of our projects were selected in the tristate RFP. This is the only one in Connecticut. We feel for a number of reasons there's additional advantages to Connecticut for hosting a project, least of all is the tax revenue and economic development value from the project for the communities. There's also some benefits to the grid to having it instate. We do have projects out of state that are selling to Connecticut, and in another solicitation, the Connecticut DEEP small-scale we have, I believe, ten sites that were selected in that process, and the majority of them are out of state.

THE CHAIRMAN: Also, did you restrict your search only to solar, as opposed to, for example, wind?

THE WITNESS (Svedlow): Yes. Originally Ranger Solar developed these projects, so Ranger Solar was focused specifically on solar.

THE CHAIRMAN: Not that apparently we have much wind in Connecticut except when we have

hurricanes.

And on your debt analysis or your carbon debt comparison with a fossil fuel plant, which I had a huge amount of trouble following, so I won't ask you to walk me through it, but did I catch at the end of your analysis a 7 year, was it after 7 years you would -- this project would have, I don't know what you call it, comparatively paid your carbon debt and then would be a plus. Did I get that right?

THE WITNESS (Svedlow): Yes. So, and if I could, just maybe delve into the details of that a little bit. So when you take into consideration the solar panels and the infrastructure and all the life cycle associated with those, the woodchips, wood products from the forest harvest, lost forest carbon below ground and sequestration, land clearing, additional carbon sequestration from our landscaping trees that we'll be planting, land use changes, et cetera, total life cycle emissions for the facility is 156,000 metric tons of CO2. So that's our entire footprint. That's our entire carbon footprint. If you were to generate the same amount of energy from a natural gas facility, you

would have a 1.2 million metric ton carbon footprint. I don't know if that helps clarify it at all. But yes, after seven years we're in the black.

THE CHAIRMAN: Okay. A question relating, which you answered in the present -- I may have asked this, pardon me, I'm not sure -- energy storage where you're saying you don't intend to employ it now. My question is the future, not the 20-year future, but say four or five or six years, because from everything I've read, and I'm not an expert, I think that's coming really fast, energy storage at the grid level, not just energy storage for the Tesla cars or my --

So what I want to know is, is there anything in either the RFP, the agreement you signed, or your PPA, or any of your agreements with Eversource and PURA, which would either encourage, allow or prohibit -- so it's a multiple-choice question -- you employing at some future date within this 20-year either some form of energy storage, if obviously from a business standpoint it made sense, or some other form of advanced renewable technology? Are we locked in for the next 20 years, is this it?

THE WITNESS (Svedlow): To my knowledge, there's nothing in the agreement that would prohibit the use of storage. I'm not aware of anything that would encourage or explicitly allow it. I agree with you, storage is -- it's at grid parity now, which means it's economically viable, and it will be an increasingly important piece of our electrical infrastructure in New England. In fact, NextEra, as I think I mentioned at our last hearing, owns the largest grid connected storage system in New England, in Maine, a 16 megawatt battery.

So I think that as we understand that market more and the technology around it, it's certainly something that would be considered at the Quinebaug project as long as it did not in any way interfere with our ability to meet the needs of Connecticut's ratepayers or otherwise interfere with the project. I think it's something that we expect to be potentially retrofitted to a number of our projects, but it's not currently being considered right now for this project.

THE CHAIRMAN: The other reason I raise that is one of the goals of the administration in Hartford, and I assume in other states as well,

particularly after the storms, wildfires, whatever you want to call it, is resiliency. And if I understand it correctly, if the grid goes down because of some major event, the sun could come out the next day and you couldn't provide any power to help from a resiliency standpoint Connecticut to local areas. Is that true? Is there some way that you can -- that this project could function like a microgrid or might be a major grid in the case that there was a major event that the grid went down because of a --

THE WITNESS (Cook): It's still a network type resource. I don't know that you would be able to treat it -- and Paul, you may have a different view -- but treat it as a local source and isolate it within the grid, I don't know that that would be possible.

THE WITNESS (Callahan): I was going to say earlier that following Hurricane Irma, all of our plants that were operating during that storm started up that next morning. So they were contributing to the grid. Generally these plants do need transmission power to keep them going. So they are what we call black start.

But could something like that be done?

Possibly, but generally it's not considered like that.

THE CHAIRMAN: Okay. I personally think that was a failing of the RFP and not considered resiliency as part of the reason we're doing it.

And finally on mitigation, you talked about you're exploring with Audubon possibly provide some kind of, I guess, monetary compensation for some maybe preservation of vernal pools somewhere else. Did I hear that correctly?

THE WITNESS (Svedlow): Yes, that's correct.

THE CHAIRMAN: I was wondering if you also were thinking about, since I forget the number, I think it's over 100, is it over approximately 120 acres of forestland that's going to have to be cut down for this project?

THE WITNESS (Svedlow): That's approximately correct, yes.

THE CHAIRMAN: That, of course, works against you for your carbon debt analysis. Have you thought about also making a compensatory contribution for preserving forestland? And I could see that wouldn't even have to be in

Connecticut.

THE WITNESS (Svedlow): I think it's something we're willing to consider. It's not something we contemplated before. Frankly, the quality of the forest there is not great currently. But I think as -- we can have that conversation with Audubon to start with, and we may be able to look into that elsewhere as well.

THE CHAIRMAN: I don't think it's something that we as an agency can require, but it would seem to me, particularly forestland, even if it's not quote/unquote high quality, however you define it for timber, but forestland that just, you know, sequesters CO2 is something that we hopefully don't want to lose anywhere.

THE WITNESS (Svedlow): That's a good point. I think that's something we can look into. And I was just thinking, you know, there are a number of wetlands obviously on our site. We're not developing them, but I think it's possible that we would be able to negotiate some sort of conservation easement, at least for the duration of our project, if not longer, for those wetland areas and associated upland forest areas that aren't being developed that we have lease rights

to on the property.

I'll also say that NextEra Energy has a long-standing relationship with the Nature Conservancy to do conservation preservation projects. So we can speak to them about possible contributions to some of their ongoing conservation activities to mitigate those impacts to the forested areas.

THE CHAIRMAN: Okay. I'm going to ask again, and I'm not going to point to anybody, even though I thought you might sit at opposite ends.

Again, the appearance of the party, Mr. and Mrs. Sposato, an opportunity to appear and to cross-examine?

(No response.)

THE CHAIRMAN: Hearing and seeing that you're not here, you've had the opportunity.

Attorney Bogan, do you have any objection to allowing their exhibits to be entered into the record?

MR. BOGAN: Mr. Chairman, I'm afraid that, although I certainly recognize the Chair and the Council's inclination to afford a lot of latitude, in that instance I would because I don't even know what they are, so I hesitate to agree to

something that I haven't seen.

THE CHAIRMAN: There are two of them. The first one should be easy. It's a request for party status.

MR. BOGAN: I have no objection to that.

THE CHAIRMAN: And the other one, which you may want, is a comment letter which I believe talks mainly about the access drive that they're concerned about, which I think actually you partially answered in one of the questions initially, allowing access from a different part which would to some extent alleviate that.

SENATOR MURPHY: And concerns about the dust.

THE CHAIRMAN: And concerns about dust.

SENATOR MURPHY: They really talk in terms of if we approve this.

MR. BOGAN: The one letter that I'm looking at is dated September 1. Are you looking at a different letter?

THE CHAIRMAN: The comment letter is dated July 18th.

SENATOR MURPHY: Yes.

MR. BOGAN: May I approach and just

take a quick look at it? I may not have an objection.

THE CHAIRMAN: You can have this.

(Pause.)

THE CHAIRMAN: September 1 is party status.

MR. BOGAN: I suspect, because the Council staff is ever diligent, that I probably got this letter dated July 25th. I would object to this introduction because it has a lot of factual assertions about which I've had no opportunity to cross-examine.

THE CHAIRMAN: Then we'll just make it a public comment letter for what it's worth.

MR. BOGAN: No objection to it coming in as a limited appearance public comment.

(Sposato Exhibit III-B-1: Received in evidence - described in index.)

THE CHAIRMAN: Okay. So before closing the hearing, the Siting Council announces that briefs and proposed findings of fact may be filed with the Council by any party or intervenor no later than November 16, 2017. The submission of briefs or proposed findings of fact are not required by this Council, rather we leave it to

the choice of the parties and intervenors.

Anyone who has not become a party or intervenor, but who desires to make his or her views known to the Council, may file written statements with the Council within 30 days of the date hereof.

The Council will issue draft findings of fact, and thereafter parties and intervenors may identify errors or inconsistencies between the Council's draft findings of fact and the record. However, no new information, no new evidence, no argument, no reply briefs without our permission will be considered.

Again, copies of the transcript of this hearing will be filed with the Brooklyn, Canterbury and Plainfield Town Clerk's Offices.

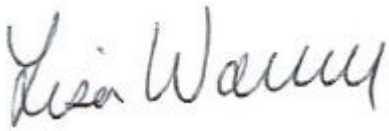
I hereby declare this hearing adjourned. And thank you for your participation. Drive home safely.

MR. BOGAN: Thank you, Chairman.

(Whereupon, the witnesses were excused, and the above proceedings were adjourned at 3:30 p.m.)

CERTIFICATE

I hereby certify that the foregoing 184 pages are a complete and accurate computer-aided transcription of my original stenotype notes taken of the Council Meeting in Re: Docket No. 1310, Quinebaug Solar, LLC petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed construction, maintenance and operation of a 50 megawatt AC solar photovoltaic electric generating facility located on approximately 561 acres comprised of 29 separate and abutting privately-owned parcels located generally north of Wauregan Road in Canterbury and south of Rukstela Road and Allen Hill Road in Brooklyn, Connecticut, which was held before ROBERT STEIN, Chairman, at the Connecticut Siting Council, 10 Franklin Square, New Britain, Connecticut, on October 17, 2017.



Lisa L. Warner, L.S.R., 061

Court Reporter

I N D E X

APPLICANT'S EXHIBITS

(Received in evidence)

I n d e x (Cont'd):

TROY AND MEGHAN SPOSATO EXHIBITS

(Received in evidence)