

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, April 9, 2015
Bedminster, New Jersey
Commencing at 7:09 p.m.

BOARD MEMBERS PRESENT:

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

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:

VOGEL, CHAIT, COLLINS and SCHNEIDER, P.C.
BY: THOMAS F. COLLINS, JR., ESQ.
Attorneys for the Board

McCARTER & ENGLISH, LLP
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Power Plant

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Forbes

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1 CHAIRMAN BOXER: Why don't we get right
2 to KDC Solar 12-015.

3 Mr. Hall, it's nice to see you here.

4 MR. HALL: Good evening. Nice to see
5 everyone.

6 We're back with Rob Moschello, one of
7 our engineers, who spoke fairly briefly at the end
8 of the last meeting. So he's back to pick up
9 where he left off.

10 CHAIRMAN BOXER: Okay.

11 MR. HALL: And hopefully answer all
12 questions about stormwater.

13 CHAIRMAN BOXER: Well, come on up,
14 Mr. Moschello.

15 The last I recall, he sort of said he
16 was done with that initial presentation.

17 MR. HALL: He gave an overview and then
18 he was going to --

19 CHAIRMAN BOXER: Right. So now you're
20 planning to go into a deeper discussion? I just
21 want to make sure I understand it.

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

25 THE WITNESS: Yes. If I remember --

1 recall correctly, I did a pretty lengthy
2 discussion about stormwater back in October.

3 CHAIRMAN BOXER: Yes.

4 THE WITNESS: Went through all the
5 details about how the system operates, how it's
6 designed, and how it's laid out on the property.

7 At the end of the last meeting, I just
8 did a brief overview of the stormwater system
9 again.

10 CHAIRMAN BOXER: Right.

11 THE WITNESS: And I didn't get into much
12 detail about it. Just to refresh the Board's
13 memory.

14 So I thought tonight what I would do is
15 touch on three topics. The first one is just a
16 little more in-depth overview of the stormwater
17 system, just to get everybody up to speed on what
18 we were proposing on the property. I know I
19 haven't spoken about it since October, so I'd
20 probably take a few minutes and go through the
21 different components of the system and how it
22 operates.

23 And there are two new topics I wanted to
24 talk about tonight to kind of wrap up my
25 presentation as it relates to stormwater. One

1 having to do with how stormwater systems are
2 designed as it relates to the soil testing that
3 was performed on the property. We had testimony
4 from Dennis Loh from GTA who talked about all of
5 the testing that was done on the property and
6 summarized the results of his findings and the
7 findings of both Birdsall and Gladstone's logs and
8 our logs.

9 And I think it would be proper to go
10 through just what do we do with that? What do we
11 do with that information once we receive it and
12 how is that used to design the basins? To kind of
13 close the loop on the soil testing portion of the
14 project.

15 Then I think the last component of the
16 system is the construction of the systems and the
17 operations and maintenance of the systems. So
18 after all this design's done, how do we build
19 them? And then, more importantly, how do we
20 ensure that they're maintained over the long term
21 so that they operate as they're intended to
22 operate.

23 So I think those are the three topics I
24 want to touch on tonight, Mr. Chairman.

25 CHAIRMAN BOXER: That's great. Thanks.

1 THE WITNESS: Great. With that being
2 said, I'm going to go back and pull up a couple of
3 the exhibits that have already been entered. I'm
4 going to use Exhibits A-16, A-17, A-18, and
5 possibly A-15 for the time being. I may have a
6 new one I may enter later on.

7 So this is to describe the existing
8 stormwater management on site. So I'm going back
9 to Exhibit A-16, which is the existing drainage
10 area exhibit. So starting back at the beginning
11 of the stormwater system itself and how it's laid
12 out, we first start with denoting the existing
13 drainage areas on site.

14 And this plan shows in three different
15 colors the drainage patterns of the runoff on the
16 property. And the site's broken down into a Point
17 of Analysis A, which is basically the western
18 property line; Point of Analysis B, which is the
19 point with which the internal stream network
20 leaves the site on the southern property line; and
21 then Point of Analysis C, which is where the
22 runoff essentially drains towards the property
23 line with Country Club Road and it's collected in
24 a series of inlets or culverts and crosses
25 underneath the road and eventually enters into

1 Chambers Brook.

2 So, again, the site is broken into three
3 drainage basins: To the left, to the middle and
4 to the east. And this generally represents the
5 runoff patterns on the property. And that's
6 approximately 107 acres, which is the overall
7 site.

8 From this plan you'll see on here a
9 series of dashed black lines. Okay? And what
10 that represents is the limit of disturbance for
11 the project. And that outlines the limits of the
12 project that includes the panels, the fencing, the
13 basins and everything that's being constructed on
14 the property. And that limit of disturbance is
15 used to calculate our reduction factors on site.
16 And I'll get to that in a few minutes.

17 So essentially with the three points of
18 analysis, we have quantities of water that flow to
19 each of those points. And that's done for the
20 2-year storm, the 10-year storm and the 100-year
21 storm, which is the three storm events that you
22 study for stormwater management. We also can talk
23 about the water quality storm, but I'll deal with
24 that a little later on.

25 And so at those three analysis points we

1 generate a rate of runoff and that rate is what we
2 have to reduce under proposed conditions when we
3 design our site. So the limit of disturbance is
4 what's used to calculate that rate of runoff --
5 I'm sorry, used to calculate the reduction factors
6 for the rate of runoff. And those values are
7 actually contained within the stormwater
8 management report.

9 The next exhibit is basically a -- is
10 Exhibit A-17, which is the limit of disturbance
11 exhibit, and this basically shows those areas of
12 disturbance that are colored in to match the three
13 different drainage areas or three different points
14 of analysis: The blue being Point of Analysis A;
15 the yellow being Point of Analysis B, which is the
16 midpoint of the site; and then the green being
17 Point of Analysis C towards Country Club Road.

18 So this represents, I believe it was 39
19 or 40 acres of actual disturbance area on the
20 project site that's used for calculating the rates
21 of runoff for the project.

22 So when we talk about stormwater
23 management, I mentioned earlier--

24 MR. HALL: Why don't you tell us what
25 exhibit that is.

1 THE WITNESS: Oh, this is Exhibit A-18,
2 which is the proposed drainage area exhibit. I'll
3 get to that in a few minutes.

4 But when we talk stormwater management,
5 I talked early on about three different items you
6 have to deal with in the stormwater management
7 rule: One is attenuation, the other one is
8 recharge, and the third one is water quality.
9 Each of those three components has to be satisfied
10 in order to satisfy stormwater management
11 calculations.

12 When we talk about attenuation,
13 that's -- that is the way that we would hold back
14 the runoff that's leaving the property to match
15 the existing rates of runoff that's there today,
16 or the reduction rates of runoff. So what I mean
17 by that is we have a certain amount of water that
18 leaves the site under existing conditions. Let's
19 say, for example, it's just 10 cfs. Okay? And
20 then we have to reduce that rate of runoff by a
21 certain amount. And for the 2-year storm it's
22 typically -- it's 50 percent, or half.

23 So if my existing flow is 10 cfs and my
24 rate of reduction is 50 percent, that means I'm
25 only allowed to discharge for the 2-year storm 5

1 cfs. Okay?

2 And then under proposed conditions, that
3 same runoff, because I'm adding impervious
4 coverage, I'm changing around the drainage
5 patterns and I'm doing things to the site, that
6 same amount of runoff may actually be 12 or 15
7 cfs. So I've increased it from 10 cfs to 12 or 15
8 cfs.

9 But in order to meet the attenuation
10 requirements, the amount of water leaving my site
11 must be reduced down to 5 cfs, because that's what
12 the reduction factor says I have to reduce it down
13 to. And in order for me to do that, I have to put
14 some form of basin or stormwater management
15 facility on the site to reduce that runoff.
16 Whether it's reduced by just holding it for an
17 extended period of time or whether I infiltrate
18 some of that runoff into the ground, I have to
19 reduce that rate of runoff in order to meet that
20 attenuation number when the water leaves the
21 property.

22 So ultimately when you design a project,
23 you start off with an existing flow, you increase
24 that flow in the proposed conditions and you put
25 it through a stormwater facility and you reduce it

1 down to a rate that's less than the existing
2 conditions in order to meet the runoff
3 requirements for attenuation for the project site.

4 The second one is recharge. And
5 recharge is the ability to put a certain amount of
6 water back into the ground. And basically what
7 happens is when you develop a site, you take what
8 may be pervious areas -- such as woods, lawns,
9 meadow and things of that nature -- and you remove
10 it and you put back a form of pavement, which is
11 going to prevent water from getting into the
12 ground.

13 So when you do that, the regulations say
14 that you have to take that water that's lost from
15 putting a piece of pavement on top of that ground,
16 and put it back into the ground, put that water
17 back into the ground utilizing some type of
18 stormwater management facility.

19 So, a typical example for this
20 particular project, we had a site that's comprised
21 of meadow grasses in the front part and meadows
22 mowed for hay, and in the rear we had cedars which
23 we treated as woods.

24 So once you come into the site and you
25 remove those cedars and you remove portions of the

1 meadow grasses and you put down what we're calling
2 these concrete ballasts that are going to be used
3 to support the solar facility, and that's a
4 concrete -- piece of concrete that's -- I think it
5 was 2 by 7, 2 foot wide by 7 foot long in size,
6 and you place that on the ground. Well, now
7 you're preventing water from infiltrating into the
8 ground at that location, because the water that
9 falls is going to hit the concrete and sheet off
10 of it and land on the ground.

11 So once you do that, you need to put
12 that water back into the ground some other way.
13 So in this particular case, what we're proposing
14 to do is utilize infiltration basins to collect
15 the runoff from portions of the project site and
16 recharge that water back into the ground through a
17 sand medium that's going to be in the basin and
18 allow that water -- and allow the water that's
19 lost to be put back into the ground.

20 And in this particular case here for
21 this project, the rate of water that's lost to
22 impervious surfaces and change of land use cover
23 was approximately an acre, 1 acre foot of water,
24 which is basically -- if you have an acre of land,
25 it would be 1 foot of water over that acre of land

1 that needs to be put back into the ground.

2 That's the volume of water that we're
3 dealing with here. Over 100 acres it's not really
4 that much water when you get down to it, but
5 that's the amount that's lost converting this site
6 from meadow and woods into a solar facility with
7 lawn areas and those concrete ballasts and some
8 gravel drives.

9 So that's the second part of stormwater
10 management.

11 The third is water quality, which is
12 treating runoff from surfaces that have pollutant
13 loadings on them such as parking lots, roadways,
14 things of that nature, that require some form of
15 treatment to meet a standard that's laid out in
16 the BMP manual for stormwater regulations so that
17 the water leaving the site is treated to a certain
18 level before it's discharged into the streams, or
19 infiltrated into the ground for that matter.

20 For this particular project, generally
21 speaking, the solar panels themselves don't
22 generate any pollutant loading from a stormwater
23 management standpoint. The water hits the panels,
24 it's typically a glass on top and sheets off onto
25 the ground. The ballast blocks that sit on the

1 ground don't generate any pollutant loading.

2 Really the only thing that has any minor
3 impact on water quality is the gravel drives, and
4 that's from just the minor vehicle traffic that is
5 concealed over the course of a year. It doesn't
6 generate any pollutant loading on its own. It
7 just would be from vehicles driving on that.

8 So for this particular project, we
9 provided water quality facilities to treat the
10 runoff from those -- from those gravel areas
11 whether it be through infiltrating it through a
12 sand medium or soil planting bed and then putting
13 that water into the detention basins and
14 discharging it.

15 So those are the three prongs of
16 stormwater management that have to be looked at
17 and brought into the design when you're designing
18 the project.

19 Now, this exhibit here, which is
20 entitled "Proposed Drainage Area Exhibit," breaks
21 down the site into the different drainage areas or
22 drainage basins that have -- that are receiving
23 runoff from the different portions of the
24 property.

25 As I spoke about earlier, there were

1 seven stormwater management facilities on this
2 project site. There were two infiltration
3 detention basins, there were three -- I'm sorry,
4 two standard detention basins, and then three
5 water quality basins that provide a small form of
6 attenuation for stormwater management, mostly for
7 water quality.

8 And those basins are denoted here in
9 different colors on the plan. I just want to take
10 everyone through where those basins are located
11 and reiterate the numbers of those basins because
12 we're going to talk about them throughout the
13 course of the evening.

14 And I'm going to start from the west
15 side of the plan. This is Point of Analysis A,
16 and the area in blue is actually the undetained
17 area where no water is collected and no panels in
18 that area, and that just runs towards the property
19 line.

20 The area shown in orange is proposed
21 drainage area number one. That area contains
22 solar panels, as well as detention basin number
23 one. And basin number one is designed as both a
24 detention basin and an infiltration basin. So it
25 does two things: It provides recharge of water

1 back into the ground, and it also provides
2 attenuation of runoff from this particular
3 drainage area here shown in orange. Okay? It
4 does not provide any water quality. There are no
5 gravel roads in that drainage area, anything that
6 provides any pollutant loading. So we just have
7 an infiltration and detention basin in drainage
8 area number one.

9 Drainage area number two, which is the
10 area shown in purple on the plan, drains down
11 towards detention basin number two. Detention
12 basin number two, which is this amorphously shaped
13 basin towards the southern portion of the site, is
14 just strictly a detention basin. Its purpose is
15 to collect the runoff from that purple drainage
16 area and detain it over a certain period of time
17 and discharge it at a reduced rate so that this
18 way we meet our peak flows at the points of
19 analysis. That's all it's designed to do. It
20 doesn't provide any water quality; it doesn't
21 provide any recharge.

22 Detention basin number -- I'm sorry,
23 detention basin 2D, or proposed basin 2D, which is
24 the basin that drains to the -- which is the basin
25 that collects the runoff from the green areas

1 shown on the plan, that is an infiltration basin.
2 And that one was designed for the purpose of
3 infiltrating the runoff from that drainage area
4 and recharging it into the ground. Its main
5 purpose is to recharge a certain amount of volume
6 so that we meet our recharge requirements. The
7 rest of the runoff from that basin is actually
8 discharged and allowed to flow into basin number
9 two for additional attenuation and storage.

10 So basin 2D was just designed for
11 infiltration and recharge, and the rest of the
12 attenuation takes place in drainage area number 2,
13 in the purple area. So actually basin 2D is
14 connected to drainage area 2 by the means of a
15 pipe and a swale network that gets the water
16 there.

17 Proposed drainage area two, which is the
18 large yellow area in the middle of the project
19 site, has no detention associated with it. The
20 runoff from that area just runs over the
21 grasslands and the wooded areas and the fields
22 into the stream and leaves the site.

23 There are some solar panels in that
24 area, but because we detain in other portions of
25 the site, we don't need to provide detention for

1 this middle portion of the project. We can allow
2 this runoff from this area to go to the stream
3 while holding back water in another location to
4 account for that increase. So the yellow area
5 doesn't have any detention.

6 There are three -- and I'll call them
7 basin 2A, 2B and 2C -- small drainage areas shown
8 in brown on the plan. Those areas are designed to
9 collect runoff from the gravel road that we're
10 proposing and treat it for water quality by means
11 of filtering the water through a planting bed,
12 typically about 2 feet in thickness, and then
13 having an underdrain system on those small basins
14 that collect the water after it's been treated and
15 then pipe it out and discharge it into the open
16 field area.

17 So we're not actually infiltrating any
18 water into the ground there. We're infiltrating
19 it through a planting bed and then through a
20 gravel layer into pipe and then discharging it.
21 That's not saying that water may not seep into the
22 ground just by doing that. There's no impermeable
23 liner on those basins, but there's a gravel layer
24 that has a perforated pipe in it, but water may
25 still seep into the ground of those systems after

1 it's been treated.

2 And those drainage areas are relatively
3 small, as you can see on here. They're just
4 designed to pick up the runoff from the gravel
5 roads and some small portion of the solar panel
6 areas.

7 Continuing to the east, we have basin
8 number three, which is this basin shaped here
9 closer to Country Club Road, and that basin
10 collects the runoff from the area shown in blue.
11 This is the remaining panel area that's closest to
12 Country Club Road. The water's collected from
13 that area. And that basin three is just a
14 detention basin. Again, its only purpose is
15 designed for attenuating runoff, holding it for a
16 certain period of time, and discharging it. It's
17 not an infiltration basin. It's not a water
18 quality basin. It's just an detention basin for
19 the purposes of attenuation.

20 And then the last area, the area shown
21 in green, which is drainage area number three, and
22 that basically is comprised of the existing wooded
23 area along Country Club Road, the existing
24 farmhouse, some of the existing farm drive, and
25 what will end up being the switchgear pad for the

1 solar project and gravel drive associated with it.
2 And, again, there's no detention associated with
3 that drainage area. We're doing the detention in
4 the blue so that this way we can -- whatever
5 improvements are in the green area, which is just
6 this gravel drive, is being attenuated for already
7 with those improvements.

8 So that's generally the overview of the
9 stormwater management system, the way it's
10 currently designed on the project site. And I'll
11 see if anybody has any questions before I move
12 into the soil testing portion of it and the
13 operations and maintenance and construction.

14 CHAIRMAN BOXER: Very good,
15 Mr. Moschello. Let me just ask Mr. Sasso or any
16 of our people in the audience. This is a rather
17 complex topic and I'm just wondering if you
18 could -- if you and Mr. Hall would prefer to have
19 questioning in sections or would you prefer to
20 wait until he's done?

21 MR. SASSO: I'll defer to Mr. Hall.

22 MR. HALL: Well, I'm not asking
23 questions.

24 MR. SASSO: Then I think it would be
25 better all at once.

1 MR. HALL: Yes, I tend to agree.

2 CHAIRMAN BOXER: That's fine.

3 MR. HALL: Certainly if people have
4 questions, before you forget them, tell us.

5 CHAIRMAN BOXER: Okay.

6 MR. HALL: But otherwise --

7 CHAIRMAN BOXER: All right. We'll keep
8 going then.

9 THE WITNESS: Great. I do have one new
10 exhibit I'm going to refer to tonight and I
11 believe we're up to -- I'm not sure what number
12 we're up to.

13 THE REPORTER: A-24.

14 THE WITNESS: Is it A-22?

15 THE REPORTER: A-24.

16 SECRETARY LINDSEY: A-24, yes.

17 THE WITNESS: A-24. This exhibit is
18 entitled "Test Pit Location Plan." Its original
19 date is February 12, 2015, and it's revised
20 through March 12, 2015.

21 What we're looking at here is a
22 compilation of all the test pits that were done
23 for the project from the beginning done by
24 Birdsall, which are shown in purple; done by
25 Gladstone Design, shown in blue; and then done by

1 GTA, which are shown in green.

2 And I believe there are over 125 test
3 pits done on the property. And I'm going to refer
4 to this plan as I talk about the interaction
5 between what's done for soil testing on the
6 property and how that information is used to
7 ultimately lay out a stormwater management system
8 and then ultimately design our basins.

9 There's a couple things we look at when
10 it comes to designing stormwater management
11 systems. Of course, the layout of the project,
12 the type of project, plays a large part in that
13 and where the development is going to go for that
14 project versus where you're going to be able to
15 put your stormwater management facility. You
16 typically want to try to locate them on the lower
17 portions of the site, because generally that's
18 where your stormwater runs off to.

19 But there's also opportunities to locate
20 certain facilities in and around developed areas,
21 depending on what you're constructing and how you
22 want to treat the stormwater runoff as it's being
23 collected before it gets to the final discharge
24 point of the project site.

25 And one of the first things we typically

1 look at for stormwater management is what are the
2 soils on the property? What do they consist of?
3 And how would they play a role in the stormwater
4 management system. What we don't usually do is
5 run right out and start doing test pits on the
6 property right in the beginning because we're not
7 quite sure yet what our design is going to be,
8 where we're going to put those facilities.

9 So we normally rely upon what's referred
10 to as the U.S.D.A., or the United States
11 Department of Agriculture, Soil Conservation
12 Service soil books that are done for the different
13 counties here in New Jersey. And this one, of
14 course, would be Somerset County. And in that
15 book there's all maps that lay out the soil series
16 that were denoted a number of years ago by the
17 federal government to say what are the underlying
18 soils on the properties.

19 And while it may be a little hard to see
20 on this map, there's a series of gray dashed lines
21 on here that represent the different soil series
22 that are on the property. This site's heavily
23 underlain by Norton soils and Penn soils. You may
24 have heard those names before mentioned on other
25 projects here in town. But a good portion of the

1 soils in Bedminster tend to be Norton or Penn
2 soils.

3 And we would rely upon looking at the
4 soil surveys first to see what type of soils our
5 site is underlain with. And why that's important
6 is because when doing stormwater management, I
7 talked early on about hydrologic soil groups. And
8 hydrologic soil groups affect the rate of runoff
9 from your project site. A more permeable soil
10 means you'll have less runoff. More impermeable
11 soil, you'll have more runoff and less water is
12 going to get into the ground and more water is
13 going to run off and run into the streams.

14 So we can look at the soil series and we
15 can take that soil type, whatever it may be, and
16 we can look up in our books that we have to tell
17 us what hydrologic soil group that soil series is
18 in. For this particular property, I talked early
19 on that typically the site was underlain by C
20 soils, which are less permeable. A soils being
21 the most permeable. You'll find them down South
22 Jersey, sandy soils. D soils being the least
23 permeable, which are typically soils found in
24 wetland areas.

25 This site's particularly -- this site is

1 underlain by typically C soils underneath the
2 solar panel areas, and we have a few sections of D
3 soils in the wetland areas on the site.

4 So we rely on those initial books to
5 tell us what our underlying soil series is so that
6 we can start doing our initial analysis to
7 determine stormwater runoff.

8 Once we've determined what that -- once
9 we determine what our runoff is and once we have a
10 concept plan or a layout that we figured out
11 generally where the development is going to go,
12 and then we start looking at where our detention
13 basins are going to go, once we have a general
14 location for those basins based upon our layout,
15 we would typically then go out and do soil testing
16 to determine a number of things.

17 And this was talked about by Mr. Loh in
18 detail, about the different criteria that he's
19 looking at for soils. He's looking at the type of
20 soil, he's looking at depth to groundwater and
21 he's looking at depth to rock in his analysis.
22 And we spent a lot of time talking about mottling
23 and depth to groundwater and all those sorts of
24 items.

25 And we rely upon that information, it's

1 given to us typically in a report of some form,
2 that we would then use to go out and start
3 designing our basins. And, you know, what we're
4 looking at here is what kind of infiltration do we
5 have in the soils that are underlying the basins?
6 Where is groundwater? What is the depth to rock?
7 So that this way we can set our basins at the
8 proper elevations so that we're not impacting
9 certain criteria that's on the property or
10 underlying site.

11 So what I want to do is point out to the
12 Board typically for the four largest basins on the
13 site -- the basin 1, basin 2D, basin 2 and basin
14 3 -- generally some of the design criteria that we
15 follow to design those basins to give you an idea
16 of, after all of the discussion about the numbers
17 and what Mr. Loh calculated and the like, what do
18 they mean in terms of the actual basin design
19 itself?

20 We talked at the last meeting, there was
21 conversation about not seeing any groundwater,
22 high groundwater in any of the pits, but there was
23 talk about seepage in one of them and what does
24 that really mean to the design of the basin and
25 what is its impact? I just want to point that out

1 as I go through the site and we talk about that
2 stuff.

3 So for basin number one, which is the
4 one furthest -- the furthest most western basin on
5 this property. That was the one that I said was
6 an infiltration basin and a detention basin.
7 There was actually a total of 16 test pits done in
8 that basin over the course of GTA/Gladstone
9 testing out in that area.

10 And I believe there was some discussion
11 about seepage that occurred in that basin as well
12 as whether or not there was any actual seasonal
13 high groundwater encountered during Mr. Loh's
14 tests. So I just want to point out that the
15 seepage was around 5 and 1/2 feet or 5.7 feet deep
16 that was found in one of the test pits that
17 Gladstone did. And then when Mr. Loh went out and
18 GTA did their test pits, they didn't encounter any
19 seasonal high groundwater.

20 So basically we would take that
21 information, which we did, and then determine what
22 the bottom of our basin would be. And in this
23 case here, we wanted to ensure that we were well
24 above that seepage that occurred and we made sure
25 we set the bottom of the basin approximately a

1 foot and a half below grade. So the seepage was
2 down at 5 and 1/2 feet and we made sure the bottom
3 of the basin was only a foot and a half deep. So
4 we had at minimum -- at least a minimum of 2 feet
5 separation that was talked about. We actually had
6 have more than that for that particular one.

7 So in this case we were able to design
8 the basin, keep it shallow enough at the surface,
9 build a berm to hold back the water, and not go
10 down 4, 5 or 6 feet with the bottom of the basin
11 and come into contact with that seepage that was
12 occurring there. That may not be indicative of
13 seasonal high groundwater, as Mr. Loh pointed out,
14 he didn't see any effects of that, but at the same
15 time we saw that seepage, we noted it, and we
16 wanted to make sure we were well above it in our
17 design.

18 The same thing goes for the infiltration
19 rates that were done in that basin. I remember,
20 if I recall, there were I think four or five
21 different tests that Mr. Loh said had passing
22 rates of anywhere between 1 inch and 11 inches an
23 hour for that particular detention basin.

24 For the actual design, we take all that
25 information and DEP says whatever your in-field

1 tested rates are, we have to typically use half
2 that rate when doing the design of your basins.
3 So we had four different varying rates out there
4 ranging from 1 inch an hour to 11 inches an hour.
5 So in order to design the basin to be sure it's
6 draining properly and it's meeting the recharge
7 requirements, we took the lowest rate of 1 inch an
8 hour and halved it to .5 inches an hour. And
9 that's the number we actually used in the
10 calculations for designing the basin for recharge
11 purposes.

12 So, you know, again, for that particular
13 basin, we're using the lowest number that's
14 allowed in terms of recharge. Certainly if you
15 can use a higher number, it would allow the basin
16 to drain faster and put more water into the
17 ground. But I think in this particular case,
18 we're using the smallest number to make sure the
19 basin's large enough that it will hold the water
20 and drain within 72 hours.

21 And we're not trying to put a larger, a
22 faster rate into the ground. We use the slowest
23 rate that we have available to us there to design
24 the basin. That means the footprint of the
25 basin's going to be a little larger, but it's

1 going to drain that water slowly back into the
2 ground.

3 Basin number two, which is down in the
4 southern portion of this site, which is a standard
5 detention basin, there's no infiltration taking
6 place in that basin. So we didn't do any
7 infiltration tests in there. We just did -- we
8 just followed the test pits that were done to
9 determine if any groundwater was encountered.
10 And, accordingly, there wasn't any that was
11 encountered in any of the test pits. There was,
12 however, in two of the test pits some minor
13 seepage that occurred down at depths of 6 and 1/2
14 and 7 and 1/2 feet below the sur -- below the
15 existing ground surface.

16 When we designed the basin, we set the
17 bottom of the basin 3 feet below grade. Again,
18 making sure that we're well above the levels of
19 seepage that were found out there. Whether or not
20 that's indicative of seasonal high groundwater,
21 for us it didn't matter here. We wanted to make
22 sure we were well above it anyway. Even though
23 GTA said there was no groundwater there, and we
24 certainly follow those logs when they say that, we
25 still want to make sure we were above anything

1 that was actually found out there.

2 So we had more than enough separation
3 between those seepage levels that occurred in that
4 basin. As I mentioned, there's no infiltration so
5 there's no rates there, so the basin is just
6 designed for holding back water and then letting
7 it discharge slowly out into the existing wetland
8 area.

9 Basin 2D, which is the infiltration
10 basin in the middle of the property, you can see
11 there were eight test pits done by GTA in the
12 middle of that basin to show a couple of things:
13 One, determine the infiltration rates for that
14 basin; and, two, determine the depth to seasonal
15 high groundwater.

16 Based upon their results, they said no
17 seasonal high groundwater was encountered, and
18 they found infiltration rates ranging between --
19 one second -- 1 inch per hour and 7 and 1/2 inches
20 per hour. So we took that information that was
21 provided and, again, we took the lowest rate, the
22 1 inch per hour for the one test, and we basically
23 halved it to .5 inches an hour, and that's the
24 rate that was used to size the basin to ensure
25 that the amount of water that's required for

1 recharge was going back into the ground.

2 So, again, there were some rates that
3 were higher in certain pockets of that basin, but
4 we used the slowest rate that we could use in the
5 design which does affect a larger basin than if we
6 used a faster rate, but that will ensure that the
7 volume of water that's needed for recharge will
8 make its way back into the ground based upon the
9 calculations.

10 This basin itself is only a foot deep
11 and it's designed -- and we weren't looking to --
12 actually it's only a 1-foot cut into the ground.
13 It's actually a little bit deeper when we build
14 the berm, but we're only actually going to cut 1
15 foot of soil and place the sand layer there to
16 construct that basin. So we're not going down, 3,
17 4, 5, 6, 7 feet. We're actually doing it right on
18 the surface to utilize the existing soil that's
19 there that does have an infiltration rate in it to
20 put that water back into the ground.

21 So, again, we could talk about depth to
22 groundwater 4, 5, 6, 7 feet deep if it was
23 encountered. In this case it wasn't encountered,
24 but the basin itself was very close to the
25 surface. And there's no indication based upon the

1 information that GTA's provided that you have
2 groundwater close to the surface on this
3 particular project, or at least in the areas of
4 these basins where the testing was done.

5 The last basin, the last of the large
6 basins, I'll say, is basin number three on the
7 eastern portion of the site. That's just strictly
8 a detention basin. And as you can see from the
9 map, there's five test pits that were done in the
10 general footprint of that basin: One by Birdsall,
11 two by GTA and two by Gladstone.

12 Again, when the test pits were done,
13 seepage was observed in one of those test pits
14 down at 7 and 1/2 feet. So when we designed the
15 basin, we wanted to make sure that we didn't come
16 anywhere near that so the actual maximum cut on
17 the basin was only 2 and 1/2 feet deep.

18 Again, since it's a detention basin,
19 we're only cutting to that bottom level. There's
20 no soil planting bed or any other additional
21 facilities below this. So it's only a 2 and 1/2
22 foot cut at its deepest point to construct that
23 basin. That seepage that was encountered was much
24 lower, was 7 and 1/2. But, again, we wanted to
25 make sure we maintain more than enough separation

1 between any of that -- any of that seepage that
2 was noted on the logs well beyond the 2 feet
3 minimum that's required by the regulations.
4 Again, that's not necessarily indicative of
5 groundwater. It's just seepage that we
6 encountered and we wanted to make sure we were
7 above that.

8 So that's generally what we look at when
9 we design the basins. The other thing is
10 typically rock, to see if rock's encountered.
11 Now, we've talked about weathered shale out here
12 and the impact of that on the project. But,
13 generally speaking, the basins are in the upper 2
14 to 5 feet of soil before we start getting into
15 that weathered shale that starts going deeper. So
16 our goal here was to maintain the basin as shallow
17 to the surface as we could, while at the same time
18 we need to generate some earthwork material to
19 construct the berms on the northern portion of the
20 site.

21 So that gets into the fact that when we
22 did the earthwork analysis, the project was
23 essentially balanced. The dirt that we were
24 taking out of the basins to construct those
25 basins, some of it will be used for the berms.

1 The rest will be used to construct the berm on the
2 northern portion of the project site.

3 So once we've designed the basins and a
4 project is approved, the next thing is you have to
5 actually construct it. And that's where, if
6 certain procedures aren't followed, you can set
7 your basins up for failure right from the
8 beginning of construction, especially when it
9 comes to infiltration basins.

10 If, for example, for the two
11 infiltration basins on the project site, if you
12 were to clear the area of the trees for those
13 basins and then start driving heavy construction
14 equipment back and forth across those basins,
15 before you even construct them, you're going to
16 compact the underlying soils. You may impact the
17 top 2, 3 feet of soil, but that may be enough if
18 your basin's only a foot or two deep to reduce the
19 amount of infiltration that that soil's able to
20 put in terms of water back into the ground.

21 So there are procedures that are
22 outlined on the plans and in the operations of the
23 maintenance manual that was prepared for this
24 project that outlines how these areas are to be
25 protected during construction. So that once those

1 trees are cleared, the areas are fenced off so
2 that this way construction equipment doesn't just
3 keep driving back and forth across those areas to
4 compact those soils. By fencing it off and only
5 going in there to construct the actual basins, at
6 least you reduce the risk of having those soils
7 compacted over the long term versus if you were
8 just to allow equipment to first traverse the site
9 and go back in and build the basins later on. And
10 we're seeing that more and more with the design of
11 the systems, that you have to protect the
12 underlying soils right from the beginning of the
13 project.

14 The other thing you may do is you may
15 not actually construct the infiltration media
16 until the end of the project. And you would do
17 that so that if any sediment, or what sediment
18 runoff enters the basins during construction --
19 which there will be because you'll have exposed
20 soil and inevitably it's going to rain at some
21 point during construction and you're going to get
22 runoff into your basins. They almost act as
23 sediment basins for the first part of the project
24 to collect that sediment before it and not allow
25 it to discharge into the streams.

1 At the end of the job, you go in and
2 remove the sediment, put down your sand filtration
3 system, and then now you're faced with what acts
4 as your infiltration basin going forward. And
5 that's done pretty regularly on projects nowadays
6 for these types of basins. Whether infiltration
7 basins or detention basins that typically happens.

8 But then, once it's constructed and the
9 contractor took the care necessary to go out there
10 and build the basins the right way, they were
11 seeded, stabilized, and the sites completed. You
12 know, everything, all this grass, is grown in on
13 the site. And now it's a matter of what's going
14 to happen in the future? Okay. Do we just walk
15 away from the site and leave it alone and not look
16 at it again and assume that for the next 15 to 20
17 years or longer it's just going to continue to
18 operate as necessary?

19 Well, with these newer systems, that's
20 not necessarily the case. We have to follow a
21 maintenance manual which outlines certain
22 procedures that need to be done over the long term
23 to make sure the basins are going to operate
24 properly. And that's a matter of, you know,
25 looking at the basins and going through them and

1 making sure that they're doing what they need to
2 do. And there's a whole series of -- the
3 operation and maintenance manual that was prepared
4 for this project, there's a series of checklists
5 in there that someone can follow to go out there
6 and inspect the basins. And typically the way
7 it's laid out is you typically want to -- you
8 typically would want to do the inspections,
9 depending on what you're looking at, it can be
10 every month, it can be every other month, it can
11 be quarterly or it can be once a year, depending
12 on what it is you're looking at and what you're
13 looking to inspect.

14 For example, the concrete outlet
15 structures that make up the basin that allow water
16 to flow through, you typically only need to
17 inspect them once a year, just to make sure that
18 there's no cracking or evidence of concrete
19 deterioration on them. But the trash racks that
20 are on those outlet structures that prevent debris
21 or sediment from washing into the piping network,
22 you may want to look at those every couple of
23 months to make sure that they're not clogged up.
24 So inside that manual is a checklist that says
25 when you need to inspect these facilities and if

1 there -- and for you to check off whether or not
2 they're operating properly.

3 Also, two, another key indication of
4 whether or not the basins are functioning properly
5 is when you get a larger storm event -- and the
6 DEP defines this in the manual as a 1-inch storm
7 or greater. A 1-inch rainfall over a 24-hour
8 period or greater, someone should go out to the
9 site and inspect the basins within 72 hours to
10 make sure they're functioning properly.

11 And if you go out there and after 72
12 hours, if they haven't drained, then you might
13 have a problem, because they're all supposed to
14 drain within 72 hours, at which point you need to
15 notify the proper people to go out there and look
16 at them, assess the situation and determine what
17 remediation -- what mitigative action needs to be
18 done to fix the basin to make sure it operates
19 properly in the long term.

20 So maintenance is an important part of
21 the basins. Inspecting them is an important part
22 of the basins to ensure that they are going to
23 operate properly over the long term.

24 I think at this point, Mr. Chairman,
25 I've finished with my direct portion of the

1 testimony if anybody as any questions.

2 CHAIRMAN BOXER: Thank you,
3 Mr. Moschello. I do have one question. Could you
4 just explain to me, in the case of test pits, are
5 test pits drawn to look at specific issues such as
6 a test pit for detention or a test pit for
7 infiltration or can they be used for seepage or
8 are they multiple in use? I'm just trying to
9 understand the context of these pits.

10 THE WITNESS: From our point of view, a
11 test pit that's done out in the field, you try to
12 use it for as much as you possibly can. So if I'm
13 out there digging it with a machine, I want to
14 find out what's in the ground. So I want to take
15 soil samples and I want to see if there's a rate
16 of infiltration associated with it. I want to
17 look in -- I want someone to look in the hole and
18 tell me whether or not they see seepage, whether
19 or not groundwater is present, whether or not
20 mottling is present.

21 So I think the test pit serves multiple
22 purposes for a project. What we ultimately use
23 that information for, it may only be used for one
24 particular component of it, but I think we want to
25 try to get as much information as we can from that

1 one test pit and then decide based upon that
2 information what kind of basin we would put there.

3 CHAIRMAN BOXER: And just one last
4 question. As we look at the total number of test
5 pits in this project, have all of them been used
6 for multiple sort of inspections, multiple
7 purposes, or not really the case?

8 THE WITNESS: Some have and some
9 haven't.

10 CHAIRMAN BOXER: Okay.

11 THE WITNESS: The ones in the basins are
12 certainly used for multiple purposes, as I talked
13 about. Groundwater, infiltration.

14 CHAIRMAN BOXER: Right.

15 THE WITNESS: Some of the other ones
16 throughout the site were done for other purposes.
17 If I recall correctly, some of the testimony for
18 the test pits that were done here in the front
19 field were more to determine what's the depth of,
20 we'll say, rock or weathered shale.

21 CHAIRMAN BOXER: Right.

22 THE WITNESS: Okay. I think some of the
23 other pits that were done around the site,
24 typically probably the Birdsall ones, just to get
25 an understanding of what's really there. So I

1 think that they are all used for different
2 purposes.

3 CHAIRMAN BOXER: All right. Thank you
4 very much.

5 THE WITNESS: You're welcome.

6 CHAIRMAN BOXER: Let me then open it up
7 first to the public.

8 BOARD MEMBER RODELIUS: I have a
9 question.

10 CHAIRMAN BOXER: Okay. All right. You
11 guys have them? You want to go first? That would
12 be easier? All right. So why don't we open up,
13 let the Board ask some questions, then we'll have
14 the public come up and then we'll have Mr. Sasso
15 and Ms. Donato.

16 Nick, go ahead.

17 BOARD MEMBER STRAKHOV: As I recall,
18 there were some test pits that were only 2 foot
19 deep because of the shale and the problem with the
20 excavator and so on.

21 Do you recall if any of them are -- if
22 the ground level is being reduced for them so
23 that, you know, you're not so sure about the
24 2-foot separation?

25 THE WITNESS: I recall the pits

1 you're -- I don't remember which numbers they are
2 on the plan, but there was talk about all
3 different levels of test pits. And then certain
4 ones were only done to a shallow depth because, as
5 Mr. Loh testified to, we were looking for
6 different things at the time.

7 We were trying to determine what
8 hydrologic soil group we were actually in. Was it
9 a C or was it a D? And so the equipment that was
10 out there that was being used and what they were
11 asking to do was only dig to a certain depth. I
12 believe we then went out with larger equipment in
13 those same areas to show that we could dig further
14 down.

15 But there was reasons why certain ones
16 were only to a certain depth and other ones were
17 deeper.

18 BOARD MEMBER STRAKHOV: Okay. So you
19 don't have any of the shallow ones in the -- what
20 do you call them, the infiltration basins?

21 THE WITNESS: There were one or two
22 shallows, but then we went back out in those same
23 basins and dug deeper because we were only testing
24 that upper horizon. There was some question:
25 Well, if you only tested the upper one, what's

1 happening down below? So then we went back out
2 and dug deeper pits and said here's what's
3 happening further down.

4 BOARD MEMBER RODELIUS: I just had a
5 question. The area where you're talking about the
6 cedars in fact has hardwoods and other trees
7 besides just cedars, correct?

8 THE WITNESS: Correct.

9 BOARD MEMBER RODELIUS: All right.

10 THE WITNESS: I should say it was
11 predominantly cedars, but there are stands of
12 hardwood trees through that area.

13 BOARD MEMBER RODELIUS: Right. Has
14 there been a tree inventory done yet, a detailed
15 tree inventory?

16 THE WITNESS: There was, and I
17 believe -- and I'd have to go back and look at
18 that, George. I thought the hardwoods were only
19 in this one stand over here. And I didn't
20 think -- I'd have to go back and look. I didn't
21 think there were any down in the cedar area.
22 There might have been some on the periphery. I
23 know there was a hardwood section down here in the
24 southwest that we're not touching.

25 But I'd have to go back and look at the

1 tree inventory to see if there were any actual
2 hardwoods in here.

3 BOARD MEMBER RODELIUS: I don't think
4 I've seen a detailed tree inventory. Maybe I
5 missed it, but --

6 THE WITNESS: Yeah, I'll have to go back
7 and look. I thought something was done by Gracie
8 & Harrigan and there was a report issued, but I
9 don't have them here in front of me. So I could
10 check that.

11 BOARD MEMBER RODELIUS: Thank you.

12 CHAIRMAN BOXER: Dorn, did you have
13 something? You guys good? Okay. Fair enough.

14 Let me ask the public at this point and
15 then we'll have the attorneys come up after that.

16 Anybody from the public like to come up
17 and question Mr. Moschello?

18 Sure, come on up. Sir, if you could
19 just come on up and introduce yourself and get
20 sworn in. You might have been sworn in already.

21 MR. GRAVEN: Bob Graven, Country Club
22 Road.

23 MR. COLLINS: Mr. Graven, you understand
24 you're still under oath, correct?

25 MR. GRAVEN: Yes.

1 MR. COLLINS: Thank you.

2 MR. GRAVEN: Thank you very much. It's
3 an enormous amount of work, the kind of detail,
4 and it's provided a lot of information for the
5 public and myself as an adjacent landowner and for
6 the Board.

7 And I also have some questions. On
8 Exhibit A-16, could we go to that? Stormwater
9 management area three is identified and drains
10 towards Country Club Road.

11 Area three is the green?

12 THE WITNESS: Yes, it's the green.

13 MR. FERRIERO: Rob, maybe you can pick
14 up the mic.

15 MR. HALL: Mr. Banisch's mic. Perhaps
16 you can share that for the moment, perhaps.

17 MR. COLLINS: That's fine.

18 THE WITNESS: Thank you.

19 MR. GRAVEN: Okay. So the area in the
20 green for basin three mostly all drains toward
21 Country Club Road?

22 THE WITNESS: That is correct.

23 MR. GRAVEN: Okay. Country Club Road on
24 the site is in a flood hazard zone as shown on
25 other drawings, correct?

1 THE WITNESS: A portion of Country Club
2 Road is contained within the floodplain from
3 Chambers Brook and the tributary to Chambers
4 Brook. I don't have it demarcated on this
5 particular plan, but I believe a portion of it is
6 further towards the north.

7 MR. GRAVEN: Yes. And that's an area of
8 concern.

9 Okay. In the report under existing flow
10 conditions -- I need my glasses.

11 In the report under existing flow
12 conditions on page 3, runoff generated from this
13 drainage area flows in an easterly direction or is
14 collected in inlets along Country Club Road and
15 ultimately discharges into Chambers Brook,
16 correct?

17 THE WITNESS: Yes.

18 MR. GRAVEN: An existing on-site public
19 safety hazard is runoff from existing drainage
20 area three. 21.97 acres presently floods Country
21 Club Road by adding to the road drainage before it
22 eventually discharges into the pond, correct? The
23 existing conditions.

24 THE WITNESS: That was contained within
25 my stormwater report?

1 MR. GRAVEN: No, no.

2 THE WITNESS: Oh, okay. I didn't know
3 what report you're referring to.

4 MR. GRAVEN: It drains towards the road
5 under existing conditions and it floods the road
6 before you've done any work.

7 THE WITNESS: The runoff that comes off
8 hits the drainage pattern, hits the inlets in
9 Country Club Road, and then it drains under the
10 road and then into the -- into the --

11 UNIDENTIFIED SPEAKER: Over the road.

12 THE WITNESS: Over the road in some
13 instances depending on how much water is there.

14 MR. GRAVEN: Over the road is the issue
15 because the inlets aren't designed to drain the
16 21.97 acres. They're designed to drain the road,
17 not the property.

18 THE WITNESS: I can't speak to the
19 design of the existing system. That was there in
20 place already.

21 MR. GRAVEN: Right. This is all
22 existing.

23 THE WITNESS: It's all existing. Okay.

24 MR. COLLINS: Do you agree about the
25 number of acres?

1 THE WITNESS: Yes, the number of acres
2 is correct, 21.97 acres.

3 MR. COLLINS: And is that just on your
4 property or is that adjacent property as well?

5 THE WITNESS: That is what is coming off
6 of our property onto -- coming off our property
7 towards Country Club Road, because there's a
8 series of different collection points along the
9 road, but it's all 21.97 acres. It doesn't reach
10 just one point on the road, but it all is going in
11 that direction.

12 MR. GRAVEN: Okay. So it's the area in
13 green as shown on this exhibit.

14 THE WITNESS: That's correct.

15 MR. GRAVEN: Okay. Drainage area three
16 can be divided into three existing on-site
17 sub-drainage areas, one area with proposed
18 stormwater management improvements, C-1; and two
19 drainage areas, one to the south, C-2, and one to
20 the north, C-3, without proposed stormwater
21 management improvements, correct? You could
22 divide that area into three where you've already
23 done the work on the panels.

24 THE WITNESS: Can it be divided into
25 additional sub areas? I'm sure it can. Did I

1 look at it that way? Not in this particular case,
2 no. We looked at it as one drainage area draining
3 towards the road.

4 MR. GRAVEN: Okay. All right. Area C-1
5 includes part of the solar panel field, swales,
6 basins, a gravel driveway and drainage to the east
7 counter to Country Club Road. An overflow swale
8 along the flood hazard limit line and a swale
9 along the gravel driveway that drains into
10 overflow basin C-1 are not proposed. Where the
11 driveway comes down and where the flood hazard
12 line is, there's just one major basin for basin
13 three.

14 THE WITNESS: You can take a drainage
15 area and if you want to break it down into
16 additional sub areas, it's certainly plausible to
17 do that. Our analysis looked at the entire
18 drainage area, what the total flow is to what I'm
19 saying is the Point of Analysis C, which is the
20 property line along Country Club Road, and
21 determined what the rates of runoff are and what
22 we need to reduce that amount for.

23 We did not get into analyzing
24 specifically any one inlet along the road. It's
25 the assumption you're making with the analysis is

1 that the water reaching those points is being
2 piped under the road and eventually into the
3 stream network.

4 I'm not saying there may be conditions
5 out there that under certain storm events you may
6 see flooding in the road. I'm sure that does
7 happen. I've heard comments about that already
8 along sections of Country Club Road. Whether the
9 inlets are clogged or the swales along the road
10 aren't draining properly or you don't have
11 drainage at certain points, that may affect
12 water -- that allows water to pond, say at the
13 intersection, and it doesn't get across the road
14 because there's inadequate drainage there to deal
15 with that.

16 But that's a function of exactly what's
17 happening today. That has nothing to do with the
18 proposed development.

19 MR. GRAVEN: Correct. It is the
20 existing conditions today. And the proposed
21 development, we hope, is going to reduce this by
22 collecting from the area where the panels are and
23 slowing down the drainage. That's the hope.

24 THE WITNESS: I'm going to go to Exhibit
25 A-18.

1 MR. GRAVEN: A-18.

2 THE WITNESS: You're right, the exact
3 hope -- you're saying hope, but the design of the
4 system is to take that area in blue, okay, that is
5 undetained today, flows overland to the road,
6 okay, there's nothing stopping it, putting it in a
7 detention basin and cut back that rate of runoff
8 to now that's a rate that's less than what was
9 going there before.

10 I do want to point out, just to answer
11 the entire question, is I talked earlier on about
12 the rates of flow to different analysis points.
13 The rate of flow to Point of Analysis C under
14 existing conditions, I'm going to just take it for
15 the 2-year storm, was 16.4 cfs. That's under
16 existing conditions. That's what typically flows
17 to that property line today.

18 It may be broken down into different sub
19 areas at different points depending on how it
20 goes. There's two culverts under the road and
21 there's a series of pipes. That's the overall
22 peak rate that goes to that property line. Under
23 the proposed conditions with the basin being in
24 put in place, that flow is now down to 11.8 cfs,
25 so it's reduced by almost a third just by putting

1 the detention basin and constructing the
2 development.

3 We're not changing any other drainage
4 patterns in the areas shown in green, but because
5 of that basin there is a reduction of flow because
6 it's going on. I'm not saying that's going to
7 solve all the drainage problems that may exist
8 along that road, whether maintenance is required
9 for clogging of pipes, or the lack of them, but
10 it's designed to reduce that rate going to that
11 point.

12 MR. GRAVEN: And we all hope that will
13 be the case.

14 If you had an overflow basin below basin
15 number three at the flood hazard line, then a pipe
16 from an overflow basin C-1 under Country Club
17 Road to the pond to reduce the public safety
18 hazard of flooding on Club Road is also not
19 proposed.

20 Now, the flood hazard line isn't
21 delineated on that particular exhibit.

22 THE WITNESS: Since we're talking about
23 it, let me just see if I have an exhibit that
24 shows it. Just so everyone knows what you're
25 referring to as the flood hazard line, I'm going

1 to go all the way back to Exhibit A-5 from
2 November 14, 2013. This is the environmental
3 constraints exhibit that was presented at the
4 beginning of the hearings.

5 And I believe the line that you're
6 talking about here, the flood hazard line that
7 you're referring to on the plan -- and here's
8 Country Club Road -- is this red line that's
9 dashed here on the plan. That's what we're
10 referring to as the flood hazard area line that
11 represents the 100-year-plus limits of the storm
12 or flooding from the stream and the tributary to
13 Chambers Brook.

14 I can say that the lower portion of it
15 was delineated based upon FEMA mapping. I also
16 want to point out that the upper portion of this
17 line that's shown on here in red was based upon
18 the DEP approximate method to determine the depth
19 of flow, which is typically a more conservative
20 approach to determining what the floodplain is for
21 a particular stream.

22 So that line may be a conservative view
23 of where the floodplain actually exists based upon
24 this tributary draining into Chambers Brook. But
25 I just want to point out to the Board that that

1 red line is the flood hazard line that's being
2 referred to in this discussion.

3 MR. FERRIERO: Mr. Chairman, if I could.

4 Rob, give us some more clarity on that.
5 The line that you're showing as the limit of the
6 floodplain, that is a line -- it's not an NJDEP
7 delineated flood hazard line.

8 THE WITNESS: Correct. There's actually
9 two lines on the -- actually, it's one red line,
10 but it's represented by two different analyses.
11 Chambers Brook is delineated under, I believe it
12 is DEP, and I'd have to go back and look, but I
13 believe DEP delineated Chambers Brook a number of
14 years ago.

15 And so Chambers Brook, which runs
16 basically along the municipal boundary line here,
17 comes on to the property where the pond is and
18 goes underneath 287 to the other side. That
19 portion of Chambers Brook is delineated by the
20 DEP.

21 However, there's a tributary that drains
22 into Chambers Brook that actually comes from the
23 middle part of town underneath 78 and 287, goes
24 across, underneath Country Club Road and then
25 joins up with Chambers Brook. That is what we

1 call an undelineated stream. There's no
2 floodplain mapping done by either FEMA or the DEP.

3 So what we typically use, then, to
4 delineate the floodplain on that, if we don't want
5 to do a full engineering analysis, is what they
6 call the approximate method, which is something
7 the DEP has in their flood hazard area
8 regulations, which allows you to, based upon
9 drainage area, determine the depth of flow in a
10 particular stream.

11 And that's a conservative approach
12 because DEP is giving you the ability to take what
13 normally is a series of engineering calculations
14 to determine something and they're saying, well,
15 for any particular given drainage area, say 500
16 acres, the depth of flow is going to be 11 feet.
17 That may not be the case for certain streams. The
18 depth may be less depending on the makeup of the
19 drainage area, the slope of the stream and all
20 those kinds of things.

21 But the DEP is saying if you want to use
22 our method, you're going to use the most
23 conservative number we're going to give you. So
24 you're going to use a number that may not be
25 completely representative of the floodplain, but

1 if you're willing to accept that number, then you
2 can use it for purposes of your plans.

3 So from this portion of the plan up
4 along Country Club Road, that's the number that
5 was used to delineate that red line.

6 The same thing for the red line shown
7 here for the middle portion of the stream that
8 leaves the site over Point of Analysis B. That
9 same red line that's shown on here was also done
10 with the approximate method to determine the
11 floodplain for that particular portion of the
12 stream that's leaving the property.

13 And the reason why it's only this
14 portion of it is the DEP, I believe it was 50
15 acres is their cutoff for determining the drainage
16 area, so anything below 50 acres doesn't get a
17 drainage area and above 50 acres starts with that
18 point of analysis, which is why it looks like the
19 way it looks on here.

20 MR. FERRIERO: That answered the
21 question.

22 THE WITNESS: Thank you.

23 MR. COLLINS: But what you're really
24 saying, though, is that in the 100-year storm
25 event, the flood waters of the Chambers Brook and

1 the tributary will be all the way to the red
2 line onto the property in question across the
3 road?

4 THE WITNESS: I'm actually saying just
5 the opposite of that, that it may not be in this
6 case. That's what DEP wants to --

7 MR. COLLINS: Isn't that line saying
8 that it is?

9 THE WITNESS: The lower portion of it is
10 saying that for Chambers Brook. But this portion,
11 based upon the DEP's numbers, they're saying this
12 is their a conservative line. It could be there,
13 but that may not always be the case for the
14 100-year storm. That's the furthest they would
15 say it would be for the 100-year storm based upon
16 their calculations.

17 MR. COLLINS: But the point I'm making
18 is that it's from the Chambers Brook and from the
19 tributary that you're experiencing that 100-year
20 storm event, right?

21 THE WITNESS: Yes.

22 MR. COLLINS: Then these anecdotal
23 comments of people that the Chambers Brook is
24 flooded are proven by this map, correct?

25 THE WITNESS: Absolutely. There is a

1 floodplain associated with Chambers Brook that
2 does impact Country Club Road.

3 MR. GRAVEN: That's sort of the problem.
4 Okay. The area C-2, going back to this one, which
5 is A...

6 THE WITNESS: A-16.

7 MR. GRAVEN: A-16, right? Area C-2 can
8 be defined as the southeast area from the summit
9 of the house and includes the field that drains
10 towards the proposed sight triangle at the corner
11 of Country Club and Meadow Road. Area C-2 does
12 not have proposed flood road protection swales
13 along Country Club and Meadow Road. It drains
14 into a stormwater basin in the sight triangle.
15 This is not proposed, correct?

16 THE WITNESS: There's nothing proposed
17 for this portion. You're talking about from the
18 farmhouse to the south, to the intersection,
19 there's nothing proposed there.

20 MR. GRAVEN: Nothing proposed.

21 THE WITNESS: Nothing proposed. No
22 panels, no development, nothing.

23 MR. GRAVEN: It stays just the way it
24 is.

25 THE WITNESS: Stays just the way it is,

1 correct.

2 MR. GRAVEN: And continues to flood
3 Country Club Road because it drains on to Country
4 Club Road. That's -- okay.

5 MR. COLLINS: Well, that was sort of a
6 question, but you have to ask a question.

7 MR. GRAVEN: Correct?

8 MR. COLLINS: Does it do that,
9 Mr. Moschello?

10 THE WITNESS: I have not witnessed it
11 flooding Country Club Road. I can only go from
12 what I've been told. But from what we're
13 proposing on the plan, we're not proposing any
14 improvements going towards the intersection of
15 Country Club Road, whether it's storm drainage
16 improvements or solar panels or grading in that
17 area.

18 MR. COLLINS: Okay. But you're
19 proposing the headwall of the discharge of the
20 basin to overland flow just south of the farmhouse
21 and just before the floodplain?

22 THE WITNESS: The headwall is to the
23 northeast of the farmhouse. It's not to the
24 south.

25 MR. COLLINS: Okay. Look at Sheet 11 of

1 31 of your plans. Is that different now? Where's
2 the farmhouse?

3 THE WITNESS: The farmhouse is on the
4 next sheet. This is a switchgear.

5 MR. COLLINS: Oh, that's a switchgear.
6 Okay.

7 THE WITNESS: Mr. Collins is looking up
8 in this area over here on the plan that he has in
9 front of him, and I believe we're talking about
10 the area from the farmhouse to the south, down to
11 the intersection.

12 MR. COLLINS: Except that the point of
13 discharge is north of--

14 THE WITNESS: The point of discharge is
15 north. It's--

16 MR. COLLINS: And the gradients are
17 basically towards Country Club Road to the
18 floodplain, which is what he's talking about.

19 THE WITNESS: Correct, but he was just
20 talking about the intersection down here. The
21 discharge from the basin is to the north of the
22 farmhouse, northeast of the farmhouse, towards
23 Country Club Road, towards the existing wetland
24 complex that's there, and eventually does drain
25 towards the floodplain line of the tributary to

1 Chambers Brook.

2 MR. GRAVEN: Which is why there's three
3 areas, three sub-drainage areas, here.

4 MR. FERRIERO: Well, I just wanted to
5 say those sub-drainage areas, those are determined
6 in Mr. Moschello's report that he designates C-1,
7 C-2, C-3?

8 MR. GRAVEN: No, they are not
9 designated.

10 MR. FERRIERO: Okay. So you're trying
11 to distinguish the areas of this drainage area C
12 by calling it areas one, two and three.

13 MR. GRAVEN: C-1, C-2 and C-3.

14 MR. FERRIERO: Okay. So they're not
15 shown on any maps.

16 MR. GRAVEN: It's not shown on any maps.
17 What is shown is the blue area -- the area that
18 has the detention basin.

19 MR. FERRIERO: Right.

20 MR. GRAVEN: But the areas to the north,
21 C-2, the area to the south, C-2, and the area to
22 the north, C-3, are not shown. This area three
23 has not been divided in this report or in this
24 analysis. It's all lumped.

25 MR. FERRIERO: Right.

1 MR. GRAVEN: Okay. So area C-2, the
2 proposed sight triangle at the corner of Meadow
3 and Country Club, had a pile of snow and ice over
4 6 feet high again this winter, because this is
5 where the road crews plow and pile the snow, which
6 prevents views across the sight triangle.

7 MR. HALL: Are we getting to questions
8 here? I hope you're going to get to a question
9 with that.

10 MR. GRAVEN: Yes.

11 MR. HALL: Okay. Thank you.

12 MR. GRAVEN: The plane from sight
13 triangle basin C-2 under Country Club Road that
14 drains into the pond would reduce the flooding of
15 Country Club Road from on-site drainage in area
16 C-2, correct? At the bottom, right? The sight
17 triangle, which is the low point there which
18 floods on to Country Club Road, there's going to
19 be a basin in the sight triangle that then drains
20 into the pond?

21 THE WITNESS: Hypothetically speaking,
22 there could be anything there. We're not
23 proposing anything because we're not changing the
24 drainage patterns in that portion of the
25 intersection.

1 MR. GRAVEN: So the flooding in the
2 intersection will continue.

3 MR. HALL: I object. I think you're
4 going beyond the scope of what he testified to.
5 He said he didn't observe flooding. He thought
6 maybe it happens.

7 MR. COLLINS: I don't know, it sounds
8 like it's relevant to the proceeding.

9 So, Mr. Graven, try to focus it as a
10 question on the particulars of that property and
11 what you're getting at.

12 MR. GRAVEN: Well, the question is to
13 ask for swales along Country Club Road, along
14 Meadow Road that go to a basin in the sight
15 triangle in order to reduce the existing drainage
16 and flooding of Country Club Road.

17 MR. COLLINS: Okay. Mr. Moschello,
18 could you do that and do you recommend that that
19 be done?

20 THE WITNESS: I think from an
21 engineering perspective, you could look at certain
22 things like that. At this point we haven't
23 studied it, so I can't say on what the exact
24 solution would be to the problem that's out
25 there. But, again, from an engineering

1 perspective maybe something can be done there, but
2 we have not studied it to determine what that
3 solution could be.

4 CHAIRMAN BOXER: And you're not
5 acknowledging that it's a problem, right?

6 THE WITNESS: I'm not saying it's a
7 problem; I'm not saying it isn't a problem.

8 CHAIRMAN BOXER: Okay.

9 THE WITNESS: I'm just saying that
10 from -- all I'm pointing to is from our
11 development, on patterns on the site, we're not
12 changing any of the runoff to that runoff point.

13 CHAIRMAN BOXER: I understand.

14 MR. HALL: So you're saying if it is a
15 problem, you're not changing it.

16 THE WITNESS: Right. If it's a problem,
17 we're not exacerbating the problem. And I'm not
18 saying we're going to make that problem any better
19 to that point because we're not taking away any
20 runoff that's going to that point.

21 MR. GRAVEN: Okay. Area C-3 was the
22 area to the north, is the northeast area that
23 drains to the north toward and includes block 69,
24 lot 4. That's the small area right there.

25 THE WITNESS: (Indicating.)

1 MR. GRAVEN: Right. Block 69, lot 4
2 does not have any proposed stormwater management
3 improvements, correct?

4 THE WITNESS: That's correct.

5 MR. GRAVEN: And it's not a part of the
6 area, of the green area three?

7 THE WITNESS: No, it's not.

8 MR. GRAVEN: Okay. However, significant
9 quantities and rapid flow rates of stormwater
10 collected from parts of I-78, I-287, Pluckemin and
11 the Hills are funneled into a pipe that drains on
12 to and rapidly floods --

13 MR. HALL: I object. He's testifying.
14 I think--

15 MR. GRAVEN: Block 69, lot 4 --

16 MR. COLLINS: Just wait, Mr. Graven.

17 Let him finish reading it, the question.
18 It sounds like it might be a question. Especially
19 Mr. Graven, he has very long questions. So
20 Mr. Hall will then interpose an objection.

21 So try to continue, take your time, and
22 please end with a question or question mark.

23 MR. GRAVEN: Do I need to repeat this?

24 MR. COLLINS: Yes, it might be good to
25 repeat.

1 MR. GRAVEN: Okay.

2 MR. COLLINS: And you might have to
3 stop --

4 MR. HALL: I suggest he ask
5 Mr. Moschello if he has observed that condition.
6 If he hasn't, I don't know where we're going,
7 frankly.

8 MR. COLLINS: Well, it's an appropriate
9 question, but make it a question.

10 MR. GRAVEN: I have "Correct?" at the
11 end.

12 MR. COLLINS: Very good. You may have
13 overcome the objection.

14 MR. GRAVEN: Significant quantities and
15 rapid flow rates of stormwater collected from
16 parts of I-78, I-287, Pluckemin and the Hills are
17 funneled into a pipe that drains on to and rapidly
18 floods block 69, lot 4 and Country Club Road,
19 correct?

20 MR. COLLINS: There is an objection. I
21 think the objection will be overruled and you
22 should answer the question.

23 THE WITNESS: I'm going to go back to
24 Exhibit A-5 just to point out what Mr. Graven is
25 discussing here. This is block 69, lot 4 outlined

1 in yellow here on the northern part of the plan.
2 It is owned by the property owner that owns the
3 main lot. We're not proposing any development on
4 it.

5 And what you can see on here is there's
6 a purple line that's shaded in that goes and stops
7 at Country Club Road and then continues on the
8 other side. That's the stream channel, the
9 unnamed tributary to Chambers Brook. Okay? And
10 there's no disputing the fact that that drainage
11 area picks up runoff from 78, 287, the town and a
12 portion of the Hills. We know that. We outlined
13 that drainage area in our stormwater report.

14 We're not changing anything there.
15 That's what's happening today. It's an existing
16 condition that's coming down that tributary, going
17 underneath the culvert in Country Club Road, maybe
18 it goes over the culvert and Country Club Road,
19 but there's no change to that drainage pattern
20 that's taking place out there. It's an existing
21 drainage area and we're not proposing any
22 improvements to that drainage area.

23 MR. GRAVEN: Mr. Collins, can I go on?

24 MR. COLLINS: Yes, continue.

25 MR. GRAVEN: An extension of this I-78,

1 I-287, Pluckemin and the Hills funnel pipe under
2 Country Club Road should result in less flooding
3 of Country Club Road, less flooding of adjacent
4 Victory Gardens residential area, and improved
5 public safety from flood hazards and was not
6 proposed, correct?

7 MR. COLLINS: Yes, you should answer
8 that.

9 MR. GRAVEN: I think the answer is yes
10 because I think you just said that.

11 THE WITNESS: Well, I'll answer that
12 I've not studied it. I'm not saying adding any
13 additional pipe is going to solve the problem. We
14 have not looked at that drainage area because
15 we're not proposing anything. It's an existing
16 township culvert that's there.

17 MR. HALL: Wouldn't that go under
18 Country Club at two points? I was confused. Do
19 you understand where the extension was?

20 THE WITNESS: Yes, it's actually --
21 well, I only know of the culvert right here.
22 There's another crossing just further to the north
23 and I'm not sure where that pipe -- exactly where
24 it runs underneath the highway, but it comes out
25 and then drains on to Country Club and then ties

1 into Chambers Brook. That's the mapping that we
2 know of, the route--

3 MR. HALL: I just wasn't sure if you
4 understood Mr. Graven's questions, that's all.

5 THE WITNESS: Yeah, I think he was
6 referring to an open pipe here at the crossing.

7 MR. GRAVEN: An extension of the pipe
8 where it comes to the north end of block 69, lot
9 4, where the pipe opens up and the flow expands.
10 If that were kept in a pipe that goes underneath
11 Country Club Road instead of being allowed to
12 expand and go over the road, that would eliminate
13 the existing problem. It's not a part of your
14 proposal, but it's on your property. This is an
15 on-site concern.

16 THE WITNESS: Okay.

17 MR. COLLINS: Do you agree with that
18 statement? This is on your property and it's an
19 on-site concern?

20 THE WITNESS: Part of it is on our
21 property. But, again, I'll go back to the
22 statement that it's an existing condition. We're
23 not changing the flow at that point. And at this
24 point without, you know, studying something, I
25 can't say whether or not adding a pipe there and

1 piping that channel, whether or not it would be
2 even permitted under the DEP regulations in the
3 first place, would alleviate flooding.

4 MR. GRAVEN: The existing -- and a pipe
5 exists. It's how it gets there, right, from a
6 large drainage area including up to the Hills.
7 And that's a township issue and a township problem
8 at that point. And so Point of Analysis C is
9 actually a line of analysis. It's not a point.
10 It's the whole --

11 THE WITNESS: That's correct. Point of
12 Analysis C is --

13 MR. GRAVEN: Is the whole line.

14 THE WITNESS: -- the whole line of water
15 that's going towards the roadway.

16 MR. GRAVEN: And so an analysis that
17 divides it into three pieces would be appropriate,
18 correct?

19 THE WITNESS: I disagree with that. No.
20 I believe the analysis that we've done that shows
21 the flow to that drainage area being reduced is
22 appropriate enough to show that we meet the
23 reduction requirements for the project.

24 MR. GRAVEN: Thank you very much.

25 CHAIRMAN BOXER: Okay. Thank you,

1 Mr. Graven. I think what we should do is take a
2 ten-minute break, give everybody a chance to get
3 caught up here. Why don't we reconvene right
4 around 8:30. Thank you.

5 (Whereupon, a recess is taken.)

6 CHAIRMAN BOXER: Okay. Our court
7 reporter is ready, the machines are fired up, and
8 we are good to go.

9 So, let's see. Mr. Sasso, Ms. Donato, I
10 think we are complete with -- let's see, I think
11 there was one more. Let me check.

12 Yes, come on up. Sorry about that.
13 Yes. Let's see. Sir, why don't you come up,
14 introduce yourself, and we'll get sworn in if you
15 haven't been. And then the gentleman in the back
16 can come up after and then we'll go to the
17 attorneys.

18 MR. HICKEY: I'm Colin Hickey from
19 Bedminster. I've been sworn in previously.

20 MR. COLLINS: Mr. Hickey, you understand
21 you're still under oath, correct?

22 MR. HICKEY: I do.

23 MR. COLLINS: Thank you.

24 MR. HICKEY: Two quick questions. You
25 mentioned the design parameters around basin size,

1 soil type, passage rates to get to, I think, a
2 72-hour-or-less mark for drainage, is that
3 correct?

4 THE WITNESS: Yes. The 72 hours is the
5 time with which a basin needs to completely drain
6 after its peak from a storm event.

7 MR. HICKEY: From a storm event.

8 THE WITNESS: Correct.

9 MR. HICKEY: Are there any issues with
10 standing water in the basin up to 72 or hours, or
11 not?

12 THE WITNESS: No, the 72 hours is so
13 that you don't have the issue for longer time.

14 MR. HICKEY: And what happens if it's
15 longer time? I mean--

16 THE WITNESS: A longer time, you get
17 stagnant water.

18 MR. HICKEY: Right.

19 THE WITNESS: And if that stagnant water
20 remains over a longer period of time, there's a
21 couple of things. It kills any vegetation in the
22 bottom of the basin and it also leads to mosquito
23 breeding.

24 MR. HICKEY: Right, West Nile.

25 THE WITNESS: And that's why the basins

1 need to drain in 72 hours.

2 MR. HICKEY: What do you do if it
3 doesn't drain in 72 hours? Is there a gate you
4 can pull or a plug you can pull or is there
5 something else that could be done to remedy --

6 THE WITNESS: Yes. The basins that we
7 have designed here have an emergency plate at the
8 bottom of them that would allow us to remove the
9 plate and drain the basin if it doesn't drain, and
10 then we could do whatever remediative action we
11 could do in the basin and then repair it.

12 MR. HICKEY: Thank you.

13 And you mentioned that the basins have
14 to be both designed correctly and constructed
15 correctly.

16 THE WITNESS: That's correct.

17 MR. HICKEY: In the real world, what is
18 the efficacy rate of these kind of designs?
19 Meaning do they work nine times out of ten? Nine
20 times out of 100? I mean, not the theoretic, I
21 mean the actual.

22 THE WITNESS: I mean, if the procedures
23 are followed properly -- and every contractor's
24 different.

25 MR. HICKEY: Right.

1 THE WITNESS: If the contractor does the
2 job the right way, it's inspected properly by the
3 design engineer and by the township during
4 construction, then the basin is going to function
5 as it should.

6 MR. HICKEY: But in your professional
7 experience, in the real world what happens? How
8 often does that happen? Does it happen more often
9 than less? Is it 90 percent?

10 THE WITNESS: I'm not going to say
11 anybody's perfect, but I can say that the jobs
12 that we construct and we design and we go to
13 construction, ones that we oversee, we try to
14 ensure that they operate properly. By the time
15 we're ready to sign off on those plans with an
16 as-built to the regulatory authority, that that
17 basin is functioning properly before we do that on
18 the projects that we work on. I can't speak for
19 other projects. I can only focus on the ones we
20 design.

21 MR. HICKEY: Is there any published
22 information as to failure rates or time to fail or
23 anything like that?

24 THE WITNESS: If there is, I haven't
25 seen them. I haven't gone to that level of detail

1 to research that.

2 MR. HICKEY: In your experience, how
3 long do they work for? Is it a year? five years?
4 Ten years? Because you've seen all kinds of
5 designs, I'm sure.

6 THE WITNESS: We have. I can say that,
7 you know, certain -- it's a function of
8 construction. It's a function of site -- what
9 drains to those basins. But if they're maintained
10 properly, they will work for the life of the
11 basin. If they're not maintained properly,
12 they're going to fail sooner.

13 And some you may never touch them and
14 they may work and you not do anything to them.
15 It's just like a car. You know, if you maintain
16 your cars, they run for a long period of time.
17 You may get the one where you never have to do
18 anything to it and it's going to run. But if
19 they're maintained, they're going to function as
20 they should.

21 MR. HICKEY: It sounds like putting the
22 money into the inspections, maintenance, et
23 cetera --

24 THE WITNESS: It's part of the process,
25 yes.

1 MR. HICKEY: Okay. Thank you.

2 THE WITNESS: You're welcome.

3 CHAIRMAN BOXER: Thank you, Mr. Hickey.

4 Sir -- or, ma'am, come on up. I'm
5 sorry. Was there somebody in the back as well? I
6 just want to make sure I get everybody. Okay.
7 Thank you.

8 MS. DATA-SAMTAK: Susan Data-Samtak,
9 Somerset Terrace.

10 MR. COLLINS: Susan, were you previously
11 sworn?

12 MS. DATA-SAMTAK: Yes.

13 MR. COLLINS: You understand you're
14 still under oath?

15 MS. DATA-SAMTAK: Yes. Last name is
16 Data-Samtak, D-a-t-a - S-a-m-t-a-k.

17 CHAIRMAN BOXER: Ma'am, if you could
18 just speak into the mic a little bit if you can,
19 that would be great. If you have to pick it up,
20 that's okay too.

21 MS. DATA-SAMTAK: When you were here in
22 October, I had asked you if you had seen the site
23 personally and you said no. Have you been there
24 since then?

25 THE WITNESS: If I said no, I apologize,

1 because I've been out to the site numerous times
2 even before October. So if that was an answer, I
3 don't remember saying that. I've been out to the
4 site over the last two years. I've been there
5 numerous times.

6 MS. DATA-SAMTAK: Okay. And then you
7 said that the water pools at the intersection of
8 Country Club and Meadow Road, that corner?

9 THE WITNESS: I didn't say -- I didn't
10 say the water pooled there. I believe there was
11 residents-- not residents, people from the public
12 who have gotten up and asked questions relating to
13 ponding water that happens at the intersection
14 there. I have not myself personally seen
15 ponding water there, but I'm being told through
16 questions that there's some form of ponding water
17 taking place at that intersection.

18 MS. DATA-SAMTAK: Okay. In October I
19 asked you about the drainage, because you said off
20 the driveway the drainage goes toward that corner,
21 that southeast corner.

22 THE WITNESS: Off the existing driveway?

23 MS. DATA-SAMTAK: Yes.

24 THE WITNESS: Yes, it does.

25 MS. DATA-SAMTAK: It doesn't.

1 THE WITNESS: Okay.

2 MS. DATA-SAMTAK: And maybe that's why
3 when I asked you had you been there to see, maybe,
4 the water and the actual drainage. The actual
5 drainage goes downhill from that driveway and it
6 continues to, what has been discussed before,
7 about the flooding and the high water.

8 THE WITNESS: I'm looking at the
9 topography on the map here and the driveway is
10 almost at the high point. So, again, I've been
11 out to the site and maybe -- the area is pretty
12 flat there. So if there's a little pitch in
13 either direction, it's going to go one way or the
14 other. So, again, but the driveway is close to
15 the high point so it could go -- it will go
16 whichever way the topo's pointing. But looking at
17 the plan, it's at the high point so it could be
18 split in both directions.

19 MS. DATA-SAMTAK: It's a little below
20 the high point on the north side and so it drains
21 to the north.

22 THE WITNESS: And I will point out, like
23 I did to the previous person, that we're not
24 changing the runoff patterns there. So whatever's
25 coming off the driveway, and if it's going to the

1 north like you're saying it is, whatever goes to
2 the south, it's going to continue to do the same
3 thing today.

4 MS. DATA-SAMTAK: Okay. Thank you.

5 CHAIRMAN BOXER: All right. Sir come on
6 up.

7 MR. YINGLING: Jeff Yingling, Country
8 Club Road.

9 MR. COLLINS: Jeff, you understand your
10 still under oath, correct?

11 MR. YINGLING: Yes. Mr. Moschello, can
12 you give a brief detail on the actual size and
13 dimensions, cubic foot? Yeah, cubic foot of the
14 individual basins. Do they slope? Are they --
15 are there drop-offs? Do they have concrete
16 channels at the bottom? How large are the
17 openings for the drains?

18 THE WITNESS: Every basin is different.
19 It varies depending on the designs that we have.
20 Typically there's orifices and weirs associated
21 with each basin. I could basically tell you,
22 without going through the entire detail of the
23 stormwater report, I can give you just generally
24 the different basins. For example, basin number
25 one, which is the basin to the -- all the way over

1 to the west, the top of the basin is 39,600 square
2 feet. That's the top area of the basin. Okay?
3 And I can tell you that that basin has, for
4 example -- I have it written down here. It has a
5 3-foot weir on it that controls the runoff from
6 that basin, and that allows runoff to flow into
7 the outlet structure, okay, for that particular
8 basin.

9 Again, each basin has different details
10 associated with it. Do you want me to go through
11 each one? If you want me to, I can certainly do
12 that.

13 MR. YINGLING: If you don't mind.

14 THE WITNESS: Sure.

15 MR. YINGLING: Can you explain to the
16 public, also, what a weir is?

17 THE WITNESS: So we'll start with basin
18 number one. As I said, the top area of the basin
19 is 39,683 square feet. It has an outlet structure
20 associated with it that controls the runoff from
21 the pond. The bottom of the basin -- I'll give
22 you some elevations. The bottom of the elevation
23 is at elevation 118 and a half. And the top of
24 the -- the top of the berm -- I don't know if I
25 have it written down here -- is at 124 and 1/2.

1 So that basin is 6 foot deep and it has a 3-foot
2 weir. Basically what that is, is in the outlet
3 structure that controls the runoff leaving the
4 basin. It's a concrete weir. It's 3 feet wide
5 and it has a certain height to it and it's set at
6 a particular elevation that allows the water to
7 flow over it into the outlet structure into a pipe
8 that discharges.

9 MR. YINGLING: So essentially like a
10 drain box?

11 THE WITNESS: Basically that's exactly
12 what it is.

13 MR. YINGLING: It has a grate across the
14 stop?

15 THE WITNESS: Yes, it has a grate. It
16 has a flat top with an open grate, so that once
17 the water gets to a certain elevation, it may flow
18 over that grate as well. The basin was designed
19 that way. So that's basin number one. There's
20 no orifice on the bottom of that basin for flow
21 because it's an infiltration basin. So we want to
22 impound a certain amount of water in that basin
23 that will allow it to infiltrate into the ground.

24 So normally you might see an orifice or
25 something way at the bottom. For this particular

1 basin, there isn't one. It's an emergency plate
2 for drainage purposes, where draining was an
3 issue. But otherwise than that, the first control
4 is set up higher so that this way the water can
5 impound and infiltrate into the ground. That's
6 basin number one.

7 Basin number two, which is the basin on
8 the southern portion of the site, closest to where
9 the tributary meets the site. I'll give you some
10 of the information on that basin. The bottom of
11 the basin is at elevation 119 and 1/2. The top of
12 the berm on that basin is at elevation 125 and
13 1/2. Okay?

14 The top of the basin area, which is the
15 outline of the basin area, that's not necessarily
16 the limit of water, but that's just the top of the
17 basin, the largest point of the basin, is 74,000
18 square feet in size. And that basin has two
19 controls on it: A 3-inch orifice down at the
20 bottom -- that's at the very bottom. That's at
21 elevation 119 and 1/2, which is the bottom of the
22 basin. Okay? And then coming up from there it
23 has a 7-foot-long weir at elevation 123.

24 So those two controls are designed to
25 allow a certain amount of water to drain out of

1 that basin at varying rates to control the amount
2 of runoff leaving that basin.

3 There's no concrete low-flow channel in
4 that basin. Basin number one has a sand bottom,
5 so there's no structure in the bottom of that
6 basin when it's a concrete channel. None of the
7 basins actually on the site have concrete
8 channels. You might see them in certain basins
9 that were constructed over the years. We've
10 gotten away from that. Now we're going to more
11 natural bottoms to allow for infiltration and
12 other types of treatment. But there's no concrete
13 low-flow channels in any of these basins.

14 Basin number three, which is the one
15 closest to Country Club Road, okay, that's a
16 detention basin. And the bottom of that basin is
17 145 and 1/2, the top of the basin is at 149, and
18 the area of that basin is 35,893 square feet, the
19 top area of the basin.

20 MR. COLLINS: How many?

21 THE WITNESS: 35,893 square feet.

22 MR. COLLINS: Thank you.

23 THE WITNESS: There's a -- that basin
24 only has a 6-inch orifice that's at the bottom of
25 the basin at elevation 145 and 1/2. And, again,

1 there's no concrete outlet structure in that
2 basin.

3 MR. FERRIERO: You mean concrete
4 low-flow--

5 THE WITNESS: Concrete low-flow channel,
6 I'm sorry.

7 And then infiltration basin 2D, which is
8 in the middle portion of the site, that has a
9 bottom elevation of 130; has a top of the basin at
10 132 and 1/2. The area for the top of that basin
11 is 38,768 square feet. That's the top area.
12 Again, that's not necessarily indicative of the
13 limit of the water. That's just the top area of
14 the basin.

15 And that has actually a grass spillway
16 that's 30 feet long at elevation 131.9 because
17 that's an infiltration basin. So, again, we want
18 to capture a certain amount of water and
19 infiltrate it into the ground. So there's no low
20 orifice in that one, so it fills up with a certain
21 amount of water and spills over the grass weir
22 into a pipe network that eventually drains down to
23 basin number two.

24 MR. YINGLING: Okay.

25 THE WITNESS: There's three small water

1 quality basins and I'll go through each -- I'm
2 sorry. Yeah, three small water quality basins.
3 I'll go through each of those.

4 Water quality basin 2A, the bottom of
5 that basin is at elevation 142.75, the top of that
6 basin is at elevation 145, and the area of that
7 basin is only 4,312 square feet. That has a
8 3-inch orifice at elevation 143. Again, that's
9 just slightly above the bottom of the basin. And
10 the reason for that is that's a water quality
11 basin with a soil medium that the water is going
12 to infiltrate through to treat the runoff water
13 quality. So we only need 3 inches between the
14 first control and bottom of that basin so that
15 water can seep in. And then there's also a 3-foot
16 weir on that basin at 143.64.

17 Then we have water quality basin 2B,
18 which there's 2B and 2C, which are the small
19 basins along the access drive. Basin 2B has a
20 bottom elevation of 154, a top elevation of 156,
21 and the top basin area is only 871 square feet.
22 And it has just a 15-foot grass spillway at 154.75
23 as an emergency spillway on that. There's
24 actually no control on that outlet structure. The
25 water is all designed to -- the water quality is

1 designed to go through the soil and the rest just
2 overflows.

3 And then basin 2C, which is also another
4 water quality basin, the bottom's at elevation
5 152, the top's at elevation 154, and the bottom
6 basin -- the top basin area is 2,788 square feet.
7 And that also has just a 10-foot grass spillway at
8 152.6.

9 Those are the seven basins on the site
10 and the controls that are associated with them.

11 MR. YINGLING: Okay. If the maintenance
12 plan that you indicated has an annual or every few
13 months' inspection point and the orifice is
14 clogged before then, what does the water do?

15 THE WITNESS: If the orifice were to
16 become clogged, then, again, there's a trash rack
17 in front of the orifice so that the orifice itself
18 shouldn't become clogged. That's why we have a
19 minimum size. Typically, 3 inches was the size
20 chosen to ensure that at least it doesn't become
21 clogged. But by degree -- if you make it smaller,
22 it has a much greater chance of clogging up.
23 There's usually -- there's a trash rack in front
24 of that orifice. That usually prevents larger
25 debris -- and the trash rack space is typically an

1 inch or two. So that something large like, let's
2 say, a tennis ball or something, a rock for that
3 matter, wouldn't get washed up against that
4 orifice to clog it.

5 So the trash rack's supposed to stop
6 that from happening. But let's just say, for
7 example, for whatever reason it doesn't and
8 something does get up against that orifice and
9 clogs it. Okay? The basin has -- most of the
10 basins have another level of control, some of them
11 have levers that will allow the water to flow over
12 that. Okay?

13 And then all the basins have outlet
14 structures. On the top of them there's an
15 opening, sort of as part of an emergency spillway
16 system. So some of that water will actually go
17 into the top of the outlet structure and it will
18 be controlled there. And then there's also a
19 grass emergency spillway on the basin that if
20 everything were to be clogged up for whatever
21 reason, you still have the ability for water to
22 safely flow over the emergency spillway and
23 discharge out. The basin would have to completely
24 fill up first in order for that to take place.

25 MR. YINGLING: Okay. And will the

1 bottoms be grass or planted in some way?

2 THE WITNESS: There's different
3 material -- different materials for the bottom.
4 Some are sand with a grass mix worked into that.
5 Some are a soil planting bed with a specific seed
6 mix in there, as well. And it's detailed out on
7 the landscaping plans, but there's going to be no
8 concrete in the bottom of the basins.

9 MR. YINGLING: Okay. And, lastly,
10 touching on what Mr. Graven brought up initially,
11 in the green area where there's no disturbance
12 proposed, there's a preexisting condition on the
13 site where runoff flows on to Country Club. Some
14 areas it actually floods the roadway where the
15 road is actually covered with runoff.

16 You've mentioned in previous testimony
17 that there's an existing drainage ditch along the
18 side of the road and it's only what Mother Nature
19 herself has carved in. There's no drainage plan
20 outside of the spillways, the catch basins if you
21 will. And something should be addressed on there,
22 whether it's channels or another basin to lessen
23 the amount of runoff.

24 THE WITNESS: Again, it's an existing
25 condition, the road is a township-owned road, and

1 we're not increasing the runoff into that portion
2 of it.

3 MR. YINGLING: But being it's part of
4 the entire overall site, it's something that the
5 applicant should be responsible for.

6 THE WITNESS: Well, again, I'll go back
7 to it. We're not increasing the runoff to those
8 points. It's in the township right-of-way, those
9 drainage inlets and those culverts that cross the
10 road.

11 MR. YINGLING: Right, but the other
12 acreage that's off that area is not--

13 THE WITNESS: The other acreage that's
14 in green is on our property and we're not
15 increasing the runoff beyond the limits of our
16 property. That's why we have the basin, to reduce
17 the flow.

18 MR. YINGLING: Right, but as a
19 preexisting condition, it would be something that
20 the applicant would be responsible for.

21 MR. HALL: Is that a legal opinion?
22 Because I think--

23 MR. YINGLING: I'm questioning.

24 THE WITNESS: I would disagree with you
25 on that. It's an existing runoff condition that's

1 coming from the site. If nothing is developed
2 here, it's going to continue to act as it is
3 anyway. Forget if development never took place.
4 It's an existing condition of runoff coming off of
5 a grass area, a field, existing woods down over
6 here. That's going to continue to do that today
7 if nothing gets developed.

8 MR. YINGLING: That's all. Thank you.

9 CHAIRMAN BOXER: Thank you, sir. Let's
10 see. There were a couple in the back. If I could
11 just ask -- sir, come on up. And then I know
12 there's one more after you. So we'll make sure we
13 do that.

14 MR. BOLASH: Thank you. Jeff Bolash,
15 150 Somerset Terrace, Bedminster. I was sworn in
16 some months ago.

17 MR. COLLINS: Mr. Bolash, you understand
18 you're still under oath?

19 MR. BOLASH: Yes, thanks.

20 THE WITNESS: Thank you. Go ahead.

21 MR. BOLASH: Who verified the findings
22 of your test holes?

23 THE WITNESS: Who verified the findings
24 of the test holes?

25 MR. BOLASH: Yes, the ones that seeped,

1 the ones that didn't seep, what was permeable,
2 what was not.

3 THE WITNESS: The different companies
4 that did the test holes produced the test pits and
5 the summary reports for them.

6 MR. BOLASH: So no outside organization
7 verified that this hole was good, this hole's bad?

8 THE WITNESS: To my knowledge, nobody
9 else inspected them besides the people that did
10 the test pits.

11 MR. BOLASH: And just a question about
12 the water infiltration. Water runs downhill, of
13 course. And at the very top, where the level is,
14 it starts to slope towards Country Club Road and
15 then it starts to slope towards the gully in the
16 back.

17 That's where the detention basins are
18 going to go, on the lower ends?

19 THE WITNESS: I'm not following what
20 you're referring to. You're saying on Country
21 Club Road?

22 MR. BOLASH: No, no. Well, not on that
23 part. Around Country Club Road towards that
24 culvert.

25 THE WITNESS: Towards this culvert over

1 here?

2 MR. BOLASH: Right, right.

3 THE WITNESS: I just want to make sure
4 I'm pointing to the right--

5 MR. BOLASH: Well, the detention basins
6 are going to be on the lower part of the property,
7 correct?

8 THE WITNESS: Yes. Here's detention
9 basin number three, which is the closest one to
10 Country Club Road.

11 MR. BOLASH: Right. Okay, but in the
12 back, on the other side.

13 THE WITNESS: On the western side?

14 MR. BOLASH: Right.

15 THE WITNESS: Yes, okay. Yes, basin
16 number one and basin number two.

17 MR. BOLASH: And you're talking about
18 water infiltration to reintroduce the water back
19 into the ground.

20 THE WITNESS: Correct.

21 MR. BOLASH: How do you do that on the
22 upper part? Do you somehow pump it up? So it
23 sounds like you're reintroducing the water into
24 where it's already wet, where the water is the
25 greatest anyway.

1 THE WITNESS: I understand what you're
2 saying. So you're saying, pick, for example, this
3 particular detention area right here, detention
4 area number one. Okay? Which is a 596-acre
5 drainage area. Okay? We're putting solar panels
6 in that area with ballast blocks that's going on
7 the ground. And those ballast blocks are going to
8 ultimately prevent water from infiltrating into
9 that portion of the ground.

10 So we can't just recharge right in front
11 of each one of those ballast blocks. So what
12 we've done is we've put a basin in generally close
13 proximity to that drainage area that's going to
14 have an amount of recharge to take what's lost in
15 that area and put it back into the ground and
16 recharge it.

17 Ultimately, again, I can't speak for
18 what's going to happen once it all goes into the
19 ground, but, again, the idea is to put it there.
20 Those soils can infiltrate at a certain rate and
21 then allow it to disperse.

22 MR. BOLASH: Well, if you clear-cut the
23 trees and the shrubs, all the grassland there,
24 won't that increase the runoff to the lower part
25 of the property to the point of erosion?

1 THE WITNESS: Well, as I stated in my
2 previous testimony, yes, if you go out there and
3 you change the runoff characteristics of the
4 property, you take what is essentially cedars,
5 which is only what's here, cut them down, go back
6 in and put lawn in place -- let's just say lawn.

7 MR. BOLASH: Right.

8 THE WITNESS: You're going to increase
9 the rate of runoff. The calculations account for
10 that increase. The current numbers that I used
11 determine how much water comes off of that
12 particular portion of land, accounts for that
13 increase. There's been studies done to come up
14 with those numbers and they say if you do this,
15 this is the increase in runoff. And then you need
16 to take that increase and cut it back.

17 MR. BOLASH: Pardon me for smiling, but,
18 you know, studies have done this. Studies have
19 shown this. Studies have shown the opposite of
20 this study.

21 THE WITNESS: Well, I understand. I say
22 studies. Published calculations that are accepted
23 in the engineering community that say what you
24 need to do as a design engineer to effectuate the
25 mitigation of runoff from a site. These are

1 accepted practices.

2 MR. BOLASH: Right, I understand. You
3 agree that this is an extraordinarily wet area?

4 THE WITNESS: I wouldn't say the whole
5 site's extraordinarily wet. I'd say where the
6 wetlands are.

7 MR. BOLASH: I live right next to it.
8 Walking in the field last year, I actually saw
9 water bubbling up out of the ground. It was not
10 runoff. Did you see that one? Did you see that
11 there?

12 THE WITNESS: I didn't see water
13 bubbling up out of the ground.

14 MR. BOLASH: It was coming out of the
15 ground and it was at the very highest part of the
16 property.

17 THE WITNESS: I did not witness that.

18 MR. BOLASH: I'm just telling you I saw
19 it. I'll show it where it is.

20 And my last question, thank you very
21 much, if these solar panels were put over a
22 parking lot, how many trees would you have to cut
23 down in here?

24 THE WITNESS: If this was built in a
25 different location? Depends on the location.

1 Again, I can't answer that question. We didn't
2 look at that.

3 MR. BOLASH: Well, how many trees would
4 you have to remove here if these solar panels were
5 built over the parking?

6 CHAIRMAN BOXER: I'm not understanding
7 the question.

8 MR. BOLASH: It's, like, a sarcastic
9 question.

10 MR. HALL: I assume if we didn't develop
11 the property, will it change?

12 MR. BOLASH: Thank you very much.

13 CHAIRMAN BOXER: I appreciate you saying
14 that rather than me...

15 All right. Sir, come on up.

16 MR. METZ: Tom Metz, 104 Preston
17 Terrace. I believe I was sworn in about three
18 months ago.

19 MR. COLLINS: Thank you, Mr. Metz. Do
20 you understand you're still under oath?

21 MR. METZ: Yes.

22 MR. COLLINS: And would you spell your
23 last name, please.

24 MR. METZ: M-e-t-z.

25 MR. COLLINS: Thank you.

1 MR. METZ: How many soil core samples
2 have been taken and submitted in your presentation
3 to the council and the town engineer?

4 THE WITNESS: Well, I wouldn't say we
5 took core samples. We did test pits.

6 MR. METZ: Pardon?

7 THE WITNESS: We did test pits. We went
8 out there with a backhoe and dug a hole in the
9 ground to a certain depth. And then we took --
10 and some had samples taken that were certain
11 studied back in certain offices, but the results
12 of those test pits were all submitted to the
13 township.

14 MR. METZ: In my notes I've got down
15 that you took -- you submitted 25 of those test
16 areas?

17 THE WITNESS: No, I believe there were
18 125 test pits done.

19 MR. METZ: 125?

20 THE WITNESS: If I go back to Exhibit
21 A-24, all those colored markings on the plan
22 represent the test pits that were performed on the
23 property by three different engineering firms.

24 MR. METZ: All right. You just answered
25 my next question. You did provide a map,

1 pinpointed where each one of the samples were
2 taken?

3 THE WITNESS: Yes.

4 MR. METZ: And then you submitted that.
5 In other words, the correlation of the sample with
6 the location was given?

7 THE WITNESS: That is correct. It was
8 given to the township.

9 MR. METZ: Okay. That's what I wanted
10 to know. Thank you.

11 THE WITNESS: You're welcome.

12 CHAIRMAN BOXER: Thank you, Mr. Metz.

13 Anybody else? Let's make sure we have
14 everybody.

15 Okay. Mr. Rodelius, do you have a
16 question?

17 BOARD MEMBER RODELIUS: I have one
18 question just because I don't understand it. Can
19 you put up the picture with the dotted lines
20 outlining the area of disturbance that you used,
21 that amount of acreage to calculate the
22 mitigation? Yeah, that one.

23 Where are the berms on there and why
24 aren't they used in that calculation?

25 THE WITNESS: The berm?

1 BOARD MEMBER RODELIUS: Berms, yes.

2 THE WITNESS: The landscaping berm
3 that's used for screening? That's the ones we're
4 talking about here?

5 BOARD MEMBER RODELIUS: Okay, sure, you
6 could call it that.

7 THE WITNESS: Okay. There's only one on
8 the project and that's along the northern property
9 line.

10 BOARD MEMBER RODELIUS: Okay. So then
11 all -- there's no other berms on the property? No
12 other soil disturbance along Country Club or
13 Meadow?

14 THE WITNESS: Only in the areas
15 highlighted and colored in on this plan is the
16 disturbance for the project.

17 BOARD MEMBER RODELIUS: Okay. So then
18 at one time all those berms that were talked about
19 down there --

20 THE WITNESS: All the berms that were
21 talked about at the intersection of Meadow and
22 Country Club Road with the solar panels in this
23 front field, those are all off the plans.

24 BOARD MEMBER RODELIUS: It's all gone.
25 Okay. Thank you.

1 THE WITNESS: You're welcome.

2 CHAIRMAN BOXER: Okay. Thank you very
3 much, everybody.

4 Ma'am, come on up.

5 MS. SMITH: I only have one question.

6 CHAIRMAN BOXER: We still need you to
7 introduce yourself.

8 MS. SMITH: All right. Michele Smith,
9 927 Washington Valley Road, Basking Ridge. I just
10 have one question --

11 MR. COLLINS: I'm sorry, Ms. Smith. You
12 understand you're still under oath?

13 MS. SMITH: Oh, yes, sir.

14 MR. COLLINS: Thank you.

15 MS. SMITH: Seriously, one question.
16 We've had a horrendous winter. I know in -- we've
17 had a lot of rain, a lot of snow, a lot of
18 freezing, a lot of thawing, a lot of refreezing.

19 What happens when it's not going to be
20 able to have any runoff because of Mother
21 Nature?

22 THE WITNESS: I'm not sure I understand
23 what you mean by "no runoff."

24 MS. SMITH: Okay. You're saying that
25 the retention -- going back into the ground, you

1 know, through the basins.

2 THE WITNESS: Yes.

3 MS. SMITH: That's what I'm talking
4 about. I'm not an engineer. Sorry.

5 THE WITNESS: To try to understand what
6 you're saying, if the ground's frozen, the snow is
7 frozen on top, then there's no infiltration taking
8 place. It's frozen. It's the middle of winter.
9 You don't have any runoff taking place.

10 When springtime comes, things thaw out
11 and it will continue to recharge again. It's just
12 the cycle of freeze/thaw that's occurring on the
13 property.

14 MS. SMITH: Okay. I understand that.
15 But how -- you were talking 72 hours that it would
16 normally take. So even after it thaws, it's going
17 to be more. Is that going to have an impact and
18 more flooding?

19 THE WITNESS: Again, I'm trying to
20 understand that in terms of the context of
21 detention basins. They're designed to hold water
22 for a certain period of time. However, if snow is
23 melting, it's melting and it's all melting with
24 the water that's flowing through. So it's going
25 to continue -- it's going to begin to infiltrate

1 and do all the things that it's going to do when
2 the weather warms up.

3 The exact point at which that happens, I
4 can't say that. But, again, as things melt, it's
5 going to start operating again way it's supposed
6 to infiltrate. Just like snow melts on your
7 property and the grass is going -- as soon as it
8 starts melting, it will start going into the
9 ground when it starts thawing out.

10 MS. SMITH: Okay. I didn't know if it
11 would be like the brook on my property, that
12 freezes and then I get my whole cellar flooded.
13 So that's what I was thinking.

14 THE WITNESS: I can't relate that to
15 your property, I'm sorry.

16 MS. SMITH: No, I know. No problem.
17 Thank you.

18 CHAIRMAN BOXER: Thank you, ma'am.

19 Okay. Let's make sure we got everybody.
20 Okay. Great.

21 Okay. Mr. Sasso, Ms. Donato, whoever's
22 up first.

23 MR. SASSO: I'll go first. Thank you,
24 Mr. Chairman.

25 CROSS-EXAMINATION

1 BY MR. SASSO:

2 Q. Mr. Moschello, I feel it's déjà vu, but
3 it's not déjà vu, right? This is round two on
4 stormwater management, right?

5 A. It may be round three.

6 Q. Okay. I'm almost 60, so I'm just -- I'm
7 wondering.

8 But you told us -- and you did a nice
9 job of outlining what your testimony was going to
10 be tonight. You said, one, we're going to talk
11 about an overview of the stormwater management
12 system; two, we're going to talk about how the
13 design of the stormwater management system relates
14 to the testing; and then the last part was
15 maintenance, right?

16 So I'm not going to ask you about the
17 first; I'm not going to ask you anything about the
18 last. Let's talk about the testing.

19 When was Gladstone originally retained?
20 Approximately.

21 A. Just give me one second. I'll give you
22 a general date of that.

23 Q. Well, how about this? Would it help if
24 you have -- do you have your original plans here
25 that you submitted?

1 A. Just one second. I have them.

2 Q. Sure.

3 A. Our original plans were dated May of
4 2013.

5 Q. Okay.

6 A. And we started working on the project a
7 few months before that. I can't remember the
8 exact date, but it was generally around 2013.

9 Q. I don't want the exact date. I don't
10 need that.

11 So in May of 2013, you drew up a
12 stormwater management plan and submitted it to the
13 township?

14 A. That is correct.

15 Q. Okay. In terms of the test pits that
16 Gladstone did, this is post-Birdsall -- we
17 understand why no more Birdsall, right? Then you
18 get hired and you do a series of test pits
19 yourselves, correct?

20 A. That is correct.

21 Q. Okay. Can you put up for us the Exhibit
22 A-24 that you showed everyone tonight?

23 Do you remember when it was that
24 Gladstone Design dug the test pits?

25 A. We did our first set of test pits, I

1 believe it was in July of 2013.

2 Q. Okay. And your plans were submitted
3 when with the stormwater management?

4 A. It was in May of 2013.

5 Q. Okay. And what tests had you done as of
6 that point in time to justify the filing of a
7 stormwater management plan when you told us
8 tonight that this is what we have to do, proper
9 procedure? First, we go to the books, the federal
10 books, and we look at the type of soil there is,
11 right?

12 A. (Indicating).

13 Q. And there are a couple of different
14 types. You told us about A, C, D. D being the
15 least permeable, right?

16 A. Correct.

17 Q. Then you determined where the basins are
18 going to go, and then you get a report, you said,
19 then we design the detention basins. What report
20 are you referring to?

21 A. When we did the original design, we had
22 approximately -- I can't remember the exact
23 number -- 40-some-odd test pits that Birdsall did.
24 And I understand the comment about Birdsall no
25 longer being here, but nonetheless there were 40

1 test pits done by Birdsall on the property. And
2 there was a stormwater management system designed
3 back then as well.

4 Q. By them?

5 A. By them.

6 Q. Okay.

7 A. We were not going to bring that up into
8 the discussion. I'm just saying--

9 Q. Right. Right. Whatever.

10 And the one you did submit is different,
11 just for the record, than Birdsall's?

12 A. That's correct, it was different.

13 Q. Correct.

14 A. So we took that initial soils
15 information, designed a system based upon what we
16 knew of the soils at that time. Okay?

17 Q. Let me stop you there.

18 Isn't it a fact that with regard to the
19 test pits that were done, that at the time that
20 you submitted those plans to Bedminster, that you
21 did not have sufficient test pits to comply with
22 stormwater management regulations of the DEP,
23 namely, the one that Mr. Loh testified to in
24 Appendix C?

25 A. At the time that is correct. Those test

1 pits were done --

2 Q. That's all I asked you. Yes or no?

3 A. That's correct. Those test pits weren't
4 performed to the letter of Appendix E at that
5 time, that is correct.

6 Q. But, again, we're talking, again, in
7 terms of engineering principles, as you told us
8 here tonight --

9 A. I agree.

10 Q. -- that if the procedures are followed
11 properly, you hope that everything turns out
12 correctly, right?

13 A. That is correct.

14 Q. All right. So you submitted your first
15 set of plans without sufficient test pits to
16 comply with DEP regulations, correct?

17 A. And I'm agreeing with you 100 percent.
18 That's what we did.

19 Q. Okay. But let's go chronologically.

20 A. That's fine.

21 Q. You made a statement earlier during your
22 testimony. You said when Geotechnology went out
23 to do its test pits, okay -- and for them we'll
24 call that round one, because in this case we have
25 a lot of rounds, a lot of attempts on the

1 engineering. You said that they -- those test
2 pits weren't done in accordance with DEP
3 regulations because at that time you were
4 determining the type of soil only.

5 Do you remember saying that tonight?

6 A. That is correct.

7 Q. Okay. Let's stop--

8 A. The first round of test pits done by
9 GTA.

10 Q. Correct. How many rounds were there?

11 A. I want to say there was three, but I
12 have to go back and look at the dates. But I
13 believe there was one in the summer, one in the
14 fall, and possibly one in the -- in the last round
15 in winter. I way want to say there were three,
16 but I can check the dates.

17 Q. That's okay. Approximate dates are fine
18 for my purposes.

19 A. That's fine.

20 Q. Then we have a situation where you hired
21 them to do round one of the test pits even though
22 Gladstone had done several test pits themselves.

23 My question to you is: Why was Geotech
24 even brought in if you, on Gladstone Design's
25 behalf, was already doing that work? Why was this

1 expert brought in?

2 A. Good question. And I think--

3 Q. Thank you.

4 A. They were brought in in that first round
5 over the summer -- they were initially brought in
6 in the spring of 2014 to look at -- spring to
7 summer of 2014 to look at the hydrologic soil
8 groups on the property to see if D soils were
9 actually -- the soils were actually acting as D
10 soils. And I believe Mr. Loh talked about this in
11 his testimony, but, again, the purpose of the
12 initial discussion was, are the soils really
13 infiltrating out there?

14 So we brought GTA in to do an analysis
15 of the upper horizons of the soils to determine if
16 they were C or D soils. And, again, the reason
17 for that being if they were D soils, if all the
18 test results came back as D soils, meaning
19 infiltration rates typically less than .12 inches
20 an hour or less than that, then technically
21 recharge wouldn't have been required for the
22 project under the DEP's regulations.

23 Q. Exactly.

24 A. But the results that came back, as we
25 know, were rates greater than that.

1 Q. Okay. However, the scope of his work --
2 and he puts it right in his report. Do you have
3 his reports tonight?

4 A. I have his reports.

5 Q. Okay. Why don't you get them out.

6 This is a geotechnology specialist upon
7 whom you relied, correct?

8 A. That is correct.

9 Q. Who submitted the majority of the
10 reports in this particular manner when he couldn't
11 even get his address correct on his report.

12 MR. HALL: I object to that needless
13 comment.

14 MR. SASSO: He admitted it during cross.

15 MR. HALL: Yes, but it's not relevant.
16 It's a typo.

17 MR. SASSO: It certainly is relevant in
18 terms of one big thing, Mr. Chairman:
19 Credibility. Credibility.

20 MR. HALL: I disagree.

21 MR. COLLINS: It's an appropriate way to
22 ask a cross-examination. Please go ahead,
23 Mr. Sasso.

24 BY MR. SASSO:

25 Q. Mr. Moschello, let's talk -- I mean,

1 let's speak plainly.

2 In terms of the test pits that --
3 Mr. Loh is back here -- did, did you witness any
4 of them?

5 A. Did I actually witness the test pits?

6 Q. Did you witness the test pits and can
7 you confirm any of the results on any of the test
8 pits, whatever the number is?

9 A. I couldn't tell you the number. I did
10 go out to the property. I can't tell you the
11 dates right off the top of my head right now. I
12 went out there.

13 Q. I don't need dates.

14 A. When I went out to the property, I did
15 see the test pits. I didn't see all of them. I
16 saw some of them. I looked in the holes.

17 Q. Okay. Morning? Afternoon?

18 A. I could tell you the last round that he
19 did in those recently submitted --

20 Q. Well, that was at the end of February.

21 A. Yeah, it was in the cold. I can tell
22 you it was very cold out that day.

23 Q. Well, this year. We know by years in
24 terms of the application.

25 A. That's right, 2015. I was out there in

1 February. I went out one of the two days. And I
2 can tell you I was out there between 11 o'clock
3 and 1 o'clock, somewhere around there. I can't
4 tell you the exact time, but I was out there maybe
5 midmorning and I looked in a number of holes. I
6 can't tell you the number, but I saw a number of
7 holes that were open at that time.

8 Q. And you would agree in terms of
9 engineering practices that you could not, unless
10 you kept observing that hole during the day,
11 attest to a certain result in a pit, correct?

12 A. Well, I can look in the pit and see what
13 I saw at that time.

14 Q. Well, no, that's not what I'm talking
15 about. Did you sign the soil log? Could you say
16 that at the end of the day that that was the final
17 result in any of the pits that you looked at?

18 A. I can't say that either which way
19 because I don't sign soil logs.

20 Q. I understand that.

21 And when you told us earlier that you
22 get a report from someone before you, quote,
23 design the drainage basins, that's what you told
24 us tonight --

25 A. You're right.

1 Q. -- you have to rely on the report and
2 the person that you hired, right?

3 A. That is correct.

4 Q. And if that person, that company, is not
5 reliable, your work then is going to be
6 unreliable, would you agree?

7 A. There's many factors in saying that. I
8 can go into many different reasons why you can
9 rely on information. But if information is
10 incorrect that's going to affect the design,
11 however that's why we go look at these things
12 ourselves, to see what's going on out there.
13 Again, I didn't look at every pit. I went out
14 and --

15 Q. How many pits did they do? And tell the
16 Board how many pits you actually looked at.

17 A. How many pits did GTA do?

18 Q. Sure.

19 A. You know, I had the number right in
20 front of me. Give me a second. Rich, I don't
21 have the number right in front of me right here.
22 I believe they did somewhere around -- Birdsall
23 did about 40-something pits. Gladstone Design
24 did, I believe it was 25 or 30 pits. And I think
25 GTA did over 40 pits themselves.

1 Q. But, again --

2 A. I'm just trying to remember the --

3 Q. Which is okay. Approximations are fine,
4 Rob.

5 A. Yeah.

6 Q. What I'm talking about is, number one,
7 you never looked at any of the pits on Geotech's
8 first round or second round?

9 A. I didn't say that. I said I remember
10 the last time I went out there in February.

11 Q. Well, you're here under oath now.

12 Can you remember being out there in
13 July/August of 2014 or even September and remember
14 what you saw under oath?

15 A. I'm just looking at the map to see where
16 the pits were so I can remember when I was out
17 there.

18 Q. Sure.

19 A. I don't recall if I was out there in the
20 summer.

21 Q. Okay. So you have no real idea what the
22 results were. You can't objectively confirm or
23 deny those results.

24 A. I don't recall if I was out there. I
25 can go back and look and tell you. I can look in

1 my logs of when I was doing the results -- doing
2 the review.

3 Q. You're testifying tonight--

4 A. That's right.

5 Q. -- for the seventh time.

6 So let's talk about the last round.

7 Okay? The last round of testing was done at the
8 end of February with the big Komatsu machine out
9 there, right?

10 A. That's correct.

11 Q. Okay. Before that was ever done, you
12 had submitted to the Township of Bedminster Board
13 completely revised stormwater management
14 information, plans, after your testimony in --
15 your first round of testimony or right before it?

16 A. We submitted -- we submitted revised
17 stormwater plans in the end of August/beginning of
18 September 2014.

19 Q. Okay.

20 A. But I testified in October to
21 stormwater, so the plans were submitted prior to
22 that.

23 Q. Okay. And Geotech did certain testing
24 prior to your testimony?

25 A. That is correct. They did the testing

1 over the summer.

2 Q. And when you testified here, you rested.
3 In other words, you completed your testimony and
4 then there were some comments from the Board.

5 Would you agree with me?

6 A. That is correct.

7 Q. You were done.

8 A. Correct.

9 Q. You were done. I'm not talking about
10 additional rounds.

11 A. You're right, that is correct.

12 Q. Now, as of that point in time, as of the
13 time of your testimony, isn't it a fact that you
14 testified with regard to the stormwater management
15 on this project without having in your hands a
16 report that contained test pits that complied with
17 the stormwater management regulations of the State
18 of New Jersey, Appendix E?

19 A. I think that was established by
20 Mr. Loh's testimony.

21 Q. No, no, I understand that. Now you're
22 up, so I get to ask you questions. That's how I
23 justify getting paid.

24 A. I understand. Yes, that was
25 established by Mr. Loh's testimony that we did

1 a -- that a report was submitted without all of
2 the test pits that he performed.

3 Q. Okay. So, again, that's not a proper
4 procedure from an engineering standpoint like you
5 told us tonight, right?

6 A. It was out of sequence, yes.

7 Q. Okay. But you were done.

8 A. That's right.

9 Q. You had finished your testimony?

10 A. I finished my testimony at that point.

11 Q. Without the proper test results, correct
12 in accordance with Appendix E?

13 A. Let's be clear. I'm not saying the
14 results weren't reliable. It's just in accordance
15 with Appendix E, it didn't follow it to the letter
16 of the appendix.

17 Q. The letter of the appendix? Rob, were
18 you here when he was cross-examined?

19 A. Yes.

20 Q. Okay. And when Mr. Loh was
21 cross-examined, do you remember me going through
22 each test pit--

23 A. Yes, I do.

24 Q. -- to see if the required depth--

25 A. Yes, I do.

1 Q. -- according to Appendix E--

2 A. I remember.

3 Q. -- was done or not done?

4 A. Yes.

5 Q. Do you remember the fact that out of all
6 of the test pits that he did --

7 A. I remember.

8 Q. -- one or two complied with Appendix E?

9 A. I remember that.

10 Q. All right. So while you're testifying
11 here tonight on behalf of the applicant, you say,
12 well, this wasn't according to the letter of the
13 law. I mean, the fact of the matter is it was
14 woefully short in accordance with Appendix E,
15 isn't that a fact?

16 A. The results were short of Appendix E,
17 yes. We established that.

18 Q. Yet you testified.

19 A. Yes, I testified before he testified.
20 Yes.

21 Q. And as you told us earlier, during his
22 testing, according to what you're saying now, he
23 was only there to see if it was a D soil or a C
24 soil?

25 A. Initially he was only there to see if it

1 was a D or C soil. When the results started
2 coming back that it was acting as a C soil, he
3 changed his approach.

4 Q. All right. Well, actually in his
5 report -- do you have his report there?

6 A. Which one? Are you referring to the
7 December 10th one? December 11, 2014?

8 Q. Yes. Yes.

9 A. Yes, I have it right here.

10 Q. All right. The one thing that we
11 noticed right away was what he said was he was
12 hired to determine if the site soils should be
13 classified as D. Not he was hired to go out and
14 find and determine whether it was A, C or D. He
15 was told out to go out and see if it's D,
16 correct?

17 A. If you're referring to the section in
18 his report, tell me --

19 Q. This is his report.

20 A. Then, yes. He was charged with going
21 out there to determine if it was D soils or not.

22 Q. Okay. Again, and the reason why you
23 want D soils is because you don't have to show the
24 infiltration rates, right?

25 A. That's correct. We stated that.

1 Q. Okay. Now, in that report -- and please
2 keep that in front of you.

3 A. It's right here.

4 Q. He goes on to say in that report, on
5 page 3, he speaks to the soils, being told that
6 the soils -- or his job and scope of work was to
7 determine if they were D soils, correct?

8 A. I think we established that already.

9 Q. Then it says, "however, not all the test
10 pits contemplated at the time were performed,"
11 correct?

12 A. That's correct.

13 Q. Okay. That was after he was done with
14 the testing, correct? I mean, we're talking about
15 August/September of 2014. This report is dated
16 December 11th, 2014, correct?

17 A. That's correct, but I believe he issued
18 a previous report in August or September, which
19 was the initial testing that was done. So I think
20 this report is a continuation of that initial
21 report. But, again, our file indicates there was
22 testing done over the summer.

23 Q. Okay. But, again, this letter would
24 have been after that, right?

25 A. This letter?

1 Q. In other words, the report of December
2 of 2014 would have been after that initial letter
3 or memo that you're referencing?

4 A. I'm referencing -- yes, the December one
5 was after that. There was also a report dated
6 December 3rd, 2014, that he prepared.

7 Q. Right.

8 A. Again, I'm not comparing the words in it
9 at this point.

10 Q. No, I'm not asking you to.

11 A. That could be what was--

12 Q. I'm just saying chronologically the one
13 I'm talking about is after.

14 A. You're talking about the December one.

15 Q. We have been, yes.

16 A. Yes.

17 Q. Okay.

18 A. And that's the one I'm looking at here.

19 Q. Good.

20 So in the December report, he speaks to
21 not doing all of the pits, right?

22 A. Correct.

23 Q. When was the next time he was told to do
24 additional sampling?

25 A. In February.

1 Q. After you had testified, correct?

2 A. Correct. And I believe it was after he
3 testified, too.

4 Q. Well, that's the point, isn't it?

5 A. Okay.

6 Q. In other words, he came and testified,
7 and testified on February 12th. And, again, let's
8 talk of the years in this case. 2015.

9 A. Yes.

10 Q. And he testified to a conclusion and
11 left the building at the end, correct?

12 A. Correct.

13 Q. In fact, Mr. Hall said we're done with
14 this witness, right?

15 A. That is correct.

16 Q. Okay. As of that point in time, after
17 you've testified, after he's testified, right,
18 you'd agree with me that the testing required
19 under Appendix E as required by DEP was not done
20 in this case, correct?

21 A. We established that already, yes.

22 Q. That's a yes?

23 A. Yes.

24 Q. Okay. Now, when you submitted the
25 revised stormwater management plans in

1 September -- we talked about that, right?

2 A. Yes.

3 Q. -- did you have any testing that was
4 done by anybody other than Gladstone that complied
5 with Appendix E?

6 A. For all the basins the answer is no, and
7 I think we established that already.

8 Q. Please, don't do that.

9 MR. SASSO: Mr. Chairman, I don't need
10 his comment. I just need his answer. I think I
11 can ask the questions to determine if I'm
12 emphasizing a point.

13 Q. So we're talking about the fact is you
14 didn't.

15 Now, he's done, he walks out, and all of
16 a sudden there's a track hoe back on the property,
17 right?

18 A. (Indicating.)

19 Q. And that is at the end of February?

20 A. That's correct.

21 Q. And that's after he was cross-examined
22 here, right?

23 A. That's correct.

24 Q. Okay. So let's talk about the
25 difference between his first report, or I call it

1 the -- I'll call it the second report for you. So
2 let's look at the December 2014 report that you
3 had right there.

4 A. Okay.

5 Q. All right. Please go to that same page
6 3, and I want to go to the section "Subsurface
7 Conditions."

8 Do you have that available?

9 A. I see it right there.

10 Q. Okay. In there what he says is "In
11 general, the natural soils were composed of
12 residual soils typically consisting of silt or
13 clay at the surface and grading with increasing
14 shale fragments with depth," is that correct?

15 A. That's exactly what it says.

16 Q. All right. "Residual soils extended to
17 the surface of highly weathered shale at depths
18 ranging from a foot and a half to 9 feet below the
19 ground surface," is that correct?

20 A. That is correct.

21 Q. All right. The next paragraph he notes
22 that he saw soil mottling, isn't that right?

23 A. He says right here, and I'll quote it
24 for you, he says "Soil mottling was observed in
25 some of the test pits typically near existing

1 wetland areas or more porous soils."

2 Is that what you're referring to?

3 Q. Oh, absolutely.

4 A. Yes.

5 Q. And it says that he saw mottling, right?

6 A. Can I continue with what else it says?

7 Q. No. I want you to answer the question.

8 Does it say that he observed soil mottling?

9 That's the question.

10 A. Okay. And it says right here "It is
11 GTA's opinion that the mottling observed" --

12 Q. Excuse me.

13 MR. HALL: I object.

14 MR. SASSO: Mr. Chairman --

15 MR. HALL: He can answer the question.

16 (Indesciperable crosstalk; reporter
17 requests one speaker)

18 MR. HALL: He should be able to answer
19 how he chooses to.

20 MR. SASSO: No, he doesn't.

21 MR. HALL: Yeah, he can.

22 MR. SASSO: He has to be responsive to
23 the direct question --

24 MR. HALL: He's responding and he feels
25 that soil was --

1 (Indisciperable crosstalk; reporter
2 requests one speaker)

3 MR. COLLINS: There's a question,
4 there's an objection, and the objection is
5 sustained.

6 You can answer the question and then he
7 can follow up with another question. So go ahead
8 and give your answer in full the way you want to
9 answer it.

10 A. The rest of that sentence -- the rest of
11 the paragraph reads: "It is GTA's opinion that
12 the mottling observed in the test pits was caused
13 by water perched atop hydraulically restrictive
14 materials or trapped within shale seams and is not
15 indicative of a seasonally high groundwater
16 table."

17 Q. Now, that's a subjective opinion. Do
18 you agree?

19 A. That's his opinion.

20 Q. No, that's his opinion. It is not your
21 opinion, correct?

22 A. That's his opinion.

23 Q. Okay. The mottling that's involved can
24 be indicative, as he admitted during his
25 testimony, of the seasonal high water table, isn't

1 that a fact?

2 A. As it doesn't relate to this project,
3 mottling can be indicative of seasonal high water
4 table. That was talked about. I'm not saying as
5 it relates to this project, but it was talked
6 about.

7 Q. At length.

8 A. But I'm not here giving an opinion on
9 mottling.

10 Q. Oh, I understand that. I understand
11 that. But you based your entire design on the
12 information that this company gave you, correct?

13 A. I based my design on a lot of
14 information, not just the information that GTA
15 provided to me.

16 Q. But you relied principally in terms of
17 the water table, the high water table, which is
18 essential in stormwater management design, on what
19 information he gave you?

20 A. I relied on his information, I relied on
21 our information, I relied on Birdsall's
22 information. I relied on a lot of different
23 information, not just GTA's, to determine the
24 design of the system.

25 Q. Okay. So you read it. You saw that

1 there was mottling, correct, in the first report?
2 You saw that there was mottling, and then he went
3 out in February, right?

4 A. He saw there was mottling in the first
5 report. That sentence is in the first report.
6 I'm looking at the December 11th report.

7 Q. I'm asking whether you read it, whether
8 you knew that he saw mottling the first time out.

9 A. His opinion to us the first time out was
10 no seasonal high groundwater was encountered on
11 the property site.

12 Q. Could you please answer my question?

13 A. I am answering your question.

14 Q. No, you're not.

15 A. His opinion to us was that seasonal --

16 Q. Does his first report -- yes or no --
17 indicate that he saw mottling?

18 A. Well, let's look at the first report
19 from September 3rd and let's see what he says.

20 Q. That's not what I'm asking you. I'm
21 asking you about the December -- maybe you need --
22 you can borrow mine. Page 3.

23 A. I don't need to --

24 MR. HALL: You just said the first
25 report.

1 A. You're saying the first report.

2 MR. HALL: Don't switch back and forth.

3 MR. SASSO: No, that's not true, Gary.

4 A. Yes, you did.

5 MR. COLLINS: Mr. Sasso, you did say the
6 first report.

7 MR. SASSO: And I said earlier with
8 regard to the December report, that that's what I
9 considered to be the first report.

10 MR. COLLINS: Let's stop. Let's stop.
11 Let's just reset, go back, ask your question and
12 wait for the answer.

13 MR. SASSO: Sure.

14 BY MR. SASSO:

15 Q. I specifically am directing you to the
16 same thing we've been looking at for 15 minutes.

17 MR. COLLINS: Please, no editorial.
18 Just the question.

19 MR. SASSO: Not unlike his comments, but
20 page 3.

21 MR. COLLINS: Focus our attention.
22 December report, right?

23 MR. SASSO: December 11, 2014 report,
24 page 3.

25 MR. COLLINS: Okay.

1 BY MR. SASSO:

2 Q. Do you have that available?

3 A. Right here in front of me.

4 Q. Okay. So whatever his opinion is on the
5 high water table aside, he indicates that he
6 observed mottling?

7 A. In that report he does, yes.

8 Q. Okay. Well, let's go to the next report
9 after the February 26th revisit to the site.

10 A. Rich, I'm just going to ask you to hold
11 on one second.

12 Q. Not a problem.

13 A. I just want to find it.

14 Q. Not a problem.

15 A. February 27, 2015?

16 Q. That's correct.

17 A. All right. I got it right here.

18 Q. Just tell me when you're ready.

19 A. I'm ready.

20 Q. All right. In the first paragraph of
21 the report, he's saying that this isn't changing
22 the original report. In other words, that the
23 original report or reports that he's rendered in
24 the matter have to be read together with his
25 February 27th submission, correct? That's the end

1 of the first paragraph?

2 A. That is correct.

3 Q. All right. Let's go to the next page.

4 Can we generalize, Mr. Moschello, with
5 regard to the test pits that were the subject of
6 the earlier December 2014 report that the depth of
7 those test pits was, in essence, a lot more
8 shallow than the ones that were done in February,
9 a depth of 8 feet and 9 feet?

10 A. That is correct.

11 Q. Okay. Now, on page 2 he indicates,
12 again, let's go to subsurface conditions. He says
13 "These soils are residual in a nature, having been
14 formed by the decomposition of the underlying
15 shale. The residual soils extended to the surface
16 of highly weathered shale at depths ranging from
17 about 2 feet to 14 feet below the ground surface,"
18 correct?

19 A. That is correct.

20 Q. Okay. Now, in the next paragraph after
21 that, when he's back there after his
22 cross-examination, what does he indicate to you
23 with regard to soil mottling?

24 A. The paragraph beginning with
25 "Groundwater seepage..."?

1 Q. Yes, the second sentence or third
2 sentence.

3 A. He says that soil mottling was not
4 present in any of the supplementary -- the test
5 pits.

6 Q. Right.

7 So before his testimony, his
8 cross-examination, he sees mottling. Afterwards,
9 in February, at the end of February, he says to
10 you I don't see any mottling in the test pits.

11 A. In the supplementary test pits.

12 Q. Correct?

13 A. That's what it says here.

14 Q. Okay. Knowing that in this case the
15 issue of the high water table, would you agree,
16 was -- I don't want to use the word "important"
17 because Mr. Hall's going to object, but was a
18 primary issue or talked about a lot in this case?
19 Would you agree?

20 A. It was discussed, yes. It was
21 discussed.

22 Q. Ad nauseum. Ad nauseum.

23 A. Yes.

24 Q. Maybe in part because of some of my
25 questions. But the fact of the matter is it was a

1 major issue for this Board, correct?

2 A. That's correct, it was. It was an issue
3 for this Board.

4 Q. Can you tell me why it is that your
5 contractor, Geotech, after he's
6 cross-examination -- cross-examined here, after he
7 completes his testimony, digs the test pits the
8 right depth this time, and brings no photographs
9 of whether there was mottling or no mottling in
10 the areas?

11 A. I can't speak to the photographs. That
12 was discussed. I mean, I have no understanding of
13 why he would or would not bring photographs.
14 However, again, speaking about the test pits, he
15 went out --

16 Q. I'm just asking you about whether or not
17 you know anything about the photographs.

18 A. I have not seen any photographs done by
19 GTA of the test pits.

20 Q. Did you ask him to take any photographs?

21 A. Did I ask him to take photographs? No,
22 I did not.

23 Q. All right. From an engineering
24 standpoint, would you agree all engineering
25 companies maintain cameras as part of their

1 business, just like lawyers?

2 A. We do.

3 Q. Of course.

4 A. I mean, everybody has cameras on their
5 phones nowadays.

6 Q. Right. Now they're even digital so you
7 don't have to pay -- you don't have to pay for all
8 that Kodak processing anymore. In fact, it's even
9 hard to get film. I still have an old camera.

10 Not only that, in his report he says he
11 covered them up right away that day, is that
12 correct?

13 A. That is correct.

14 Q. At any time on behalf of KDC, did you
15 ever ask the engineering department, Mr. Ferriero
16 or anyone on his behalf, anyone from the township,
17 to come out and see these test pits that -- by the
18 way, no one knew it was going to take place
19 because he was already done with his testimony.

20 Was anyone from the town ever given the
21 opportunity to view whether there was mottling 3
22 feet down in 80 percent of the holes or not?

23 A. We notified the town -- and I don't
24 remember how we did it -- that test pits would be
25 dug out on the property.

1 Q. Okay. And now my question. My
2 question: Did you ever ask anyone from
3 Bedminster, presumably objective, to go out there
4 and look to see if there's mottling in all these
5 holes that were dug?

6 A. I personally did not ask anyone to go
7 look.

8 Q. Okay. And they weren't left open,
9 correct?

10 A. That's correct.

11 Q. According to him, and that's what he
12 told you.

13 A. That is correct. They typically
14 process, we do -- first of all, with test pits, we
15 close them up at the end of the day.

16 Q. Except in this case it's an abandoned
17 farm, right? No one occupies the property,
18 correct?

19 A. That doesn't -- it's an abandoned farm,
20 but it doesn't matter.

21 Q. It's an abandoned farm. No one's living
22 there, correct?

23 MR. HALL: I think we heard testimony
24 some night that a neighbor was on the property.

25 A. So, again, we close them up at the end

1 of the day.

2 MR. SASSO: I'm talking about living
3 there, Gary.

4 MR. HALL: Doesn't matter.

5 MR. SASSO: No one's pitching a tent.

6 Q. Right? I mean --

7 A. As far as I know, no one's living in the
8 farmhouse on the property.

9 Q. And not only that, you've had occasions
10 as an engineer with regard to test pits or even
11 construction holes, let's say putting in a sewer
12 line, where the hole was left open at the end of
13 the day and proper safety procedures, in the way
14 of cones and tape, et cetera, would be put around
15 the holes so that no one would fall into it,
16 correct?

17 A. In some instances that's done, correct.
18 I'm not going to speak to the proper procedures
19 that are done. But certain contractors may leave
20 excavations open at the end of the day.

21 Q. All right.

22 A. How they decide to protect it is usually
23 up to them.

24 Q. Okay. But this is your contractor
25 performing test pits that now supposedly comply

1 with the stormwater management regulations in
2 Exhibit E, right?

3 A. Appendix E, correct.

4 Q. Appendix -- the bottom line is there was
5 nothing that prevented keeping those holes open
6 and, for instance, since we were all sharing
7 engineers, that you would have Najarian come out
8 and look at the pits, correct?

9 A. Mr. Loh and his company closed the pits
10 up as part of their procedures.

11 Q. After he was cross-examined
12 chronologically.

13 A. Well, he closed -- all sets of test pits
14 from when he first started back in the summer
15 through the fall --

16 Q. We were talking about the end of
17 February.

18 A. -- they were all closed up at the end of
19 the day. I just want to make the Board clear on
20 that. No test pits were left open overnight on
21 the property.

22 Q. All right. But between that and the
23 February test results, actually my client paid to
24 have Najarian meet with your company and the
25 township engineer, right, to discuss joint issues

1 regarding stormwater management, correct?

2 A. That's correct.

3 Q. And Gary Hall asked us to do that and I
4 said okay.

5 A. And we met with them. Yes, that's
6 correct.

7 Q. Okay. Despite that, you never called
8 Najarian and gave them an opportunity to see any
9 of these test pits, that suddenly you have no
10 mottling at all in any of them, correct?

11 A. That's correct.

12 MR. SASSO: That's all I have.

13 MS. DONATO: Shall I? Thank you.

14 CHAIRMAN BOXER: Thank you, Ms. Donato.

15 CROSS-EXAMINATION

16 BY MS. DONATO:

17 Q. Mr. Moschello, did you attend the public
18 hearing here in July 2014?

19 A. Can you give me the exact date of that
20 one?

21 Q. I think it was July the 10th or 11th.

22 A. I don't believe I did. I believe that
23 was when Mr. Kennedy was testifying to the
24 project's layout, is that correct?

25 Q. There was additional testimony on

1 stormwater, yes. If you don't--

2 A. On July 11th? Was that me then
3 testifying? I'm sorry, there's been so many
4 dates, Ms. Donato --

5 Q. You don't recall.

6 A. -- that I'd have to go back and look at
7 the -- read the transcripts.

8 Q. All right. So were you here at the
9 meeting when the Board directed your firm to go
10 back and develop a stormwater management plan that
11 complies with the applicable regulations?

12 A. I believe, if I get the date right on
13 this, we submitted a plan in May of 2014 that was
14 a revised layout that did not contain a revised
15 stormwater management system. And if I recall
16 correctly, Mr. Kennedy testified to that layout.
17 It might have been in July.

18 Q. Yes.

19 A. Again, I just don't have the dates here
20 in front of me. And from that meeting, I
21 believe -- and I don't have the transcript
22 either -- there was concurrence that we would then
23 design the actual stormwater management system to
24 match that revised layout.

25 Q. Okay. And do you recall what your firm

1 was directed to do with regard to the stormwater
2 management plan?

3 A. It was my understanding -- again, I
4 don't remember if I was at the meeting or not --
5 was to revise the plan based to -- revise the
6 stormwater management system based on the new plan
7 and submit that information to the Board.

8 Q. Well, didn't the Board kind of tell you
9 don't come back until you give us some more
10 information so that we can make an intelligent and
11 informed decision about stormwater management
12 issues?

13 A. I don't recall the exact words.

14 Q. And then you proceeded, your firm
15 proceeded, to contract with GTA to determine that
16 these were all D soils to relieve yourself of the
17 obligation to infiltrate?

18 A. It wasn't to relieve ourselves of the
19 obligation to infiltrate. Knowing what we
20 understand about the soils out here on this
21 particular property, there was concern that it
22 wasn't acting as a C soil; that it was more along
23 the lines of a D soil.

24 So we contracted with GTA to determine
25 whether or not they were actually acting as D

1 soils. And if they were, then under the rules
2 you would not have to do a recharge. Because if
3 it's actually acting as D soils, then we want to
4 note that and make that aware to everyone that
5 this is actually what it's doing. But as it turns
6 out, as we testified to, it was not acting as
7 that.

8 Q. Okay. So, but the Board didn't ask you
9 to go out and try to not infiltrate. The Board
10 asked you to devise a compliant stormwater
11 management plan and to get complete information to
12 support that plan. Isn't that what you were asked
13 to do?

14 A. We were asked to complete the stormwater
15 plan, so...

16 Q. So you went out and you did the D soil
17 and you were going to try to change the mapping
18 and that didn't work. So then you said that you
19 then changed gears and decided to do some
20 additional work.

21 When did that changing gears, that you
22 stopped looking to prove that it was all D soil
23 and you then looked for, what, the seasonal high,
24 is that it, or water table or water seepage?

25 A. No. At that point when we changed

1 gears -- and I can't tell you the exact date
2 without looking at some of the test pit logs that
3 GTA had done when they were out there in -- and
4 I'm looking at GTA's September 3rd, 2014 report.
5 The logs are dated in August. So their testing
6 started in August, if I recall correctly from this
7 report.

8 And so it was at that point when they
9 did the initial tests that it was determined that
10 it was not D soils and that we did have
11 infiltration out there. So it was between that
12 testimony in July to when GTA did their testing in
13 the beginning of August, through August, that we
14 needed to revise the design because the soils were
15 coming back as the C soil type and there was
16 infiltration taking place in the upper horizons.

17 Q. So when the chairman asked you in July
18 2014 to go and do a compliant stormwater
19 management plan, did he make any suggestion that
20 you should try to avoid infiltration?

21 MR. HALL: I'm going to object. He
22 didn't say he recalled being at the meeting, so
23 how can he answer that question?

24 Q. Well, did you listen to a transcript --
25 you don't know -- he doesn't know if he was there.

1 A. I don't recall if I was at that
2 particular meeting.

3 Q. Okay.

4 A. However, I don't remember -- I don't
5 remember being directed by anyone from the Board,
6 whether it was through anyone that was here, to
7 direct Gladstone to go look for D soils.

8 Q. Okay.

9 A. That was something that we did based
10 upon what we know about the soils to determine
11 what's actually out there on the property.

12 Q. Okay. Now, you agree, based on the
13 testimony that you've given this evening, that you
14 need to know where the water level is. Whether
15 you want to call it seasonal high or perched
16 water, that you need to know where that water
17 level is in order to design your basins, am I
18 correct?

19 A. That is correct.

20 Q. Okay. So all of this discussion about
21 whether it's seasonal high because it's perched
22 water or not, if there's water in the ground and
23 it interferes with the basin, doesn't have the
24 required distance, okay, then it doesn't comply
25 with the design criteria that are applicable to

1 this development, right, under the Appendix E?

2 A. Well, if it's perched, again, there are
3 different types of groundwater. Perched water is
4 different than seasonal high groundwater. I think
5 we had that discussion at the last meeting.

6 Q. Yes, I understand.

7 A. So I don't think we need to debate about
8 that.

9 Q. Correct.

10 A. That has an effect on how you design the
11 basin. Perched water is different than seasonal
12 high groundwater, and seasonal high groundwater is
13 what the requirements -- is what you are required
14 to have a separation from in the design of your
15 basin. Perched water is a different situation.

16 Q. All right. So you are not familiar with
17 the DEP regulations in terms of the treatment of
18 perched water. You're saying that you think that
19 you could have perched water and the bottom of
20 your basin doesn't have to be 2 feet away from
21 that water level?

22 A. That is correct.

23 Q. That's your opinion?

24 A. That's my opinion.

25 Q. Okay. That's your opinion.

1 Do you have the regulation of the DEP
2 that you can cite to demonstrate that?

3 A. I don't have it exactly in front of me.
4 I'm not sure the regulations state that exactly.

5 Q. Okay. I don't either.

6 It is now 10 to 10, so will you make
7 certain that you bring that back with you for the
8 next meeting?

9 A. I will research what the DEP says about
10 perched water as it relates to seasonal high
11 groundwater and I'll bring that citation to the
12 next meeting.

13 Q. Okay. So, now, let's just look at this
14 as perched water, okay? It's a restrictive layer
15 and the water's not draining down. Okay? So if
16 you were to design a basin and the bottom of the
17 infiltration bed was not 2 feet -- at least 2 feet
18 away from this perched water level, what would
19 happen to that basin?

20 A. From the perched water level?

21 Q. Yes.

22 A. I guess every basin's designed
23 differently, but let's just say hypothetically,
24 okay, and I'm not referring to this particular
25 project, but hypothetically if you had a perched

1 water condition on top of a restrictive horizon,
2 okay, and that perched water was close to the
3 surface for all intents and purposes, what we
4 would normally do is -- first of all, you would
5 dig your test pit deeper anyway. We talked about
6 the depth of test pits enough.

7 But you would determine where the
8 restrictive horizon is, where the perched water
9 is, and you would typically dig through that
10 restrictive horizon to a less restrictive horizon,
11 at which point is where you would perform your
12 infiltration, generally speaking.

13 Q. Okay. So my question to you is the
14 following: If you have a basin and the bottom of
15 the infiltration bed, it is not at least 2 feet
16 above this perched water level, okay, what happens
17 to the basin?

18 A. Let's just say if someone did design a
19 basin like that, that was only to the perched
20 water level and it wasn't 2 feet above -- I guess
21 you'd have to assume whether or not the perched
22 level of the water was actually into the bottom of
23 the basin or not. So let's assume for the moment
24 that it's a foot into the basin, okay, for
25 argument's sake.

1 So I have a restrictive horizon. I have
2 a foot of water sitting on top of that -- 2 feet
3 of water sitting on top of that restrictive
4 horizon, hypothetically speaking of course, and I
5 dig my basin down to 1 foot above the water.

6 Okay? If it's an infiltration basin, the water is
7 only going to go so far, it's going to stop, and
8 the water's going to remain -- may remain in the
9 bottom of the basin if it's a perched condition
10 and there's nowhere for that water to go.

11 However, in this case -- in that case
12 you wouldn't typically do that because the water
13 would never drain out of the bottom of the basin.
14 You want to get that water into the more
15 less-restrictive horizon.

16 Q. Okay. So we had previously talked about
17 the fact that if a basin doesn't drain, you have a
18 mudhole, right?

19 A. You have a -- you have stagnant water
20 sitting in the basin.

21 Q. You have stagnant water and a mosquito
22 haven --

23 A. Right, I said all that. That's correct.

24 Q. -- and vegetation dies and all of that
25 stuff. So whether you call it seasonal high or

1 whether you call it perched water, for all
2 practical purposes the result is the same. You
3 don't want to have your basin with water in it
4 that doesn't drain within 72 hours, am I right?

5 A. That's correct.

6 Q. Thank you.

7 All right. Now, what I'd like to do now
8 is I'd like to direct your attention to the -- to
9 basin number one. Okay? And I'd like to direct
10 your attention to the test pits that you did, your
11 firm did, in March of 2014, specifically
12 SL1-32614.

13 A. The one I'm pointing to on the map right
14 there.

15 Q. That's correct.

16 A. That test pit right there.

17 Q. That's correct.

18 A. That blue dot right there on the map,
19 your basin number one.

20 Q. That's basin number one.

21 A. That is.

22 Q. Okay. Now, can you tell me, that test
23 pit was done in a wet season, right?

24 A. It was done in March, correct. March of
25 2014.

1 Q. Were there any other test pits done in
2 that basin in the wet season?

3 A. That was the only one that Gladstone
4 Design did in that basin.

5 Q. Okay.

6 A. And I can't remember the dates of the
7 GTA ones, whether GTA did--

8 Q. Okay. Let's stick with yours first,
9 your firm. Okay?

10 So in that can you tell me, what did you
11 show as the regional zone of saturation for that
12 test pit?

13 A. If you give me a moment, I'll pull out
14 the log for that test pit.

15 Q. Thank you.

16 A. This test log here says "Regional zone
17 of saturation, depth to top, 48 inches." This is
18 for SL-32614.

19 Q. Okay. So the surface elevation at that
20 test pit was what?

21 A. The surface elevation?

22 Q. Yes.

23 A. I don't think this log gives a number
24 for the surface elevation. I could tell you that
25 it's roughly, looking at the map right here --

1 give me one second. Roughly elevation 120, 121.

2 Q. Okay. And so you just said that the
3 regional zone of saturation was 48 inches below
4 that, right?

5 A. That's what--

6 Q. Four feet below that, right?

7 A. Correct.

8 Q. So that comes up to what number is that?

9 That would be the --

10 A. Let's assume 120 is the bottom of the --
11 let's assume 120 is the existing grade. So that's
12 elevation 116.

13 Q. 116. Well, isn't it 120.9 is the
14 surface elevation at the point of that particular
15 log, 32614?

16 A. If that is, I don't see that on the log
17 here. But, okay, we'll say 120.9. So we'll say
18 116.9.

19 Q. Okay. To what -- you have to measure
20 your 2 foot from the bottom of the infiltration
21 bed, is that correct?

22 A. From the bottom of the sand layer,
23 that's correct.

24 Q. The infiltration bed, right?

25 What is the level of the bottom of the

1 infiltration bed in the location of this -- at
2 this basin?

3 A. The bottom of the basin --

4 Q. The bottom of the infiltration bed was
5 my question.

6 A. I'm going to get there. The bottom of
7 the basin is elevation 119 at its lowest point.
8 That's the lowest point of the basin, which is
9 just downgradient of the test log that we're
10 talking about here. So the bottom of the basin is
11 at elevation 119. The test log we said was 120.9,
12 correct?

13 Q. Yes.

14 A. And the bottom of that test log at your
15 48-inch level, which is what you're calling it and
16 this log says it's the zone of saturation, is
17 116.9.

18 Q. Correct.

19 A. So 119 is the bottom of the basin. The
20 sand--

21 Q. Well, are you sure it's 119? Can you
22 show me the contour on this plan, please?

23 A. I'm looking at Exhibit A-15. So using a
24 120 contour, which is the darker contour line,
25 that small one right there is the 119 contour. So

1 that's at the low point of the basin by the outlet
2 structure.

3 Q. Doesn't it say that --

4 A. The bottom of the basin is 118 and 1/2,
5 which is the -- which is the elevation right at
6 the outlet structure.

7 Q. Okay. So the bottom of the basin is not
8 119, it's 118.5, am I right?

9 A. And I just want to point out --

10 Q. Now, what's the bottom of the
11 infiltration bed?

12 A. I want to point out that the bottom of
13 the basin at that point, at the lowest point, is
14 118 and 1/2. The existing grade at that lowest
15 point is 119 -- I'm sorry, 119 and 1/2. So it is
16 a foot below the existing grade at that point.

17 Q. I didn't ask that, but that's fine.

18 A. No, that's to clarify the depth.

19 Q. What's the bottom of the infiltration
20 bed?

21 A. Well, the bottom of the basin is 118 and
22 1/2 and the bottom of the infiltration bed is 117
23 and 1/2. Keep it in mind the existing grade at
24 that point is 119 and 1/2. So it's 2 feet below
25 the existing grade at that point on the basin.

1 Q. Do you have that on a plan that you can
2 show me, Mr. Moschello, please?

3 A. It's right here.

4 Q. The bottom of the infiltration bed is my
5 question to you.

6 A. No, I don't show it on this particular
7 plan, the bottom of the bed, but it's a foot below
8 that.

9 Q. Well, hold on. Let me just make sure I
10 understand something. You need to have a 2-foot
11 separation between the bottom of the infiltration
12 bed, do you not?

13 A. That's correct.

14 Q. And the regional zone of saturation, am
15 I right?

16 A. Well, seasonal high groundwater. Okay?
17 You're saying regional zone of saturation. That's
18 marked on a log here with 48 inches. Okay?
19 There's seepage indicated on this log at a depth
20 of 68 inches. Okay? We're not saying that's
21 seasonal high groundwater. That says regional
22 zone of saturation.

23 Q. I understand.

24 A. So you're taking--

25 Q. I'm using your terminology.

1 A. You're taking a number on a chart here.
2 That's not saying -- there's a groundwater
3 observation that says seepage was at 68 inches.

4 Q. Mr. Moschello, doesn't the DEP use the
5 regional zone of saturation?

6 A. They may use that as one of their terms
7 for seasonal high groundwater, but we have a pit
8 with seepage observed at 68 inches. So I want to
9 point that out to the Board, that that's what
10 observed--

11 Q. I didn't ask you that question, but you
12 can answer it.

13 But why would you put the regional zone
14 of saturation on your log? Why would you put that
15 there?

16 A. I don't know why it's there, but it's on
17 the log. So let's stick with that 48 inches if
18 you want to use that for your analysis. Now,
19 let's stick to the 48 inches as the regional zone
20 of saturation. So let's go back to the numbers.
21 And excuse me if I write some of these down
22 because we're throwing a lot of numbers around
23 here.

24 The bottom of the basin is 118 and 1/2.
25 The existing grade at that point in the basin is

1 119 and 1/2. The regional zone of saturation
2 is --

3 Q. Are you sure that the existing grade is
4 119 and 1/2?

5 A. Do you want to say -- I'm saying 119 and
6 1/2 based upon the topo I'm looking at here. It's
7 a 100 scale plan -- it's a 100 scale plan, but I'm
8 going to say 119 and 1/2 for existing grade.
9 We'll keep it in whole numbers here for
10 discussion.

11 So 4 feet down from 119 and 1/2 to 115
12 and 1/2. And the bottom of my basin is 118 and
13 1/2. The bottom of my sand is 117 and 1/2. I'm 2
14 feet above the regional zone of saturation from
15 the bottom of that basin.

16 Q. Can you show me where, on a set of plans
17 that's before this Board, where it shows the
18 elevation of the bottom of the sand bed -- the
19 bottom of the infiltration bed?

20 (Pause)

21 A. On sheet 29 of 31, this is the drawing
22 set that was submitted to the township; the last
23 revision of August 29th, 2014. The
24 cross-sectional detail of the infiltration basin
25 number one, it's noted on my detail sheet. And

1 I'm mistaken. The sand layer is only 6 inches
2 thick, not 1 foot thick. So it's only 6 inches
3 below grade. I thought it was a foot there, but
4 the detail here says 1 foot -- the detail here
5 says 6 inches. That's where the depth of the sand
6 is denoted on the plans.

7 Q. Okay. So what does that mean numberwise
8 in terms of elevation as to what is the bottom of
9 the infiltration bed?

10 A. Going back to my numbers, 118 and 1/2,
11 the bottom of the basin, the sand is 6 inches
12 thick, that puts the bottom of the basin at 118.0,
13 2 and 1/2 feet above the 115 and 1/2 elevation.

14 Q. Where did you get the 115 and 1/2?

15 A. It's the 4 feet depth to the regional
16 zone of saturation. You've got to remember, the
17 topo --

18 Q. It doesn't--

19 A. The grade changes across the detention
20 basin.

21 Q. Okay.

22 A. So I may have --

23 Q. I just want --

24 A. I'm explaining to you--

25 Q. Mr. Moschello, I just want one set of

1 numbers and I don't want you to keep switching
2 them.

3 A. I'm not switching them.

4 Q. So what we had--

5 A. I wrote them down right here.

6 Q. Well, you may have written them down,
7 but the surface elevation, we established, is
8 120.9, right?

9 A. At the test pit, but--

10 Q. At the test pit.

11 A. We're talking about--

12 Q. I'm only talking about the test pit.
13 Let's take it one step at a time.

14 A. Let's go back to the test pit. I'm
15 going to go back to the el -- I'm going to go back
16 to the plan. I'm sorry, it's A-21.

17 Q. At the test pit--

18 A. I'm sorry, not A-21. I'm sorry, this is
19 the wrong one. A-21 -- I'm sorry, A-24, you said
20 the elevation of the basin at the test pit. You
21 told me, you were saying it was 120.9. I said it
22 was 120, and you said 120.9. So let's use 120.9
23 as that particular number. So that's the existing
24 grade at the test pit.

25 Now, keep in mind that test pit is

1 probably halfway up the basin. Now, the basin
2 bottom isn't completely flat. It's sloping. So
3 at that elevation of 120.9, which is the existing
4 elevation, the proposed basin elevation right
5 there -- if you give me a moment I will confirm
6 this.

7 (Pause)

8 Q. I can show you on the plan if you want
9 here.

10 A. Well, I have a more detailed plan right
11 here for the basin numbers.

12 Q. Do those numbers differ from the numbers
13 that are on --

14 A. No, it's just easier to read.

15 And just for the record, I'm referring
16 to what are entitled the "Test Pit Location Plans"
17 that are dated December 19th, 2013, revised
18 through February 27th, 2015, prepared by Gladstone
19 Design. And we're looking at test pit soil log
20 326.14, correct? The existing grade we said was
21 120.9. The proposed grade in the basin at that
22 point, we'll say for the discussion here, is
23 119.9, is the proposed grade at that point of the
24 basin.

25 So if you look right here, Ms. Donato,

1 here is the -- here is the -- let me help you out
2 here. See this darker line right here?

3 Q. Yes, I see that.

4 A. That's the 120 contour, okay, and this
5 dashed line underneath it is the 121 contour. It
6 is a 1-foot cut right at that soil line right
7 there.

8 Q. Okay. Now, do you see the print that is
9 obscured by the squares here?

10 A. Yes, and that's the same--

11 Q. Okay. That's the print that we looked
12 up over here, is that right?

13 A. Let me see if it's on this one.

14 Q. Is that this one?

15 A. That's the denotation of the basin right
16 there.

17 Q. And that says 118 and 1/2.

18 A. It says --

19 Q. So, again, like, the numbers keep
20 changing.

21 A. It says the bottom of the basin is the
22 118 and 1/2. That's the bottom of the basin. The
23 bottom slopes. It's not 118 consistently across
24 the entire basin bottom.

25 Q. I understand that.

1 A. It's sloping.

2 Q. But don't you have to go to the bottom
3 of the basin? Isn't that the regulatory
4 requirement?

5 A. And at the bottom of the basin, at 118
6 and 1/2 --

7 Q. Yes.

8 A. -- when you take that test pit and you
9 could extrapolate the 20 feet over to where the
10 bottom of the basin is and the test -- and you're
11 saying the zone of saturation is 4 feet deep,
12 well, I move that test pit with the grade when I
13 move it. I don't keep it at the same elevation 20
14 feet uphill as I would 20 feet downhill. I have a
15 foot and a half grade change across the basin.

16 Q. I think I understand that. I want one
17 set of numbers and I'm getting a whole bunch of
18 numbers --

19 MR. HALL: I object. That's not a fair
20 characterization of his testimony. He's trying to
21 explain numbers to you. You just don't get it.

22 A. I'm sorry, Ms. Donato--

23 MS. DONATO: I think that somebody
24 doesn't get it, but it's not me, Mr. Hall.

25 A. I'm sorry, Ms. Donato, I've given you

1 two sets of numbers --

2 MR. COLLINS: One at a time and question
3 and answer only. No more editorial from anybody.
4 It's too late for that.

5 BY MS. DONATO:

6 Q. Mr. Moschello, we have established that
7 118.5 is the bottom of the basin, correct? Not
8 119. 118.5 is the bottom of the basin.

9 A. At its lowest point.

10 Q. At its lowest point. That's where
11 you're supposed to do it, right?

12 A. Right.

13 Q. Okay. That's all I asked you. I didn't
14 ask you for curving and everything else.

15 Now, what is the bottom of the
16 infiltration bed? You said you take 118.5 and you
17 take off 6 inches. So that's 118.

18 A. That's correct.

19 Q. Okay. What is the difference between
20 118 and 116.9, which is the regional zone of
21 saturation?

22 A. No, it is not. Not at the point of the
23 lowest point of the basin. The regional zone of
24 saturation at the lowest point of the basin is
25 115.5.

1 Would you like me to draw it for you on
2 the board at this point?

3 Q. No, you don't need to draw it for me.

4 The bottom of the infiltration bed is
5 118, am I right, at its lowest?

6 A. The bottom of the sand bed is 118.

7 Q. The bottom of the sand bed is 118. So
8 now you're saying that the regional zone of
9 saturation is going to vary throughout this thing.
10 So this 48 inch that you show at that particular
11 test pit, 32614, okay, is 4 feet.

12 Wouldn't you just take that off of the
13 surface elevation and that's where you have your
14 regional zone of saturation, 116.9, am I right?

15 A. At the test pit. The test pit only--

16 Q. That's the testimony. That's all I'm
17 asking now.

18 A. Right, but when I move 30 feet away from
19 the test pit --

20 Q. Don't give me when you move. I just
21 want to stick to these numbers.

22 A. We'll stick to that number only in the
23 location of the test pit then, because once we
24 move the test pit, we change the grade. When we
25 change the grade, we have to change the number.

1 Q. Doesn't the DEP require that the
2 distance between that -- that the 2 foot has to be
3 measured between the lowest point of the bottom of
4 the infiltration bed and the regional zone of
5 saturation?

6 A. Yes, but the regional zone of
7 saturation changes with the grade. It doesn't
8 stay constant.

9 Q. But you have -- let's just focus on the
10 test pit.

11 A. Yeah. At that test pit, I have 2 and
12 1/2 feet of separation. At that test pit.

13 Q. What is the bottom of the infiltration
14 bed at that location of the test pit?

15 A. At the test pit the bottom of the
16 infiltration bed is -- hold on one second. 120.9
17 minus a foot for the basin, which is 119.9, and
18 minus 6 inches is 119.4.

19 Q. 119.4, that's what your new number is?
20 Because I have --

21 MR. COLLINS: Why don't you stop with --

22 Q. -- about five sets of numbers.

23 MR. COLLINS: Just focus on -- just try
24 to get the fact. The question doesn't help. He
25 says that the calculation that he just made is the

1 19 -- what did you say, Rob? I'm sorry.

2 THE WITNESS: We're dealing with two
3 sets of numbers. Let's just step back for a
4 second and let's just get the numbers right. The
5 existing elevation at test pit -- I changed the
6 board.

7 BY MS. DONATO:

8 Q. 32614.

9 A. 32614 is 120.9. Do we all agree on
10 that?

11 Q. Yes.

12 A. Okay. So 120.9 is the existing
13 elevation at that test pit. The elevation of my
14 basin at that test pit is 1 foot below that at
15 119.9, and at 6 inches below that is the bottom of
16 the sand.

17 CHAIRMAN BOXER: All right. Let me just
18 figure this out. Because, Ms. Donato, maybe what
19 we could do is try and find a natural break point,
20 because I'm not sure where this is going to go
21 yet. It seems like--

22 MR. FERRIERO: Mr. Chairman, maybe what
23 we could do to help clarify this is to maybe get
24 the information that Ms. Donato is asking for.
25 And it's a three-dimensional number. The numbers

1 do change because as you change horizontally
2 across the ground, your vertical changes. So
3 you're not going to have the same -- if you're
4 talking about two different points, you have two
5 different numbers.

6 And, frankly, the bottom of the basin is
7 not -- the lowest point of the basin is not at the
8 location of the soil bed.

9 MS. DONATO: I understand that.

10 BOARD MEMBER STEWART: But we don't have
11 a test pit --

12 MS. DONATO: But that's not the point.

13 BOARD MEMBER STEWART: -- at the lowest
14 point of the basin either, so we have to guess
15 what the regional zone of saturation is.

16 MS. DONATO: Exactly.

17 BOARD MEMBER STEWART: So I don't know,
18 that's what I--

19 MS. DONATO: That is exactly the point.

20 BY MS. DONATO:

21 Q. Let me ask you something. Other than
22 your test in March of 2014, up until GTA did its
23 February 2015 test pits, okay, there were no other
24 test pits that were done during the wet season, is
25 that right? This basin--

1 A. That's correct.

2 Q. How many-- that's correct.

3 A. There were two sets of test pits done in
4 the wet season, March and then February.

5 MS. DONATO: So, Mr. Chairman, whatever
6 you'd like to do.

7 CHAIRMAN BOXER: Well, I think what we
8 should do is, look, we have plenty of -- I think
9 you've still got some more time with
10 Mr. Moschello.

11 MS. DONATO: Yes, I do.

12 CHAIRMAN BOXER: So I would suggest that
13 what we do is continue at the next meeting. I
14 think everyone probably needs a little bit of a
15 break.

16 I do agree, Nick, I think part of the
17 problem we're all having is there is no pit at the
18 bottom of the bin. So we're all struggling with
19 numbers.

20 We certainly don't want to tell you how
21 to testify. Maybe what you can do is either work
22 with Ms. Donato to get her some information or
23 possibly, when we meet next time, have a white
24 board so we can see it. Because I think we are
25 poking around so many numbers right now that we're

1 having a difficult time following them.

2 THE WITNESS: Very good, Mr. Chairman.

3 MS. DONATO: That's absolutely correct
4 and it's very, very important as you know.

5 CHAIRMAN BOXER: Fair enough.

6 MS. DONATO: So better to be accurate
7 than not.

8 CHAIRMAN BOXER: Mr. Hall, is that okay
9 with you?

10 MR. HALL: Yes, I agree.

11 CHAIRMAN BOXER: Let me just -- so,
12 thank you, Ms. Donato.

13 MS. DONATO: Thank you.

14 CHAIRMAN BOXER: We will continue. I
15 appreciate it.

16 Let me just make sure for housekeeping
17 that we have the schedule set up for next month.

18 MR. FERRIERO: We don't have KDC
19 scheduled yet. For May 14th we have two other
20 applications that will take the entire evening. I
21 think there was a concern that -- there was a
22 concern about the first meeting in May. I believe
23 one of the attorneys had a conflict, so it was not
24 scheduled for the first meeting in May.

25 CHAIRMAN BOXER: We might be able to, if

1 everyone -- do you guys want to do a special
2 meeting? If we could try to--

3 MR. HALL: I said I'd cooperate if we
4 could do it now. No one has contacted me, so I'd
5 just ask for May 7th. I mean, it's a little late
6 to be --

7 CHAIRMAN BOXER: Ms. Donato?

8 MR. HALL: And with all due respect,
9 back in January we scheduled a special meeting
10 and it got canceled because you didn't have a
11 quorum. So they had to reschedule. I'd like to
12 stick to the schedule.

13 CHAIRMAN BOXER: That would be fine with
14 me.

15 Ms. Donato, are you good for the 7th?
16 Mr. Sasso?

17 MS. DONATO: I'm not available on the
18 7th. That's -- I'm not available.

19 CHAIRMAN BOXER: What about you,
20 Mr. Sasso?

21 MR. SASSO: I would think that I am.
22 But, again, I don't know how we go forward
23 without -- this is really her bailiwick. As
24 between the two attorneys, I tried to limit my
25 questions.

1 CHAIRMAN BOXER: Sure.

2 MR. SASSO: So to tug her out now would
3 be extremely prejudicial to the objectors.

4 MR. HALL: Well, they should have
5 thought of that when he went before her an hour
6 ago. She could have finished. They knew that was
7 an extra meeting.

8 MR. SASSO: My understanding, Mr. Hall,
9 is she would still not be done--

10 MR. HALL: Well, I don't know that.

11 MR. SASSO: -- with all the information
12 she has.

13 MS. DONATO: I would not be done.

14 MR. SASSO: And your client's reports.

15 CHAIRMAN BOXER: All right.

16 Mr. Collins, how do you want to proceed at this
17 point?

18 MR. COLLINS: It sounds like we need to
19 have a date that Ms. Donato can be here and I
20 don't see why that can't be May 14th or whatever.

21 MR. FERRIERO: We already have two
22 scheduled for May 14th, the Chesson application
23 and the Trump cemetery.

24 MR. COLLINS: Okay. So we could use a
25 special. I mean, it's good to get this out in a

1 reasonably continuous fashion without too much
2 delay.

3 CHAIRMAN BOXER: You know, we have the
4 time now, Mr. Hall. I think if you'd be willing
5 to look at dates, maybe we can try and get an
6 agreement for a special meeting so that we can
7 keep this thing moving forward a little bit. We
8 may not have everybody here, but we'll try to get
9 a quorum together.

10 MS. DONATO: I'm available on -- do you
11 want to do it on a Thursday, Mr. Chairman?

12 MR. HALL: What about the fifth
13 Thursday, April 30th? Mr. Moschello, you're the
14 key one.

15 CHAIRMAN BOXER: April 30th.

16 MS. DONATO: I'm available on April
17 30th.

18 CHAIRMAN BOXER: All right. So you're
19 good.

20 Mr. Sasso, are you good?

21 MR. SASSO: I'll make myself available.

22 CHAIRMAN BOXER: Let's see. I could
23 make myself available. You're good. You're good.

24 Nick, are you good?

25 BOARD MEMBER STRAKHOV: I guess. I'm

1 not sure. The 30th? No.

2 BOARD MEMBER CHRISTIE: I am.

3 MR. HALL: It's the fifth Thursday of
4 the month.

5 CHAIRMAN BOXER: So we're good here. We
6 have enough here to cover the 30th.

7 BOARD MEMBER STRAKHOV: Probably not.
8 I'll have to double-check.

9 MR. HALL: But we'll have a transcript.

10 BOARD MEMBER DIGIOVINE: We skipped the
11 7th.

12 CHAIRMAN BOXER: We skipped the 7th.
13 All right. So why don't we notice it for April
14 30th.

15 Is that good, Mr. Collins?

16 MR. COLLINS: That's fine. Does that
17 work for Ms. Donato?

18 MS. DONATO: Yes, it does. Thank you,
19 Mr. Collins.

20 MR. COLLINS: And, Mr. Sasso, that's
21 good for you, right?

22 MR. SASSO: I'll make it work.

23 MR. COLLINS: And, Mr. Hall and
24 Mr. Moschello, you're all available?

25 THE WITNESS: I'm good.

1 MR. COLLINS: Okay.

2 MR. HALL: And you're doing this in lieu
3 of the 7th?

4 MR. COLLINS: Yes, in lieu of the 7th.
5 So we'll carry the KDC hearing until April 30th,
6 7 p.m., no additional notices. And I'm guessing
7 we're going to cancel the May 7th meeting unless
8 we have -- so we're probably canceling the May 7th
9 meeting, but we'll deal with that ourselves. This
10 case will not be on for May 7th.

11 MS. DONATO: Now, may I have just two
12 procedural issues? One has to do with the
13 transcripts. I think it really facilitates the
14 ability to prepare, and I think it really helps
15 the Board as well, to be able to have the
16 transcripts. And these transcripts, I think they
17 came in very, very late. I don't know whether
18 they came in -- is it possible for the reporter to
19 file them directly with the secretary so we could
20 not have the transmission potentially from the
21 applicant?

22 MR. HALL: She does that.

23 MS. DONATO: You do that, Bridget?

24 MR. HALL: Yes.

25 MS. DONATO: Okay.

1 THE REPORTER: And it's within two
2 weeks, right, Trina?

3 MS. DONATO: Okay. Thank you very much.
4 It wasn't within two weeks because they -- okay.
5 Then there was a delay someplace that's
6 inexplicable.

7 And then the other question has to do
8 with Mr. Moschello giving me a set of numbers that
9 are the ones that he intends to use and, as
10 Mr. Ferriero indicated, to provide, like, a
11 diagram so that everybody can see this and
12 understand it. Because to ask the questions with
13 the numbers and he runs the plans, it just would
14 be so much easier if he just gave us some
15 explanation that would be able to assist. And
16 provide that, really, to Najarian & Associates,
17 the stormwater engineers. And we will then make
18 certain it is properly distributed.

19 Is that acceptable?

20 MR. FERRIERO: Just to be clear what
21 those numbers are, the way I understand it is you
22 would be looking for the elevations at the various
23 soil logs and at the lowest points of the basins,
24 the existing grade, the proposed grade, the bottom
25 of the basin, and the bottom of the level of

1 infiltration if it's there.

2 MS. DONATO: Right, and the regional
3 zone of saturation.

4 MR. FERRIERO: Yes, the regional zone of
5 saturation.

6 THE WITNESS: I guess we'll take that
7 for both basin one and basin 2D?

8 MR. FERRIERO: I'm assuming it's going
9 to be for every basin, the way the questions are
10 going. So I would say be exhaustive.

11 MR. YINGLING: Could we also include a
12 cross-section and a detail?

13 MR. FERRIERO: The cross-sections and
14 details are in the plans.

15 THE WITNESS: I can do a summary -- I
16 can do a summary form of those numbers and provide
17 it to the Board and Najarian.

18 MR. SASSO: And, lastly, the new exhibit
19 for tonight, Rob, you don't have to send it to me.
20 You could send it to Najarian.

21 THE WITNESS: Okay. We'll send it to
22 Trina so that the Board has a copy of it and it
23 could be distributed.

24 MS. DONATO: Thank you very much. I
25 appreciate it. Thank you very much.

1 CHAIRMAN BOXER: Thank you, Ms. Donato.
2 Mr. Hall, we appreciate your
3 cooperation.

4 MR. HALL: So we're on for April 30th, 7
5 p.m.

6 CHAIRMAN BOXER: April 30th, 7 p.m.

7 MR. HALL: And no notice required
8 because you've announced it tonight.

9 MR. COLLINS: Right. 7 p.m.

10 CHAIRMAN BOXER: Okay. Good night,
11 everybody. Thank you for coming.

12 (Whereupon, the hearing on this
13 application was adjourned to April 30, 2015 at
14 7:00 p.m.)

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C E R T I F I C A T E

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