

BEDMINSTER TOWNSHIP

LAND USE BOARD

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IN THE MATTER OF:

TRANSCRIPT

CASE LUB# 12-015 (BOA)  
KDC SOLAR SA55 LLC  
Solar Project  
Country Club Road  
Block 71.02, Lot 1  
Block 62, Lot 10  
Block 69, Lot 4

OF  
PROCEEDINGS

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Thursday, March 12, 2015  
Bedminster, New Jersey  
Commencing at 8:04 p.m.

BOARD MEMBERS PRESENT:

LANCE BOXER, Chairman  
GEORGE RODELIUS  
CAROL GUTTSCHALL  
NICK STRAKHOV  
DORN STEWART  
KATHY CHRISTIE

ALSO PRESENT:

TRINA LINDSEY, Board Secretary  
FRANK BANISCH, Board Planner  
PAUL W. FERRIERO, Board Engineer

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A P P E A R A N C E S:

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Forbes

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WITNESS:

DENNIS C. LOH

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1           CHAIRMAN BOXER: All right. We just want  
2 to try and get going because we have a lot of  
3 material to cover tonight. It's 8 o'clock and we'd  
4 like to stay on time.

5           So, Mr. Hall, it's nice to have you back.

6           MR. HALL: Good evening.

7           CHAIRMAN BOXER: And we'll turn it over to  
8 you. If you can just summarize where we're at, who  
9 we're going to hear from, maybe what your plan is  
10 tonight.

11          MR. HALL: Okay.

12          CHAIRMAN BOXER: I think we have a couple  
13 of hours.

14          MR. HALL: Yes, thank you. As you may  
15 recall, last month we had Mr. Dennis Loh, who's next  
16 to me. He testified. He got questioned.  
17 Afterwards, even though he was finished, there was  
18 some thinking that -- a decision was made to do some  
19 supplemental testing.

20          CHAIRMAN BOXER: Yes.

21          MR. HALL: We filed an information on that  
22 with the Board and your professionals. So I brought  
23 him back to describe what else was done and  
24 obviously he can be questioned about that. But then  
25 we hope our main witness will be Mr. Moschello from

1 Gladstone, the stormwater engineer. He actually  
2 testified at some length back in October about the  
3 stormwater plan. I think he was questioned by the  
4 Board, but not the attorneys or the public, or at  
5 least not the attorneys, because at that point we  
6 said, well, we'll tinker with it a little bit more.  
7 So we said let's do that first before he comes back.

8 So he's here and we hope to wrap that  
9 subject up tonight.

10 CHAIRMAN BOXER: All right. I do think we  
11 may not be that fast because I think it's been a  
12 long time and I think with the changes, I suspect we  
13 all need to get refreshed. Maybe start a little bit  
14 from the beginning, because we're not really sure  
15 where we are and what plan we're looking at.

16 So, Mr. Loh, we can start with you, if  
17 that's okay.

18 MR. HALL: Yes, that's fine.

19 CHAIRMAN BOXER: Why don't you --

20 MR. HALL: He was previously sworn, Tom?

21 MR. COLLINS: Yes. Mr. Loh, you  
22 understand you're still under oath?

23 THE WITNESS: Yes, I do.

24 MR. COLLINS: Thank you, Mr. Loh.

25 D E N N I S C. L O H, having been

1 previously duly sworn, remained under oath and  
2 testified as follows:

3 EXAMINATION

4 BY MR. HALL:

5 Q. You heard my description, but why don't  
6 you just tell the Board what else was done and  
7 why.

8 A. Right. So, Mr. Chairman and board  
9 members, if you recall, last month, through some  
10 questions and answers, at the end of the night there  
11 were essentially three concerns raised during my  
12 testimony: One was that the test pits did not  
13 extend to the depths required in Appendix E of the  
14 New Jersey stormwater regs; another was that there  
15 were an insufficient number of passing infiltration  
16 tests within each of the two infiltration basins;  
17 and the third was that the test pits were not done  
18 during the "wet season" of the year, which is from  
19 January 1 through April 1, inclusive.

20 So following that meeting, KDC decided to  
21 do some additional testing to try to satisfy as many  
22 of those concerns, if not all of them, as possible.  
23 So to do that, we mobilized a large track-mounted  
24 excavator, much larger than the ones we had had out  
25 there previously, capable of digging through the

1 shale with much more ease.

2 We completed the required number of test  
3 pits in each basin based on the planned areas of  
4 infiltration to be in compliance with Appendix E for  
5 each basin. All of the test pits also extended  
6 several feet below the required depth per Appendix  
7 E.

8 In doing those test pits, we observed that  
9 there was no groundwater seepage to the maximum  
10 depth explored, and we also observed that there was  
11 no mottling to the maximum depth explored in any of  
12 the test pits that we performed.

13 So since there's no groundwater or  
14 mottling to the completion depths, the depths to the  
15 seasonal high groundwater level was below the level  
16 of the completion depths of the test pits, certainly  
17 well in excess of the 2 feet minimum that's required  
18 by Appendix E.

19 CHAIRMAN BOXER: Mr. Loh, what dates were  
20 they done, these tests?

21 THE WITNESS: The test pits were done on  
22 February 26th. I'm sorry, let me make sure I'm  
23 right. February 26th and 27th, Mr. Boxer.

24 CHAIRMAN BOXER: Thank you.

25 THE WITNESS: You're welcome.

1           CHAIRMAN BOXER:  Would the cold  
2           temperatures and kind of the excessive freezing we  
3           had, would that have any effect on the test  
4           conditions?

5           THE WITNESS:  No.  No, it would not.  The  
6           testing is done at depth.  The cold conditions  
7           caused the ground to freeze.  There was about 8  
8           inches or so of frozen soil at the surface below the  
9           snow.  The snow is a good insulator.  That's why  
10          there were only 8 inches or snow of frost.

11          A.  So then we also -- so that satisfies two  
12          of the three concerns that were raised during the  
13          last month.

14          The other one was that there were an  
15          insufficient number of passing infiltration tests.  
16          And so we performed infiltration testing and, sure  
17          enough, we were able to obtain at least the minimum  
18          required number of passing infiltration tests.  In  
19          fact, in basin one, where we need only three passing  
20          tests to meet Appendix E, we, in fact, got four.

21          So the testing confirms the prior  
22          conclusions based on the extensive prior testing  
23          throughout the site by GTA and Birdsall and  
24          Gladstone Design that the entire site is underlain  
25          by shale and the separation between the planned

1 levels of infiltration and the seasonal high  
2 groundwater level is well in excess of the 2 feet  
3 required by Appendix E.

4 And that's the end of my direct testimony.

5 Q. Okay. And what you just testified to, the  
6 test, is that reported in a, I'll call it a  
7 document, dated February 27 prepared by you or your  
8 firm?

9 A. That's right.

10 Q. And it's actually labeled "Geotechnical  
11 Engineering Report Addendum"?

12 A. Correct.

13 Q. Okay. Good.

14 MR. COLLINS: We'll make that an exhibit,  
15 Exhibit -- next number? I don't have it.

16 THE REPORTER: I think it's A-22.

17 MR. COLLINS: So it will be A-22.

18 MR. HALL: Yes, the last month A-21 was  
19 the last number in the transcript.

20 Now, this was filed with the Board. I  
21 don't know, do you want to mark a new copy?

22 MR. COLLINS: You can mark a new copy as  
23 long as it's the same document.

24 MR. HALL: Take that one. Who's marking  
25 it? Do you want us to just do it?

1 MR. COLLINS: Yes. A-22 with today's  
2 date, March 12th, 2015.

3 BY MR. HALL:

4 Q. And just tell us, again, what that is and  
5 what's attached to it.

6 A. This is an addendum to our original report  
7 which was dated December 11, 2014. And this report  
8 presents the results of the additional testing,  
9 field testing, that was performed at the site on  
10 February 26 and 27 of 2015.

11 Q. And there's various test result pages  
12 attached to that, is that correct?

13 A. There are. There's a summary of  
14 infiltration test results within the text of the  
15 report as well as a summary of subsurface  
16 conditions. There are plans showing close-up views  
17 of each of the two infiltration basins, as well as  
18 the locations of all of the test pits that have been  
19 done at the site within those areas. There's the  
20 logs, the test pits that were done for this  
21 supplementary work.

22 And that's the completion of the report.

23 Q. Okay. Now, also, let me show you a set of  
24 plans. Would you tell us what that is and if that  
25 was submitted with the report?

1           A.    This was submitted with the report.

2           Q.    And tell us what it is, please.

3           A.    It's titled "Test Pit Location Plan  
4 prepared by Gladstone Design, Inc." And it  
5 incorporates -- it shows the locations of all of the  
6 test pits performed by Gladstone, by GTA, as well as  
7 by Birdsall.

8           Q.    Is that listed as having six sheets?

9           A.    Yes.

10           MR. HALL:  Let's mark that as A-23  
11 perhaps?

12           MR. COLLINS:  Yes, please, with today's  
13 date, March 12, 2015.

14           MR. HALL:  Okay.  I have no other  
15 questions for Mr. Loh.

16           CHAIRMAN BOXER:  Thank you, Mr. Hall.  I  
17 appreciate it.

18           I assume Mr. Sasso, Ms. Donato, you have  
19 some cross here?

20           MR. SASSO:  Absolutely.

21           CHAIRMAN BOXER:  Okay.  So why don't we  
22 start with Mr. Sasso.  He will be followed by  
23 Ms. Donato and then we'll have the public and the  
24 Board go after that.

25           MR. HALL:  Sure.

1                   CHAIRMAN BOXER: Is that okay with you,  
2 Mr. Hall?

3                   MR. HALL: Sure.

4                   CHAIRMAN BOXER: Okay. Thank you. Mr.  
5 Sasso, it's all yours.

6                   MR. SASSO: Thank you, Mr. Chairman.

7                                   EXAMINATION

8 BY MR. SASSO:

9           Q. Mr. Loh, welcome back.

10          A. It's nice to be back.

11                   CHAIRMAN BOXER: You have to mean it.

12                   THE WITNESS: I do mean it.

13                   CHAIRMAN BOXER: Okay.

14                   MR. HALL: So far anyway.

15                   CHAIRMAN BOXER: It's early in the  
16 evening.

17                   MR. COLLINS: We're so friendly to one  
18 another.

19                   CHAIRMAN BOXER: It's early in the  
20 cross-examination.

21                   MR. SASSO: I promise tonight I'm going to  
22 be short, I have a cold, and Michele is going to  
23 deal with most of the substance. I promise tonight  
24 I will be short.

25 BY MR. SASSO:

1 Q. Mr. Loh, last time that you were here and  
2 you gave us testimony, you ended your testimony and  
3 you said that was it. In other words, you were --  
4 you were done testifying based on the tests you had  
5 done as of that point in time, correct?

6 A. Correct.

7 Q. And then there was a decision made by  
8 someone later on to go back to this site and give it  
9 another try, right?

10 A. Correct.

11 Q. Okay. Now, you did that and your test  
12 results are contained in your report dated -- what  
13 is it, February 27th? A-22?

14 A. Correct.

15 Q. Now, the results of those tests, are they  
16 accurate? In other words, is this a situation where  
17 Gladstone Design has to reach out to a  
18 geotechnologist and get their specialty and testing  
19 before they render their design for the stormwater  
20 system?

21 A. I don't -- I don't understand your  
22 question.

23 MR. HALL: I think that's --

24 Q. In other words, do they do it themselves  
25 or do they have to rely on an expert like you to

1       come up with a design?

2           A.    I think normally they would rely on  
3       somebody like me to do the field testing.

4           Q.    And that's the type of work you do  
5       throughout the state, correct?

6           A.    Correct.

7           Q.    And there's a reason for that.  In other  
8       words, explain to the Board the difference between  
9       your ken and an engineer in terms of stormwater  
10      management and --

11           MR. HALL:  I object.  We went through this  
12      last month.  I mean, this is--

13           MR. SASSO:  I didn't ask him for him to  
14      come back.  I didn't ask--

15           MR. HALL:  Well, I don't care if you did  
16      or not.

17           MR. SASSO:  Your letter, Mr. Hall, said he  
18      wasn't going to testify tonight and the Board knows  
19      that.  So now you bring him.  Now I'd like him to  
20      explain why -- what his role is versus engineering  
21      by Gladstone Design.

22           CHAIRMAN BOXER:  Mr. Collins, do you have  
23      any comments?

24           MR. COLLINS:  The area of  
25      cross-examination is appropriate and the witness

1 should answer the question.

2 A. Well, Mr. Sasso, this is part of what I do  
3 as a professional: I test soil.

4 Q. I understand that, but that's not helping  
5 the Board.

6 In other words, why doesn't someone with  
7 an engineering degree, who's going to do the  
8 stormwater management, need someone like you with  
9 your expertise for them to design the system?

10 MR. HALL: I object. That's a question  
11 for Gladstone. I said he'll be testifying. I don't  
12 know -- he's asking him what they think.

13 MR. SASSO: No, I'm not.

14 MR. HALL: Yeah, you are.

15 MR. SASSO: I'm asking him what services  
16 he provides to PEs to design a system.

17 MR. HALL: No, no, you said why does  
18 Gladstone need somebody.

19 MR. SASSO: It's pretty straightforward.

20 CHAIRMAN BOXER: Mr. Collins?

21 MR. COLLINS: The objection should be  
22 sustained, and try to focus your question on this  
23 witness.

24 MR. SASSO: Okay.

25 BY MR. SASSO:

1           Q.    What information did you provide to  
2 Gladstone Design for them to come up with the  
3 stormwater management?

4           A.    We performed additional test pits within  
5 each of the two infiltration basin locations and  
6 provided the results of that testing to Gladstone  
7 Design.

8           Q.    And did the results of the testing play  
9 into in any way the design of the stormwater  
10 management system in this case?

11          A.    Of course.

12          Q.    In what way?

13          A.    In the manner of evaluating where the  
14 seasonal high groundwater level is and in evaluating  
15 what the infiltration rates are at those basin  
16 locations.

17          Q.    Okay.  Would you agree with me, then, that  
18 in terms of Gladstone's design of the stormwater  
19 management system is directly related to whether or  
20 not your test results are accurate?

21          A.    Yeah, that's true.  Of course.

22          Q.    Right?  I mean, it's based on what you do,  
23 what you did in this case, correct?

24          A.    Correct.

25          Q.    Now, are the test results that you have in

1 your report of February 27th as accurate as your  
2 letterhead? You're an engineer, correct?

3 A. Yes, I am an engineer.

4 Q. All right. And this is the report that  
5 you submitted on your letterhead to this Board,  
6 correct?

7 A. Yes.

8 Q. Would you agree with me, sir, you don't  
9 even have the right address on your letterhead --

10 A. Well, I --

11 Q. Excuse me, sir. I'm asking a question.

12 A. Oh, I'm sorry, I thought you had finished.

13 Q. Yes. No, obviously not.

14 Is the address on the bottom of your  
15 letterhead, your report of February 27th that's been  
16 marked in as A-22, inaccurate?

17 A. There appears to be a typographical error.  
18 Instead of "Worlds Fair Drive" it says the "Words  
19 Fair Drive." The "l" I guess was omitted somehow.

20 Q. On your letterhead, correct, sir?

21 A. Yeah.

22 Q. Okay. Now, as an engineer, you deal in  
23 precision, correct?

24 A. Yes.

25 Q. And Gladstone Design in this case is

1 interfacing with you to provide them with that data  
2 that you explained is needed for their stormwater  
3 management system, correct?

4 A. Yes.

5 Q. Now, last time you were here before this  
6 Board, you told them that Appendix E, when you first  
7 testified on direct, as part of the DEP regulations,  
8 wasn't mandatory at all, correct?

9 A. I didn't say it wasn't mandatory at all.  
10 I said it was a guidance document.

11 Q. You told us that it was a guideline that  
12 did not control the testing in this case during your  
13 direct examination, isn't that true, sir?

14 A. That is not true.

15 Q. Okay. At the end, during  
16 cross-examination, sir, you admitted the Appendix E  
17 regulations, in fact, do apply to the testing that  
18 you previously did and presented to the Board, isn't  
19 that true?

20 A. That's true.

21 Q. Okay.

22 A. We normally follow the guidelines --

23 Q. Is that true, sir? That's a yes or a no.

24 A. I answered it.

25 Q. Okay. Now, in terms of your testimony

1 now, you are saying that the testing was done in  
2 accordance with Appendix E, correct?

3 A. Yes.

4 Q. Okay. In terms of the equipment that you  
5 had out there, was it larger than the equipment that  
6 you originally had?

7 A. Yes, it was.

8 Q. Okay. And who witnessed the test results,  
9 if anyone?

10 A. Two of my field representatives and I also  
11 witnessed some of them.

12 Q. Okay. Well, which ones did you witness?  
13 Which ones didn't you witness that you recall?

14 A. I believe I witnessed test pits 301, 302  
15 and 303, as well as infiltration tests I-2 and I-3  
16 while they were in progress.

17 Q. All right. And you attached soil logs or  
18 test logs?

19 A. They're attached.

20 Q. Yeah. Are any of them signed?

21 A. The report is signed and they're attached  
22 to the report.

23 Q. Is there a requirement under DEP  
24 regulations that the test logs be signed?

25 A. In New Jersey, the Professional Engineer

1 Society, it is custom to attach logs and other data  
2 to the text of the report, sign the text of the  
3 report, combine them, join them all together, and  
4 it's all one document.

5 Q. Okay. So when they're submitted to a  
6 township as a test result, they do not have to be  
7 signed by the witness who did the test?

8 A. No. The test results, the backup data, is  
9 part of the entire report.

10 Q. Okay. So the answer is they don't have to  
11 individually be signed by the person who witnessed  
12 them?

13 A. Correct.

14 Q. Okay. Now, in this case, when you were  
15 out at the -- doing the tests, was anyone there from  
16 Gladstone Design?

17 A. Not while I was there.

18 Q. And there were two days of testing. What  
19 days were you there? If both, tell us that.

20 A. I was there on both days.

21 Q. Okay. And while you were there, you made  
22 a notation that someone made an inspection of the  
23 test pits and then, according to your report, due to  
24 safety reasons they were filled in, right?

25 A. Yes.

1 Q. They were filled in on the 27th?

2 A. They were excavated. The deep test pits  
3 were excavated on the 26th and they were backfilled  
4 on the 26th.

5 Q. Okay. So the same day?

6 A. Same day.

7 Q. Okay. What pages can you show us here  
8 that there was no mottling of those test pits, that  
9 you took the time to dig down now to the correct  
10 depths?

11 A. I don't have pictures. I have my eyes.

12 Q. Your eyes. So it's based on your  
13 testimony?

14 A. That's right.

15 Q. Was there anything preventing you from  
16 presenting pictures to this Board to show whether or  
17 not there was mottling, which we've already heard  
18 testimony about, prior to you filling them in the  
19 same day? Was there anything preventing you, sir?

20 A. No.

21 MR. SASSO: That's all.

22 EXAMINATION

23 BY MS. DONATO:

24 Q. Good evening, Mr. Loh.

25 A. Hi.

1           Q.    I think I may not have heard you in  
2 response to a question asked by Mr. Sasso regarding  
3 what tests you actually observed on either the 26th  
4 or the 27th.  What test pits?  I just didn't get the  
5 numbers.

6           A.    I observed test pits 301, 302, 303, and  
7 infiltration tests I-2 and I-3 as they were in  
8 progress.

9           Q.    Okay.  And how many total tests were  
10 performed on both those two days, the 26th and the  
11 27th?

12          A.    We performed three test pits and four  
13 infiltration tests within basin 1, and four test  
14 pits and one infiltration test in basin 2D.

15          Q.    And that's it?

16          A.    Yes.

17          Q.    What were the total number of tests that  
18 were performed on this site taking into account  
19 Birdsall and Gladstone?

20          A.    If you'll allow me to get my other notes.

21          Q.    Yes, sir.

22          A.    123.

23          Q.    So 123 were Birdsall and Gladstone?

24          A.    There were a total of 123 test pits  
25 performed by Birdsall, Gladstone and GTA.

1 Q. Oh, all together?

2 A. Yes.

3 Q. And the total test pits that you performed  
4 including those in the summer of 2014?

5 A. We performed 43 test pits in the summer of  
6 2014 and then this additional seven. So that's 50  
7 by GTA.

8 Q. Now, can you explain to me, is there a  
9 difference between a geotechnical engineer and a  
10 soils expert?

11 A. A geotechnical engineer is a soils expert.

12 Q. That's the same thing?

13 A. A geotechnical engineer is a soils expert.

14 Q. Okay. And are there soils experts who are  
15 not geotechnical engineers?

16 A. There are soils scientists that are not  
17 engineers at all.

18 Q. Okay. So as a geotechnical engineer,  
19 you've encompassed within your skills the soils  
20 analysis?

21 A. Yes.

22 Q. Okay. All right. Now, I just want to  
23 refresh. As the Chair indicated, you testified a  
24 month ago. I just want to make sure that we're on  
25 the same wavelength about what you testified to the

1 last time.

2 Now, you did state that during the wet  
3 season, seasonal high water is determined by  
4 observed water, is that correct?

5 MR. HALL: I would object. My view is it  
6 should be limited to what he testified to tonight.  
7 I know the chairman -- I think you talked about  
8 Mr. Moschello being in October. He was a month ago.  
9 I don't think we need to go over old ground.

10 CHAIRMAN BOXER: I understand.

11 Mr. Collins, do you have any issues  
12 tonight with Ms. Donato questioning Mr. Loh?

13 MR. COLLINS: Yes, Ms. Donato should focus  
14 on the direct testimony given tonight.

15 MS. DONATO: Well, I intend to do so. I  
16 was just going to ask one or two questions so we  
17 make sure that we have this foundation of what was  
18 stated the last time. I think it will make it much  
19 easier.

20 It's also relevant to his testimony  
21 tonight even if he didn't testify last month.

22 MR. COLLINS: Well, why don't you ask it  
23 that way then. In other words, go backwards.

24 MS. DONATO: All right. Okay. Fine.

25 BY MS. DONATO:

1 Q. Isn't it true that the seasonal high water  
2 table during the wet season is determined by  
3 observing water seepage or water?

4 A. Yeah, that's one method in addition to  
5 observing soil mottling.

6 Q. Okay. Let's talk about the water for the  
7 moment. Okay? So we're in agreement on that.  
8 Okay.

9 And for purposes of determining the areas,  
10 not only the separation between the bottom of the  
11 basin and the seasonal high as well as the  
12 infiltration basin, isn't it true you need to know  
13 where the seasonal high water table is?

14 A. Yes.

15 Q. So it's an essential design element, a  
16 piece of information you need so someone else can  
17 design the basin, right?

18 A. Yes.

19 Q. Okay. Now, you indicated -- strike that.  
20 I won't go back. It goes back and I don't want to  
21 do that.

22 Okay. Now, can you tell -- in response to  
23 a question from the Chair regarding whether weather  
24 would have any effect, you said that it would not,  
25 is that correct?

1           A.    I believe he was talking about cold  
2 weather.

3           Q.    Cold weather.

4                    In your opinion, cold weather has no  
5 effect on --

6           A.    Not at the depths that we were testing.

7           Q.    Okay.  And are you aware of the fact that  
8 the DEP regulations actually allow the weather  
9 period for testing for observed seasonal high water  
10 table to be changed depending on weather conditions?

11          A.    No.  Why don't you enlighten me.

12          Q.    Okay.  I don't think I took the entire  
13 quotation from the regulations, but are you familiar  
14 with NJAC 7:9A-5.10?

15          A.    Well, I have read 7:9A.  I can't tell you  
16 right now what paragraph you're citing.

17          Q.    I don't have the entire -- the entire  
18 provision here.  But you are not familiar with that  
19 provision of the NJDEP regulations?

20                   MS. DONATO:  So I'll provide it later to  
21 the Board so they have it.

22          Q.    You're not familiar with it, though,  
23 right?

24                   MR. HALL:  He didn't acknowledge it was  
25 that provision.  He said he wasn't aware of a

1 weather adjustment.

2 MS. DONATO: Okay.

3 MR. HALL: That's all he said.

4 MS. DONATO: That's what I meant.

5 MR. HALL: Okay.

6 BY MS. DONATO:

7 Q. You're not aware of the ability of the DEP  
8 to modify the periods of time based on weather  
9 conditions. That's correct, right?

10 A. Sure.

11 Q. Okay. All right. Now, you have concluded  
12 that there -- that the -- you didn't observe any  
13 seepage and that there's no observed seasonal high  
14 water in the test pits that you performed on  
15 February 26th and 27th, am I correct?

16 A. Correct.

17 Q. Okay. Now, can you tell us what the  
18 weather was like on February 26th and 27th?

19 A. It was cold.

20 Q. Do you know how cold?

21 A. I don't recall the temperature  
22 specifically. It was below freezing.

23 Q. Do you know how cold it was before  
24 February 26th and 27th?

25 A. I don't recall the weather forecasts, no.

1 Q. Was there snow on the ground?

2 A. There was snow on the ground when we were  
3 out there, yes.

4 Q. How deep was the snow?

5 A. Probably about 6 inches or so.

6 Q. All right. At its least or at its most?

7 A. I didn't measure it.

8 Q. Okay. How about in the area where you  
9 actually did the test pits? How deep was the snow?

10 A. When I was there, the surface was all  
11 disturbed from the equipment running around.

12 Q. Okay. So the surface had already been  
13 disturbed. Okay.

14 And was there any ice or was it just  
15 snow?

16 A. It was snow.

17 Q. And do you know anything about the weather  
18 conditions that existed in February of 2015?

19 A. Such as?

20 Q. How cold was it?

21 A. It was cold.

22 Q. The whole month was cold, wasn't it,  
23 basically?

24 A. Yes. It was a cold month.

25 Q. Freezing the whole month?

1           A.    I don't know where you're going, but I  
2           imagine we may have had a couple of days above  
3           freezing, but...

4           Q.    Okay.  But you didn't care about what the  
5           weather was.  You say that it didn't matter.

6           A.    It didn't matter.

7           Q.    Okay.  Now, I'd like to direct your  
8           attention to the test pits that you performed for  
9           basin number 1.  These are three of the test pits  
10          that I believe you stated that you observed, isn't  
11          that correct?

12          A.    Yes.

13          Q.    TP-301, 302 and 303?

14          A.    Yes.

15          Q.    Okay.  And you say you didn't observe any  
16          seepage in that test pit, right?

17          A.    Correct.

18          Q.    And you concluded that using that test pit  
19          together with other test pits that were performed by  
20          the other professionals in this matter, that the  
21          adequate number of tests were performed for that  
22          basin, is that correct?

23          A.    Correct.

24          Q.    Now, you're familiar with the test pit  
25          SL1-32614?  That was a test pit performed by

1 Gladstone?

2 A. I'm aware that there were test pits, yes.

3 Q. Can you just get me SL1-32614, please?

4 (Pause)

5 A. I have it.

6 Q. Okay. So when was that test pit  
7 performed?

8 A. March 26, 2014.

9 Q. That's the wet season, isn't it?

10 A. Yes.

11 Q. And can you tell me at what elevation the  
12 seasonal high water was observed in that test pit?

13 A. Seepage is indicated as depth 68 inches.

14 Q. And the actual elevation above sea level?

15 A. I'm sorry, I'm not seeing the elevation on  
16 this log.

17 Q. So you don't have 116.9 anyplace on the  
18 information you have?

19 A. I'm just not seeing it right now.

20 Q. All right. So, you don't know what that  
21 ele -- okay.

22 So did you go 68 inches down with the pits  
23 that you performed, TP-301, 302 and 303?

24 A. We went deeper than that, yes.

25 Q. Okay. So you went deeper than 68 inches.

1           And that test pit, SL1-32614, he observed  
2 the seasonal high at 68 inches, isn't that correct?

3           A.    He's indicating seepage at 68 inches, yes.

4           Q.    But you didn't see seepage at 68 inches in  
5 the test pits that you performed, did you?

6           A.    No.

7           Q.    And how close were the test pits that you  
8 performed? Do you want to look at your map? Your  
9 test pit map that you provided with your submission.

10          A.    They're in the same general area, sure.

11          Q.    So Mr. Kennedy's firm found seasonal high  
12 water at 68 inches. Your test pits 301, 302 and  
13 303, you don't find it at 68 inches and you don't  
14 find it at 78 inches. How far did you go? How many  
15 inches below surface did you go with those 301, 302  
16 and 303 pits?

17          A.    Thirteen feet.

18          Q.    So you went down 13 feet and you didn't  
19 see seasonal high, but Mr. Kennedy's office found it  
20 at 68 inches below the surface?

21          A.    Well, he found seepage.

22          Q.    He found seepage. Why did he find seepage  
23 at 68 inches?

24          A.    I don't know.

25          Q.    Because it's the wet season, in that why?

1           A.    Well, our test pits were done in the wet  
2 season as well.

3           Q.    But you didn't see it.  So you didn't see  
4 it at 68 inches where he saw it.

5           A.    In a different spot, in a different year,  
6 sure.

7           Q.    See how close these test pits are?  Do you  
8 want to put up your test pit map?  I mean, what is  
9 the distance between SL-32614 and TP-303?

10          A.    Well --

11          Q.    What is the distance?  That is my  
12 question.

13          A.    I'm sorry, I don't know.  I don't have a  
14 scale.  It's pretty close.

15          Q.    It's pretty close, isn't it?

16          A.    Yeah.

17          Q.    I mean -- so you're submitting a test pit  
18 location plan and you don't have a scale on it, is  
19 that right?

20          A.    That's correct.

21          Q.    So what if we wanted to know how close  
22 those test pits were?

23          A.    Then you would go to A-23.

24          Q.    Okay.  So why don't you look at A-23 for  
25 me, please.  Tell me how close these test pits were.

1 MR. COLLINS: First, what sheet of those  
2 plans are you looking at?

3 Q. Want to put it up on that board so that we  
4 can all see it?

5 A. Sure.

6 THE WITNESS: They look to be about 20  
7 feet away.

8 MR. COLLINS: Sir, what sheet of the plans  
9 are you measuring on?

10 THE WITNESS: This is sheet 3 of 6.

11 MR. COLLINS: Thank you.

12 THE WITNESS: And I'm measuring by scale  
13 the distance between SL1-32614 and test pit 303.

14 BY MS. DONATO:

15 Q. And from what point of each of those pits  
16 are you measuring? The center of them?

17 A. The center line.

18 Q. So you're saying they're about 20 feet  
19 away?

20 A. About 20 feet.

21 Q. Okay. So in March 2014, Mr. Kennedy's  
22 firm identified seasonal high at 68 inches below the  
23 surface --

24 A. You're saying he identified seasonal high.  
25 I'm saying he identified seepage.

1 Q. Well, isn't seepage seasonal high?

2 A. No, not necessarily.

3 Q. Oh, okay. So now we're disowning Mr. --  
4 we're disowning the accuracy of Mr. Kennedy's test  
5 pits, is that right?

6 MR. HALL: I object. That's not what he  
7 said.

8 MS. DONATO: I'm asking him what he's  
9 doing.

10 MR. HALL: You said he's disowning.  
11 Are you disowning it?

12 THE WITNESS: Of course not.

13 MR. HALL: Okay.

14 BY MS. DONATO:

15 Q. Okay. So what did he observe? He said in  
16 his -- doesn't he say in his report that that was  
17 the observed seepage and seasonal high?

18 A. He says "observed seepage."

19 Q. So what is it if it's not seasonal high?

20 A. Seepage, as I testified to last month,  
21 seepage can be perched. It can be water trickling  
22 into the ground if it's a hard spot and it sits  
23 there for a little while and then, when you dig  
24 through it, it seeps out of that spot. But that's  
25 not groundwater necessarily.

1 Q. If you put a detention basin into a  
2 perched water table and you continue to have the  
3 perched or restrictive layer, what happens to the  
4 basin? Does it drain?

5 A. That's a design question.

6 Q. Oh, so you don't really -- again, we're  
7 back to that again. You don't really care what  
8 happens when it gets designed so --

9 MR. HALL: I object. He didn't say he  
10 doesn't care. You're putting words in his mouth.

11 MS. DONATO: I'm asking him.

12 MR. HALL: You said you don't care.

13 MS. DONATO: I'm not putting words in his  
14 mouth for him to answer.

15 MR. HALL: Do you care?

16 THE WITNESS: Of course I care.

17 BY MS. DONATO:

18 Q. Well, then, who's going to connect the  
19 dots? I mean, we've seen a lot of dots here and  
20 they're not connected. Who's going to do that?  
21 You?

22 A. I don't know what dots you're talking  
23 about.

24 Q. The dots between the identified seepage in  
25 the March 2014 test pit and the fact that you don't

1 see any identified seepage in the test pits, the  
2 three test pits that you performed in close  
3 proximity to that soil log.

4 A. Ms. Donato, you're making the assumption  
5 that the groundwater level is always the same no  
6 matter when or where or what. I would say that you  
7 could go and dig exactly through that same test pit  
8 and the seepage level might be completely different.

9 Q. I recognize that the seasonal high water  
10 table changes, because that's why it's called  
11 seasonal. So I think I do understand that.

12 And I think I also understand that it's  
13 supposed to be tested whether it's perched,  
14 unperched or wherever it is, in order to get an  
15 accurate determination by observation.

16 You said that the last time you testified,  
17 didn't you?

18 A. And these were observed, weren't they?

19 Q. Well, Mr. Kennedy's test pits observed  
20 seepage, am I right?

21 A. Yes.

22 Q. From whatever -- however you want to  
23 classify it, perched or whatever, it's seepage. Am  
24 I right?

25 A. That's right.

1 Q. Okay. And that water is there for  
2 purposes of any design analysis for a detention  
3 facility, isn't it?

4 A. Yes.

5 Q. Okay. So we can agree on that.

6 Now, can you explain to me with  
7 temperatures that ranged from 26 -- from 29 degrees  
8 at a high on the 26th of February to 16 as a low.  
9 The day below the low was a three. The day before  
10 was minus 9.

11 MR. HALL: I object. She's testifying.  
12 We don't have that information in the record.

13 MS. DONATO: I'll show you the  
14 information.

15 MR. HALL: I don't want to see it.

16 MS. DONATO: I'm going to show it to Mr.  
17 -- I'm going to show it to him.

18 I'd like to have this marked for  
19 identification.

20 Do we give it to the reporter?

21 MR. COLLINS: Yes, go ahead and mark it  
22 with--

23 MS. DONATO: I have here a collection of  
24 quality control local climatological data from the  
25 National Climactic Data Center of NOAA. The station

1 location is Somerset Airport and there are a series  
2 here of reports from February 15th, February 2015,  
3 of March 2014, and a series of interpretive data  
4 from that same source.

5 MR. COLLINS: That will be the next  
6 exhibit.

7 (Whereupon, exhibit is received and marked  
8 O-2 for identification.)

9 BY MS. DONATO:

10 Q. Okay. Now, you see this document, this  
11 quality control local data, the top sheet? I have  
12 highlighted with green the temperatures on the  
13 26th, one of the days that you took these tests,  
14 right?

15 A. Yeah.

16 Q. And can you see the temperatures in the  
17 month of February?

18 A. Yes.

19 Q. And there was one day there was a 46, one  
20 day there was a 40, one day there was a 42. But  
21 what was the prevailing pattern of temperatures in  
22 the month of December?

23 A. Cold.

24 Q. Very cold, wasn't it?

25 A. Maximum average was about freezing.

1 Q. Maximum average was freezing.

2 Okay. I'm not an engineer, but doesn't  
3 water freeze? I mean, that's what freezing is.

4 A. Everything freezes.

5 Q. So how can you observe seepage if the  
6 water is frozen?

7 A. The water's not frozen when it's in the  
8 ground.

9 Q. Well, we have a test pit here in which  
10 Mr. Kennedy's firm, a very good engineering firm,  
11 observed that seepage at 68 inches. But you didn't  
12 see it, did you, 20 feet away?

13 A. There was no seepage in our test pits.

14 Q. Because it was frozen, isn't that right?

15 A. No, that's not right. That's absurd.

16 Q. So then why would Mr. Kennedy have  
17 observed seepage in March and you don't see any  
18 seepage when it's frozen solid for a month?

19 A. The ground surface was frozen. Certainly  
20 the earth is not frozen.

21 Q. Well, it was frozen at 68 inches, wasn't  
22 it?

23 A. No.

24 Q. Because you didn't see the seepage that he  
25 observed in a wet season.

1           A.    No, Ms. Donato.  You're so off base I  
2           can't tell you.

3           Q.    I'm not so sure who's off base, Mr. Loh.  
4           You are here before this Board and you're saying  
5           that water doesn't freeze.

6           MR. HALL:  Object.  He didn't say that.

7           A.    Seriously?

8           Q.    What goes on and why?  Does Mr. Kennedy --

9           MR. HALL:  I think we're at a dead end  
10          here.

11          CHAIRMAN BOXER:  Can I just ask this  
12          question?  Mr. Loh, is it possible -- look, we don't  
13          want to get into a technical debate here, but it is  
14          an interesting question.  Is it possible at the  
15          lower levels, as you dig 6, 8 feet down, is it  
16          possible that water freezes at those levels or not?  
17          Is your professional opinion no?

18          THE WITNESS:  Absolutely not.

19          CHAIRMAN BOXER:  Thank you.

20          BY MS. DONATO:

21          Q.    How about at 68 inches?  Does water freeze  
22          at 68 inches?

23          A.    No, not in New Jersey.

24          Q.    Okay.  So are you counting Mr. Kennedy's  
25          firm's test pit as one of the four test pits that

1       you're using to say that this particular basin,  
2       basin A, has the requisite number of tests?

3             A.    No.

4             Q.    You're not test -- you're not counting  
5       that?

6             A.    I don't need to.  It's another piece of  
7       data.

8             Q.    Is there any other test pit in that basin  
9       that comes from the wet season?

10            A.    I don't recall, but it doesn't matter.

11            Q.    Why don't you look at your report so you  
12       can refresh your recollection.

13            A.    The fact is that the test pits that we  
14       provided--

15            Q.    I didn't ask you that.  I asked you to  
16       look at your --

17                    THE WITNESS:  Mr. Chairman, am I allowed  
18       to talk?

19            Q.    -- report and tell me if there is any  
20       other test pit in the wet season for basin number 1.

21                    CHAIRMAN BOXER:  Just try not to talk over  
22       each another.

23                    THE REPORTER:  Thank you.

24                    CHAIRMAN BOXER:  I realize this may be a  
25       little uncomfortable, but please free to respond to

1 Ms. Donato.

2 THE WITNESS: Thank you.

3 A. I do want to reiterate that the testing  
4 that GTA did recently in and of itself, at least in  
5 basin 1, satisfies all the provisions in Appendix B.  
6 I just want to make that point.

7 Q. Mr. Loh. Mr. Loh, I asked you a question.  
8 My question to you was, are you using the test pit  
9 that was performed by the -- in the wet season  
10 performed by Gladstone Engineering?

11 A. No, I'm not.

12 Q. You're not using that.

13 So all the other test pits -- of all the  
14 other test pits, are there any that were performed  
15 in the wet season?

16 A. Let me look.

17 (Pause)

18 A. The only other test pit that I see in  
19 basin 1 is SL4-7313 performed by Gladstone Design.

20 I'm sorry, what was your question about  
21 that?

22 Q. When was that performed?

23 A. July 3rd, 2013.

24 Q. Okay. My question to you is the  
25 following: In basin number 1, other than

1 SL1-32614, is there any test pit performed in the  
2 wet season?

3 A. Well, there are the ones that GTA just  
4 did.

5 Q. Okay. Other than -- I'm asking you about  
6 the ones that you did not perform.

7 A. It doesn't appear so.

8 Q. Okay. So the only test pit performed in  
9 the wet season is that by Gladstone Engineering with  
10 the observed seepage at 68 inches below the surface  
11 and you did not see that seepage?

12 A. No, but I did see the test pit performed  
13 by GTA in the wet season.

14 Q. I understand that.

15 Now, let me ask you something. We're back  
16 to this -- this is kind of, like, what's wet and  
17 what's not wet? Isn't the wet season when there's,  
18 like, snow melt or some kind of seep -- is that the  
19 idea of it? That the winter is melting and the  
20 water -- the seasonal high water level rises because  
21 it's melting?

22 A. I think traditionally the groundwater  
23 level is highest during that wet season.

24 Q. And isn't it actually -- isn't the soil  
25 actually dry when you have very cold, freezing

1 weather?

2 A. Not necessarily, no.

3 Q. Well, let's assume that Gladstone's report  
4 was correct and they did see seepage at 68 inches.

5 A. I'm sure they did.

6 Q. Are you testifying that you would have  
7 seen seepage in February when we had such  
8 extraordinarily cold and dry weather?

9 A. One has nothing to do with the other.

10 Q. So water doesn't freeze.

11 MR. HALL: I think that's been asked and  
12 answered five times.

13 Q. You're saying water doesn't freeze.

14 A. I never said that.

15 Q. Okay. Was there any snow melt whatsoever  
16 when you performed your test pits in February?

17 A. Not significantly. For sure the ground  
18 was a little bit wet, but probably from the track  
19 machine running around on it.

20 Q. Right. And I showed you those weather  
21 conditions. It was pretty cold. Freezing the whole  
22 month, isn't that true?

23 A. Yeah. I think we've gone over that. It's  
24 been cold.

25 Q. Okay. So, if you wanted to really know

1 where the seasonal high water level is on this  
2 property or on any property, would you perform it  
3 when we've had freezing weather for a month?

4 A. It doesn't make any difference what the  
5 temperature is in the air versus where the  
6 groundwater level is.

7 Q. And it doesn't make any difference that  
8 there's a level of snow?

9 A. No, it doesn't.

10 Q. And it doesn't make any difference that  
11 the ground freezes when the air freezes?

12 A. That does not affect groundwater.

13 Q. Do you have any treatise or other  
14 scientific document that you could use to support  
15 your opinion in this regard?

16 A. Not with me.

17 Q. Can you provide one?

18 A. And what exactly are you looking for?

19 Q. That when you're attempting to observe  
20 seasonal high in the wet season, that it doesn't  
21 matter if everything is frozen. If you've had  
22 freezing weather for a month prior to your tests.

23 A. Air temperature does not correlate to  
24 groundwater.

25 Q. Well, I guess in my mind, I'm, like, just

1 a practical person, if Mr. Kennedy saw it at 68  
2 inches, I don't think he was lying.

3 A. I don't think so either.

4 Q. I don't think he saw something that wasn't  
5 there.

6 MR. HALL: I object. We've been over this  
7 three times now. Can we move on?

8 Q. Do you have a treatise --

9 MR. HALL: I object to that. We're not  
10 providing any treatise because he's not coming back  
11 here--

12 MS. DONATO: I can never get--

13 (Indesciperable crosstalk; reporter  
14 requests one speaker)

15 MS. DONATO: He did not answer the  
16 question. He said he didn't understand the  
17 question.

18 BY MS. DONATO:

19 Q. So what I'm asking you for is, is there a  
20 scientific treatise of which you are aware that  
21 states that it doesn't matter if it's freezing cold  
22 and dry for a month prior to the test?

23 A. I'm not aware of any document that  
24 correlates air temperature to groundwater level.

25 Q. So is this just your opinion?

1           A.    I suppose it is.

2           Q.    Okay.  And what do you base your opinion  
3 on?  Your experience?

4           A.    Yes.

5           Q.    And you would say this no matter who you  
6 were here before the Board testifying for?

7           A.    Of course.

8           Q.    Okay.  Is that a conservative approach to  
9 how you would determine whether or not there's  
10 seepage in a test pit?

11          A.    Is what a conservative approach?

12          Q.    That you don't really worry about how long  
13 it's been with deep freeze.

14          A.    One has nothing to do with the other.

15          Q.    But you don't have any engineering  
16 documentation that would support that opinion,  
17 right, that one has nothing to do with the other?

18          A.    Not with me.

19          Q.    Okay.  Then I'm back to the question  
20 again, Mr. Loh:  Will you provide that?

21               MR. HALL:  I object.  We're not providing  
22 anything else from this witness.  He's not coming  
23 back.

24               MS. DONATO:  Then it's a net opinion.

25               Thank you.

1 MR. HALL: No, it's not a net opinion. He  
2 said based on his experience. He doesn't have to  
3 produce anything. You're welcome to bring a witness  
4 in to testify to the contrary when your turn comes.

5 MS. DONATO: We intend to do so.

6 MR. HALL: Fine.

7 BY MS. DONATO:

8 Q. Now, I'd like to ask you a question about  
9 the fact that you felt it was imperative to close up  
10 these test pits.

11 Is that the ordinary practice?

12 A. Yes, it is.

13 Q. So you don't leave a pit open to see  
14 whether or not seepage might end up coming into that  
15 pit?

16 A. Not normally, no.

17 Q. So are you trying to find seasonal high or  
18 are you trying not to find it?

19 A. Of course we're trying to find it. If  
20 there was groundwater in the ground --

21 Q. I didn't have a question.

22 THE WITNESS: Am I allowed to speak,  
23 Mr. Chairman?

24 MS. DONATO: I didn't have a question--

25 CHAIRMAN BOXER: You have to work with

1 your attorney on this one.

2 MR. HALL: I think he was supplementing  
3 his answer. Why don't you tell us--

4 MS. DONATO: I don't think he was.

5 MR. HALL: Well, I think he was. He's a  
6 witness and --

7 MR. COLLINS: The witness can elaborate.  
8 Go ahead, Mr. Loh.

9 CHAIRMAN BOXER: Mr. Loh, go ahead.  
10 Mr. Collins said you could do that.

11 A. When there's groundwater level, there will  
12 be seepage. When there's groundwater, there will be  
13 seepage if you dig through it.

14 Q. If you dig through what?

15 A. The groundwater level.

16 Q. That wasn't my question. I understand  
17 that there'll be seepage if it's there.

18 A. Oh, good.

19 Q. Okay. Whether it's perched or not  
20 perched, as I understand it.

21 Now, did you encounter anything in the  
22 tests that you reviewed that showed that there may  
23 be a restrictive layer?

24 A. When the bedrock or when the shale gets to  
25 be more tightly knit, it's certainly restrictive.

1 Q. And that's what you consider to be the  
2 restrictive layer that creates what you've referred  
3 to as a perched water table, is that right?

4 A. No, a restrictive layer is not a perched  
5 water table.

6 Q. It doesn't create a perched water table?

7 A. Yes, it would.

8 Q. That's what my question was. I think I  
9 understand the difference.

10 MR. COLLINS: Well, I want to go back.

11 So, Mr. Loh, did you encounter a  
12 restrictive layer in these test pits that you did in  
13 February?

14 THE WITNESS: Yes.

15 MR. COLLINS: Could you elaborate?

16 THE WITNESS: The shale becomes  
17 increasingly sound with depth. And so the shale  
18 rock will be a restrictive layer when it's tightly  
19 knit.

20 MR. COLLINS: And where did you find the  
21 tightly knit shale in these -- approximately in  
22 these test pits? What elevation or what depth?

23 THE WITNESS: Mr. Collins, I did not --  
24 I'm sorry. I did not make that note in these test  
25 pits. In the previous test pits that we did, I

1 would take that as the bucket refusal depths that  
2 were noted on each test pit log.

3 MR. COLLINS: And about how many inches  
4 below the ground was that typically?

5 THE WITNESS: Typically it's a few feet  
6 below the surface of the shale. The surface of the  
7 shale, not the surface of the ground.

8 MR. COLLINS: Okay. So if your test pit  
9 says "shale encountered," that's probably the point  
10 at which the restrictive horizon exists in these  
11 test pits, even the new test pits?

12 THE WITNESS: I would say it's probably a  
13 couple, a foot or two, on that order of magnitude,  
14 below the surface of the shale, where the shale  
15 starts to get tight.

16 MR. COLLINS: And are you reaching the  
17 opinion in this case that that shale is the  
18 restrictive horizon that created that perched water  
19 table?

20 THE WITNESS: Mr. Collins, there was no  
21 perched water table in our test pits.

22 MR. COLLINS: Well, not in your test pits,  
23 but the prior test pits last month you said  
24 indicated to you some indication of perched water  
25 conditions based upon the mottling that was

1 identified in those test pits, isn't that correct?

2 THE WITNESS: Oh, correct. Yes.

3 MR. COLLINS: So have you changed your  
4 opinion about whether there was a perched water  
5 condition or not, or is a perched water condition or  
6 not?

7 THE WITNESS: Well, the perched water  
8 condition would be in those isolated test pits where  
9 water was encountered. No water was encountered in  
10 any of these test pits so there's no perched water  
11 condition, if that answers your question.

12 MR. COLLINS: Okay. Thank you.

13 MS. DONATO: Are you finished,  
14 Mr. Collins?

15 MR. COLLINS: Yes.

16 MS. DONATO: Thank you.

17 BY MS. DONATO:

18 Q. Did you encounter anything else that you  
19 might classify as a restrictive layer?

20 A. No.

21 Q. So you did not find any sandy silt?

22 A. I wouldn't necessarily call that sandy  
23 silt a restrictive layer, since we were able to get  
24 favorable infiltration tests in that layer.

25 Q. And you reviewed all the infiltration

1 tests, only your own, in rendering that opinion?

2 A. Yes.

3 Q. Okay. Now, I'm going to direct your  
4 attention to the climatological data that I have  
5 from March 2014 that was marked as Exhibit O-2 for  
6 identification. This is when Mr. Kennedy performed  
7 the one test pit that encountered seepage, isn't  
8 that correct?

9 A. March 2014, yes.

10 Q. So what were the temperatures shown for  
11 that month?

12 A. Well, it seemed like it was a nice and  
13 warm March.

14 Q. Was it freezing in any day?

15 A. Yeah, it was freezing in a lot of days.

16 Q. Okay. But what was the average  
17 temperature throughout the month of March?

18 A. The average temperature was 34 and 1/2  
19 degrees.

20 Q. If you would go to the date of 3/26, that  
21 was the day of Mr. Kennedy's test pits of 2014, what  
22 was the temperature on that day?

23 A. What was the date?

24 Q. March 26.

25 A. March 26?

1 Q. Yes.

2 A. It ranged from 24 to 35.

3 Q. And what about the day before?

4 A. It ranged from 14 to 40.

5 Q. Okay. And that month in itself ranged all  
6 the way from 65 on the 22nd, didn't it?

7 A. Apparently.

8 Q. Okay. But your opinion is -- was the snow  
9 melting during that period of time? Do you have any  
10 idea?

11 A. No, I don't know.

12 Q. Would that matter to you?

13 A. Sure.

14 Q. Why would it matter?

15 A. Snow melts, snow seeps -- water seeps into  
16 the ground and raises the groundwater level, which  
17 is why the seasonal high ground -- the wet season is  
18 included in this time of year.

19 Q. But your tests were performed during a  
20 period of time when there was no snow melt, was  
21 there?

22 A. Not on that day.

23 Q. Was there snow melt on any of the days  
24 before you tested?

25 A. I don't know.

1 Q. Why would somebody wait until the coldest  
2 month that we've experienced in years to do these  
3 tests?

4 A. One reason is because we got so much  
5 pushback that we didn't do any test pits in the wet  
6 season, and so KDC decided to do some test pits in  
7 the wet season.

8 Q. Would you call it a wet season if it's  
9 frozen solid with snow that's not melting?

10 A. Yes.

11 Q. You would call that a wet season?

12 A. DEP does.

13 Q. Except when I show you the regulation  
14 about changing it.

15 A. You didn't show that to me.

16 Q. Well, I did not show it to you. I said  
17 until I show you the wet season.

18 So you're saying it's wet even though you  
19 didn't see -- you didn't see the seepage observed by  
20 Kennedy. You didn't see it. Am I right?

21 A. No, I did not see his test pit. No.

22 Q. Okay. If the DEP doesn't have a  
23 requirement in the stormwater management regulations  
24 for a certain testing protocol, in your opinion is  
25 that the end of the story?

1 A. What story?

2 Q. The story of trying to determine where the  
3 seasonal high water table is, for example.

4 A. So can you restate your question then,  
5 please?

6 Q. Okay. You're a professional engineer, am  
7 I right?

8 A. Yes.

9 Q. So you follow -- you try to follow good  
10 engineering practice?

11 A. Of course.

12 Q. Of course.

13 So if the DEP's regulations don't  
14 specifically address a requirement and you feel that  
15 it's good engineering practice that would come to  
16 bear, do you do it even though the DEP doesn't  
17 require it?

18 A. Ms. Donato, the question is so vague I  
19 have no idea what you're asking me.

20 Q. All right. I'll try again.

21 You look at some of the -- you've been  
22 involved with the DEP regulations so you know that  
23 in some respects the DEP regulations are sometimes  
24 not as clear as a bell, am I right?

25 A. That's your words. Go ahead.

1 Q. Well, do you agree or disagree?

2 A. I disagree.

3 Q. You think the DEP regulations are clear as  
4 a bell?

5 A. They make sense. They're understandable.

6 Q. I didn't ask you whether or not they made  
7 sense. I asked you if you thought they were as  
8 clear as a bell.

9 A. Can you define "clear as a bell"?

10 Q. Very, very specific, no ambiguity, no  
11 interpretation.

12 A. I can't think of an instance off the top  
13 of my head that they're not very clear.

14 Q. So do you also employ good engineering  
15 practices that might supplement whatever DEP  
16 requirements are in place with the stormwater  
17 management regulations and the BMP manual?

18 A. I always try to employ good engineering  
19 practice.

20 Q. Okay. And does your good engineering  
21 practice sometimes go beyond what the DEP may  
22 actually specifically require?

23 A. I don't -- I don't know really what you're  
24 asking. It's not a very specific question.

25 Q. Well, let me ask you this. Okay? You

1 don't think that's a specific enough question, that  
2 you have good engineering practice about any aspect  
3 of what you're doing?

4 A. I didn't say that. In fact, I said the  
5 opposite.

6 Q. So do you have any practices -- I'm asking  
7 you a question -- any practices that you employ as  
8 an engineer that may not be required by the NJDEP  
9 regulations and the DEP manual and its appendices?

10 A. Ms. Donato, I employ good engineering  
11 practice, or I try to, on a daily basis in whatever  
12 form it takes.

13 Q. Okay. Now, with respect to closing up  
14 these test pits, what you did quickly, is that  
15 something that's dictated by the DEP?

16 A. It's desirable to leave test pits open as  
17 long as possible, but I felt bound for the public  
18 health and safety to close the test pits at the end  
19 of the day so that nobody would fall into them at  
20 night.

21 Q. Well, who would go on to the farm in the  
22 middle of February --

23 A. I don't know.

24 Q. -- in freezing cold weather? It's  
25 private property.

1           A.    I don't know.

2           Q.    Why would you want to leave the test pits  
3 open, like you said?

4           A.    Just to observe if there is, you know,  
5 incredibly slow seepage coming in at the bottom,  
6 something like that. But typically that doesn't  
7 happen. Typically if you dig through the water  
8 level, you observe that the seepage is shown fairly  
9 quickly after you penetrate it. And these test pits  
10 were open for many hours. They were, in fact,  
11 filled at the very end of the day.

12          Q.    So you closed them because somebody might  
13 go wandering on Kirby Farm in the dark in the middle  
14 of February?

15          A.    Somebody or somebody's dog.

16          Q.    Isn't that a problem wherever you have a  
17 test pit?

18          A.    Yeah, that's definitely a concern. Public  
19 safety is definitely a concern for me.

20          Q.    But you nevertheless keep them open on  
21 occasion, don't you?

22          A.    Until the end of the day and then we'll  
23 close them up.

24          Q.    You always close them up at the end of the  
25 same day?

1           A.    Yeah, actually, we do.

2           Q.    And how long were these test pits left  
3 open?

4           A.    Many hours.

5           Q.    And did you go back to observe them again?

6           A.    No, I had my field representatives there.

7           Q.    And did they observe them again or did  
8 they just --

9           A.    Of course they did.

10          Q.    -- mark down what they saw in their  
11 initial report?

12          A.    No, they observed all the time, all day  
13 long.

14          Q.    How do you know that?

15          A.    Because they're trained employees.

16          Q.    They're practicing good engineering  
17 practices, right?

18          A.    Of course.

19          Q.    Not mandated by the DEP, is it?

20          A.    Whether or not it is.

21          Q.    Okay.

22                MS. DONATO:  I have no further questions.

23                CHAIRMAN BOXER:  Thank you, Ms. Donato.

24                    Let me open it up to the public and see if  
25 anybody would like to limit their questions to this

1 cross-examination period. But if there's anybody  
2 from the public that would like to come up, we would  
3 invite you now.

4 Come on up, sir.

5 MR. GRAVEN: Bob Graven, G-R-A-V-E-N,  
6 Country Meadow Farm, adjacent to this property.

7 Your testimony was there's no correlation  
8 between air temperature and ground temperature.

9 THE WITNESS: No, I didn't say that, sir.

10 MR. GRAVEN: Then I misunderstood.

11 THE WITNESS: Yeah. I said there was no  
12 correlation between air temperature and groundwater  
13 level.

14 MR. GRAVEN: Okay. Can you give me an  
15 estimate or an explanation of what the profile is of  
16 temperature, of ground temperature, as you go down  
17 in this type of soil under these -- under the  
18 freezing conditions of February 2015?

19 THE WITNESS: Well, what I could say is  
20 that in my 30 years of geotechnical engineering and  
21 seeing the ground in the winter every one of those  
22 years and talking to others in my profession who  
23 have seen the ground a lot, the depth to frost  
24 typically does not extend deeper than about 18 to 24  
25 inches.

1           The building code requires foundations to  
2 extend to depths of 36 inches below grade with the  
3 thought that the ground will never, ever freeze  
4 below that depth.

5           MR. GRAVEN: So 36 inches is 3 feet?

6           THE WITNESS: That's 3 feet. And I've  
7 never seen it deeper than 2 feet.

8           MR. GRAVEN: In central New Jersey?

9           THE WITNESS: In central Jersey, yes.

10          MR. GRAVEN: Does it freeze deeper in one  
11 soil versus another soil?

12          THE WITNESS: Yes.

13          MR. GRAVEN: In a sandier or a clay  
14 environment?

15          THE WITNESS: Yeah, silt and clay will  
16 tend to freeze a little bit deeper than sand and  
17 gravel, yes.

18          MR. GRAVEN: The denser materials  
19 freeze --

20          THE WITNESS: It's the fine grain freezes  
21 deeper than the coarser grain. It has more to do  
22 with the gradation of the soil than the density of  
23 it. Density does play a little bit of a role, but  
24 it's more to do with the grain size of each particle  
25 of soil versus the density.

1 MR. GRAVEN: Grain size rather than -- and  
2 because -- it's grain size because there's more  
3 space between the grains. If you have boulders,  
4 there's room for a lot of water in between. But  
5 when you have very fine grains of soil, then there's  
6 no room --

7 THE WITNESS: Yeah.

8 MR. GRAVEN: -- because it's so packed.

9 THE WITNESS: Well, yeah.

10 MR. GRAVEN: Is that correct?

11 THE WITNESS: Yeah, that is true. I  
12 believe it really has a lot to do with the air in  
13 the void space between the particles. Air is a  
14 really good insulator.

15 MR. GRAVEN: Trapped air, we know, is a  
16 very good insulator compared to not trapped air.

17 THE WITNESS: Right.

18 MR. GRAVEN: I guess I'm still a little  
19 more confused about the grain size versus density.  
20 This is a lot of rock. Once you're below 2 feet, 3  
21 feet, 4 feet, you run into a heavy shale.

22 THE WITNESS: Yeah.

23 MR. GRAVEN: And that's the problem or  
24 that's the condition of it.

25 THE WITNESS: That's the condition.

1 MR. GRAVEN: That's the condition.  
2 Whether it's a problem, I don't know.

3 Is that material, then, really good for  
4 foundations?

5 THE WITNESS: Absolutely. In fact, you  
6 bring up another really good point about the bedrock  
7 in the ground and freezing ground. In fact, the  
8 building code says that foundations can be put on  
9 hard rock even shallower than 3 feet because that  
10 material doesn't freeze in that...

11 MR. GRAVEN: Okay. So this is a good  
12 place to build because the foundation that's  
13 there --

14 THE WITNESS: Depends what you're  
15 building, but sure, yeah.

16 MR. GRAVEN: It's a solid rock base.

17 THE WITNESS: Yeah, rock is good for  
18 foundations.

19 MR. GRAVEN: Like Manhattan, for example--

20 THE WITNESS: Yeah, that's right.

21 MR. GRAVEN: -- is a lot of rock. Okay.

22 THE WITNESS: Yes.

23 MR. GRAVEN: Were any wells -- wells have  
24 dried up in the area. And if there's a problem with  
25 not enough water as we go deeper, during droughts

1 and other conditions or freezing, we run out of  
2 water. The wells have to go deeper. How deep would  
3 we want to go? Is there -- you went down to 13  
4 feet.

5 THE WITNESS: Yes.

6 MR. GRAVEN: Right?

7 THE WITNESS: Uh-huh.

8 MR. GRAVEN: Aren't wells deeper for --

9 THE WITNESS: Potable?

10 MR. GRAVEN: -- drinking?

11 THE WITNESS: Much deeper than that.

12 MR. GRAVEN: Much deeper.

13 THE WITNESS: Typically, yes.

14 MR. GRAVEN: So would well logs give us  
15 information on where the water is and isn't when the  
16 well dries up?

17 THE WITNESS: You know, sir, I'm now --  
18 I'm not a hydrogeologist, which is that field of  
19 expertise, but I believe that wells extend down to a  
20 deeper aquifer typically than the one that's near  
21 the surface. So it's two different waters,  
22 aquifers, if you will. Typically for, you know, a  
23 residential well, those wells will go down 100 feet  
24 or whatever.

25 MR. GRAVEN: Do we know how deep the wells

1 are there?

2 THE WITNESS: I don't, no.

3 MR. GRAVEN: I don't know. All right.

4 okay. When they did it for the golf courses, they  
5 had a shallow aquifer, I guess, because it was by  
6 the Raritan River. And so there was also a lot of  
7 large grain size there, I guess, more gravel.

8 THE WITNESS: Okay.

9 MR. GRAVEN: That's where you get a lot of  
10 water to be able to water the golf course. But from  
11 the basis of the material here, this is a lousy  
12 place for a golf course because you don't have water  
13 unless you take the water from somewhere else.

14 THE WITNESS: Right.

15 MR. GRAVEN: Okay. Thank you.

16 THE WITNESS: You're welcome.

17 CHAIRMAN BOXER: Thank you very much,  
18 Mr. Graven.

19 Come on up. Do you have questions?

20 Good evening. Jeff Yingling, Country Club  
21 Road.

22 Couple of questions. Can you show us on  
23 the map where the test pits were dug on the 26th and  
24 27th?

25 THE WITNESS: Yeah. Would you like to

1 follow me here?

2 MR. YINGLING: Sure.

3 CHAIRMAN BOXER: You guys are going to  
4 have to speak up so we get it on the transcript.

5 MR. HALL: Why don't you take the mic  
6 maybe.

7 THE WITNESS: All right. So we're looking  
8 at pages 3 and 4. And, first, we're looking at the  
9 area of basin 1, which is this area, this one right  
10 here, and it extends here on the next sheet. So  
11 these sheets match up on this big dotted line.

12 Do you see that?

13 MR. YINGLING: For clarification, can you  
14 show us on the colored map?

15 THE WITNESS: Yeah. So this is basin 1  
16 right here.

17 MR. HALL: And why don't you tell us what  
18 you're pointing to.

19 THE WITNESS: I'm pointing to --

20 MR. HALL: No, no. Is there an exhibit  
21 number on that?

22 THE WITNESS: Oh, it's A-15.

23 MR. HALL: Okay. Thank you.

24 THE WITNESS: And so basin 1 is in the  
25 farthest west part of the site, right here. And

1 then basin 2D is the one right here in this big  
2 cutout in the middle of this solar field. That's  
3 where we did the testing, those two areas.

4 MR. YINGLING: So the additional 50 pits,  
5 or tests, were done in those areas?

6 THE WITNESS: Not an additional 50.  
7 Seven. GTA, my firm, GTA did 50 test pits all  
8 together throughout the site during our involvement  
9 with the project.

10 MR. YINGLING: So the additional seven  
11 were done with the large excavator?

12 THE WITNESS: Yes, they were.

13 MR. YINGLING: Once those holes were dug,  
14 do you have photos to show the results of what was  
15 found in the pits?

16 THE WITNESS: No.

17 MR. YINGLING: So no photos to indicate  
18 the type of soil or moisture levels?

19 THE WITNESS: No. Well, the photos in my  
20 mind are the test pit logs. We measure the ground,  
21 measure each layer and make notes. And then this is  
22 a representation or a picture of what the ground  
23 looked like at that spot, but we don't have any  
24 photographs.

25 MR. YINGLING: Okay. So no actual photo

1 that would show the public and the Board what the  
2 actual results were? The soil coloring, soil  
3 condition, freeze levels?

4 THE WITNESS: No, nothing. Sorry.

5 MR. YINGLING: Okay. So my apologies if  
6 it sounds sarcastic, but we have to essentially take  
7 the word of a paid spokesperson or a paid  
8 professional?

9 THE WITNESS: I'd like to think that  
10 you're taking the word of a professional engineer  
11 who's bound to -- my license depends on me being  
12 honest.

13 MR. YINGLING: Okay.

14 THE WITNESS: And I took an oath to that  
15 effect.

16 MR. YINGLING: Okay. And I know you  
17 mentioned that the holes were closed after or on the  
18 same day for safety reasons.

19 Was there any concern or thought that  
20 maybe just throw a piece of plywood over it with  
21 some snow fence around it so you could go back the  
22 second day to see if the conditions changed at all  
23 as far as the moisture penetration?

24 THE WITNESS: As a matter of fact,  
25 originally our scope was supposed to be for only one

1 day of testing. And so it wasn't until after the  
2 day was completed and we talked to our client and  
3 discussed the results that we agreed that maybe an  
4 additional day of testing would be appropriate. So  
5 that's when it was done.

6 So the tests were backfilled thinking the  
7 job was done. So I take it that's your answer.

8 MR. YINGLING: Okay. Thank you.

9 CHAIRMAN BOXER: Anybody else?  
10 Mr. Ferriero? Mr. Collins? Mr. Banisch? Any  
11 questions? Anybody on the Board?

12 BOARD MEMBER STRAKHOV: Yes. First of  
13 all, for my background information, could you  
14 describe this double ring infiltrometer, what it  
15 kind of looks like?

16 THE WITNESS: Sure. It looks like two  
17 pieces of pipe, one's larger than the other, and  
18 they're about a foot high. One's about 2 feet in  
19 diameter; the other's a foot in diameter. So  
20 they're concentric circles. And you place both of  
21 them in the ground, one inside the other, with the  
22 bottom being at the level where you want to test the  
23 infiltration of that material.

24 BOARD MEMBER STRAKHOV: So it's relatively  
25 shallow, like 2 feet or something?

1           THE WITNESS: Yeah. Well, it's closer to  
2 a foot. Yeah, the length of pipe, right, it's  
3 closer to about a foot. And so you shove those into  
4 the ground so that you get a good seat so that the  
5 water that you pour in doesn't seep out the bottom  
6 and into the sides. We were having a lot of  
7 problems with that in the earlier testing that we  
8 did in the summer.

9           So you get a good seat. You dig down  
10 inside carefully, usually by hand, just dig down  
11 into the bottom of the rings. Then you pour water  
12 and fill both rings. Then you time for that water  
13 to go -- you go through what they call a  
14 presaturation period, where you're saturating it,  
15 you're taking readings, you know, maybe every half  
16 an hour or so. You take a reading to see how much  
17 the water dropped.

18           And you're measuring the water drop in the  
19 center ring, not the bigger one outside. The bigger  
20 one outside, the purpose of that one being filled  
21 with water is to saturate the soil around the area  
22 where you're really trying to measure. So you're  
23 not going to be thrown off -- that infiltration  
24 won't be thrown off by water seeping sideways,  
25 laterally, into a dryer area. So you're saturating

1 a bigger area than the area that you're actually  
2 measuring.

3 You go through this presaturation period  
4 and then you start the test. And the test is  
5 essentially the same thing. You fill the rings with  
6 water. After a time period, arbitrary time period,  
7 you measure how much water -- how much the water  
8 dropped. And you repeat that same time period and  
9 you get -- and you continue to get readings.

10 And when you have three consecutive same  
11 readings, then you know that you have a stabilized  
12 level of drop.

13 BOARD MEMBER STRAKHOV: That is if every  
14 ten minutes it's gone down half an inch three times  
15 in a row.

16 THE WITNESS: Right. And usually--

17 BOARD MEMBER STRAKHOV: And this water is  
18 going out the bottom.

19 THE WITNESS: It's going out the bottom to  
20 the ground.

21 BOARD MEMBER STRAKHOV: And why are we  
22 doing this?

23 THE WITNESS: Because that's mimicking  
24 what will happen when the detention basin fills with  
25 water and the water's going to go down to the

1 ground. So we're measuring how quickly the water  
2 goes into the ground.

3 BOARD MEMBER STRAKHOV: And what does that  
4 have to do with the -- I think there's a term called  
5 level of infiltration.

6 THE WITNESS: Well, that's the elevation  
7 of the bottom of the basin, the level. It's not a  
8 level like a plumb level. This is the table level.  
9 So it's the bottom of the infiltration basin is the  
10 level of infiltration.

11 MR. HALL: A finished grade.

12 BOARD MEMBER STRAKHOV: Now, if we were to  
13 draw a picture, there's a hole in the ground.

14 THE WITNESS: There's a hole -- there's a  
15 hole in the ground that they scoop out and it's the  
16 bottom of the hole. It's the level at which the  
17 water is going to be seeping into the natural  
18 ground.

19 BOARD MEMBER STRAKHOV: Oh, into it. You  
20 can stand on it.

21 THE WITNESS: Yes.

22 BOARD MEMBER STRAKHOV: Yeah. Oh, okay.  
23 Your foot would get wet, but, or maybe.

24 THE WITNESS: Maybe.

25 BOARD MEMBER STRAKHOV: So that's where

1 the infiltration starts and it has to now get into  
2 the ground and it has to be 2 feet between that and  
3 the high level mark?

4 THE WITNESS: That's right.

5 BOARD MEMBER STRAKHOV: All right.

6 BOARD MEMBER RODELIUS: I have a question.

7 CHAIRMAN BOXER: Please, Mr. Rodelius.

8 BOARD MEMBER RODELIUS: Can you briefly  
9 describe the process when you're not at the site?  
10 Who's there, what they're doing and how they're  
11 getting the information to you so you can tell us  
12 about it?

13 THE WITNESS: Well, you know, I'm the  
14 owner of a large, somewhat large, company. You  
15 know, I have lots of employees out on project sites  
16 every day and they're making measurements, they're  
17 taking tests, they're making determinations. And  
18 they're trained to do so.

19 And so what are they doing every day? On  
20 this site they're out there, they're locating where  
21 the test pits should be. We had survey stakes out  
22 there from Gladstone Design to help us with that.  
23 So they're locating where to dig. They're directing  
24 and supervising the excavator, that operator.  
25 They're collecting samples. They're making

1 measurements of the ground, in the ground. They're  
2 performing that infiltration testing. And they're  
3 writing it all down. They're taking notes.

4 I don't typically go out to each job site  
5 on a daily basis, as I have done for a lot of this  
6 recent work. Typically I'm relying on my employees,  
7 my engineers, my professionals to fulfill their job  
8 duties that they're trained to do.

9 BOARD MEMBER RODELIUS: Would it be --  
10 would we get different interpretations from the  
11 folks that were actually on the ground there and  
12 looking at the site than what you're telling us, or  
13 not really?

14 THE WITNESS: I don't think so in this  
15 site. You know, I can understand in some  
16 construction projects, for example, that there might  
17 be some -- certainly that there is some room for  
18 interpretation of, if there's an unstable area and  
19 it needs to be stabilized, how best to go about  
20 that. And that's something that comes with  
21 experience.

22 But measuring, you know, the depth to rock  
23 or the depth to water or if there's water seepage,  
24 any of those things, that's hard data. Those are  
25 measurements and they're really not open for

1 interpretation.

2 BOARD MEMBER RODELIUS: Okay. Thank you.

3 THE WITNESS: You're welcome.

4 CHAIRMAN BOXER: Okay. Everybody's good?  
5 Okay.

6 Thank you very much, Mr. Loh. Appreciate  
7 it.

8 Ma'am, I'm sorry, do you have a question  
9 back there?

10 MS. BARONE: I do

11 CHAIRMAN BOXER: Oh, I'm sorry. Come on  
12 up. I apologize.

13 MS. BARONE: Jill Barone, 104 Preston  
14 Terrace.

15 Can you tell me the date of the report  
16 that you submitted?

17 THE WITNESS: Yes. This last report?

18 MS. BARONE: Yes.

19 THE WITNESS: Is February 27th.

20 MS. BARONE: And you did the inspection on  
21 the 26th and 27th?

22 THE WITNESS: Yes.

23 MS. BARONE: What about your young  
24 engineers, do they take soil samples?

25 THE WITNESS: That's a part of what they

1 do, yeah.

2 MS. BARONE: And then what do they do with  
3 those?

4 THE WITNESS: They bring them back. They  
5 put them in Ziploc bags. They mark where they came  
6 from, which tests that they came from, what the  
7 count is that -- you know, where they came from in  
8 the ground. And then they bring them back into the  
9 office, into our lab. And some of them might be  
10 subject to some laboratory testing if that's  
11 appropriate and others, you know, aren't.

12 MS. BARONE: Do you have a lab to test the  
13 soil in your office on site?

14 THE WITNESS: My office in Somerset has a  
15 lab.

16 MS. BARONE: And did you take samples on  
17 both the 26th and 27th?

18 THE WITNESS: I don't know. I don't know  
19 if samples were taken both dates.

20 MS. BARONE: If the report was dated on  
21 the 26th and you just said to us that you closed the  
22 pits, but then your client wanted you to also  
23 examine the next day, I guess I'm just confused.

24 If you took samples on both days, how did  
25 you have all of the information at hand to sit and

1 write a report when it's about soil and that's what  
2 we're here for?

3 THE WITNESS: Yeah, I knew that our client  
4 needed this report quickly and I worked my ass off  
5 at night.

6 MS. BARONE: Okay. Thank you. Thank you  
7 so much.

8 MR. BANISCH: The date of the report is  
9 February 27th.

10 CHAIRMAN BOXER: Come on up, sir.

11 MR. FRANTZ: Steve Frantz, 90 Preston  
12 Terrace. F-R-A-N-T-Z.

13 Just a quick question. I know you said  
14 you didn't take any pictures, but on other jobs at  
15 other times, do you guys -- in this digital age  
16 where it's so easy to document things with  
17 photographs, and video for that matter, do you use  
18 those technologies at all?

19 THE WITNESS: Sometimes.

20 MR. FRANTZ: And how come you wouldn't --  
21 it's not a standard practice? Do other engineers in  
22 similar fields use that type of digital media to  
23 document stuff?

24 THE WITNESS: Sometimes. It's not done on  
25 a normal practice.

1 MR. FRANTZ: It's not your normal  
2 practice?

3 THE WITNESS: Not necessarily, no.

4 MR. FRANTZ: Okay. What made you choose  
5 not to?

6 THE WITNESS: Well, for one, I observed  
7 the test pits as well. So it's not that important  
8 that they be photographed for me to get information  
9 from my field engineers saying there's no mottling  
10 or whatever. I observed it, too. So perhaps that  
11 was one reason that they didn't take picture. But  
12 it's not our standard practice to take pictures.

13 MR. FRANTZ: I've got to imagine you do a  
14 lot of this, coming to these types of meetings.

15 THE WITNESS: No, actually, I don't.

16 MR. FRANTZ: You don't.

17 THE WITNESS: No.

18 MR. FRANTZ: Does your company?

19 THE WITNESS: No. For a geotechnical  
20 engineer, this is not--

21 MR. FRANTZ: It's not normal practice.

22 THE WITNESS: Not as much as--

23 MR. FRANTZ: Because I've got to imagine  
24 that people would probably ask for photographs,  
25 particularly when there's a little bit of, like, you

1 know, tension about this particular topic.

2 THE WITNESS: Yeah, well, now I'm wishing  
3 that maybe we had taken some photos to prove to  
4 nonbelievers what I saw.

5 MR. FRANTZ: Yeah. And, you know, it puts  
6 everybody else at ease, I think, if you actually  
7 were to do that. So I just wanted to find out if it  
8 was a normal practice or not to do it. Thanks.

9 THE WITNESS: You're welcome.

10 CHAIRMAN BOXER: Anybody else? Let's make  
11 sure we're good here.

12 Okay. Thank you very much, Mr. Loh. We  
13 appreciate it.

14 Mr. Hall, I think we'll probably take a  
15 few minutes to get everybody's head cleared, is  
16 probably a good thing. Five or ten minutes, not  
17 much more. I know we've got to get started.

18 MR. HALL: Okay. That would be great.  
19 Thanks.

20 CHAIRMAN BOXER: And probably -- he's not  
21 going to have a lot of time, but we can certainly  
22 get started.

23 MR. HALL: And just so you know, he will  
24 do a recap. I wasn't telling him not to do a recap.

25 CHAIRMAN BOXER: No, that's fine. Maybe

1 given the time, I have a feeling we're going to be  
2 very limited tonight. So however you choose to  
3 present it.

4 MR. HALL: Okay.

5 CHAIRMAN BOXER: We'll take ten minutes,  
6 please.

7 (Whereupon, a recess is taken.)

8 CHAIRMAN BOXER: Ladies and gentlemen,  
9 thanks. We don't have a lot of time and we'd like  
10 to get started.

11 So, mr. Hall, I think, for planning, I  
12 think about 10 o'clock or so is probably right. I  
13 mean, you're never going to get done by 10:15  
14 anyway.

15 MR. HALL: Okay.

16 CHAIRMAN BOXER: So let's plan whatever  
17 you can do in 15 minutes and we'll take it nice and  
18 slow and then we'll obviously be back again.

19 R O B E R T M O S C H E L L O, having  
20 been previously duly sworn, remained under oath and  
21 testified as follows:

22 EXAMINATION

23 BY MR. HALL:

24 Q. Mr. Moschello, I think you were sworn  
25 before and you remain under oath and you're a

1 professional engineer and was so accepted  
2 previously.

3 A. That is correct.

4 Q. Okay. You heard the Chairman. We don't  
5 have much time, so I'll just defer to you as to how  
6 you want to proceed. You were here before talking  
7 about stormwater, so why don't you just jump right  
8 in.

9 A. Yes.

10 THE WITNESS: I think what I'd like to do,  
11 Mr. Chairman, is take 10, 15 minutes, and do an  
12 overview of the layout of the project again and the  
13 stormwater management system. I'll refer back to  
14 some of the exhibits that I entered into the  
15 testimony, and just take this time to refresh the  
16 Board's memory as to what we actually were proposing  
17 on the site from a stormwater perspective. I think  
18 it was last October I was here, so it's been a  
19 couple of months.

20 So I think that would be a good place to  
21 start. And then if I complete that, we can go ahead  
22 and move on to questioning.

23 CHAIRMAN BOXER: That's perfect.

24 THE WITNESS: Thank you.

25 A. Great. Okay. The first exhibit board

1 that I have up here is Exhibit A-15. I believe we  
2 were referring to this before. It's entitled  
3 "Proposed Site Plan Rendering Exhibit," dated  
4 November 14, 2013, and revised through October 2nd,  
5 2014.

6 It's a state aerial, a map of the subject  
7 site. The property is outlined in yellow. And this  
8 shows the layout of the solar facility, with the  
9 panels shown in a blue-ish color on the plan. And  
10 also on the plan are the stormwater management  
11 facilities for the project site.

12 I do just want to point out this plan has  
13 not been modified or changed since I've been last in  
14 front of the Board. So I just want to point out  
15 some of the features of the project in terms of the  
16 stormwater management basins.

17 There are a total of seven basins on the  
18 subject site. I'm going to work in a west to east  
19 pattern across the board with north being up.

20 Along the western property line -- along  
21 the western side of the site, we have the solar  
22 array on the western portion. We have detention  
23 basin or infiltration basin number 1, which is the  
24 westerly most basin.

25 Moving to our east, we have infiltration

1 basin 2D, which is in the middle of the solar field.

2 To the south of that we have detention  
3 basin number 2, which is on the bottom portion of  
4 the solar array.

5 Moving to the other side of the wooded  
6 stream corridor that runs through the middle of the  
7 site, we have basin 2A, which is just to the south  
8 of the gravel access drive.

9 In the middle solar array fields, we have  
10 water quality basins 2B and 2C.

11 And then furthest to the east on the plan,  
12 closest to Country Club Road, we have detention  
13 basin number 3.

14 As I pointed out before in my testimony,  
15 those seven basins, infiltration basins, detention  
16 basins, water quality basins, all work in series to  
17 provide different levels of stormwater management on  
18 the subject site. We have to do three different  
19 things with stormwater management. We have  
20 attenuation, we have recharge, and we have water  
21 quality. So those basins are designed with  
22 different features to do those different tasks.

23 So for attenuation we have to hold a  
24 certain amount of water and let a certain rate out  
25 over a certain period of time to be less than the

1 existing flows that were leaving the site. For  
2 water quality we have to treat the water, whether  
3 that's through infiltration, through -- infiltration  
4 through a soil medium, or through a manufacturer's  
5 filtration device to remove any pollutant loadings  
6 that are in the water and may be seen from parking  
7 areas, driveways and the like.

8 And then, lastly, we have to deal with  
9 infiltration, which is putting a certain amount of  
10 water back into the ground that was lost to  
11 typically a change in land use cover, where one  
12 would take a permeable surface such as woods, grass,  
13 meadow, and make that impervious with a driveway or  
14 building pad.

15 So those are the three different types of  
16 storm -- three different tasks we have to deal with  
17 in terms of dealing with stormwater management on  
18 the subject site.

19 I want to just point out I have two other  
20 exhibits I want to put up for the Board just to  
21 refresh everyone's memory. The first exhibit here  
22 is existing drainage area exhibit, and this was A-16  
23 when it was entered into the record and it's dated  
24 October 2, 2014.

25 This is a colored map of the existing

1 drainage patterns on the property. Remember I  
2 talked about three different points of analysis.  
3 There was the Point of Analysis A, which is on the  
4 western property line of the subject property. And  
5 that's the area that's shown in blue, that drains  
6 towards that western property line.

7 There was Point of Analysis B, which is  
8 where the stream corridor that collects the water in  
9 the middle portion of the site actually leaves the  
10 property at the southern property line. And that's  
11 the drainage area shown in yellow on this map.

12 And then there was Drainage Area 3, which  
13 is part of Point of Analysis C, which I'm calling  
14 the easterly property line which basically runs  
15 along Country Club Road. And that's the area shown  
16 in green and that drains towards Country Club Road,  
17 the existing pond and ultimately into Chambers  
18 Brook.

19 Approximately 107 acres in total drainage  
20 area which encompasses the project site. And then  
21 we have the proposed drainage area map, which is  
22 entitled "Proposed Drainage Area Exhibit," dated  
23 October 2, 2014. This was A-18 when it was entered.  
24 And this basically takes those three drainage  
25 areas -- the blue for the westerly side, the yellow

1 for the middle, and the green for the easterly  
2 side -- and we break those up into the different  
3 proposed drainage areas that are going to the  
4 different detention basins.

5 So the orange color here is for  
6 drainage -- is for detention basin number 1. The  
7 purple color is what's going to detention basin  
8 number 2. The green is going to the infiltration  
9 basin 2D. The blue on the western side is going to  
10 detention basin 3. And then we have this brownish  
11 color, which is actually going to basins 2A, 2B and  
12 2C.

13 And those are the seven basins that are on  
14 the property that I talked about previously. And  
15 this plan shows those drainage patterns and how that  
16 water moves around the subject site before it  
17 ultimately leaves at different points of analysis.

18 And that's generally the overview of the  
19 stormwater management system on the property.

20 CHAIRMAN BOXER: Has anything changed  
21 since October? I mean, obviously the basins haven't  
22 moved around, but have you changed any size, any  
23 interconnections between the basins to deal with  
24 attenuation, infiltration, quality, any of the three  
25 elements that you mentioned?

1 THE WITNESS: No, the design that was  
2 submitted at the end of August, which were the plans  
3 we revised through August 29th, none of that has  
4 been changed. The information I testified to in  
5 October, that I presented to the Board as far as the  
6 size of the basins, the designs of the basins, the  
7 way they treat the water, none of that information  
8 is changed. It's all the same as I presented back  
9 in October.

10 CHAIRMAN BOXER: Okay. Good. Thank you.  
11 I appreciate it.

12 THE WITNESS: You're welcome.

13 I have no other direct testimony at this  
14 time.

15 CHAIRMAN BOXER: Okay. So I know it was  
16 quick, but we appreciate it. I mean, it's helpful  
17 to get a baseline. I know that there's a lot more  
18 to be said.

19 MR. HALL: Right. I think going into a  
20 new subject would be counterproductive at this  
21 time.

22 CHAIRMAN BOXER: Okay. Thank you, Rob.  
23 Appreciate it.

24 Okay. Mr. Hall, again, we appreciate the  
25 time. Maybe for planning purposes we can pick it up

1 next month.

2 MR. FERRIERO: Next month we were looking  
3 at the second week in April.

4 CHAIRMAN BOXER: I know the first meeting  
5 is jammed up already. We have three or four  
6 applications.

7 SECRETARY LINDSEY: Right.

8 CHAIRMAN BOXER: So what date is it?

9 MR. FERRIERO: The 9th.

10 CHAIRMAN BOXER: So April 9th will be the  
11 first full meeting we have.

12 MR. HALL: The expectation is the whole  
13 meeting?

14 CHAIRMAN BOXER: Yes.

15 MR. HALL: Okay, great.

16 MR. FERRIERO: Maybe we can kind of look  
17 forward into the future. I know in May the Chesson  
18 application, which was supposed to be on earlier,  
19 they requested to be on the second meeting in May.

20 MR. HALL: I prefer to get back to the  
21 first Thursday.

22 CHAIRMAN BOXER: So can we do that here?  
23 So April 9th we would do, and what would be the  
24 first meeting in May?

25 SECRETARY LINDSEY: May 7th.

1           CHAIRMAN BOXER: May 7th.

2           MR. SASSO: That's a problem.

3           MS. DONATO: You know, the first is always  
4 a problem for me. I understand that the Chair has  
5 indicated that you try to alternate back and forth,  
6 but I don't know if anyone's aware, but that is the  
7 State League of Municipalities is having their 100th  
8 anniversary and they're really trying to get  
9 municipalities. It's Mr. Dressel's retirement as  
10 well as being the -- I think the biggest event  
11 they've ever held.

12           CHAIRMAN BOXER: Does that matter to you,  
13 Mr. Hall?

14           MR. HALL: Frankly, I've missed -- with  
15 the 9th of April, I'll be missing three meetings in  
16 a row of a board I represent and I've had to have  
17 covered. I was hoping to get back to the first  
18 Thursday finally.

19           CHAIRMAN BOXER: Right. The problem we  
20 have in -- the problem we have -- do we have May  
21 already booked up?

22           SECRETARY LINDSEY: The second meeting in  
23 May, yes.

24           CHAIRMAN BOXER: That's what I thought.

25           SECRETARY LINDSEY: We already have it

1       booked for Chesson.

2               CHAIRMAN BOXER:   The second meeting in May  
3       is already booked.

4               MR. HALL:   Yeah, I was asking for the  
5       first one.   I guess she --

6               SECRETARY LINDSEY:   Right, and that's  
7       what--

8               MR. HALL:   Unless you want to -- I'm sure  
9       we could work with you on a schedule, try to change  
10      that date to maybe a fourth Thursday in April, if  
11      that would accommodate people.   I have a second and  
12      third Thursday.   And we could talk about that in  
13      April.   We don't have to do that tonight.

14              CHAIRMAN BOXER:   So April 9th is good,  
15      right?

16              SECRETARY LINDSEY:   Yes.

17              CHAIRMAN BOXER:   So it's really the May  
18      7th meeting that we...

19              MR. HALL:   Apparently they have a problem  
20      with that.

21              CHAIRMAN BOXER:   But the problem we have  
22      is that May -- that in May we already have the  
23      Chesson application, and that's going to go quite a  
24      while.   That's going to be a fairly long  
25      application.   I mean, we'll probably get it done,

1 but it will be a very long night for that.

2 MR. HALL: I'm suggesting maybe if you  
3 could move it up to the fourth Thursday? I don't  
4 know.

5 SECRETARY LINDSEY: That calls for a  
6 special meeting. That's more up to Tom.

7 MR. COLLINS: Well, yeah, the fourth  
8 Thursdays are bad for me personally.

9 CHAIRMAN BOXER: I know I'm not around.

10 MR. COLLINS: Third Thursdays are better  
11 for me, but I have other dates. If the Board wants  
12 to have a special, you could, but --

13 CHAIRMAN BOXER: Why don't we talk -- we  
14 probably need to look at calendars. I have to look  
15 at my own. I know I'm not going to be available  
16 that date.

17 MR. FERRIERO: Maybe that's the marching  
18 orders between now and the April meeting, everybody  
19 look at their calendars for a potential special  
20 meeting.

21 CHAIRMAN BOXER: Okay. We'll try to do  
22 that.

23 MR. HALL: And we'll do the same on our  
24 end. I haven't checked with my people either.

25 CHAIRMAN BOXER: No, we'll try to do that.

1 Sure.

2 MR. HALL: We'll try to work with  
3 everyone.

4 MS. DONATO: Thank you.

5 MR. COLLINS: So at the next meeting,  
6 though, Mr. Moschello will be back for  
7 cross-examination, correct?

8 MR. HALL: Well, he's I think probably  
9 going to present some more?

10 THE WITNESS: No, I'm done.

11 MR. HALL: That's your direct?

12 CHAIRMAN BOXER: That's your total --

13 THE WITNESS: Yeah. I'm relying back on  
14 my October testimony, which I presented all the  
15 information in terms of stormwater. And since  
16 nothing's changed on the plan, I think I'm at the  
17 point where we could do that unless there's other  
18 questions to that.

19 CHAIRMAN BOXER: All right. Well, let me  
20 confer with Mr. Ferriero. Either way we'll have you  
21 back for cross-examination.

22 MR. HALL: If there's possible alternate  
23 dates, if we could try and talk about that before  
24 the meeting, that would be great.

25 CHAIRMAN BOXER: But April 9th is locked

1 in, is that what we're saying?

2 MR. HALL: Yes.

3 CHAIRMAN BOXER: All right.

4 MR. HALL: We're looking at after that.

5 Understood.

6 CHAIRMAN BOXER: All right. So we'll have  
7 you back on April 9th and we'll sort out the  
8 cross-examination program.

9 Mr. Sasso, are you good?

10 MR. SASSO: Absolutely. I appreciate  
11 Mr. Hall accommodating my co-counsel.

12 CHAIRMAN BOXER: Well, if you guys can  
13 maybe funnel some dates to Trina and we'll try to  
14 lock down some future dates.

15 MR. SASSO: I'm good. I'm not going  
16 anywhere. I wish I was.

17 CHAIRMAN BOXER: Okay. Thank you very  
18 much, everybody. All right. We need to go through  
19 our final agenda. Thanks, Mr. Hall.

20 MR. HALL: Thank you. Have a good night.

21 (Whereupon, the hearing was adjourned at  
22 10 o'clock p.m. to April 9, 2015, at 7:00 p.m.)

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C E R T I F I C A T E

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