1 STATE OF NEW HAMPSHIRE 2 SITE EVALUATION COMMITTEE 3 DAY 3 4 November 3, 2010 - 9:10 A.M. Public Utilities Commission 5 21 South Fruit Street MORNING SESSION Suite 10 Concord, New Hampshire 6 7 SEC DOCKET NO. 2010-01 8 RE: Application of Groton Wind, LLC, 9 for a Certificate of Site and Facility for a 48 Megawatt Wind Energy Facility in Groton, 10 Grafton County, New Hampshire. 11 (Hearing on the merits) 12 PRESENT: SITE EVALUATION SUBCOMMITTEE: 13 Chairman Thomas B. Getz N.H. Public Utilities Comm. 14 (Presiding) Robert Scott, Director Air Resources Division - DES 15 Brook Dupee, Bureau Chief Dept. of Health & Human Serv. 16 Richard Boisvert N.H. Div. of Historical Res. Inland Fisheries - N.H. F&G Stephen Perry, Chief Charles Hood, Admin. 17 Dept. of Transportation Donald Kent, Admin. Dept. of Resources & Econ. Dev. Eric Steltzer Office of Energy & Planning --18 Public Utilities Commission Michael Harrington 19 20 21 22 Counsel for the Committee: Michael Iacopino, Esq. 23 COURT REPORTER: SUSAN J. ROBIDAS, LCR NO. 44 24

 $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1 2 ALSO PRESENT: 3 Counsel for the Applicant: Susan S. Geiger, Esq. (Groton Wind, LLC) Douglas L. Patch, Esq. (Orr & Reno) 4 Counsel for the Public: 5 Evan Mulholland, Esq. (Asst. Atty. General) Michelle Thibodeau 6 7 Reptg. the Town of Groton: Miles Sinclair, Selectman James Buttolph, Intervenor 8 Reptg. the Buttolph Group: Cheryl Lewis, Intervenor 9 10 Reptg. the Mazur Group: Lawrence Mazur, Intervenor 11 Sarah Mazur, Intervenor 12 13 14 15 16 17 18 19 20 21 22 23 24 {SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 INDEX 2 PAGE 3 WITNESS: ADAM GRAVEL DIRECT EXAMINATION: 4 5 By Ms. Geiger . . . . . . 11 6 CROSS EXAMINATION: 7 By Mr. Buttolph . 13 • • • . 39 By Mr. Mazur 8 By Ms. Mazur 44 WITNESS PANEL: MICHAEL LEO 9 NANCY RENDALL 10 PETER WALKER 11 DIRECT EXAMINATION: 12 By Mr. Patch . . . . 47 13 **CROSS-EXAMINATION:** 14 By Mr. Mazur 58 By Ms. Mazur 65 • • 15 By Ms. Lewis 66 • • By Mr. Mulholland . . . 82 . 16 17 INTERROGATORIES BY SUBCOMMITTEE MEMBERS: 18 By Mr. Harrington, . 97, 120 • By Mr. Steltzer 105 By Mr. Scott 19 108 . . 111, 117 By Dr. Kent . . • . . • 20 INTERROGATORIES BY SUBCOMMITTEE COUNSEL: 21 By Mr. Iacopino . 22 **RECROSS EXAMINATION:** 23 By Ms. Lewis 24

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

INDEX (CONT'D) APPLICANT'S EXHIBITS PAGE 7/9/10 Letter from VHB . . . . 46 (FOR IDENTIFICATION) . . . . . . 46 11/2/10 VHB Memorandum 11/2/10 VHM Memorandum re: NHNHB 46 {SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

5 1 PROCEEDINGS 2 CHAIRMAN GETZ: Good morning, everyone. All right. We'll open the hearing in Site 3 Evaluation Committee Docket 2010-01 concerning the 4 5 application of Groton Wind, LLC. Let's take appearances, 6 please. 7 MS. GEIGER: Yes. Good morning, Mr. Chairman, Members of the Subcommittee. I'm Susan Geiger 8 from the law firm of Orr & Reno. I represent the 9 Applicant, Groton Wind, LLC. And I appear today with my 10 colleague, Doug Patch. 11 12 CHAIRMAN GETZ: Good morning. 13 MR. BUTTOLPH: Good morning, Mr. 14 Chairman. I'm Jim Buttolph. I'm an intervenor from 15 Rumney. 16 CHAIRMAN GETZ: Good morning. 17 MS. LEWIS: Good morning. I'm Cheryl Lewis, intervenor from Rumney. 18 19 CHAIRMAN GETZ: Good morning. 20 MR. MULHOLLAND: Good morning. I'm Evan Mulholland, appearing as Public Counsel. Here with 21 22 me is Michelle Thibodeau. 23 CHAIRMAN GETZ: Good morning. And I'll note for the record that all nine members of the 24  $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1 Subcommittee are present this morning.

Is there anything we need to address before we turn to, I believe we're starting with the direct testimony of Mr. Gravel. Is there anything else we need to address? Mr. Harrington.

6 MR. HARRINGTON: Just a question, Mr. 7 Chairman. There was some questions we asked for on Monday 8 having to do with capacity factors and such. I think some 9 of that was going to be confidential. I was just 10 wondering, is there a status of any --

11 MR. IACOPINO: Yes. There were two parts of that. That's Exhibit 33 that's been reserved. 12 The Applicant has agreed that they will provide an 13 explanation of the calculation of the claimed carbon 14 15 offset in Mr. Cherian's testimony, and they will not be looking for confidential treatment of that. They've also 16 17 agreed to provide the profile of the claimed capacity factor, but they will be seeking confidential treatment of 18 19 that. And they will submit that along with a motion for 20 confidential treatment, to which the other parties will be 21 permitted to object, and the presiding officer will have 22 to rule on whether we'll accept it.

23 MR. HARRINGTON: Do we have a time 24 schedule for that?

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 MR. IACOPINO: That we did not have as of yesterday. I don't know what Mr. Cherian's time frame 2 on that is. 3 4 MS. GEIGER: Okay. We're hoping we 5 can get that to you either by the end of the today or 6 tomorrow. 7 It would also be helpful to know, with 8 respect to the other record requests that have been made by the Committee, when the Committee would expect us to 9 provide answers. Some of them we have and some of them we 10 may need more time. 11 MR. IACOPINO: Want me to go through 12 13 I was just doing an e-mail to the Chairman. them? 14 Do you want me to just go through 15 them? 16 CHAIRMAN GETZ: Sure. 17 MR. IACOPINO: Applicant's 34 which has been reserved is a request for information regarding 18 19 the amount of money paid to Professor Gittell. I would 20 imagine that's something that be could be obtained fairly 21 soon. 22 Yes, we have that. MS. GEIGER: 23 MR. IACOPINO: Okay. Exhibit 35 was 24 reserved for an explanation regarding the size, dimensions {SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 and possible locations for the 115 kV step-up transformer facility to interconnect at 115 kV at the PSNH substation. 2 MS. GEIGER: We're closing in on that. 3 4 We have some information on that, so we'll be able to 5 provide that probably tomorrow. MR. IACOPINO: Next one is Exhibit 36 6 7 which has been reserved for -- this should be -- your 8 visual expert should be able to get this to you 'cause 9 they're already created. He was going to provide the contrast information sheets that were used in the visual 10 11 impact assessment. And the same thing with Exhibit 37. 12 That was reserved for re-drawn cross-section drawings with 13 the line of sight with the correct turbine heights, and 14 the new line-of-sight drawings are required in there. 15 38 and 39 we have. Those are the 16 17 project area forms. Exhibit 40 was reserved for financial 18 19 statements. And yesterday I met with the parties, and 20 they've agreed that Iberdrola Renovables, which is the 21 publicly traded company in Spain, that they have audited financial reports which they will submit through the end 22 of fiscal year '09, and then they have two quarters of 23 unaudited statements for 2010 that they will submit. 24 And

 $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1 those can be submitted without a confidentiality order. They are also prepared to provide unaudited 2009 financial 2 statements for Iberdrola Renewables, Inc. and Groton Wind, 3 LLC, as well as two quarters of unaudited statements for 4 2010. But they are going to ask the court -- for the 5 court -- they're going to ask the Committee that those 6 7 financial statements for IRI and Granite -- Groton Wind, LLC be confidential exhibits. I assume there will be a 8 motion that will be filed with those. I don't know what 9 the realistic date for obtaining those financial 10 statements is. 11 CHAIRMAN GETZ: Does that complete the 12 13 list? MR. IACOPINO: 14 No, there's two more. I don't know if the Applicant has an idea when they'll... 15 16 MS. GEIGER: I've been told by Ms. 17 Goland probably not until next week. MR. IACOPINO: Exhibit 41 has been 18 19 reserved for the name of the groups that Iberdrola has 20 been cooperating with in doing their bat studies. And I 21 imagine that's something that could be obtained fairly 22 quickly. 23 MS. GEIGER: Yeah. MR. IACOPINO: And 42 was reserved for 24 {SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 windrose information.

We had a discussion about this 2 yesterday. Mr. Steltzer had asked for some additional 3 calculations based on the sound survey. What we've agreed 4 was they're going to provide their windrose information. 5 And as I understand it, that has some calculation by 6 season, to determine if that answers the question raised. 7 If not, we may need to have a further discussion about 8 more confidential information or -- one of the problems 9 10 there is that the request actually would require further analytics, in terms of taking the windrose and the sound 11 studies and somehow putting them together, which would 12 require further work by their consultant --13 14 MS. GEIGER: Mr. Iacopino, I'm not sure that that information is by season. It's not. 15 It's 16 annual. 17 MR. IACOPINO: Oh. Didn't -- I thought I was told there was a shift for each month, 18 19 though. CHAIRMAN GETZ: Well, let's clarify 20 21 that off-line. We don't need to get into that detail at 22 this point. I'm just looking for an update. 23 MS. GEIGER: Okay. MR. IACOPINO: That's all of the 24 {SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

		11
1	outs	tanding reserved exhibits and data requests.
2		CHAIRMAN GETZ: Okay. All right.
3	Let'	s then turn to Mr. Gravel.
4		(WHEREUPON, ADAM GRAVEL was duly sworn
5		and cautioned by the Court Reporter.)
6		ADAM GRAVEL, SWORN
7		DIRECT EXAMINATION
8	BY M	IS. GEIGER:
9	Q.	Good morning. Could you please state your name and
10		spell your last name for the record.
11	Α.	My name's Adam Gravel, G-R-A-V-E-L.
12	Q.	And Mr. Gravel, by whom are you employed and in what
13		capacity?
14	Α.	I am a project manager, wildlife biologist with
15		Stantec Consulting.
16	Q.	And what are your responsibilities with Stantec?
17	Α.	I help manage and conduct many of the field
18		surveys bird and bat surveys, specifically.
19	Q.	Could you speak into the microphone when you answer.
20		Thank you.
21		Have you ever testified before the New
22		Hampshire Site Evaluation Committee before?
23	Α.	Yes, once.
24	Q.	And when was that?
		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

<ul> <li>A. It was last year for the Granite Reliable project.</li> <li>Q. And are you the same Adam Gravel who submitted</li> <li>prefiled direct testimony in this docket, which I</li> <li>believe was submitted with the application in</li> <li>Volume I?</li> <li>A. Yes.</li> <li>Q. Okay. And Mr. Gravel, did you also submit</li> <li>supplemental prefiled testimony, which I believe h</li> <li>been included in what's been marked as Applicant</li> <li>Exhibit 5?</li> <li>A. Yes, I did.</li> </ul>	
3 prefiled direct testimony in this docket, which I believe was submitted with the application in Volume I? 6 A. Yes. 7 Q. Okay. And Mr. Gravel, did you also submit supplemental prefiled testimony, which I believe h been included in what's been marked as Applicant Exhibit 5?	
<ul> <li>4 believe was submitted with the application in</li> <li>5 Volume I?</li> <li>6 A. Yes.</li> <li>7 Q. Okay. And Mr. Gravel, did you also submit</li> <li>8 supplemental prefiled testimony, which I believe h</li> <li>9 been included in what's been marked as Applicant</li> <li>10 Exhibit 5?</li> </ul>	
5 Volume I? 6 A. Yes. 7 Q. Okay. And Mr. Gravel, did you also submit 8 supplemental prefiled testimony, which I believe h 9 been included in what's been marked as Applicant 10 Exhibit 5?	
<ul> <li>A. Yes.</li> <li>Q. Okay. And Mr. Gravel, did you also submit</li> <li>supplemental prefiled testimony, which I believe h</li> <li>been included in what's been marked as Applicant</li> <li>Exhibit 5?</li> </ul>	
<ul> <li>Q. Okay. And Mr. Gravel, did you also submit</li> <li>supplemental prefiled testimony, which I believe h</li> <li>been included in what's been marked as Applicant</li> <li>Exhibit 5?</li> </ul>	
8 supplemental prefiled testimony, which I believe h 9 been included in what's been marked as Applicant 10 Exhibit 5?	
9 been included in what's been marked as Applicant 10 Exhibit 5?	
10 Exhibit 5?	as
11 A. Yes, I did.	
12 Q. Do you have any corrections or updates to the	
13 information contained in that prefiled testimony?	
14 A. The only update I have to that testimony is I did	
15 visit the proposed alternate interconnect route.	
16 However, it does not change any of the data that	
17 we've collected.	
18 Q. Okay. Thank you. And with the updates that you'v	e
19 just given, if I were to ask you all of the same	
20 questions that are contained in both your	
21 supplemental prefiled testimony and direct prefile	d
22 testimony today under oath, would your answers be	tha
23 same?	CITE
24 A. Yes, they would.	CIIE

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

		13
1	Q.	Thank you.
2		MS. GEIGER: Mr. Chairman, the witness
3	is a	vailable for cross-examination.
4		CHAIRMAN GETZ: Okay. Thank you. Mr.
5	Butt	olph.
6		MR. BUTTOLPH: Yes.
7		CROSS-EXAMINATION
8	BY M	R. BUTTOLPH:
9	Q.	Good morning.
10	Α.	Good morning.
11	Q.	First question I have for you relates to Page 5 of
12		your October 12th, 2010 supplemental testimony, if
13		you could get to that page.
14	Α.	You said Page 5?
15	Q.	Yes, that's right. Page 5 of the October 12th
16		testimony.
17	A.	Okay.
18	Q.	You indicate that overall detection rates, of bats,
19		presumably, in the two years of studies at the Groton
20		project are similar: 4.5 calls per detector night in
21		the fall of 2009, and 6.4 calls per detector night in
22		the spring and summer of 2010.
23		When I look at that, what that literally
24		means to me is that the bats were noted by the
l		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		acoustic detectors at a rate that was 42 percent
2		higher during the 2010 study than the previous study
3		in the fall of 2009. With this data, you concluded
4		that there is no significant difference between the
5		detection rates in the two surveys. I wonder if you
6		could explain how 42-percent difference is
7		statistically no difference.
8	Α.	Yes. In terms of bat activity, it's an index of
9		activity. And we're looking at ranges of calls,
10		ranges of activities at sites. These two numbers
11		in fact, actually, I'd like to refer to my the
12		2010 bat report. We provide an explanation on why
13		it's not statistically different. There is
14		basically, there was one there are two nights that
15		had high activity at one detector, and it was during
16		the month of June, which is a resident period and not
17		a migration period. What happens during the resident
18		period is you have there's a increased probability
19		of detecting the same bat many times, because the
20		Anabat detectors cannot differentiate between
21		individual calls. So one bat foraging around a
22		detector could produce many calls. So the report
23		basically what we did was we took that anomaly out,
24		which was that one two-night period, and the

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 detection rate was much similar. I think it went from 4.5 -- I mean 6.4 to 5.-something. 2 WITNESS GRAVEL: Can I take a minute 3 to get the exact number for you in the report? 4 5 CHAIRMAN GETZ: Sure. Do you have a cite to that report? Where is that? What Appendix? 6 7 WITNESS GRAVEL: It's the most recent. 8 It was submitted with the supplement, I think, Appendix 44? 9 10 MS. GEIGER: I think it's 48. 11 WITNESS GRAVEL: Appendix 48. MR. IACOPINO: So that would be 12 contained in Applicant 5. It's a white volume. 13 (Witness reviews document.) 14 I apologize. I might be mistaken. It might actually 15 А. 16 be in my testimony. (Witness reviews document.) 17 CHAIRMAN GETZ: Well, let's revisit 18 19 the question. My understanding of the question from Mr. 20 Buttolph is he asked to explain essentially -- and correct 21 me if I'm wrong -- why the 4.5 calls or 6.4 calls 22 shouldn't be considered a significant increase, given the 23 proportionate change. And your answer to that is? 24 WITNESS GRAVEL: My answer to that is {SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1	the difference in how detectors work. The time period
2	that these detections occurred, many of these the
3	majority of the detections occurred were in the breeding
4	resident period, which is when the bats when the
5	majority of detections we're getting is from foraging
6	bats. And the difference was inflated basically by two
7	nights of increased activity at two detectors, and that's
8	the difference. So when you take out that anomaly, within
9	the season, the exact number I will have to find for you.
10	But I believe it's 5.3 calls per detector night.
11	Q. So, if I understand this correctly, there are times
12	when the bats are perhaps flying in circles and being
13	detected multiple times, and that might drive the
14	numbers up for those, what you were calling
15	anomalies; is that right?
16	A. Yes. Or at least in this case it was a two-night.
17	That's what I'm calling anomalies. One detector
18	two detectors on two nights had increased activity
19	and actually comprised over 50 percent during that
20	time period. So, basically it was 23 percent of all
21	calls in the entire season was recorded by those two
22	detectors on those two nights.
23	Q. Okay. So when these events happen or I should say
24	the existence of these events, would that be an
I	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		unusual think, or would you expect every so often to
2		have these anomalies?
3	Α.	I would expect to have those events during the summer
4		period because you have resident bats foraging in the
5		area, versus migration season you don't have bats
6		stopping on site for very long. They're moving.
7		They're migrating. So during the migration period
8		you're more apt to detect single calls, versus during
9		the resident period when they're foraging and
10		potentially detecting multiple calls by the same bat
11		and the same detector.
12	Q.	Okay. But what I understand, also, is that if you
13		have turbines up there spinning, then these same bats
14		are having multiple opportunities to be damaged by
15		those turbines?
16	A.	Well, that's not necessarily the case, because the
17		majority of bat fatalities occur during the migration
18		period when bats are moving through the area and not
19		foraging in the area.
20	Q.	It just strikes me as I'm just trying to
21		understand the fact that a bat is migrating versus
22		encircling, which happens periodically. And I guess
23		what you said is it's not unusual to have them
24		circling and coming back through, that somehow
	L	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1	they're at less of a risk because they happen to be
2	foraging than if they're migrating. I'm confused by
3	that.

- A. The reason that they're less at risk when they're
  foraging versus migrating is, when they're foraging,
  they're usually foraging below tree canopy height,
  which are much lower than wind turbine height. But
  when they're migrating, they get up to a certain
  altitude and are flying high enough, or within the
  range of the proposed turbine height.
- Q. So during these anomalies, did you also detect a
  height that was lower for those particular instances?
  A. Yes. That activity occurred at the middle and low
  detectors at one met tower.
- 15 Q. So, what would you consider to be a significant 16 difference? Like let's say we take the anomalies out 17 and we look at one study versus another study. And in the first study we have 4.5 calls, the next study 18 we have X-number of calls. What would you consider 19 20 to be significant, based on your statistical 21 approach?
- 22 A. It's generally orders of magnitude difference is what 23 we consider statistically different. And the reason 24 is because pre-construction acoustic bat data is {SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		really good at providing an index of activity that
2		you can relate to other projects, and especially
3		those projects that are now operational and have
4		post-construction data. And what we're finding is
5		that the pre-construction acoustic activity is not
6		correlated with post-construction mortality. So
7		that's it's not as we're not putting as much
8		weight on the pre-construction data alone. It's
9		coupled with data collected from sites that have
10		conducted pre-construction surveys and also
11		post-construction surveys. So you get the mortality
12		rates of those projects in relation to
13		pre-construction activity.
14	Q.	Okay. I'm confused again. Bear with me here. Did
15		you just say that the pre-construction studies, your
16		studies show that they are generally not correlated
17		to the post-construction mortality studies?
18	Α.	It's not just our studies. It's studies in general.
19		Pre-construction bat acoustic surveys are not
20		correlating with post-construction bat mortality.
21	Q.	Okay. So, can we conclude I mean, I'm tempted as
22		a layperson to conclude that you do your
23		pre-construction studies, it really gives you no idea
24		as to what your mortality rate would be. Maybe you
	L	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

can help me understand that.

1

2 Α. Yeah, that's not necessarily true. I mean, I'm not going to be able to quantify mortality based on 3 pre-construction data. But what you can do is you 4 have -- so now we have, you know, over a hundred 5 proposed wind projects that have conducted 6 7 pre-construction acoustic bat surveys using similar 8 methods. That gives you an index of activity that you can compare amongst each other. And then, now 9 that time's passed, you have more projects 10 operational with post-construction mortality data. 11 So you're looking at the pre-construction index of 12 activity in relation to projects that are now 13 operational, the pre-construction data of those 14 projects, and those projects that also have 15 post-construction data. So you can see basically 16 there's no -- there's no connection between 17 pre-construction and post-construction. What we're 18 19 finding is the index are a lot higher than mortality 20 rates for bats. But what you can do is use 21 pre-construction data to compare to like project sites, similar in habitat, elevation, and then assess 22 whether or not you're within range of those sites. 23 And if they have -- and if post-construction 24

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 mortality data is available for those sites, you have 2 an idea how to gauge what you might expect for mortality. 3 In the -- just a little change in gears here. In the 4 Q. public hearing held in Plymouth -- and this would be 5 Exhibit Buttolph 3, Page 49 --6 7 MS. GEIGER: Could you please provide 8 me with a copy of the page that you're looking at off of the exhibit? I don't believe he has it. 9 MR. BUTTOLPH: I'm sorry. 10 It's Page 49. 11 12 MS. GEIGER: Do you have an extra copy 13 for the witness? 14 MR. BUTTOLPH: There's a whole stack up there. I'm sorry. 15 16 MR. BUTTOLPH: Mr. Chairman, in the 17 future, should I be -- when a new witness comes up, should I be hand-delivering a copy of my exhibits up there? 18 I'm 19 sorry that I... 20 Page 49 you said? Α. O. Yes, Page 49. 21 22 MR. IACOPINO: Mr. Buttolph, are you referring to the page numbers at the bottom of the page 23 24 or -- because the document has got --

 $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1	MR. BUTTOLPH: Yes, it's Buttolph 3.
2	And once you get that out, then there are page numbers at
3	the bottom. I think the cover sheet says Page 34, for
4	example.
5	MR. IACOPINO: Okay.
6	A. I'm on Page 49. What line are you referring to?
7	BY MR. BUTTOLPH:
8	Q. Okay. It's approximately in the middle of the page.
9	You had answered well, here's what I was going to
10	say: You were asked, "Why should we believe your
11	avian studies, when one of their wind farms out west
12	recently reported that the birds killed were seven
13	times more than the preliminary studies indicated?"
14	And your answer here was, "This isn't the
15	West Coast, for one. This is the East Coast. We
16	have several operational projects here on the East
17	Coast now that show very low mortality. And it is
18	true that there is a very there's a lack of
19	information in terms of connecting pre-construction
20	results to post-construction fatality results. And
21	part of this is because it's kind of a random,
22	episodic event based on weather variables. And it's
23	kind of like a freak accident, really, if you get
24	more than that."

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

		2J
1		I just could you could you indicate
2		as to you know, are you saying that there are
3		events that happened that we ought not to consider
4		because they're random or could you elaborate on
5		that a little bit more?
6	Α.	No, that's not at all what I'm saying. But what I am
7		saying is it makes it difficult to predict because of
8		the randomness.
9	Q.	Okay. So, again, it sounds like we don't really have
10		a very good way of getting our arms around a
11		prediction of fatalities is what it sounds like to
12		me. Sounds like you're agreeing with that.
13	Α.	No. I mean, we're talking West Coast versus East
14		Coast, for one, which is much different in terms of
15		avian mortality. There's you know, beyond
16		projects in New England, there's projects down, you
17		know, throughout the Northeast now that have showed
18		low bird mortality relative to other projects in the
19		west or other forms of bird mortality, you know,
20		vehicles or tall structures, you know, skyscrapers.
21	Q.	Okay. But we don't really have a well, you're
22		looking at the West Coast and saying that the studies
23		really didn't help you to anticipate what the
24		fatalities would be, I think is what I'm hearing you
		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

Γ

		24
1		say.
2	Α.	That's true.
3	Q.	And on the East Coast you think that they do. Is
4		that true?
5	Α.	I'm assessing impacts on the East Coast. So I don't
6		calculate West Coast. You have different species.
7		You have different factors involved that could
8		influence mortality.
9	Q.	I'm going to change gears again here. We're going to
10		be on Page 9 of the prefiled testimony from
11		October 12th. So, hopefully that won't require a lot
12		of paper going around. Right in the prefiled. All
13		right? Are we there? Okay.
14		You state that Groton Wind has committed to
15		one full year of post-construction monitoring,
16		similar to that conducted at the nearby Lempster Wind
17		project. If first year results show higher mortality
18		than the range of observed rates at other operational
19		projects on forested ridgelines in the Northeast,
20		then Groton Wind will conduct a second year of
21		post-construction monitoring."
22		And I also need to ask you, if you will
23		refer to Buttolph 20, which is one of our exhibits
24		CHAIRMAN GETZ: Mr. Buttolph, where
		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 are you reading? Were you reading from Page 9? 2 MR. BUTTOLPH: I hope I was. That was my intention. 3 MR. STELTZER: Mr. Chairman, is that 4 5 the supplemental or the prefiled? MR. BUTTOLPH: The October 12th. 6 I'm 7 sorry. The supplemental. I apologize. I should have 8 made it more clear. MS. GEIGER: Mr. Buttolph? 9 MR. BUTTOLPH: Oh, I'm sorry. Are you 10 11 ready? MS. GEIGER: I have a question for 12 you. Could you please repeat the exhibit that you would 13 like the witness to refer to? 14 15 MR. BUTTOLPH: Sure. The next exhibit is going to be Buttolph 20. 16 17 MS. GEIGER: Thank you. MR. BUTTOLPH: And I'm also going to 18 19 be referring to Buttolph 19. So those two exhibits are 20 right next to each other. They're not lengthy, but ... 21 BY MR. BUTTOLPH: 22 Okay? Q. 23 Α. Yes. Great. So I guess I'll just repeat it very briefly. 24 Q. {SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1	Groton Wind has committed to one full year
2	of post-construction monitoring, similar to that
3	conducted at the nearby Lempster Wind project. If
4	the first-year results show higher mortality than the
5	range of observed rates at other operational projects
6	at forested ridgelines in the Northeast, then Groton
7	Wind will conduct a second year of post-construction
8	monitoring.
9	Now, Exhibits 19 and 20, Buttolph 19
10	and Buttolph 20, are the corporate policy of
11	Iberdrola with respect to, I guess you'd call it your
12	ABPP, your avian and bat protection plan. Is that
13	and the policy I'll start with Buttolph 19.
14	If you read down through this, this says
15	that you will implement and comply with your
16	comprehensive ABPP. That's on the first page. If
17	you go to the second page of I'm sorry the
18	third page of your exhibit, there's an implementation
19	schedule which has some time frames and so forth,
20	which would indicate to me that particular project
21	would fall under that corporate directive.
22	Now, if I go back to or forward, I
23	should say, to Buttolph and Buttolph 20 is a Town
24	of Rumney data request. And the question that was
	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 answered -- or the answer, really, is what's applicable. And it would be the second paragraph if 2 you are there. It says, "Pre-construction surveys 3 did not show the potential for an unreasonable 4 adverse impact to birds as a result of the project. 5 In addition, Iberdrola has committed to a one-year 6 7 post-construction monitoring to assess project 8 impacts to birds. If an unreasonable adverse impact is observed, then the Iberdrola corporate-wide Avian 9 Bat Protection Plan will be followed." And then see 10 Appendix 16 for that. 11

Why are you not following it at the outset 12 when your corporate policy says that you shall? 13 14 First of all, it's not my corporate policy. But the Α. reason is that if you don't have impacts, you don't 15 need to monitor for the life of the project. 16 So the 17 ABPP is taking effect by committing to that one-year post-construction monitoring. If impacts or 18 mortality rates are within range of other wind 19 20 projects in the east, then this plan commits to 21 monitoring with on-site staff years after that. So 22 it's this one formal post-construction study. If that study -- so if that's not the case, the 23 mortality rates are not within the range or lower, 24  $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1		then Iberdrola has committed to a second year of
2		monitoring to figure out what factors caused higher
3		rates.
4	Q.	And do I understand the corporate policy would say
5		that it would do that automatically without that
6		data, that first year's data?
7	Α.	Can you repeat that question, please?
8	Q.	Do I understand that your corporate that the
9		Applicant's corporate policy I'll rephrase a
10		little bit is more significant than what you have
11		just suggested is appropriate?
12	Α.	It's more significant than any wind project that's
13		been proposed or constructed because it puts a level
14		of commitment on the monitoring that most projects
15		are not following. They do one or two years of study
16		and that's it. And the thing that makes this plan
17		better is that, if there's a significant event that
18		occurs and you're only monitoring for year one or
19		year two, there's a very good chance you won't
20		observe an event if it does occur. And this
21		commitment puts further basically monitoring
22		further out than year one and two and will encompass
23		any events if they did occur.
24	Q.	Okay. So it sounds like maybe the people at

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		corporate Iberdrola might listen to your advice and
2		perhaps change their corporate policy. But it sounds
3		to me as though the answer to that data request was
4		that your Iberdrola is not going to be following
5		their corporate policy in this respect. And it
6		sounds like you agree that that's what it says, not
7		you're thinking it's not important that they follow
8		it directly. And maybe you have an alternative which
9		you would suggest that's better?
10	Α.	I'm actually not sure where you're how we're
11		getting to them not following the policy.
12	Q.	It's saying if there's well, again, back to
13		Exhibit 20, Buttolph Exhibit 20, that second
14		paragraph down. It says "if" something happens,
15		"then" we'll follow our policy. It's about the
16		second or third paragraph. It says if there's
17		unreasonable adverse observed, then Iberdrola will
18		follow the plan. And I guess the presumption is that
19		you won't be following the plan unless that occurs.
20		So that's where I'm getting that conclusion. And I
21		guess you're suggesting it isn't important because no
22		wind projects follow these plans, or very few, and
23		it's more extensive than is necessary; so, therefore,
24		Iberdrola shouldn't be following their corporate
l		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 policy in this regard is what I think I'm hearing. 2 And I just --CHAIRMAN GETZ: Well, Mr. Buttolph, we 3 try to give some latitude to parties who aren't familiar 4 5 with the process. But it seems you're making a lot of argument that you're free to do at the end of the case. 6 7 But try -- and certainly you can ask questions to the 8 witness and determine whether he agrees or not, but --MR. BUTTOLPH: Okay. 9 10 CHAIRMAN GETZ: But you can make your argument and your conclusions about what the evidence says 11 and what his testimony says. You'll have that opportunity 12 13 later. 14 MR. BUTTOLPH: Okay. I beg your pardon. Thank you. 15 16 CHAIRMAN GETZ: Sure. 17 MR. BUTTOLPH: We'll change gears. BY MR. BUTTOLPH: 18 19 Q. In response to a question on Page 12 of your 20 supplemental testimony which we just were looking at, 21 you state, "I disagree with Mr. Buttolph's assertions 22 that raptor migration surveys must be conducted throughout the migration season and over the course 23 24 of several years."

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

		51
1		If you will, Buttolph 15 is another exhibit
2		that I would ask you to get out. It's a letter from
3		Neal Randall, who is the Chairman of the Board of
4		Directors of HMANA, which is dated October 25th. Oh,
5		you're there?
6	Α.	Yeah, I'm there.
7	Q.	The letter states the following: "The proposed
8		Groton protocols appear inadequate for evaluating the
9		risk posed by industrial wind turbine projects to
10		wildlife resources One year of studies is
11		insufficient for pre-construction studies. Seasons
12		are extremely variable from year to year, and a
13		one-year snapshot is inadequate to determine patterns
14		of migration, species, abundance and risks."
15		Now, given that HMANA has just recently
16		submitted this letter as public input, and they have
17		stated precisely the position that I had taken, would
18		you reconsider your professional opinion on this
19		matter?
20	Α.	No, I wouldn't, because I disagree with the statement
21		that migration is extremely variable year to year.
22		We have several examples of you know, looking at
23		HMANA's data itself and for the past seven years
24		at the two sites closest to this project, the
		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		patterns are very similar. There's a trend, in that
2		the peak of migration occurs in September and
3		mid-October. It does not change, vary extremely as
4		suggested.
5	Q.	Okay. And just a very brief question on corporate
6		policy from before. Just a very quick, one question.
7		Will you be following the corporate policy, the AA
8		I'm sorry ABPP? That's just the brief question I
9		have.
10	Α.	That might be a better question for the Applicant.
11	Q.	Okay. I'm now going to move to another exhibit. And
12		actually, this is one from the Public Counsel, which
13		I believe was just recently handed out. It should be
14		Exhibit PC 14, if I'm not mistaken. I know that the
15		parties out here have it, and we weren't sure if the
16		Committee had that one.
17		MR. MULHOLLAND: Could we go off the
18	reco	rd for a second?
19		CHAIRMAN GETZ: Yes.
20		(Discussion off the record)
21		CHAIRMAN GETZ: We're back on the
22	record.	
23	BY M	R. BUTTOLPH:
24	Q.	Okay. Are you familiar with this report that they
l		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		just gave you? This is, my understanding well,
2		I'll just read the cover here. It's "Wind Turbine
3		Guidelines Advisory Committee, Established Under the
4		Federal Advisory Committee Act, October 26, 2007."
5		It's from the Chairman of the Wind Turbine Guidelines
6		Advisory Committee. I'll ask just a general question
7		for starters. Are you familiar with this advisory
8		committee?
9	A.	Yes, I am.
10	Q.	Okay. Is it your opinion that the field studies
11		indicate that species of concern are present on or
12		likely to use the proposed site?
13	A.	No, it isn't. It's my opinion that they could pass
14		through during migration, but that they're not
15		present in they're not residents of the project
16		area.
17	Q.	They are not residents. Okay.
18		So, being present on or likely to use, in
19		your view, is there are none. So they just
20		okay. I got that.
21		If I could direct your attention to
22		Page 28. So if there were some of these species of
23		concern there "In the event a species of concern
24		is very rare and only occasionally visits a site, a
	L	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 determination of 'likely to occur' would be inferred from the habitat at the site." 2 So if there were, you know -- well, what I 3 just said. 4 5 MS. GEIGER: Excuse me. Mr. Chairman, I'm not sure if there's a question. If not, I'm going to 6 7 object to this statement being read into the record 8 because it's not a question. MR. BUTTOLPH: Okay. I'll withdraw 9 the question. 10 11 CHAIRMAN GETZ: Okay. BY MR. BUTTOLPH: 12 During the fall 2009 sample of eight days, from 8/24 13 Q. 14 through 10/26, five bald eagles were observed. Now I'm going to direct your attention to Buttolph 18 and 15 Buttolph 17. And this one is in Buttolph 18. 16 17 Do you have that? Okay. It looks like five bald eagles were observed, as well as two golden 18 19 eagles. Now, given that this is apparently your 20 position, that this is a sufficient sample -- I 21 shouldn't -- I guess I should ask you this question: 22 As I understand it, the 10 days provides a sufficient sample in order to do your analysis; is that correct? 23 24 That's correct. Α.

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1	Q.	So, given that's the case, we have five bald eagles
2		and two golden eagles that were observed in that time
3		period. So, based on that, what would you estimate
4		would be the total count of those two species during
5		the totality of the fall migration?
6	Α.	Be difficult to tell without observing the entire
7		season. But I would note that it's important to
8		consider where those observations occurred. Of those
9		observations, not all of them occurred within the
10		project area.
11	Q.	Okay. Now I'm going to go back to the question that
12		I withdrew, and hopefully I'll do better with this.
13		That Page 28 from Exhibit PC 14 says that,
14		in the event a species of concern is very rare and
15		only occasionally visits a site, a determination of
16		"likely to occur" would be inferred from the habitat
17		at the site. So if the five bald eagles or the two
18		golden eagles were present or likely to use the
19		proposed site, then the then that would be a
20		concern relative to this particular directive out of
21		the federal government; is that correct?
22	Α.	I think the important or the key point in that
23		sentence is, "would be inferred from the habitat on
24		the site." The "habitat" is the key word there, in
l		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		that the habitat for bald eagles, as we know, are
2		open-water bodies or river corridors. They do use
3		ridge lines, you know, near their foraging and
4		breeding areas for thermal development and soaring.
5		But I would not say that this project has a habitat
6		for eagles.
7	Q.	Okay. There is the Baker River that this project is
8		close to. You're familiar with that, of course.
9	Α.	Yes. And also Newfound Lake.
10	Q.	Right, Newfound Lake.
11		Again, regarding your sampling of 10 days,
12		from $8/24$ to $10/26$ , and the data collected there,
13		could you please explain your probabilistic sampling
14		protocol that allows a statistical extrapolation to
15		the area in the time of interest?
16	Α.	So you're asking me how we determined the when to
17		sample in the migration season?
18	Q.	I'm asking as to whether you have developed and you
19		have a statistic a sampling protocol that allows
20		for a statistical extrapolation to the area in the
21		time of interest. And I guess what you said was it
22		was kind of hard to predict how many of these raptors
23		would fly through. And so I guess I should conclude
24		you don't really have a statistical extrapolation for
L		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		counting or estimating how many would be flying
2		through; is that right?
3	A.	That's correct. And we don't do that because, as I
4		said earlier, there's no correlation between
5		pre-construction survey results and post-construction
6		mortality, and especially for raptors where mortality
7		in the East has been extremely low.
8		DR. MAZUR: Extremely what?
9		WITNESS GRAVEL: Low.
10		MR. BUTTOLPH: He said "extremely
11	low.	n
12	BY M	R. BUTTOLPH:
13	Q.	Would you consider the risk of taking even one of
14		these individuals of these two species to be
15		reasonable, considering the Bald and Golden Eagle
16		Protection Act?
17	A.	Yeah. The Bald and Golden Eagle Protection Act has a
18		specific clause in there about basically
19		intentionally taking of an eagle. This project,
20		through field surveys and peregrine-use surveys over
21		the course of several years, has shown due diligence
22		to avoid avoid and assess risk. And the results,
23		as well as known information from publicly available
24		mortality studies, the conclusion is that it's a low
		$\begin{bmatrix} 2 & 2 & 0 & 1 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} 2 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \begin{bmatrix} 2 & 0 & 0 $

		38
1		risk and a low potential.
2	Q.	Have you conducted raptor nest searches in this area?
3	A.	No, we didn't.
4	Q.	And why not?
5	Α.	Well, in part, because it hasn't been requested at
6		any project before. I mean, let me back up,
7		actually.
8		Before we conduct and carry out studies, we
9		consult with the state and federal agencies
10		beforehand with detailed work plans of what we
11		propose to do on site, as was the case here. Work
12		plans were submitted to the agencies for comment, to
13		basically identify any gaps in proposed
14		methodologies. No comments were received on the
15		study plan.
16	Q.	Okay. So you've concluded, since you received no
17		comments then, the specific question here? There was
18		no raptor nest search required?
19	Α.	Yes.
20	Q.	Okay.
21		MR. BUTTOLPH: I'm done. That's all
22	the	questions I have.
23		CHAIRMAN GETZ: Thank you. Dr. Mazur,
24	do y	ou have questions for this witness?
		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1	CROSS-EXAMINATION
2	BY MR. MAZUR:
3	Q. Mr. Gravel, I don't know too much about birds and
4	bats.
5	CHAIRMAN GETZ: If we could
6	DR. MAZUR: Oh, I'm sorry.
7	BY MR. MAZUR:
8	Q. Mr. Gravel, I'm Dr. Mazur. I don't know too much
9	about birds or bats, but I have few questions for
10	you.
11	How many birds and bats would you
12	anticipate being found on the ground at such a work
13	site with 24 turbines on a daily basis? How many
14	birds corpses would be on the ground every morning?
15	A. I can't quantify that for you. But I would as I
16	said in several, you know, testimonies and reports,
17	that I expect it to be within range of publicly
18	available studies. So I think it's going to be I
19	think I would predict it would be more similar to
20	some of the work that's been done in Maine and New
21	Hampshire Lempster, specifically.
22	Q. So, how many birds would be laying on the ground
23	every morning? More or less?
24	A. I don't know.

1 Q. Zero to 10 or --

2	А.	Most likely it's most often at these studies it's
3		zero. And that's what makes it difficult to
4		correlate. You can't correlate pre-construction data
5		to zero mortality on a regular basis. There's
6		occasions where you'll find a few. But there's also
7		many occasions within a survey year you find zero.
8	Q.	Based on your expertise, sir, do the birds that fly
9		within the proximity of the turbine blades, do they
10		do that randomly, or might they do that for some sort
11		of physiological disequilibrium due to the sound wave
12		emigration that might be affecting their balance and
13		nervous system monitoring loci?
14	A.	Based on what we know about birds in the data
15		collected, we feel it's more random due to weather
16		variables and not necessarily a bird's nervous
17		system.
18	Q.	Okay. Are you aware of any experimental studies that
19		have ever been done trying to monitor the effect of
20		sound wave propagation, audible or inaudible, as far
21		as the birds or bats are concerned, on their
22		equilibrium and sensory
23	Α.	No, I'm not.
24	Q.	Okay. Why would some such studies be of some
Ĺ		$\int \operatorname{GEC} 2010_01 \int \operatorname{IDNV} 2 = \operatorname{MODNINC} \operatorname{GECCION} \int 11_02_10 \int 10^{-1}$

40

1	value, since there is concern about these creatures
2	coming to possible harm with such turbines? Why
3	would no laboratory want to seek funding to do such
4	research?
5	A. The problem is you can't isolate the variables, in
6	terms of what factors are influencing that, whether
7	it's noise or weather. So that's the problem.
8	You're in a natural environment, and you can't
9	isolate all the variables that could influence
10	collision incidents.
11	Q. I want to be careful that I don't comment and I only
12	question. But I this problem about not being able
13	to isolate variables is also applicable to concerns
14	regarding the effect of the sound wave propagations
15	on humans
16	MS. GEIGER: I'm going to object to
17	this question. This witness has not testified about sound
18	effects on humans, and so I don't think the question is
19	fair.
20	DR. MAZUR: Allow me to repeat that.
21	I appreciate Mr. Gravel's concern about the difficulty in
22	controlling for variables affecting the equilibrium,
23	balance or disturbance of the creatures we're discussing.
24	BY MR. MAZUR:

1	Q.	But regarding the peregrine falcon that everyone is
2		concerned about, I think I read in your pretrial
3		testimony that you had only observed two sightings
4		over the potential site area in 200 hours of
5		observation.
6	A.	I don't know if that's the correct number. It might
7		have been four.
8	Q.	Four sightings?
9	A.	Yeah.
10	Q.	Does it really matter whether you observe 1 sighting
11		or 10 sightings? All it takes is one unfortunate
12		sighting for the peregrine to be bladed. How
13		significant does it matter how much sightings you
14		observed?
15	A.	It's very significant. I mean, if you have, you
16		know, throughout the course of the year very few
17		opportunities for interaction, then you would expect
18		the risk to be much lower. But you also have to
19		think about, you know, life history characteristics
20		of the bird that we're talking about. I mean, these
21		birds will pick off other birds at speeds up to
22		200 miles an hour. To think that they can't see a
23		turbine is not reasonable. I'm not saying it does
24		you know, freak events do not happen. I mean, there
l		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		is, you know, definitely occasions where you could
2		have an injured bird or even a juvenile bird,
3		inexperienced, that could have an incident. But as a
4		whole, it's not we're not expecting that.
5	Q.	Are you saying your expertise, sir, are the
6		peregrines or other birds of concern to you, are they
7		particularly attracted to such artifacts in nature as
8		turbines? I mean, have you reason to believe that
9		whether or not a turbine is in their flight path,
10		they might be they might redirect their trajectory
11		to fly into the turbines?
12	Α.	No. In fact, actually, many studies
13		post-construction have showed avoidance behaviors by
14		raptors and turbines, where we've had an example
15		is Mars Hill, Maine, where we've had eagles nesting
16		nearby that we saw pre-construction and
17		post-construction. And they continually avoided the
18		turbines. They didn't avoid the ridgeline, but they
19		avoided the turbines.
20	Q.	When you say "avoided," are you saying a hundred
21		percent of circumstances or
22	Α.	At that site, yes.
23	Q.	I think I've exhausted my questions. Let me ask my
24		fellow intervenor.
ļ		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

	44
1	Sarah, do you have any questions?
2	MS. MAZUR: I do.
3	DR. MAZUR: She needs to speak at the
4	microphone. This is Sarah Mazur. She's also may she
5	ask her questions?
6	CHAIRMAN GETZ: Well, we had asked
7	ahead of time that you designate for the intervenor group.
8	But I think at this point if you have a question for this
9	particular witness, come up to a microphone.
10	DR. MAZUR: Okay. Thank you.
11	CROSS-EXAMINATION
12	BY MS. MAZUR:
13	Q. Hello. Thank you. Well, my question is: What is
14	the procedure for what seems to be a blind or
15	invisible mortality rate if the birds and the bats
16	that are become victims of the wind turbines and
17	fall to the ground as corpses and are eaten
18	immediately that night by roaming predators or
19	scavengers? What's the procedure for counting or
20	accounting for those?
21	A. Both scavenger-removal and search-efficiency trials
22	are conducted at these post-construction sites to
23	provide a correction factor on birds that searchers
24	may miss because of ground cover, or birds that were
	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1	there but are no longer there because of scavengers.
2	So the mortality rates are adjusted based on those
3	trials.
4	Q. But are those trials based on counts of how many
5	predators are on the premises or
6	A. Yeah. Yeah. Basically, carcasses are planted on a
7	site, and it's I think it's a seven-day interval
8	where you monitor daily if those carcasses are there
9	and see how long it takes for those carcasses to be
10	scavenged by coyotes or crows or ravens and so forth.
11	Q. But do you know if there are more coyotes in the East
12	than in the West?
13	A. No, I don't know that.
14	Q. Thank you.
15	CHAIRMAN GETZ: Thank you. Mr.
16	Sinclair, do you have questions?
17	MR. SINCLAIR: None. Thank you.
18	CHAIRMAN GETZ: Then my understanding,
19	Mr. Mulholland, was that Mr. Roth would conduct the
20	cross-examination of Mr. Gravel. Is that correct?
21	MR. MULHOLLAND: Yes.
22	CHAIRMAN GETZ: Okay. I guess at this
23	juncture then well, let me clarify and make sure.
24	Mr. Buttolph, I assume you were still
	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 conducting the cross-examination for your group? 2 MR. BUTTOLPH: Yes. CHAIRMAN GETZ: Okay. All right. 3 At this point then, I think we would want the Subcommittee to 4 ask its questions after Mr. Roth had conducted his 5 cross-examination. So we'll excuse Mr. Gravel until -- I 6 7 believe it's this afternoon that Mr. Roth will be here? MR. MULHOLLAND: He'll probably be 8 9 here between 11 and 12. Closer to 12, I think. 10 CHAIRMAN GETZ: Well, then let's 11 excuse Mr. Gravel. And then let's take about a 15-minute recess, bring up the panel, have the -- conduct the direct 12 13 and then start their cross-examination. Thank you. 14 (Whereupon a recess was taken at 10:11 15 a.m. and the hearing resumed at 10:36 16 a.m.) (Applicant's Exhibit 43 marked.) 17 (Applicant's Exhibit 44 marked for 18 identification.) 19 20 (Applicant's Exhibit 45 marked.) 21 CHAIRMAN GETZ: We're back on the 22 record and moving to the direct examination of the panel 23 ο. F Leo, Rendall and Walker. 24 {SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

Γ

	47
1	(WHEREUPON, the following witnesses
2	were duly sworn and cautioned by the
3	Court Reporter.)
4	MICHAEL LEO, SWORN
5	NANCY RENDALL, SWORN
6	PETER WALKER, SWORN
7	DIRECT EXAMINATION
8	BY MR. PATCH:
9	Q. Good morning. Could you each state your name for the
10	record.
11	A. (Leo) Sure. My name is Michael J. Leo. I'm a
12	project manager and civil engineer from Vanasse,
13	Hangen, Brustlin.
14	A. (Walker) My name is Peter J. Walker. I'm director of
15	environmental services for Vanasse, Hangen, Brustlin.
16	A. (Rendall) Nancy B. Rendall, senior environmental
17	scientist for Vanasse, Hangen, Brustlin.
18	Q. Might make sense to speak into the microphone when
19	you're speaking, just to make sure the court reporter
20	and everyone can hear what you're saying.
21	Now, each of you submitted prefiled
22	testimony in this docket. I believe, Mr. Leo, I'll
23	start with you.
24	You submitted with the original
	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		application, which has been marked as Exhibit 1, part
2		of Volume I, prefiled testimony; is that correct?
3	Α.	(Leo) That's correct.
4	Q.	And then part of what's been marked as Exhibit No. 5
5		supplemental prefiled testimony; is that correct?
6	Α.	(Leo) That's also correct.
7	Q.	Okay. And do you have any well, actually before I
8		do that, Mr. Walker, why don't we go to you now.
9		You were not involved in the original
10		prefiled testimony, but you submitted jointly with
11		Nancy, with Ms. Rendall, the supplemental prefiled
12		testimony that is part of Exhibit 5; is that correct?
13	A.	(Walker) Yes, that's correct.
14	Q.	And Ms. Rendall, just to be clear, you submitted
15		original prefiled testimony, part of Exhibit 1, and
16		jointly with Mr. Walker as part of Exhibit 5;
17		correct?
18	Α.	(Rendall) That's correct.
19		MR. PATCH: Okay. Does everyone have
20	that	straight? I'm sorry. I just want to be clear about
21	that	•
22	BY M	R. PATCH:
23	Q.	Now I'm going to ask each of you: Do you have any
24		corrections or updates to either the original
ļ		SEC 2010-01 LINAY 3 - MODNING SESSION 1/11-03-10

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		prefiled or the supplemental prefiled testimony? Mr.
2		Leo, why don't we start with you.
3	A.	(Leo) I do not.
4	Q.	Mr. Walker?
5	A.	(Walker) In terms of corrections to the pre-
6		supplemental prefiled testimony, no real corrections.
7		There was a question last Friday during the
8		prehearing conference that came up regarding a plan
9		set and some information that was dated July 9th. So
10		at that time, at the prehearing conference, I came
11		and explained the basis of what those filings were.
12		And I believe copies of a letter dated July 9th and a
13		letter and attachments dated July 22nd were submitted
14		to the counsel at that point.
15	Q.	Okay. Thank you.
16		MR. PATCH: Just to stop there, Mr.
17	Chai	rman. We have handed out a packet that shows the
18	July	22nd, 2010 letter to Mr. Craig Rennie on the front of
19	it.	And I think it's been premarked as Exhibit 43.
20	BY M	R. PATCH:
21	Q.	And I believe the other letter that you mentioned,
22		Mr. Walker, is contained as part of that package.
23		That was the June 29th letter; is that correct?
24	Α.	(Walker) There should be a letter dated July 9th
		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		which was signed by Michael C. Hansen, which also had
2		a number of attachments.
3	Q.	All right. I believe that's part of the packet
4		that's been handed out. But we can verify that. So
5		that's all together in what has been premarked as
6		Exhibit 43.
7		And maybe if you could just very briefly
8		summarize what that packet is again.
9	A.	(Walker) These two submittals which VHB prepared on
10		behalf of Groton Wind, LLC contained our technical
11		responses to DES comments on the alteration of
12		terrain permit application and the Wetlands Bureau
13		application.
14		So, very briefly. On June 30th, we had
15		received a request for more information from Craig
16		Rennie of New Hampshire DES regarding our alteration
17		of terrain permit application. And we replied to
18		Craig's comments on our application via this July 9th
19		letter. And although Michael Hansen signed that
20		letter today, Mike Leo, who is a lead engineer, would
21		be responsible for addressing any questions on
22		alteration of terrain.
23		We also again, as briefly as possible.
24		On June 28th, we received a separate letter from
		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 Craig Rennie, who was providing comments on our wetlands permit application. And we replied to those 2 comments of Craig's via this letter, dated July 22nd, 3 and the information that was attached to it. 4 5 Q. Okay. CHAIRMAN GETZ: Mr. Patch, I'm having 6 7 trouble finding -- are both of those in --MR. IACOPINO: 8 They're not. 9 MR. PATCH: I apologize, Mr. Chairman. I thought they were part of the packet, but apparently the 10 July 9th is not. So we'll have to check on that during a 11 break and make sure you have copies. But I --12 13 CHAIRMAN GETZ: So what's been marked as Applicant 43 is just the July 22nd material, as I can 14 best tell it. 15 MR. PATCH: That's my understanding. 16 17 And I apologize for that. But we'll correct that. MR. IACOPINO: Mr. Patch, just to 18 19 clarify. 20 Mr. Chairman, I believe that -- I know 21 the Committee doesn't have it. But my understanding is 22 that the July 9th letter was indeed previous -- between 23 Friday and Monday was circulated to the parties via 24 e-mail.

1 MR. PATCH: That's correct. Yeah. 2 CHAIRMAN GETZ: And just for additional context for my benefit, this was all material 3 that was submitted to DES that formed the basis for the 4 DES actions? 5 MR. PATCH: That's correct. 6 And there 7 were questions raised at the prehearing conference about 8 the information, so Mr. Walker came up and discussed it 9 with the parties at that time. 10 MR. IACOPINO: And the other parties actually requested this information from you. 11 12 MR. PATCH: That's right. BY MR. PATCH: 13 Okay. Then, Ms. Rendall, could you -- are there any 14 Q. updates to your testimony? 15 (Rendall) Yes, there are. I have two updates. 16 А. One is -- and they both referred to the alternative 17 interconnect route proposal. 18 19 MR. MULHOLLAND: Mr. Chairman, I'm 20 going to -- I think I'm going to object to the 21 introduction of this. We were just handed this today, 22 dated November 2nd. This is what Ms. Rendall is going to 23 talk about. And the basis of the objection is that, what this is, is an amendment to the application that's late. 24

1 And I agree it's interesting to the Committee. But we 2 don't really know where the -- as we established yesterday or the day before, we don't know where the interconnection 3 is going to be. So this is wetlands information about a 4 5 proposed orientation of the wire based on a sketch. And I mean, I guess it presents a problem to the Committee. 6 7 CHAIRMAN GETZ: Do we have this 8 document? MR. IACOPINO: Yes. This is Exhibit 9 44 for identification, Applicant's Exhibit 44. It's been 10 passed out. 11 CHAIRMAN GETZ: Oh, it's to Kristen 12 Goland, that letter dated November 2nd? 13 14 MR. IACOPINO: Yes. 15 CHAIRMAN GETZ: And it includes these other separate pieces, the summary table and the two sets 16 17 of photographs? MR. PATCH: That's correct. 18 19 MR. IACOPINO: Actually, I think it's 20 more than two photographs, isn't it? 21 MR. SCOTT: Mr. Iacopino, can I get 22 that exhibit number again? 23 MR. IACOPINO: It was 44 for 24 identification. And I believe it was passed out just a  $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1 few moments ago. I believe it actually has four 2 3 photographs, if I'm correct. CHAIRMAN GETZ: Well, what I'm saying 4 is I have two stapled sets of photographs is what I have. 5 And... 6 7 MR. IACOPINO: Maybe there was... 8 CHAIRMAN GETZ: Let's go off the record just so you don't have to try and follow this. 9 10 (Discussion off the record) 11 CHAIRMAN GETZ: All right. Back on 12 the record. Mr. Patch, have a response to Mr. Mulholland's statement? 13 I do, Mr. Chairman. 14 MR. PATCH: Ι think Mr. Mulholland had said that it was all based on a 15 16 sketch. But I'd like to point out that in the 17 supplemental application, Appendix 42 actually contains a map of the alternate interconnection route. And I believe 18 19 in his supplemental prefiled testimony, Mr. Cherian also 20 discussed it. Now, I understand that this is supplemental 21 information and it was not provided at that point in time. But I think, as we've indicated before, it is an iterative 22 process. We're trying to respond to the concerns that you 23 24 had expressed to us on Friday and then early in this

 $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1	proceeding about the fact that we needed to try to address
2	the interconnection route in more detail. Again, I
3	apologize it's coming in when it is. But we're doing the
4	best we can to try to provide more information.
5	CHAIRMAN GETZ: Well, I guess at this
6	point we'll mark it for identification. I'd like to get
7	an explanation of it. It raises several other issues:
8	One is what weight to give it; two is opportunity for the
9	other parties to inquire about it, prepare questions about
10	it; and I guess as a third, I'm taking it that some of
11	this information basically has to be considered by DES?
12	Would that be correct?
13	MR. PATCH: Well, I think it fair to
14	say if it relates to wetlands, that it would be something
15	that would be discussed with DES. But I think I'll let
16	the witnesses maybe testify more about that. They have
17	more experience dealing with DES on issues like this. But
18	maybe that would be the best way to deal with it. But I
19	would say the answer is yes.
20	CHAIRMAN GETZ: Okay. Well, let's
21	receive at least an explanation of what this information
22	is, and then we'll figure out how to deal with it.
23	BY MR. PATCH:
24	Q. Okay. Thank you. Do you need the question again or
l	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		do you remember?
2	Α.	(Rendall) Yes, I do, because I don't know how far I
3		got.
4	Q.	Okay. If you could just provide us with an update to
5		your supplemental testimony and describe for the
6		Committee, if you could, Exhibits 44, and then
7		there's a 45. At least they've been marked for
8		identification as those numbers.
9	Α.	(Rendall) Okay. Exhibit 44 is the results of a field
10		investigation that I performed at Groton Wind on
11		Friday, October 29th. The purpose of that visit was
12		to traverse a hundred-foot wide corridor, based on
13		the information that was provided to VHB by Ed
14		Cherian as to the proposed alternative interconnect
15		route. At that time, the purpose of that was to see
16		if there were wetlands, fertile pools, streams, any
17		other areas of special concern. This memo summarizes
18		the results of that investigation. I flagged the
19		wetlands in accordance with the interim guidelines
20		and located those wetland flags in the field with a
21		Trimble GPS unit, which is the same method that was
22		used for locating wetlands throughout the rest of the
23		project area.
24	Q.	And Exhibit 45?

1	Α.	(Rendall) Exhibit 45 is the result of a New Hampshire
2		Natural Heritage Bureau online data check for listed
3		species within the proposed alternative interconnect
4		route. And there are no known records within that
5		proposed area as a result of that. So that's a memo
6		to Kristen Goland explaining that that check had been
7		done and that there were no species listed or found.
8		No known records.
9	Q.	Okay. And Mr. Leo, just to be clear, did you
10		participate in that site visit on Friday?
11	A.	(Leo) Yeah, I did walk on the ground, the route of
12		the proposed interconnect.
13	Q.	Okay. Now, if we were to ask you the same questions
14		that you've been asked in your respective testimonies
15		that you filed, would you answer them the same way
16		today?
17	A.	(Leo) Yes.
18	A.	(Rendall) Yes.
19	Q.	Absent the update that we just talked about.
20	A.	(Rendall) Yes.
21	A.	(Walker) And yes.
22		MR. PATCH: The witnesses are
23	avai	lable for cross-examination.
24		CHAIRMAN GETZ: What I would propose
l		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1	is that we conduct the cross-examination on the prefiled,
2	the original prefiled and the supplemental testimony, and
3	defer any unless parties are inclined, they may
4	question about Exhibit 44 in particular. But I'd like to
5	address this issue in independent pieces and give some
6	thought to how to deal with Exhibit 44 in particular. So
7	I would suggest that we conduct the cross-examination that
8	you intended to conduct when we came here this morning,
9	and later in the day hear argument about what's the best
10	approach for dealing with Exhibit 44.
11	So, with that, Mr. Sinclair, do you
12	have any questions for the panel?
13	MR. SINCLAIR: None. Thank you.
14	CHAIRMAN GETZ: Dr. Mazur?
15	DR. MAZUR: Yeah. Thank you. I have
16	one question that really comes from my wife, who
17	Christine is also an intervenor, but not present today.
18	CROSS-EXAMINATION
19	BY MR. MAZUR:
20	Q. The wetlands that you folks monitored presumably
21	drains into the Clark Brook which runs parallel to
22	Groton Hollow Road, the access the proposed access
23	road. And the Clark Brook meanders and finally
24	enters the Baker River right across from our
I	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 property, or exactly where we go swimming in the Baker River. 2 My wife's concern is: Does this panel 3 perceive any implications for the outflow of the 4 Clark Brook into the Baker River that might affect 5 the brook -- the river itself and perhaps push the 6 7 river over to our side and affect our property, our lower fields? Is there -- that's the question. 8 (Leo) From a hydraulic standpoint, we are emulating 9 Α. on site the existing drainage flow conditions, and 10 11 we're adhering to requirements to control our runoff rates to what they are today. So there should be no 12 change caused by this project to the confluence of 13 the Clark Brook and the Baker River. 14 15 Q. My incredulous wife would then ask the question: 16 Even if you would need to dynamite the ridges of 17 Fletcher Mountain in particular, you do not anticipate any change in the off-flow of the Clark 18 Brook that might affect the position where -- the 19 20 topography where it enters the Baker River? 21 Α. (Leo) No, we don't. Overall, we've got, I think, 22 less than a 3-percent change in land use total for this project. And we're proposing very limited 23 additional impervious areas, only those areas 24

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		associated with the operation and maintenance
2		building and room for a small parking area. Other
3		than that, all the roads we're creating are going to
4		be gravel. And the slopes are going to be, you know,
5		impervious surfaces. So we're not changing the
6		patterns or the runoff rates from the site.
7	Q.	So what about the risk of contamination from the work
8		site into the Clark Brook feeding then into the Baker
9		River? Do we have to worry about contamination
10		runoff from the site?
11	Α.	(Leo) Long term, no. Once this project is completed
12		and stabilized, it will be similar to the existing
13		use that's on the site. Right now, you have to
14		remember, most of this property is an ongoing logging
15		operation. There are disturbances out there. When
16		we're gone, we'll have upgraded Groton Hollow Road on
17		the site to be a more stable road. We'll have
18		improved some of the culverts out there right now
19		that are undersized to be the correct size, so you'll
20		have less of a chance of erosion. And this is a
21		low-intensity use. In other words, these roads we're
22		building aren't going to be traveled by the public
23		every day. There's not going to be a high number of
24		cars on them. The only vehicles traveling up and
l		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		down these roads after it's built are going to be to
2		maintain the towers. So it's a very low-intensity
3		use.
4	Q.	You used the qualifying word "long term." What about
5		short term? What sort of short-term
6	A.	(Leo) Yeah. What I meant by "long term" is once the
7		project is complete and stabilized. Short term is of
8		a little more concern. During construction, it's
9		going to be imperative that they follow best
10		management practices for construction activities and
11		erosion control. We put together a fairly
12		substantial package of requirements for them to limit
13		disturbance areas, have barriers for limited
14		construction to collect sediment. There's
15		requirements that monitors be identified, people be
16		out here on site weekly monitoring all the stormwater
17		controls on site and make sure they're functioning as
18		proposed.
19	A.	(Walker) If I could, just to supplement Mike's
20		answer. Your concern is with regard to contamination
21		of water quality. The New Hampshire Department of
22		Environmental Services has reviewed the plans. That
23		is the main focus of DES's review. Water quality and
24		effect on wetlands is one area, but probably receives
Į		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		the most focus. DES has issued a recommendation to
2		the Committee. That recommendation included a number
3		of permit conditions that relate to some of the
4		concerns that you have.
5		Mike referred to construction-phase
6		monitoring. And if you look at the DES
7		recommendation, you're going to see there's a number
8		of provisions in there for spill-control provisions
9		and for monitoring of the surface water to make sure
10		there are no effects off the site.
11	Q.	Now, when we swim in the Baker, we don't drink it.
12		We drink our well water. So my wife would like to
13		know, do you have to worry about possible
14		contamination of the source of our well water? We
15		live on Quincy Road. We abut the Baker River. Do we
16		have to worry about contamination of our well?
17	Α.	(Leo) Not from this site as constructed, no.
18	Q.	You had to think about the question. Was there any
19		qualifying comments?
20	Α.	(Leo) No, I was just going through in my mind what
21		the conditions on the project were, trying to figure
22		out how to best answer your question.
23	Q.	Okay. Last week I attended a PSU, Plymouth State
24		University, climatology lecture on the anticipated
ļ		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

change in the climate in New Hampshire over the next 1 2 90 years. Through the course of the 21st Century 3 it's going to get dryer and dryer. There's going to be risk of summer droughts, be less snow and more 4 rain in the winter months. 5 MR. PATCH: Mr. Chairman, I don't know 6 7 if this is a question or --8 BY MR. MAZUR: 9 And the question is, in anticipation of the change of Q. the New Hampshire climate, would you anticipate any 10 modification of your expressed reassurance to 11 abutters such as ourselves regarding the quality and 12 the off-flow of the brook? This project will have a 13 life of at least 20 years. And we will be warming --14 we'll be going through climate warming over the next 15 90 years, for sure, maybe mitigated by such 16 17 technology as wind turbines. But do you anticipate any modification of your reassurance over the next 18 19 20, 30 years? 20 MR. PATCH: Mr. Chairman, I just need 21 to object to one portion. Mr. Mazur said as an abutter of the project, and just to be clear from a legal 22 perspective, I don't believe there are an abutter. 23 24 MR. MAZUR: I stand corrected. I mean  $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1	as abutter to the Baker River which receives off-flow from
2	the Clark River Clark Brook, which drains from the
3	potential work site. I stand corrected. I appreciate
4	that.
5	BY MR. MAZUR:
6	Q. Do you anticipate any modifications to your
7	reassurance over the course of the next 10, 20, 30
8	years as the climate continues to warm?
9	A. (Leo) I think I'll go back and just reiterate that
10	this is a low-intensity-use project. There's ongoing
11	logging activities going on on the site right now.
12	Our improvements to the site aren't going to change
13	the characteristics of the runoff of the site.
14	Whether this project is built or not built, if
15	there's substantial changes in climatic activities, I
16	don't think you'll see a difference in the
17	characteristics of the runoff of the site, whether
18	the project's built or not built. I can't predict
19	what the future climatic changes are going to be.
20	And I know there's certainly been some controversy
21	over what they actually will be.
22	Q. Okay.
23	MS. MAZUR: I do have a question about
24	the
L	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		DR. MAZUR: Is it okay if fellow
2	inte	rvenor, Sarah Mazur, asks questions?
3		CHAIRMAN GETZ: Please proceed.
4		CROSS-EXAMINATION
5	BY M	IS. MAZUR:
6	Q.	You mentioned the low impact to the road through the
7		property, which will be the extension of Groton
8		Hollow Road. I'm aware that the Clark Brook and the
9		road divide by maybe a 50-meter to 100-meter, very
10		steep incline that might be is this 90 degrees up
11		straight? and that the road really is the trail
12		goes straight down and then here's the brook. Will
13		there be guardrails or some kind of buttressing to
14		the side, the incline, 50 to 100 meters where do
15		you know what I have in mind?
16	Α.	(Leo) Well
17	Q.	I mean, it's a very obvious dramatic feature of the
18		landscape.
19	Α.	(Leo) Yeah. Right now, all the improvements we're
20		proposing to Groton Hollow Road is to widen the road
21		away from the brook and so as not to touch those
22		revetments that go down to the brook as it is.
23	Q.	So you'll cut into it to
24	Α.	(Leo) So, yeah, sort of the ravine where the brook,
		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 on Groton Hollow Road, to the extent we need to widen it, we'll widen it back into the hill on the high 2 side, not towards Groton Hollow Road, because we do 3 4 want to stay away from those ravine areas. 5 MS. MAZUR: Thank you. DR. MAZUR: Those are all the 6 7 questions from our group. 8 CHAIRMAN GETZ: Thank you. Mr. 9 Buttolph. 10 MR. BUTTOLPH: With the Chairman's permission, I would ask Cheryl Lewis to do this 11 12 cross-examination. 13 CHAIRMAN GETZ: Ms. Lewis. MS. LEWIS: 14 Thank you. 15 CROSS-EXAMINATION 16 BY MS. LEWIS: 17 0. Good morning. I guess I'd like to follow up quickly with the last question you were just asked on the 18 steep incline of the road. And you mentioned that 19 20 you would be widening it on the opposite side of the 21 Clark Brook. Is that area specific to the private 22 portion of Groton Hollow? I thought Ms. Mazur was 23 speaking right where it changes over from the public 24 to the private part. Which area were you speaking  $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1 about	:?
---------	----

2	Α.	(Leo) I was referring to the public part in the town
3		of Groton I'm sorry the private portion of road
4		in the town of Groton.

Q. Okay. Thank you. Because we've been assured in the
town of Rumney that Groton Hollow Road will not be
touched, so I just wanted to make sure that that's
not what your -- that it's not in Rumney, which we've
been told it would not be changed.

10 I have a few questions for Ms. Rendall. 11 On your supplemental prefiled testimony, Page 5, could you just clarify a bit the mitigation 12 package whereby you go on to describe a number of 13 14 stream crossings, culverts, et cetera. And specifically, were they not already adequate for the 15 logging that was being done, and that's why you're 16 17 going into to improve them, or -- I guess just to understand a little bit better what all these 18 19 upgrades are that you're proposing. 20 (Rendall) I can address that question in particular Α. 21 if you want to know. The New Hampshire DES recently

22adopted new stream crossing rules. They've been23working on them for quite a while. And the existing24logging roads that are out there are built by the

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		foresters and loggers during their timber-harvesting
2		operations. So, many of the culverts that are
3		currently along existing roads are undersized and not
4		adequate. They're not installed properly. They
5		don't have stabilized invert and outlet protection
6		and that sort of thing. The proposal is to improve
7		those to the level of the recently adopted at the
8		time that so, I guess
9	Q.	Okay. Thank you. On Page 6 of your prefiled, could
10		you explain a little bit further the detailed
11		conversation with the EPA and Army Corps as to the
12		mitigation package, including both the direct and
13		indirect impacts?
14	Α.	(Rendall) I'm going to turn this part of the
15		discussion over to Pete Walker. He's he was sort
16		of the liaison for the mitigation, development of the
17		mitigation package.
18	Α.	(Walker) Your question is could you repeat your
19		question? I just want to make sure I answer it.
20	Q.	I just wondered if you could detail a little more of
21		your conversations with both the EPA and the Army
22		Corps as to the mitigation package which they wanted
23		to include both the direct and indirect impacts.
24	Α.	(Walker) We had submitted an original mitigation
l	L	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 package with our permit application. And we had actually had meetings and discussions with all of the 2 resource agencies before we submitted our 3 application, and we had a general agreement on the 4 components of the mitigation package. 5 So, for example: The stream crossing upgrades that you just 6 7 asked about, that was originally suggested by New Hampshire DES, and we were able to incorporate that 8 into the design of the project. 9

Where the issue arose with the mitigation 10 package, the Corps of Engineers needs to -- has its 11 12 own internal regulations about mitigation. And they were having a difficult time applying those rules to 13 the component where we were assisting the Forest 14 Society with the green acre woodlands preservation. 15 So where their regulations may require, for example, 16 17 creation or preservation, they had a more difficult time dealing with our proposal, which was to provide 18 technical information and financial assistance. 19 So, 20 after the permit application was submitted, the EPA 21 and the Army Corps of Engineers commented that that was an issue for them and that they preferred that 22 our mitigation take the form of what's known as an 23 "in-lieu fee," a donation to a state fund known as 24

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 the Aquatic Resource Mitigation Fund. We met -- we had the site walk on June 29th 2 with all of the -- my recollection, all of the 3 resource agencies were present at that meeting, and 4 5 we discussed it with DES and the Corps and EPA and Fish & Wildlife, et cetera. And at that meeting, it 6 7 wasn't a clear consensus. It seemed to us that DES 8 was supportive of the mitigation package as submitted. But the Corps and EPA were pretty clear, 9 in that they wanted us to shift our focus to this 10 armed fund donation. And eventually, we had provided 11 some additional information via a July 20th 12 memorandum, and then I believe it was a July 28th 13 memorandum where we did finally opt to shift the 14 mitigation slightly. And Groton Wind, the Applicant, 15 did agree to provide \$150,000 donation to the armed 16 17 fund. That satisfied the EPA. They removed their objection to the mitigation package. And the Army 18 19 Corps eventually provided a letter, which was dated 20 September 3rd, in which they indicated that they were 21 satisfied with the mitigation proposal. Okay. Was there a specific reason why they requested 22 Q. a change in the financial aspect from 20,000 up to 23 24 150?

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 (Walker) Well, first of all, our initial proposal --Α. quite frankly, I'm not certain exactly where that 2 \$20,000 figure really came from. I think that was 3 someone within the resource agency who, you know, 4 5 made a calculation. But our initial proposal was to provide the technical assistance and to provide a 6 7 cash donation that was equivalent to 40 acres of land 8 preservation. And the way we came up with that 40 acres is we applied the DES rules on mitigation, 9 given our impact of about 1.65 acres of impact. 10 Our proposal would have met DES rules if we had proposed 11 to preserve 16-1/2 acres; so, about 10 times our 12 That's how the mitigation ratios work in the 13 impact. So we thought our proposal to provide 14 DES rules. the equivalent of 40 acres of preservation was quite 15 16 generous.

But your question was, did they provide a justification or an explanation of why 150 was acceptable and this \$20,000 was unacceptable? No, they didn't. They didn't, really. It was more the form and who was receiving the funding that was the issue.

Q. Okay. So there wasn't a change in that amount based on specific types of impacts that they were more {SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		concerned about or you know, that dollar wasn't
2		related directly to some aspect of the impact? It
3		was just more in generalities?
4	A.	I mean, you're asking about what was on their mind in
5		the negotiation. And I don't honestly know. I think
6		their general sense and it's quite common,
7		actually, in a mitigation negotiation for EPA in
8		particular to look at the initial proposal and
9		always feel that they can negotiate a better package.
10		And I think that had something to do with it. As
11		part of their leverage in this negotiation, they did
12		refer to the fact that in addition to the
13		1.65 acres of direct impact, they did reference the
14		idea that we would be clearing close to wetlands and
15		that type of thing, and that's known as an indirect
16		impact.
17	Q.	Okay. Thank you. This question is more specifically
18		for Mr Ms. Rendall. Do you recall at the
19		technical session in August when I asked you about
20		possible contamination to wells and the aquifer due
21		to significant blasting that would take place in the
22		project?
23	Α.	(Rendall) I recall that question.
24	Q.	Okay. Do you recall your answer?
ļ		

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 A. (Rendall) No.

2	Q.	Would it help if I remind you, and then you could
3		tell me if you believe I'm wrong? But my
4		recollection was that you didn't believe that wells
5		were ever contaminated by blasting and that you only
6		believed that the surface water could be effected,
7		but not the subsurface water. Do you recall that?
8	Α.	(Rendall) Well, I would not have said that. So that
9		must have been a misinterpretation of what I would
10		have said. But as Mr. Lewis had pointed out, there
11		was there is there are known cases where wells
12		have been impacted by blasting. So I wouldn't have
13		said that it wasn't a possibility. But I am not a
14		blasting expert, and I will have to defer any
15		questions on blasting to somebody else.
16	Q.	Okay. This one is more specific to Mr. Walker. I
17		noticed that in your resume you have listed you
18		worked on the Interstate 93 improvement in Southern
19		New Hampshire. And I wondered if you were involved
20		in that project at the time when there were issues
21		that occurred during blasting and/or erosion issues
22		which caused major concerns of drinking water
23		contamination, including the town's water supply.
24		Were you involved in that project at that time?
L		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 (Walker) We were -- my role for the Interstate I-93 Α. project was primarily during the compilation of the 2 environmental impact statement for the project. 3 VHB was also involved in the engineering design for 4 5 portions of the highway upgrade. Our specific area was around Exit 1 and Exit 2. The issue that you're 6 7 referring to occurred at Exit 3. That was not our 8 design task, although VHB was working on portions of the project at that time. 9 Okay. Could you tell us a little about -- because 10 0. 11 your company was involved, although you may not have 12 designed that area personally -- were there any lessons learned from that experience that would help 13 in the future so that type of situation won't happen 14 again? 15 (Walker) I want to be really clear that VHB was not 16 Α. 17 directly involved in the erosion and the blasting issues that occurred at Exit 3. So I will answer 18 19 your question, though. 20 And I will tell you that I think as a 21 result of that, DES engaged in developing best 22 management practices for blasting specifically. And as a matter of fact, those new best management 23

-

practices are referenced in the DES recommendation to

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

24

1		the Committee as permit conditions. And I think what
2		DES sought to do, working with other partners, DOT
3		and other agencies and experts in the area, was to
4		try to make sure that when blasting occurs, that all
5		of the appropriate precautions are put in place to
6		avoid and minimize any potential impacts.
7	Q.	Were you aware that the town's aquifer runs under
8		part or begins, so to speak, at parts of Groton
9		Hollow, not all the way up to the project area, but
10		up to a significant portion of Groton Hollow Road?
11		Were you aware of that when you were doing the design
12		work on this project?
13	A.	(Walker) Yes, we were.
14	Q.	You were?
15	A.	(Walker) Yes.
16	Q.	Okay. I guess I'm surprised. My recollection at the
17		tech session was that this panel that represented
18		your company was not aware of the aquifer.
19	A.	(Rendall) I presented this figure at that hearing
20		that shows that we were aware of that aquifer. And
21		this is part of our wetland permit application. So
22		this is publicly available information that's been
23		prefiled.
24		CHAIRMAN GETZ: Well, can you describe
		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 it in this case? (Walker) In this case, it's the map that Nancy just 2 Α. referred to as Figure 8. It's titled "Groundwater 3 Resources Map." And that would be filed with the 4 5 original wetlands permit application. MS. GEIGER: That would be in 6 7 Volume II of the application. 8 CHAIRMAN GETZ: Okay. Thank you. BY MS. LEWIS: 9 Could you explain if you have any plans in place to 10 0. reduce the risk of minimizing contamination of the 11 aquifer specifically? 12 13 (Leo) As part of the New Hampshire DES's recommended Α. 14 conditions of approval, they have asked that we follow, I guess, best management practices for 15 blasting procedures and handling of regulated 16 17 substances on site, and have also requested that we identify all water wells located within 2,000 feet of 18 19 the site, and that we establish a groundwater quality 20 sampling program to monitor those wells. 21 Q. Were you aware of the fact that the majority of the 22 residents in the town of Rumney lie above that aquifer and, therefore, their drinking water would be 23 related directly to that aquifer? 24

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1	Α.	(Leo) I'm not sure what you mean by they're located
2		above the aquifer, but they rely on the aquifer.
3	Q.	Yes. They
4	A.	(Leo) We have identified on this Figure 8 a number of
5		wells, intake wells that are located in the town of
6		Rumney. I'm not sure which one you're referring to.
7	Q.	Well, I guess what I'm suggesting is the way the
8		aquifer runs, it basically runs right on both sides
9		of the Baker River, which is where the majority of
10		the residences are, and going up into the village
11		area where it's most there's more residences
12		throughout the entire area of the aquifer than there
13		is anywhere else in the town. So I'm suggesting that
14		there's a lot of people in town that rely on their
15		wells not being polluted and not having any issues.
16	Α.	(Leo) I think the area you're referring to are the
17		aquifer areas, the stratified-drift aquifers on
18		either side of the Baker River. Our project is
19		located outside of the designated aquifer zone.
20	Q.	Right. I understand that. But your project, the
21		aquifer begins or a part of it goes up into Groton
22		Hollow Road, which is where your project, you know,
23		overlooks.
24	λ	(Leo) Yesh

24 A. (Leo) Yeah.

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 Q. And it's all downhill. So --(Leo) Right. But I don't believe we're going to be 2 Α. having any blasting or any substantial earth-removal 3 activities occurring within 2,000 feet of that 4 aquifer zone. 5 Do you feel certain about that? You were a little 6 Q. 7 reluctant earlier when Dr. Mazur --(Witness reviews document.) 8 9 (Leo) Well, right at the entrance of our site we have Α. 10 some minimal road widening and a little bit of 11 excavation to do for the switch station that's fairly minor. And I'm just sort of eyeballing off the plan. 12 I think those areas are all greater than 2,000 feet 13 from the aquifer zone. 14 15 (Walker) If I could, generally speaking, impact to an Α. 16 aquifer is going to result from either increased imperviousness or the introduction of contamination. 17 I don't think the Groton Wind proposal really does 18 19 either of those. We certainly are not creating a 20 additional impervious area within the main part of 21 the aquifer. The aquifer is actually located quite a 22 distance north of the project site. I think your -we should be looking at the potential for any impacts 23 to the aquifer. And it's an appropriate question to 24 {SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		ask. My own opinion is that the risk to the aquifer
2		is quite minimal. And we again, this is something
3		that DES is responsible for reviewing. It was
4		considered. They imposed these permit conditions to
5		make sure that we're looking to detect if there is
6		any impact and taking appropriate measures to
7		minimize that risk as much as we possibly can.
8	Q.	Do you believe
9	A.	(Walker) I would also you pointed out that the
10		bulk of Rumney is actually in that aquifer. And I
11		would suggest to you that the activities with
12		commercial activity, trucking, what's occurring
13		independent of this project is a far greater risk to
14		that aquifer than anything that Groton Wind would be
15		doing.
16	Q.	Given your last response, would you you said that
17		you don't believe that the risk is high for any
18		contamination to the aquifer. However, do you
19		believe that the experts that had designed and worked
20		on the situation in Salem I'm sorry Exit 3, so,
21		Windham, do you know that they had anticipated a high
22		risk in that situation?
23		MR. PATCH: Mr. Chairman, I'd object
24	to	that question. I think he's being asked to speculate
Ĺ		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1	about what some other experts may have thought, and I
2	don't see how he can honestly answer that question.
3	CHAIRMAN GETZ: All right. But I
4	think it's fair to inquire as a general matter in the
5	industry, that companies have taken precautions that they
6	thought were reasonable, that didn't turn out to be the
7	case. Now, I guess, clearly he's testified that that
8	wasn't their involvement in that issue. So he's I
9	think it's a fair question to ask. He can respond and
10	distinguish as is appropriate under the circumstances.
11	So I'd just ask you to respond to Ms.
12	Lewis's question.
13	A. (Walker) I think in the case of Exit 3 at I-93,
14	something didn't work correctly. And I don't know,
15	to be honest with you, whether it was the design or
16	the implementation of the design or the monitoring
17	and enforcement to make sure that things were being
18	installed.
19	I would also point out, to be honest with
20	you, if you look at the scale of the excavation at
21	Exit 3, you look at the scale of the blasting, the
22	size of the blasting, the footprint of the
23	construction that occurred at Exit 3, it is it's
24	much, much greater than I think any area associated
ļ	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		with our project. But I would say that there needs
2		to be an appropriate design. There needs to be an
3		appropriate set of conditions and best management
4		practices, and that those things need to be overseen
5		during construction, and that's how it should happen.
6	Q.	Do you recall how long that project was shut down due
7		to that situation?
8	A.	(Walker) I don't.
9	Q.	I mean, months? Was it months or a year or
10	Α.	(Walker) Oh, I don't want to attempt to answer a
11		question I don't know the answer. It certainly
12		wasn't a year. I don't know.
13	Q.	But it wasn't a couple days, either. It was an
14		extended period of time.
15	Α.	(Walker) Sounds like you might know.
16	Q.	Honestly, I don't know. I remember it was shut down
17		for a lengthy period of time. That's all. But I
18		don't know exact dates or what
19	Α.	(Walker) I don't know. But I would be surprised if
20		it was shut down for more than I thought it was a
21		matter of days to weeks. But I could be wrong.
22	Q.	Okay. All right.
23		MS. LEWIS: That's all the questions I
24	have	. Thank you.
L		$\begin{bmatrix} GEG 2010 01 \end{bmatrix}$ $\begin{bmatrix} DAY 2 \end{bmatrix}$ MODNING GEGGION $\begin{bmatrix} 11 02 10 \end{bmatrix}$

	82
1	CHAIRMAN GETZ: Okay. Mr. Mulholland.
2	MR. MULHOLLAND: Thank you.
3	CROSS-EXAMINATION
4	BY MR. MULHOLLAND:
5	Q. I want to start off with Figure 8 that you have right
6	there in the wetlands application. That doesn't show
7	all the private wells; right?
8	A. (Rendall) No.
9	Q. Okay. You're going to have to go out and find some,
10	according to the DES permit; right?
11	A. (Rendall) Within 2,000 feet.
12	A. (Leo) What we would do is go look at all the homes
13	within 2,000 feet and see if we can ascertain the
14	location of their wells.
15	CHAIRMAN GETZ: Just one second.
16	Let's make sure we get the full citation to that, because
17	I'm not sure we got the full citation to that figure.
18	That's in
19	A. (Rendall) Volume II.
20	MR. IACOPINO: Applicant's Exhibit 2,
21	which is in Volume II of the application. The wetlands
22	permit is Appendix 1 contained in there. And the figures
23	that are in the copies that the Committee has are actually
24	on 8-1/2-by-11 sheets of paper, not the large copies that
	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 the witnesses have. And the figures are towards the back. 2 Let's see if I can get page numbers here. They're after Page 45 of the application. 3 CHAIRMAN GETZ: Okay. I think we're 4 5 set, Mr. Mulholland. 6 MR. MULHOLLAND: Great. 7 BY MR. MULHOLLAND: 8 0. Mr. Leo, would a likely spot to start looking be on Groton Hollow Road, right at the town border where 9 the houses are? 10 (Leo) Yeah. The closest houses to us are right near 11 Α. the border at Groton Hollow Road and the 12 Groton/Rumney town line. 13 14 Okay. Mr. Walker, you referred a number of times to Q. the \$150,000 payment as a donation. It's not really 15 a donation; right? I mean, it's a fee. 16 It's a 17 condition to getting the permit; right? 18 (Walker) Yes. Α. 19 Q. But it's not a voluntary sort of donation. 20 (Walker) It's payment in lieu of other forms of Α. mitigation. So, yes. 21 22 You wouldn't recommend to the Applicant that this Q. Committee consider a different amount of money, 23 right, to the armed fund? 24 {SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1	А.	(Walker) No. No, I mean, this is an amount that the
2		resource agencies have it's been vetted by all of
3		the people who have expertise in mitigation, and it's
4		been found to be acceptable.
5	Q.	So if this Commission puts that \$150,000 fee as a
6		condition, or in the certificate, if any is issued,
7		you wouldn't recommend that the company appeal that;
8		right?
9	Α.	(Walker) No. I think the company has already agreed
10		to that amount.
11	Q.	Okay. Ms. Rendall, the largest wetland fill is
12		5,500 square feet, the largest individual fill?
13	Α.	(Rendall) Could you refer me to the place where
14		you're looking?
15	Q.	Sure. It's in your prefiled initial testimony at
16		Page 7, Line 7.
17	A.	(Rendall) Yes.
18	Q.	So the largest fill is about 5,500 square feet?
19	A.	(Rendall) Yes.
20	Q.	Where is that?
21	A.	(Rendall) I thought you were going to tell me. I
22		would have to find it on the plans, unless Mike Leo
23		can help me find it faster.
24	A.	(Walker) It's to the west, I think.
	u	

1 Q. We can come back to that, and I can move on to a different topic. 2 (Walker) Yeah, we can find it relatively quickly I 3 Α. think. It's from the Groton Hollow Road up to the 4 west ridge. 5 (Leo) Oh, okay. 6 Α. 7 (Walker) You know, the switchback. Α. 8 А. (Leo) Here? A. (Walker) Yeah, I think so. Yeah. 9 10 A. (Rendall) It's in --11 CHAIRMAN GETZ: Let's go off the 12 record so the court reporter doesn't have to try to record 13 the cross-talk. (Discussion off the record) 14 15 CHAIRMAN GETZ: Let's go back on the record. I assume you're going to have some more 16 17 cross-examination. Why don't you move on. MR. MULHOLLAND: Different topic. 18 19 CHAIRMAN GETZ: Yes. 20 (Rendall) Okay. Well, I'm in the right location for Α. 21 that. So if you... 22 (Witness reviews document.) 23 (Rendall) Okay. I'm at the location of the impact. Α. 24 At which point? Q. {SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1	A.	(Rendall) Okay. It's on the Sheet C-9.1. And the
2		wetland the impact number is 119, and the wetland
3		ID is NWR8.
4	Q.	Okay. All right. I guess those sorry. Those are
5		not in this; right?
6		MS. GEIGER: No, they're in Volume II.
7	A.	(Rendall) It would be in Volume II.
8	Q.	But where is that in the site, in general?
9	A.	(Rendall) It's on the access to the north ridge.
10	Q.	Why was that impact necessary? Was there any way
11		that you tried to avoid that wetland impact?
12	A.	(Rendall) Mike? I think I'll have to defer that
13		question to Mike Leo.
14	Q.	All right.
15		(Witness reviews document.)
16	A.	(Leo) The stream seems to flow pretty much from the
17		top of the hill all the way down. So we needed to
18		cross it somewhere to get to the N6 turbine location.
19	Q.	So then, just a couple questions about construction.
20		Have you found a general contractor yet?
21	Α.	(Leo) I'm not aware that Iberdrola has.
22	Q.	When will Iberdrola find a general contractor?
23	A.	(Leo) You'd have to ask them that.
24	Q.	So your company is not the general contractor?
	L	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

Α.	(Leo) No, we're the civil environmental design firm.
Q.	So all the plans say "Stamped for permitting, not
	construction." When will Iberdrola have construction
	plans?
А.	(Leo) Once the remaining process is finalized and we
	get all the conditions that have to be part of the
	plans, we'll change the stamp from "not for
	construction" to "for construction."
Q.	And that's something your company would do?
А.	(Leo) That's really a protection for us as designers,
	so that somebody doesn't grab a set of plans while
	we're permitting and think they can go build them.
Q.	Okay. Now, you talked about the permit from DES, in
	the proposed permit conditions, there are
	requirements to follow best management practices for
	erosion control and blasting. During construction,
	will your company be involved in monitoring that?
A.	(Leo) There will be a monitor selected, erosion
	control monitor. We think it's going to be us right
	now. They're talking about it being VHB. But
	Iberdrola would have the option of hiring a different
	consultant to do that monitoring as well.
Q.	And then what about to make sure blasting is being
	followed? Would that be your company or a different
L	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}
	Q. A. Q. A.

1 company?

2	Α.	(Leo) It would I think, given what's in here, we
3		would provide some oversight for that. I am not an
4		expert on blasting, so it wouldn't be me.
5	Q.	Okay. We talked about this at the tech session. In
6		order to construct some of the roads, I think
7		especially Groton Hollow Road, there's going to be
8		rock crushing that has to be done?
9	A.	(Leo) Yeah, we'll be trying to use most of the
10		materials that are removed from the site on site.
11		So, to the extent that we have rock removal and we
12		will have rock removal we will be processing that
13		material in other words, crushing it to various
14		diameters; some of it to be use as fill as large rock
15		and finer stone to be used for the road bed.
16	Q.	Would the as far as you know I mean, you may
17		not be able to speak for them. But would the
18		Applicant be amenable to a condition as to dust
19		reduction for things like that, for rock crushers?
20	A.	(Leo) As part of their erosion control, we have to
21		put together a best management plan as part of the
22		DES conditions. And that will include dust control
23		dust control for crushing, dust control for the roads
24		and material placement, mostly involving the use of
	<u> </u>	$\begin{bmatrix} 222 \\ 2010 \\ 01 \end{bmatrix} \begin{bmatrix} 202 \\ 202 \end{bmatrix} \begin{bmatrix} 202 \\ 20$

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		water to keep dust from blowing around.
2	Q.	So, could we just look at the Exhibit 51, the
3		proposed conditions for the AOT permit. You're
4		aware, obviously, that there are people at DES who
5		review these things and draft these permit conditions
6		for the Commission. You wouldn't recommend that the
7		Commission adopt any other permit conditions that
8		would change the ones in the DES permit; right?
9		MR. PATCH: Just to be clear, it's not
10	Exhi	bit 51. It's actually Appendix 51 to the supplement
11	to t	he application. So I think that's part of Exhibit 5.
12		MR. MULHOLLAND: Thanks, Doug. Sorry.
13	Α.	(Leo) I guess I would say I agree with the
14		conditions, and we'll comply with the conditions that
15		AOT has recommended. And I agree with their program.
16		We had already put together a fairly substantial
17		erosion control program as part of the plan set. And
18		they've imposed additional conditions and protections
19		for the project, which I think are quite adequate for
20		the construction of this project.
21	Q.	And you would recommend to the Commission that these
22		proposed conditions be part of any certificate that's
23		issued; right?
24	Α.	(Leo) Yeah. I've reviewed these with Iberdrola, and
		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		they have agreed to these conditions as part of the
2		project. And I think they're good conditions for the
3		project.
4	Q.	Okay. Can you just look at No. 12 in the AOT final
5		decision. Talks about construction, BMP inspection
6		and maintenance plan.
7	A.	(Leo) Yeah, I've got it in front of me.
8	Q.	Has the Applicant done that yet, or is that in the
9		future?
10	A.	(Leo) That would be done in the future.
11	Q.	Okay. Let's see. No. 15, same answer?
12	А.	(Leo) Just reading it now.
13		(Witness reviews document.)
14	A.	(Leo) Yes, that would also be done. It says 90 days
15		prior to the placement excuse me 90 days prior
16		to, really, the construction activity. So we would
17		need to take care of it prior to the start of
18		construction.
19	Q.	And then No. 21, we talked about this earlier?
20	A.	(Leo) Yeah, I had mentioned this previously. And we
21		would identify wells, to the best that we can, within
22		2,000 feet of any proposed blasting areas. And these
23		would mostly be the residential homes near Groton
24		Hollow Road.
	1	

Q.	Okay. Says "proposed blasting activities." Where
	are they proposed?
Α.	(Leo) Well, that's where I sort of stuttered before
	when they asked me how far it was from the blasting
	activities. As soon as you cross the Rumney/Groton
	town line onto the property, there's some areas of
	some minor excavation on either side of the road,
	some for the switching yard, some for the O & M
	building. We may or may not hit rock in those areas.
	If we do hit rock in those areas, we'd measure it
	from there. The more substantial blasting's much
	further into the site. So if we don't hit rock
	there, it may be that there are no homes within the
	2,000 feet of the rock removal.
Q.	Would there be blasting, as far as you know right
	now, on the private portion of Groton Hollow Road,
	the cuts that you were talking about?
Α.	(Leo) The portion in Rumney, no.
Q.	What about the portion in Groton?
Α.	(Leo) I'm sorry. Would you repeat the question?
Q.	The portion in Groton below the line
Α.	(Leo) Yes.
Q.	would there be blasting in those cuts?
Α.	(Leo) Yeah, some of those cuts will require some rock
	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}
	A. Q. A. Q. A. Q. A. Q.

1 removal and some blasting.

2	Q.	Okay. I think you mentioned that most of the
3		material you try to source on site. Does that mean
4		that some you're going to have to get from off site?
5		Sand, perhaps?

(Leo) Right now -- we'll know when we open up the 6 Α. 7 site. We're hoping that all the materials that we need are on site. There are plenty -- there's plenty 8 of earth for us to do that. There may be some 9 specialty things, like maybe some sand bedding for 10 11 some pipes that we can't find that we may need to bring on site in limited quantities. But as far as 12 the major fills and the select gravels for the road 13 construction and the stones for the concrete pads, 14 all that should be able to be obtained on site. 15 Q. I think Ms. Lewis mentioned this, but I just want to 16 17 ask you directly. Will there be any alterations to the public portion of Groton Hollow Road in Rumney? 18 (Leo) Right now, we don't anticipate any changes to 19 Α. 20 that road. I mean, we will have to truck down the 21 road, with the exception of right up the entrance off 22 of Route 25 there on the -- if I get my bearings correct here -- the northwest corner. 23 There's about -- I think it's about a 50-by-80-foot area 24  $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1		right in the right-of-way itself that we need to
2		level out and widen. And the reason for that is so
3		that the larger trucks, when they come in, can swing
4		that corner and turn into Groton Hollow Road. When
5		we're done, that will be returned to as near to its
6		original condition as we can.
7	Q.	Now let's go to No. 22, the AOT permit, best
8		management practices for blasting. You testified
9		that your company may be involved in making sure that
10		the blasters follow these practices. Yes?
11	Α.	(Leo) We may be. I mean, I'm not the expert on
12		blasting. We have people in our company that can do
13		this.
14	Q.	That was my next question. Does your company have
15		people who can do that?
16	Α.	(Leo) We do. We have people that can do it. I'm not
17		the person that would know exactly how to apply these
18		regulations, but they can certainly be monitored
19		either by us or somebody else.
20	Q.	Now, I'm concerned about No. 4A.
21	Α.	(Leo) Which number?
22	Q.	4A, muck pile management.
23	Α.	(Leo) Yes.
24	Q.	It says you have to remove the muck pile from the

93

1		blast area as soon as reasonably possible. How can
2		you square that with your testimony that you're going
3		to reuse the muck, the blasted rock?
4	A.	(Leo) I guess I don't understand your question.
5	Q.	Well, I mean the BMP says you have to remove the muck
6		pile from the blast area. And you said you're not
7		really going to remove it, you're going to reuse it
8		and crush it.
9	Α.	(Leo) No. We would actually any rock we're
10		blasting, we're blasting because we need to lower the
11		earth in that area. We would remove that rock and do
12		one of a couple things with it: Pick it up and place
13		it in the deeper fills and then fill over it, or we
14		would take it to an on-site crusher and process it
15		for roadbed material.
16	Q.	I think the concern of this tell me if I'm
17		wrong is that the muck pile is contaminated by the
18		blasting material, by the nitrates. I mean, isn't
19		that the reason for the muck pile management?
20	Α.	(Leo) Well, I mean, there are some finds in the muck
21		pile that we want to make sure don't get washed away.
22		I think the main thrust of this is that you keep the
23		muck piles of the blasted rock out of the
24		concentrated surface water flows.
	ι	

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1	Q.	I mean, isn't that because the muck piles may have
2		concentrations of nitrates from the blasting agent
3		that didn't fully blast?
4	A.	(Leo) I think part of it is that, yes.
5	Q.	So you may be reusing blasted rock that is
6		contaminated with nitrates is what you're saying;
7		right? Or you don't know?
8	Α.	(Leo) I'm not really the expert for the nitrates, no.
9	Q.	All right. Just a couple other questions. One
10		moment. I think I'm done. I just want to make sure
11		I didn't skip anything.
12		(Pause in proceedings)
13	BY M	IR. MULHOLLAND:
14	Q.	I guess I have just a series of questions for Ms.
15		Rendall about impacts to wetlands.
16		You agree that there's going to be adverse
17		impacts to the wetlands as a result of the project;
18		right?
19	A.	(Rendall) I agree that there will be impacts to
20		wetlands. I'm not sure how you're defining
21		"adverse."
22	Q.	Adverse meaning you're going to build the project on
23		where the wetlands are right now, at least
24	A.	(Rendall) Yes.
		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1	Q.	1.6 acres worth.
2	А.	One point six five acres, yes.
3	Q.	But you're going to mitigate them through the
4		mechanisms that you talked about.
5	Α.	(Rendall) Correct.
6	Q.	And so you also testified that that impact is not
7		going to be unreasonable. Is that how you come to
8		that conclusion?
9	A.	(Rendall) Well, it affects less than 1 percent of the
10		wetlands within the project area, and it's less than
11		a tenth of a percent of the total project area, all
12		of the land within the total project area. In
13		addition to that, we work with the engineers during
14		the design process to make sure that the most
15		significant wetlands were avoided and that buffers
16		were kept around important and significant wetlands.
17		So, for a project of this size, 116 acres, I think it
18		is a reasonable impact. You know, I've done a lot of
19		wetland inventories for towns across the state. And
20		in general, wetlands comprise 10 to 15 percent of the
21		landscape. So this is far less than what you would
22		normally expect within any random, you know, 116-acre
23		area.
24	Q.	Thank you. Those are my questions. Thank you.

1	CHAIRMAN GETZ: Thank you. Questions
2	from the Subcommittee? Mr. Harrington.
3	MR. HARRINGTON: Yeah, I had just a
4	couple questions.
5	INTERROGATORIES BY MR. HARRINGTON:
6	Q. Going back to that section on the groundwater
7	sampling plan for wells within 2,000 feet of
8	blasting. It sort of I mean let me just get
9	it. It says you'll develop and implement a
10	groundwater sampling plan program. Maybe I'm just
11	ignorant of what those terms mean. But it doesn't
12	say what do you do if you find out that there's
13	nitrate or nitrate ether in the drinking water
14	supply. I mean, there's no step for what happens,
15	other than just monitoring. So you found it. Then
16	what?
17	A. (Leo) Well, as part of the program, we would have
18	to I believe we would include a reporting piece of
19	that. So
20	Q. Well, would you fix the problem, I mean, up to the
21	point of putting in a new well for somebody if it
22	became contaminated? I'm trying to find out, finding
23	it and saying, okay, we've got bad news for you.
24	There's nitrates in your wells. The good news is we
	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		discovered it. The bad news is it's there. Now what
2		are you telling them you're going to do about it? Is
3		there something I'm missing that
4	A.	(Leo) No, I'm just I don't want to speak for
5		Iberdrola right now. I think they're the ones that
6		would have to agree to the remedial action.
7	Q.	But typically let me just go like this then:
8		Typically in your experience, when something like
9		this program is put in place to identify or to
10		monitor for a potential problem, monitoring and
11		discovering a potential problem doesn't really
12		accomplish much if there isn't some mitigation method
13		to take care of the problem.
14	Α.	(Leo) Right. And I think that the program we would
15		put in place would spell that out. You know, if it
16		was determined that it was caused by the project
17		site, you know, there would be some immediate
18		response, as in the activity would be changed or
19		stopped. And, you know, if it was determined that
20		there was damage to a well based on the project, that
21		some remedial action would be taken to correct that,
22		whether that be drilling a new well or flushing out
23		the well that they have.
24	Q.	So it's safe to assume within this Section 21, then,

98

1		it's just not a we found a problem, stop drinking
2		your water. But actually, there'd be some
3	Α.	(Leo) No. I took this to mean that we need to submit
4		a program to DES which they're going to review,
5		comment on. And I would think that they would have
6		the same concerns that you do.
7	Q.	Okay. There's a lot of talk on the and I'm not
8		sure you're the right people to be asking this to,
9		but it did come up a number of times on the fact
10		that nothing or very little is going to be done to
11		the public portion of Groton Hollow Road, which means
12		that you'll have the trucks going back and forth
13		delivering these very large pieces of machinery on
14		what is considered, what I would look at we
15		haven't seen the road but a pretty small road.
16		It's certainly not wide at all. And is there any
17		provisions in the plan to make any cutouts or turnout
18		areas, so if a truck, let's say, had a flat tire or
19		something, they could make an attempt to get off the
20		road? Or does it just sit there blocking the road
21		until they can bring in the proper equipment to haul
22		it away?
23	Α.	(Leo) We're not proposing any upgrades or turnouts to
24		the public portion of the Groton Hollow Road. We

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		had, early on, looked at seeing if we needed to widen
2		it. We had a transportation company that delivered
3		these components for other wind projects look at the
4		road. They told us they can get their trucks up and
5		down the road. So we're not creating any additional
6		turnouts. If someone were to get stuck on the road,
7		there's certainly enough construction equipment on
8		the site that they could tow that vehicle up into the
9		site or back out onto Route 25, if need be.
10	Q.	Okay. Let me start with that then. If one of these
11		trucks carrying the turbine or all the various other
12		very, very large pieces of equipment were to break
13		down on that road, would a vehicle be able to get by?
14		Or is it just basically going to take the whole road
15		when it's going up?
16	A.	(Leo) There's portions where it would take the whole
17		road up, yes.
18	Q.	Okay. So, do you know of any plans, then, if that
19		were to occur? Because by looking at that road in
20		the maps, everybody on the south side of that, if a
21		vehicle were to break down, they'd basically be
22		trapped from the point of view of using a vehicle to
23		get there's no other way out; is that correct?
24	Α.	(Leo) That would be correct.

1	Q.	So if there were and this is probably a fairly
2		rare case, but it could be. The consequences could
3		be quite devastating if someone were to have a
4		medical emergency or something, and one of these
5		trucks there's a number of trucks going back and
6		forth. There could always be the potential that
7		something shifts and the truck has to stop. The
8		truck gets a flat tire. The truck has something. Do
9		you know of any provisions that are put in effect, so
10		if somebody I mean, as simple as they were going
11		on vacation and they wanted to drive their car down
12		to get to the beach or get to the airport. What's
13		the provision for getting around that stuck truck,
14		which at that size I think could take maybe five, six
15		hours before they could get it out?
16	A.	(Leo) There will be notifications to the people
17		living on the road when these trucks are coming
18		through so that they'll know what time frames the
19		road is expected to be down, barring a breakdown, as
20		you've suggested. I think we could certainly look
21		into some type of emergency provision, should
22		(Cell phone ringing.)
23	Q.	Sorry. Excuse me. Hang this thing up here.
24	Α.	(Leo) should somebody need emergency access from
L		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1	their home out to the road. I think that's probably
2	a good thing to think about ahead of time. It's
3	something we can incorporate into the plan for access
4	to the site.
5	Q. And what's the transit time for one of these very
6	large vehicles from when it enters the bottom of
7	Groton Hollow Road until it passes through the gates
8	onto the private property?
9	A. (Leo) I think it's, round figure, about a mile from
10	one end to the other. Assuming he's doing 5 miles an
11	hour, it's probably going to take him 20 minutes, 15
12	to 20 minutes.
13	MR. HARRINGTON: I don't know how we
13 14	MR. HARRINGTON: I don't know how we go about seeing how we follow up on this, Mr. Chairman, to
14	go about seeing how we follow up on this, Mr. Chairman, to
14 15	go about seeing how we follow up on this, Mr. Chairman, to see if we can get some commitment to some type of a plan
14 15 16	go about seeing how we follow up on this, Mr. Chairman, to see if we can get some commitment to some type of a plan to address that issue.
14 15 16 17	go about seeing how we follow up on this, Mr. Chairman, to see if we can get some commitment to some type of a plan to address that issue. CHAIRMAN GETZ: Well, I think we can
14 15 16 17 18	go about seeing how we follow up on this, Mr. Chairman, to see if we can get some commitment to some type of a plan to address that issue. CHAIRMAN GETZ: Well, I think we can discuss when we get to the level of deliberations what we
14 15 16 17 18 19	go about seeing how we follow up on this, Mr. Chairman, to see if we can get some commitment to some type of a plan to address that issue. CHAIRMAN GETZ: Well, I think we can discuss when we get to the level of deliberations what we determine is an appropriate condition. I guess we could
14 15 16 17 18 19 20	go about seeing how we follow up on this, Mr. Chairman, to see if we can get some commitment to some type of a plan to address that issue. CHAIRMAN GETZ: Well, I think we can discuss when we get to the level of deliberations what we determine is an appropriate condition. I guess we could ask we could reserve an exhibit and ask the Applicant
14 15 16 17 18 19 20 21	go about seeing how we follow up on this, Mr. Chairman, to see if we can get some commitment to some type of a plan to address that issue. CHAIRMAN GETZ: Well, I think we can discuss when we get to the level of deliberations what we determine is an appropriate condition. I guess we could ask we could reserve an exhibit and ask the Applicant to propose a condition, and then we would have that before
14 15 16 17 18 19 20 21 22	go about seeing how we follow up on this, Mr. Chairman, to see if we can get some commitment to some type of a plan to address that issue. CHAIRMAN GETZ: Well, I think we can discuss when we get to the level of deliberations what we determine is an appropriate condition. I guess we could ask we could reserve an exhibit and ask the Applicant to propose a condition, and then we would have that before us so we could consider it in our deliberations. That may

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 MR. IACOPINO: Forty-six. CHAIRMAN GETZ: Applicant Exhibit 46 2 for proposed conditions to deal with circumstances that 3 might arise on Groton Hollow Road with respect to 4 breakdowns of the trucks -- delivering equipment is what I 5 take it to be; correct? 6 (Applicant's Exhibit 46 reserved.) 7 8 MR. HARRINGTON: Yeah. I mean, like I said, I don't know exactly how many trucks there are going 9 10 to be. But if it's 20 minutes a truck, and there seems like there would be a large number of them, the odds are 11 probably fairly small. But if there was, for example, a 12 fire in a house up there or some medical emergency, there 13 should be some plan that we don't start -- people don't 14 15 start figuring out when it happens, but should figure out something in advance to have an emergency plan to deal 16 17 with those situations. That's what I'm looking for. That's the only questions I had. 18 19 CHAIRMAN GETZ: Okay. Thank you. 20 MR. PATCH: Mr. Chairman, could I 21 just -- some of the questions that have been asked of this 22 panel, you know, they've deferred because they don't want to speak for the Applicant. But if they could be 23 24 addressed to us, you know, Mr. Cherian may very well be  $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1	able to answer those questions. And it's kind of hard to
2	predict what might come up and at what point in time, and
3	I don't know if we should just sort of interrupt and say
4	Mr. Cherian can answer that or
5	CHAIRMAN GETZ: Well, I think maybe
6	the better procedure is to keep a list of questions
7	that because I think there may have been in the past
8	couple of days some areas where Mr. Cherian did have
9	information. But what I'd like to do is to have all the
10	parties know what those potential issues are. If we could
11	compile a list, and then we'll have some notice to the
12	other parties of any supplemental information directly
13	responsive to questions that have been asked and whether
14	to recall Mr. Cherian at the end of basically the
15	Applicant's direct case. It doesn't have to happen today,
16	but it could be something that might be appropriate
17	tomorrow. I just want to make sure all the parties see
18	what the suggestions are and what the questions and
19	answers are likely to be, rather than doing it on the fly.
20	MR. PATCH: Okay. Thank you.
21	CHAIRMAN GETZ: Any other questions?
22	Mr. Steltzer.
23	MR. STELTZER: Yes, just a few.
24	

1 INTERROGATORIES BY MR. STELTZER:

2	Q.	In your opinion, which of the proposed
3		interconnection routes would cause the least amount
4		of environmental impact?

(Walker) I'll take a stab at that. It depends on 5 Α. what resource you're really looking at. Going down 6 7 Groton Hollow Road, there's minimal -- I want to make 8 sure Nancy agrees with me. But there would be minimal wetland constraint going down Groton Hollow 9 But our understanding of why we're looking at 10 Road. 11 the alternative is because residents are concerned about that alternative. So the new alternative, if 12 you will, which does involve Groton Hollow Road, may 13 involve some indirect -- some clearing and some 14 indirect impacts. Neither one, at least in my 15 opinion, represents a significant environmental 16 17 impact.

MR. STELTZER: The next two are maybe more directed -- I'm not sure how to handle them, so I'll just raise them and take input from the Chairman of how to handle it. One is regarding the residue from the blasting. And it was raised by Mr. Mulholland, as far as the nitrates that might be within the materials and how the Applicant would reuse those materials on site. And I

 $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1	don't know if it would be appropriate to have an exhibit		
2	to understand that concern a bit more, about how the		
3	nitrates the leftover nitrates in that residue would be		
4	reused or contained.		
5	Α.	(Rendall) Could I just	
6	Q.	Sure.	
7	Α.	(Rendall) It's not something I studied for or	
8		prepared for today so I may get the conversion right.	
9		But one occurs in the absence of oxygen. When it's	
10		put into the air, it converts to a non-toxic form of	
11		nitrates. So, in removing that contaminated muck	
12		away from the hole, it's not able to go down into the	
13		hole where it's in an anaerobic state. When you move	
14		it away and it's put in a stockpile location or	
15		spread out, it becomes aerobic, and it converts to a	
16		different form. That problem is resolved.	
17	Q.	So, to paraphrase, there isn't as much concern about	
18		the residue of the blast material within the products	
19		that would be reused on the site. Is that your	
20		opinion?	
21	А.	(Rendall) In terms of the nitrogen, yes.	
22	Q.	And is the nitrogen the chief concern, as far as	
23		potential pollutants from the blasting that could	
24		affect the aquifer and the wells?	
		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}	

1 (Rendall) That's my understanding. But I'm not Α. 2 positive if there are other concerns, so... BY MR. STELTZER: 3 And the only reason I was suggesting maybe there 4 0. should be an exhibit entered into for this was just 5 for some comments I had heard from the panel, in that 6 7 they weren't necessarily blasting experts on some of it. So I'll defer on whatever the best way is to 8 handle that. But it would be -- I do think it would 9 be appropriate to gain some better understanding 10 about the potential effect from the residue from the 11 blasting on that material and how it would be reused 12 on the site. 13 14 CHAIRMAN GETZ: And I take this -let's link it to the document. It's the permit -- the 15 16 final decisions and conditions from DES, and it's the Alteration of Terrain Bureau final decision, Condition 22, 17 Subset 4, goes to muck pile management. And I think this 18 is a similar concern with an issue raised by Mr. 19 20 Harrington on Condition 21, is the condition appears to be 21 drawn as this is the result that should be achieved. And 22 what we don't have before us is essentially what steps are 23 taken and how is it implemented to achieve those results. And, you know, some of it, I think with Mr. Harrington's 24

 $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1 question, maybe go to what DES intends to do. On this issue, we may be able to get an answer based on a blasting 2 expert from the -- I guess from the consultant. 3 So I guess that's a long way around to 4 say why don't we reserve an exhibit -- that would be 5 Applicant's 47 -- that would, I guess, explain in greater 6 7 detail how the muck pile management is executed so that the terms of the condition can be met. Does that take 8 care of it, you think? 9 10 MR. STELTZER: That handles it. Thank 11 you. 12 (Applicant's Exhibit 47 reserved.) 13 CHAIRMAN GETZ: All right. Other 14 questions? Mr. Scott. 15 INTERROGATORIES BY MR. SCOTT: 16 Good afternoon, I guess it is. Q. 17 Α. (Walker) Good afternoon. Whoever on the Panel can best answer it, regarding 18 Q. 19 the rock crushing operations. I was interested in a 20 little bit more detail. Who will be doing that? 21 Α. (Leo) It will be an operation run by the contractor, 22 who has not been selected yet. 23 And do you have an idea where that will be done and Q. in what proximity to the residences in the area? 24  $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1	Α.	(Leo) It would be done internal to the site. Further
2		away from the residents, the better. We do some
3		staging areas, I think, where the west ridge access
4		roads starts off. You would probably want to get
5		fairly central to the site, away from the residents.
6	Q.	And associated with that, I assume there will be time
7		constraints if there are noise impacts, that type of
8		thing?
9	A.	(Leo) Yeah, I would think there would be whatever
10		I don't even know if there's any hours in here. But
11		the 7-to-7 kind of hours.
12	Q.	Broader question: Obviously for the plan as we
13		initially submitted in the existing regulatory
14		permits you have, in dealing with the regulating
15		agencies, has your plan changed in any significant
16		way?
17	A.	(Leo) Well, I think the comments we had gotten from
18		both Wetlands Bureau and the Alteration of Terrain
19		folks resulted in fairly minor changes to the plan.
20		We added a culvert or two, some additional erosion
21		control, and then we added the monitoring sequencing
22		notes that they wanted to the plan. So there has
23		been some changes. I think they're fairly minor.
24		And we have added those comments to the plans.
I		$\{SEC \ 2010 - 01\} [DAY \ 3 - MORNING \ SESSION] \{11 - 03 - 10\}$

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

Sounds like -- if I may paraphrase, sounds minor, at 1 Q. 2 most? (Leo) Yeah. The roads are in the same locations, for 3 Α. the most part, other than some minor alignment 4 adjustments. All turbines are still in the same 5 locations. It's all pretty minor. 6 7 (Walker) And all of the changes to those plans, that Α. was the July 9th submittal. And the updated is a 8 subset of the plans. Maybe a dozen or so sheets were 9 changed, and that was submitted to the Committee. 10 11 MR. SCOTT: And Mr. Chairman, just to 12 clarify. So, any questions regarding the alternate interconnect route or the step-up station, that would be 13 handled at a different time; is that correct? 14 15 CHAIRMAN GETZ: Well, I think what we -- I want to hear argument about how to treat 16 17 exhibit -- what is this, 44? So, yeah, I would say let's defer questions about that exhibit and the alternate 18 route, unless you have general questions about the 19 20 alternate route. But the questions you would have had before Exhibit 44 was marked for identification --21 22 MR. SCOTT: I can wait until once we 23 discuss it. Thank you. 24 CHAIRMAN GETZ: Okay. Other {SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 questions? Dr. Kent. INTERROGATORIES BY DR. KENT: 2 What's the status of your discussions with the 3 Q. agencies regarding the alternate interconnections? 4 (Walker) Aside from consulting with the Natural 5 Α. Heritage Bureau, we haven't submitted any information 6 7 to DES or the other resource agencies. 8 DR. KENT: Thank you. CHAIRMAN GETZ: Other questions? 9 Mr. Iacopino. 10 INTERROGATORIES BY MR. IACOPINO: 11 Along that line -- and I don't know who would be best 12 Q. 13 to answer this. But let's say the alternate route 14 was just a separate project. Would it require as standard dredge and fill permit application, 15 alteration of terrain permit application, and any 16 17 other resource applications? MS. GEIGER: Excuse me. Could we get 18 19 a clarification about what we're talking about in terms of "alternate route"? I want to make sure everybody 20 21 understands exactly what -- how we are using that term. 22 MR. IACOPINO: The "alternate route" 23 is the alternate transmission line that you've provided in your supplemental materials, as contained within Mr. 24

 $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1 Cherian's prefiled testimony, and also provided us with a map -- I don't know what exhibit -- Appendix 42 I think it 2 might have been -- Appendix 42 in your supplemental 3 filing, which is Exhibit 5. And as I understand it, 4 5 that's also the subject of Applicant Exhibit 44 for identification. 6 7 MS. GEIGER: The reason I'm asking for 8 the clarification is that I think that these witnesses, in the documents they submitted this morning, provided 9 information about the part of the route that is on the 10 property of the project site. They have not looked at 11 anything beyond Route 25. So when these -- I think my 12 concern is that these witnesses have in their mind the 13 alternate route being from the switchyard to Route 25. 14 They do not have in their mind a more expansive view that 15 might be reflected in Figure 6-A. 16 17 MR. IACOPINO: And right now, that's all I'm -- as I understand it, you haven't identified a 18 19 location, for instance, for the step-up transformer and --20 MS. GEIGER: Correct. 21 MR. IACOPINO: -- those other parts of 22 the interconnection. But I'm just talking about the line 23 that goes down to Route 25 right now. 24 CHAIRMAN GETZ: Okay. Let me just  $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1 make sure that we're all on the same page. So when we're 2 talking about "alternate route," we're basically talking about the alternative to going down Groton Hollow Road to 3 4 reach Route 25. 5 MS. GEIGER: Correct. CHAIRMAN GETZ: And those other issues 6 7 are the issues implicated by the substation in the 115 kV. 8 Those are alternatives that may arise because of the issues with respect to the voltage-level interconnection 9 required by PSNH. 10 11 MS. GEIGER: Correct. MR. MULHOLLAND: Mr. Chairman, there's 12 another use of the term "alternate route" that was used 13 for Route 25 versus across the river on Quincy Road, which 14 was the initial proposal. So there's a number of uses of 15 "alternate route." 16 17 MR. IACOPINO: Just to make it clear, for the purposes of my question, we're talking about the 18 19 alternate route that is alternate to going down Groton Hollow Road and is described in what's been marked as 20 21 Applicant Exhibit 44 for I.D., and is the first portion of what is contained, as I understand it, in Appendix 42 of 22 23 Exhibit 5. And it's basically the alternate to Groton Hollow -- from Groton Hollow Road down to Route 25, not 24

 $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1 using Groton Hollow Road. BY MR. IACOPINO: 2 And if I understand correctly, that's what you went 3 Q. out to the field and provided Applicant 44 for 4 identification. 5 (Rendall) That's correct. 6 Α. 7 Okay. If what's proposed in Applicant 44 for 0. 8 identification was a separate project, would you be required to file a wetlands application? 9 (Rendall) I would view the -- as you can see in the 10 Α. 11 report, I traversed a hundred-foot-wide corridor. And the clearing width for the transmission, the 12 lines, is 34 feet. So there's a lot of room within 13 14 the corridor that I looked at for them to place the poles and the lines to avoid direct impacts and/or 15 indirect impacts due to clearing. So I made some 16 17 recommendations in that, so that -- what they could to avoid all direct and/or in direct impacts to 18 wetlands. So it's possible that there could be no 19 20 wetland impacts and no need for a wetland permit 21 application. What about alteration of terrain permit application? 22 0. (Walker) Well, the -- and, Mike, maybe you may want 23 Α. to supplement my answer. But generally, alteration 24 {SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		of terrain is an independent project. It is		
2		triggered by 100,000 square feet, about 2-1/2 acres		
3		of contiguous disturbed area. Very unlikely that		
4		that would reach that threshold. So, an alteration		
5		of terrain permit application, it's unlikely that one		
6		would be required for that.		
7		Do you agree, Mike?		
8	Α.	(Leo) I mean, it's a separate especially since		
9		it's on a separate landowner's property, it would be		
10		under a separate application. And it would be		
11		under likely be under 100,000 square-foot of		
12		impact and not require a permit.		
13	Q.	And are there any other agencies that you would have		
14		to seek a permit from, environmental resource		
15		agencies that you're aware of, or any other types of		
16		permits that you might need to seek from DES for this		
17		portion of the project?		
18	Α.	(Walker) There's no other state or federal permits		
19		that I'm aware of that would be required for that.		
20	Q.	I take it, you all aren't the folks to speak to about		
21		impacts on historical sites.		
22		Okay. I guess my question then is, if this		
23		is proposed as part of the project, does this require		
24		amended review by Department of Environmental		
l		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}		

1		Services with regard to your wetlands permit or the	
2		alteration of terrain permit which have been	
3		previously submitted as Appendix 52 in Exhibit A	
4		I'm sorry, not 52 Exhibit 51, the final decisions	
5		that we've received on October 8, 2010, from DES?	
6	А.	(Walker) I think that we would. And certainly if the	
7		decision is made to go with this alternate route, we	
8		would certainly consult with DES on the alteration of	
9		terrain and the wetlands permit.	
10		My personal thought on this is that it	
11		would be treated it would be regarded as a fairly	
12		minor the impacts and the changes are fairly	
13		minor. So, with regard to wetlands, I think it can	
14		be designed without incurring any, you know,	
15		significant new impacts. And I think DES would	
16		probably look at it as a minor change.	
17	Q.	But it's something you would present to them	
18	А.	(Walker) Yes.	
19	Q.	to seek an amended final decision and conditions.	
20	А.	(Walker) Yes.	
21	Q.	I have no further questions about that. I do have	
22		some questions just about the N6 turbine.	
23		CHAIRMAN GETZ: Well, let's I think	
24	Dr.	Kent has a follow-up on your previous questions.	
l		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}	

1 INTERROGATORIES BY MR. KENT:

The stream crossing, can you avoid that? 2 0. (Rendall) The lines themselves will go across the 3 Α. streams, and there will be clearing within the 4 50-foot buffer. There are -- let me look at my 5 There are streams that cross the -- and 6 table. 7 they're linear. So there would definitely be clearing within the buffers, the upland riparian 8 buffers of the streams. But if you're outside the 9 banks, that's not jurisdictional. So there would not 10 be any impacts within a jurisdictional area for the 11 placement of poles, because they can move the poles 12 so they would not be put into a stream or a wetland 13 and so forth. The only possible impact would be 14 clearing from in the banks. 15

Q. So I think what you're saying, so for installation of 16 17 the poles, we'll have to keep coming in and out, make sure we're not going through a stream with the 18 19 construction, with the installation equipment. 20 (Rendall) There is an existing skidder road that is Α. 21 being used currently. They're actively logging in 22 this section on the green acre woodlands portion of 23

the property. That skidder road is already --

24

there's a bridge that was built over the perennial

 $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1		stream. And there are probably they may be	
2		driving through the streams with the skidder, some of	
3		them, because there aren't culverts at some of these	
4		intermittent streams. So I guess if the road in that	
5		case I don't know the process for putting in the	
6		poles, and so I don't know how that part would work.	
7		So, possibly, yes.	
8	Q.	So if I understood you right, you anticipate using	
9		that skidder road as much as possible for	
10		accessing	
11	Α.	(Rendall) For the first I'd have to refer to my	
12		own	
13		(Witness reviews document.)	
14	Q.	So we don't have to go looking for things again, I	
15		guess the more important question is that you're	
16		going to have a discussion with DES at some point; do	
17		you know when that will be, so you'll know what your	
18	obligations are?		
19	А.	A. (Walker) Again, that's a question we would I'd	
20		pass that to the Applicant. It's really up to the	
21		Applicant to direct us to DES. We don't work	
22		independent of the Applicant. So the answer is I'm	
23		not sure, Don.	
24	Q.	Thank you.	

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1		CHAIRMAN GETZ: Mr. Iacopino.	
2	INTERROGATORIES BY MR. IACOPINO:		
3	Q.	Mr. Leo, previously in your testimony there was	
4		discussion regarding the 5,500 square feet of	
5		affected wetlands in the vicinity of the is it a	
6		cut and fill at Turbine No. 6, N6? It's on sheet	
7		C9-1, I believe.	
8	Α.	(Leo) It's a cut in the immediate vicinity of	
9	Q.	And that's what causes that largest wetlands impact?	
10	Α.	(Leo) Well, I guess I think I misspoke. I was kind	
11		of looking in the wrong way in the plans. Actually,	
12		past N6 is where the wetland impact is. And that	
13		provides access to N1 through N5.	
14		So, here is N6. That's the large wetlands	
15		impact just above it. That's how they get access to	
16		the north ridge.	
17	Q.	Okay. So it wasn't for the installation, for	
18		instance, of the area where the turbine would	
19		actually be. It's a continuation of the road?	
20	Α.	(Leo) Right. It's the main access road that goes up	
21		to the north ridge.	
22	Q.	So the elimination of Turbine N6 wouldn't do anything	
23		to eliminate that wetlands impact?	
24	Α.	(Leo) No. There's only a minor 40-square-foot impact	
		{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}	

required for N6. 1 2 0. Okay. Thank you. CHAIRMAN GETZ: Okay. 3 Other 4 questions? Mr. Harrington. INTERROGATORIES BY MR. HARRINGTON: 5 Just a follow-up. I guess we're into Applicant's 44 6 Q. 7 with the alternate route --CHAIRMAN GETZ: Well, actually --8 MR. HARRINGTON: We're waiting on 9 10 this? 11 CHAIRMAN GETZ: We were going to hold off on cross-examining on Exhibit 44 itself. I wanted to 12 hear additional argument on that, that issue, because I 13 still have my -- the concerns I expressed earlier in the 14 15 day. So let's -- and then Mr. Scott, I think, had some similar types of issues. But let's do that separately. 16 I want to see now if there's any other 17 further questions on the prefiled direct and the 18 supplemental. Ms. Lewis? 19 20 MS. LEWIS: I do have a few follow-up 21 questions, if that's okay. 22 CHAIRMAN GETZ: Follow-ups to 23 questions raised by the Subcommittee? MS. LEWIS: One was raised from Mr. --24 {SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1 sorry. I forget his last name. CHAIRMAN GETZ: Mulholland? 2 MS. LEWIS: -- Mulholland, regarding 3 4 the blasting that was going to be done just over the Rumney line. 5 6 CHAIRMAN GETZ: Okay. Let's proceed 7 through those questions then. 8 MS. LEWIS: Okay. INTERROGATORIES BY MS. LEWIS: 9 Given that the blasting is going to be occurring just 10 0. 11 over the line, with nearby houses right amongst that area, will there be any structural surveys done on 12 these homes prior to the blasting and, therefore, be 13 able to make a comparison if there are any issues 14 that occur during the blasting? 15 (Leo) We don't have structural surveys as part of the 16 Α. 17 plan right now. Any reputable blasting company will go out, based on their own criteria, and survey homes 18 within a certain distance of the work they're 19 20 performing. They do that to protect both themselves 21 and the people around them. Most reputable blasting 22 companies have done quite a bit of this work, and they know where to look and what to look for in 23 24 foundations. So...

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1	Q.	So, is that done at the expense of the Applicant or
2		the homeowners?
3	A.	(Leo) That would be not the homeowner.
4	Q.	Okay. Thank you. Is that a routine thing, or is
5		that something that needs to be required as a
6		condition?
7	A.	(Leo) That's a routine thing. There's only a few
8		blasting companies in the New England area that could
9		take on this kind of work. All those companies would
10		conduct some type of a pre-blast survey.
11	Q.	Thank you. My second question just had to do with a
12		little more follow-up on the muck that was discussed.
13		Would there be any muck that was reused
14		along any area where the new transmission lines are
14 15		along any area where the new transmission lines are proposed? Is that any possibility at all or
	А.	
15	А.	proposed? Is that any possibility at all or
15 16	А.	proposed? Is that any possibility at all or (Leo) I mean, there could potentially be some gravel
15 16 17	A. Q.	proposed? Is that any possibility at all or (Leo) I mean, there could potentially be some gravel that's put down to firm up the roads for access to
15 16 17 18		proposed? Is that any possibility at all or (Leo) I mean, there could potentially be some gravel that's put down to firm up the roads for access to the transmission lines.
15 16 17 18 19		proposed? Is that any possibility at all or (Leo) I mean, there could potentially be some gravel that's put down to firm up the roads for access to the transmission lines. Okay. Given that the new transmission lines that
15 16 17 18 19 20		<pre>proposed? Is that any possibility at all or (Leo) I mean, there could potentially be some gravel that's put down to firm up the roads for access to the transmission lines. Okay. Given that the new transmission lines that have been proposed do run directly over the aquifer</pre>
15 16 17 18 19 20 21		<pre>proposed? Is that any possibility at all or (Leo) I mean, there could potentially be some gravel that's put down to firm up the roads for access to the transmission lines. Okay. Given that the new transmission lines that have been proposed do run directly over the aquifer in that area, is that something that further</pre>
15 16 17 18 19 20 21 22		<pre>proposed? Is that any possibility at all or (Leo) I mean, there could potentially be some gravel that's put down to firm up the roads for access to the transmission lines. Okay. Given that the new transmission lines that have been proposed do run directly over the aquifer in that area, is that something that further conditions or further plans would need to be done, to</pre>

{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1	CHAIRMAN GETZ: Well, I think this	
2	question effectively goes to the request made by	
3	Mr. Steltzer, that what it appears at this point is these	
4	witnesses don't have the knowledge to comment, as I take	
5	it, on what the muck pile management plan is or what DES's	
6	expectations are. Is that correct?	
7	WITNESS LEO: Well, I understand what	
8	their expectations are. It's to keep the muck pile out of	
9	surface waters and to manage it with that respect. You	
10	know, and we will have downstream controls, filter	
11	barriers and things like that, that will help filter out	
12	any nitrates leaving the site anywhere.	
13	Her question about, I think the	
14	interconnect, is whether or not we'd be transporting any	
15	of this rock down into that area. And I think we can	
16	certainly, you know, agree not agree to not have any of	
17	the rock that was blasted on the site, you know, hauled	
18	and used off site.	
19	BY MS. LEWIS:	
20	Q. Just one more follow-up on that. Do you know if	
21	there would be any blasting necessary to create that	
22	new proposed transmission line?	
23	A. (Leo) There would not be any blasting necessary.	
24	MS. LEWIS: Thank you. That's all I	
L	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}	

1 have. CHAIRMAN GETZ: Okay. Thank you. 2 Rather than do redirect now, I think we should hold that 3 until the -- until we make a decision on what to do about 4 Exhibit 44, unless there are issues that you would like to 5 address on redirect. Maybe I'll give you the option. 6 7 MR. PATCH: That's fine. We don't 8 need to at this point. Thank you. CHAIRMAN GETZ: Then the witnesses 9 will be subject to recall. 10 11 I'd like to take the lunch recess now, 12 but this is how I would suggest that we proceed: Effectively, this panel is excused, pending how we -- the 13 14 decision to be made about the appropriate treatment of Exhibit 44. And I want to consider over the lunch break 15 what's the best approach to dealing with that issue and to 16 17 make sure everyone gets an opportunity to weigh in on how we should proceed. 18 19 But Mr. Mulholland, is the expectation that Mr. Roth will be here this afternoon? 20 21 MR. MULHOLLAND: Yes. 22 CHAIRMAN GETZ: I'd like to get on the record his cross-examination of Mr. Gravel. It's almost 23 I would suggest we resume at 1:45 and that the 24 12:30.  $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

first thing we do then is pick up with the completion of the cross-examination of Mr. Gravel. We would hear from Mr. Roth and then turn to the Subcommittee for an opportunity for redirect. And hopefully I'll be able to give some more concrete guidance about how to deal with the alternate route to the Groton Hollow Road distribution line.

8 But let me re-emphasize a couple 9 things, because I think this goes to, in the first 10 instance, the motion to suspend that was filed by the Buttolph Group and that we dealt with at the prehearing 11 12 conference, and it goes to comments made at the beginning of the hearing, and it also goes to some comments made 13 today, and these are some of my concerns at this juncture. 14 15 Part of it was taken up by Mr. Iacopino on this 16 alternative information. It looks like there may or may 17 not have to be some DES review of some sort. Another issue is, of course, the weight to be given to this type 18 19 of information. Ultimately, it's a -- both sides of the 20 coin are implicated here. What's the -- and I'm looking 21 at R.S.A. 162-H:16, and it goes to what's the Applicant's burden of proof with respect the Subsection 4, the things 22 that we must find in order to approve an application. 23 So, of course, the Applicant has the burden of proving certain 24

 $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1 issues by a preponderance of the evidence. And then we must find, among other things, that the project would not 2 have an unreasonable adverse effect on a list of items, 3 including aesthetics, historic sites, air and water 4 quality, the natural environment, and the public safety. 5 So, of course, the obligation is on the Applicant to prove 6 7 that there will not be unreasonable adverse effects. So my concern is what is the status of the record and how we 8 would address all of those issues. And it also implicates 9 10 where we are with the historic sites and any interaction with the Division of Historic Resources. And I've also 11 got concerns about appropriate measures for due process, 12 especially with this newer information, to make sure the 13 parties and Public Counsel have a way to address those 14 issues, conduct the cross-examination in a fair way. 15 So 16 those are my concerns at this point.

17 I'm prepared to do a couple of things. I think maybe the best way is to give the parties an 18 19 opportunity to think about these issues today and have 20 argument tomorrow morning on those issues, on what's the 21 best way to proceed, and, of course, give some time for the parties, if they can reach an agreement on a way to 22 That certainly would be a useful measure. 23 proceed. But 24 if there's no agreement among the parties, then we'll take

 $\{SEC \ 2010-01\}[DAY \ 3 - MORNING \ SESSION]\{11-03-10\}$ 

1	argument and be prepared to rule on how we should proceed
2	with the remainder of the case.
3	But having said all that, I'd like to
4	get the complete the Gravel testimony. Certainly the
5	Applicant, I think, should be permitted to make its case.
6	And then I think what we were going to try to do is
7	accommodate Public Counsel's witness, Mr. Tocci, his
8	schedule, and to conduct the direct and cross-examination
9	of him this afternoon.
10	So, any questions before we take the
11	lunch recess?
12	(No verbal response)
13	CHAIRMAN GETZ: Okay. Hearing
14	nothing, then let's recess and resume at 1:45. Thank you.
15	(WHEREUPON, the Day 3 AM Session
16	recessed for lunch at 12:32 p.m.
17	Day 3 Afternoon Session to resume
18	under separate cover so designated.)
19	
20	
21	
22	
23	
24	
	{SEC 2010-01}[DAY 3 - MORNING SESSION]{11-03-10}

1	CERTIFICATE
2	I, Susan J. Robidas, a Licensed
3	Shorthand Court Reporter and Notary Public
4	of the State of New Hampshire, do hereby
5	certify that the foregoing is a true and
6	accurate transcript of my stenographic
7	notes of these proceedings taken at the
8	place and on the date hereinbefore set
9	forth, to the best of my skill and ability
10	under the conditions present at the time.
11	I further certify that I am neither
12	attorney or counsel for, nor related to or
13	employed by any of the parties to the
14	action; and further, that I am not a
15	relative or employee of any attorney or
16	counsel employed in this case, nor am I
17	financially interested in this action.
18	
19	Susan J. Robidas, LCR/RPR
20	Licensed Shorthand Court Reporter Registered Professional Reporter
21	N.H. LCR No. 44 (RSA 310-A:173)
22	
23	
24	
	$\{SEC 2010-01\}[DAY 3 - MORNING SESSION]\{11-03-10\}$

		GROTON WIND, LLC		
	70:24;71:18	28 (2)	12;124:5,15	8-1/2-by-11 (1)
\$	<b>15-minute</b> (1)	33:22;35:13	45 (5)	82:24
¥	- 46:11	28th (2)	46:20;56:7,24;57:1;	
\$150,000 (3)	16 (1)	50:24;70:13	83:3	9
70:16;83:15;84:5	27:11	29th (3)	46 (2)	
\$20,000 (2)	<b>16-1/2</b> (1)	49:23;56:11;70:2	103:2,7	9 (2)
71:3,19	71:12	2nd (2)	47 (2)	24:10;25:1
71.5,19	<b>162-H16</b> (1)	52:22;53:13	108:6,12	90 (5)
0	125:21		48 (2)	63:2,16;65:10;90:14,
•	17 (1)	3	15:10,11	15
09 (1)	34:16		49 (5)	93 (1)
8:23	18 (2)	3 (10)	21:6,11,20,21;22:6	73:18
0.25	- 34:15,16	21:6;22:1;74:7,18;	4A (2)	9th (7)
1	19 (4)	79:20;80:13,21,23;	93:20,22	49:9,12,24;50:18;
<b>_</b>	25:19;26:9,9,13	127:15,17		51:11,22;110:8
1 (6)		30 (2)	5	
42:10;48:1,15;74:6;	2	63:19;64:7		Α
82:22;96:9		30th (1)	5 (13)	
1.6 (1)	2 (2)	50:14	12:10;13:11,14,15;	AA (1)
<b>1.0 (1)</b> 96:1	74:6;82:20	33 (1)	15:13;48:4,12,16;67:12;	32:7
<b>1.65 (2)</b>	2,000 (8)	6:12	89:11;102:10;112:4;	able (13)
71:10;72:13	76:18;78:4,13;82:11,	34 (3)	113:23	8:4,8;20:3;41:12;69:8;
<b>1:45 (2)</b>	13;90:22;91:14;97:7	7:17;22:3;114:13	5,500 (3)	88:17;92:15;100:13;
1:45 (2) 124:24;127:14	20 (13)	35 (1)	84:12,18;119:4	104:1;106:12;108:2;
	24:23;25:16;26:9,10,	7:23	5.3 (1)	121:14;125:4
<b>10 (7)</b> 34:22;36:11;40:1;	23;29:13,13;63:14,19;	36 (1)	16:10	above (3)
	64:7;102:11,12;103:10	8:6	50 (2)	76:22;77:2;119:15
42:11;64:7;71:12;96:20	20,000 (1)	37 (1)	16:19;65:14	ABPP (4)
<b>10/26 (2)</b> 34:14;36:12	70:23	8:12	50-by-80-foot (1)	26:12,16;27:17;32:8
<b>10:11 (1)</b>	200 (2)	38 (1)	92:24	absence (1)
46:14	42:4,22	8:16	<b>50-foot</b> (1)	106:9
	2007 (1)	39 (1)	117:5	Absent (1)
10:36 (1)	33:4	8:16	50-meter (1)	57:19
46:15	2009 (4)	3-percent (1)	65:9	abundance (1)
100 (1)	9:2;13:21;14:3;34:13	59:22	51 (4)	31:14
65:14	2010 (8)	3rd (1)	89:2,10,10;116:4	abut (1)
100,000 (2)	8:24;9:5;13:12,22;	70:20	52 (2)	62:15
115:2,11 <b>100-meter (1)</b>	14:2,12;49:18;116:5		116:3,4	abutter (3)
65:9	2010-01 (1)	4	5-something (1)	63:21,23;64:1
11 (1)	5:4		15:2	abutters (1)
46:9	20th (1)	4 (2)		63:12
115 (3)	70:12	107:18;125:22	6	accept (1)
8:1,2;113:7	21 (3)	4.5 (4)		6:22
116 (1)	90:19;98:24;107:20	13:20;15:2,21;18:18	6 (2)	acceptable (2)
96:17	2-1/2 (1)	40 (4)	68:9;119:6	71:19;84:4
<b>116-acre</b> (1)	115:2	8:18;71:7,9,15	6.4 (3)	access (10)
96:22	<b>21st</b> (1)	40-square-foot (1)	13:21;15:2,21	58:22,22;86:9;101:24;
90:22 <b>119 (1)</b>	63:2	119:24	6-A (1)	102:3;109:3;119:13,15,
86:2	22 (2)	41 (1)	112:16	20;122:17
<sup>80:2</sup> 12 (4)	93:7;107:17	9:18		accessing (1)
30:19;46:9,9;90:4	22nd (4)	42 (6)	7	118:10
	49:13,18;51:3,14	9:24;14:1;54:17;		accident (1)
<b>12:30 (1)</b> 124:24	23 (1)	112:2,3;113:22	7 (2)	22:23
124:24 12:32 (1)	16:20	42-percent (1)	84:16,16	accommodate (1)
12:32 (1) 127:16	24 (1)	14:6	7-to-7 (1)	127:7
	39:13	43 (4)	109:11	accomplish (1)
12th (4) 13:12 15:24:11:25:6	25 (8)	46:17;49:19;50:6;		98:12
13:12,15;24:11;25:6	92:22;100:9;112:12,	51:14	8	accordance (1)
14 (2)	14,23;113:4,14,24	44 (20)		56:19
32:14;35:13	25th (1)	15:9;46:18;53:10,10,	8 (4)	according (1)
<b>15 (4)</b> 21:1:00:11:06:20:	31:4	23;56:6,9;58:4,6,10;	76:3;77:4;82:5;116:5	82:10
31:1;90:11;96:20;	26 (1)	110:17,21;112:5;	8/24 (2)	accounting (1)
102:11	33:4	113:21;114:4,7;120:6,	34:13;36:12	44:20
150 (2)		112.21,111.1,1,120.0,	5	

achieve (1) 107:23 achieved (1) 107:21 acoustic (5) 14:1;18:24;19:5,19; 20:7acre (2) 69:15;117:22 acres (10) 71:7,9,10,12,15;72:13; 96:1.2.17:115:2 across (4) 58:24;96:19;113:14; 117:3 Act (3) 33:4;37:16,17 action (2) 98:6.21 actions (1) 52:5 actively (1) 117:21 activities (8) 14:10;61:10;64:11,15; 78:4;79:11;91:1,5 activity (14) 14:8,9,15;16:7,18; 18:13;19:1,5,13;20:8,13; 79:12:90:16:98:18 actually (25) 10:10:14:11:15:15: 16:19:29:10:32:12:38:7; 43:12;48:7;52:11;53:19; 54:2,17;64:21;69:2; 72:7;78:21;79:10;82:23; 89:10:94:9:99:2:119:11. 19:120:8 ADAM (4) 11:4,6,11;12:2 added (3) 109:20,21,24 addition (3) 27:6;72:12;96:13 additional (9) 10:3;52:3;59:24; 70:12;78:20;89:18; 100:5;109:20;120:13 address (9) 6:2,5;55:1;58:5;67:20; 102:16;124:6;126:9,14 addressed (1) 103:24 addressing (1) 50:21adequate (3) 67:15;68:4;89:19 adhering (1) 59:11 adjusted (1) 45:2 adjustments (1) 110:5

adopt (1) 89:7 adopted (2) 67:22:68:7 advance (1) 103:16 adverse (8) 27:5,8:29:17:95:16, 21,22;126:3,7 advice (1) 29:1 Advisory (4) 33:3,4,6,7 aerobic (1) 106:15 aesthetics (1) 126:4 affect (4) 59:5,7,19;106:24 affected (1) 119:5 affecting (2) 40:12:41:22 affects (1) 96:9 afternoon (6) 46:7;108:16,17; 124:20;127:9,17 again (14) 19:14:23:9:24:9; 29:12:36:11:50:8.23; 53:22:55:2.24:74:15: 79:2:118:14.19 agencies (11) 38:9,12;69:3;70:4; 75:3;84:2;109:15;111:4, 7:115:13,15 agency (1) 71:4 agent (1) 95:2 ago (1) 54:1 agree (11) 29:6;53:1;70:16; 89:13,15;95:16,19;98:6; 115:7;123:16,16 agreed (6) 6:13,17;8:20;10:4; 84:9;90:1 agreeing (1) 23:12 agreement (3) 69:4;126:22,24 agrees (2) 30:8;105:8 ahead (2) 44:7:102:2 air (2) 106:10;126:4 airport (1) 101:12 alignment (1)

110:4 Allow (1) 41:20 allows (2) 36:14.19 almost (1) 124:23 alone (1) 19:8 along (4) 6:19;68:3;111:12; 122:14 alteration (11) 50:11,16,22;107:17; 109:18;111:16;114:22, 24;115:4;116:2,8 alterations (1) 92:17 alternate (20) 12:15;54:18;110:12, 18,20;111:4,13,20,22, 23:112:14:113:2.13.16. 19,19,23;116:7;120:7; 125:6 alternative (9) 29:8;52:17;56:14; 57:3;105:11,12,12; 113:3;125:16 alternatives (1) 113:8 although (3) 50:19:74:8.11 altitude (1) 18:9 always (2) 72:9;101:6 amenable (1) 88:18 amended (2) 115:24;116:19 amendment (1) 52:24 among (2) 126:2,24 amongst (2) 20:9;121:11 amount (6) 7:19;71:23;83:23; 84:1,10;105:3 Anabat (1) 14:20 anaerobic (1) 106:13 analysis (1) 34:23 analytics (1) 10:11 and/or (3) 73:21;114:15,18 annual (1) 10:16 anomalies (5) 16:15,17;17:2;18:11,

16 anomaly (2) 14:23:16:8 answered (2) 22:9:27:1 anticipate (8) 23:23;39:12;59:18; 63:10,17:64:6:92:19; 118:8 anticipated (2) 62:24;79:21 anticipation (1) 63:9 **AOT (4)** 89:3,15;90:4;93:7 apologize (5) 15:15;25:7;51:9,17; 55:3 apparently (2) 34:19;51:10 appeal (1) 84:7 appear (2) 5:10;31:8 appearances (1) 5:5 appearing (1) 5:21 appears (2) 107:20:123:3 Appendix (11) 15:6.9.11:27:11: 54:17:82:22:89:10; 112:2,3;113:22;116:3 applicable (2) 27:2;41:13 Applicant (26) 5:10;6:13;9:15;12:9; 15:13;32:10;51:14; 70:15;83:22;88:18;90:8; 102:20;103:2,23; 105:24;112:5;113:21; 114:4,7;118:20,21,22; 122:1;125:24;126:6; 127:5 Applicant's (13) 7:17;28:9;46:17,18, 20;53:10;82:20;103:7; 104:15;108:6,12;120:6; 125:21 application (28) 5:5;12:4;48:1;50:12, 13,17,18;51:2;52:24; 54:17;69:1,4,20;75:21; 76:5,7;82:6,21;83:3; 89:11;111:15,16;114:9, 21,22;115:5,10;125:23 applications (1) 111:17 applied (1) 71:9 apply (1) 93:17

applying (1) 69:13 appreciate (2) 41:21:64:3 approach (3) 18:21;58:10;124:16 appropriate (13) 28:11:75:5:78:24; 79:6;80:10;81:2,3; 102:19;104:16;106:1; 107:10;124:14;126:12 approval (1) 76:14 approve (1) 125:23 approximately (1) 22:8 apt (1) 17:8 Aquatic (1) 70:1 aquifer (27) 72:20;75:7,18,20; 76:12,23,24;77:2,2,8,12, 17,19,21;78:5,14,16,21, 21,24;79:1,10,14,18; 106:24;122:20,24 aquifers (1) 77:17 area (42) 8:17:17:5.18.19; 33:16:35:10:36:15.20: 38:2;42:4;56:23;57:5; 60:2;61:24;66:21,24; 74:5,12;75:3,9;77:11,12, 16;78:20;80:24;92:24; 94:1,6,11;96:10,11,12, 23:108:24:115:3: 117:11;119:18;121:12; 122:8,14,21;123:15 areas (15) 36:4:56:17:59:24.24; 61:13;66:4;77:17;78:13; 90:22;91:6,9,10;99:18; 104:8;109:3 argument (7) 30:6,11;58:9;110:16; 120:13;126:20;127:1 arise (2) 103:4;113:8 armed (3) 70:11.16:83:24 arms (1) 23:10 Army (4) 68:11,21;69:21;70:18 arose (1) 69:10 around (9) 14:21;23:10;24:12; 74:6;89:1;96:16;101:13; 108:4:121:21

artifacts (1)

43:7 ascertain (1) 82:13 Aside (1) 111:5 aspect (2) 70:23;72:2 assertions (1) 30:21 assess (3) 20:22;27:7;37:22 assessing (1) 24:5assessment (1) 8.11 assistance (2) 69:19;71:6 assisting (1) 69:14 associated (3) 60:1;80:24;109:6 assume (5) 9:8;45:24;85:16; 98:24:109:6 Assuming (1) 102:10 assured (1) 67:5 attached (1) 51:4 attachments (2) 49:13:50:2 attempt (2) 81:10:99:19 attended (1) 62:23 attention (2) 33:21:34:15 attracted (1) 43:7 audible (1) 40:20 audited (1) 8:21 August (1) 72:19 automatically (1) 28:5 available (6) 13:3;21:1;37:23; 39:18:57:23:75:22 avian (4) 22:11;23:15;26:12; 27:9 avoid (8) 37:22,22;43:18;75:6; 86:11;114:15,18;117:2 avoidance (1) 43:13 avoided (4) 43:17,19,20;96:15 aware (11) 40:18;65:8;75:7,11,

18,20;76:21;86:21;89:4;	become (1)	1
115:15,19	44:16	
away (8)	becomes (1)	
65:21;66:4;94:21;	106:15	
99:22;106:12,14;109:2,5	<b>bed (1)</b> 88:15	
В	bedding (1)	
	92:10	
back (17)	beforehand (1)	
17:24;26:22;29:12;	38:10	
32:21;35:11;38:6;46:21;	beg (1)	]
54:11;64:9;66:2;83:1; 85:1,15;97:6;99:12;	30:14 beginning (1)	1
100:9;101:5	125:12	
bad (2)	begins (2)	1
97:23;98:1	75:8;77:21	
Baker (12)	behalf (1)	]
36:7;58:24;59:2,5,14,	50:10 behaviors (1)	]
20;60:8;62:11,15;64:1; 77:9,18	43:13	1
balance (2)	below (2)	]
40:12;41:23	18:6;91:21	
bald (7)	benefit (1)	1
34:14,18;35:1,17;	52:3 best ( <b>20</b> )	1
36:1;37:15,17 <b>banks (2)</b>	<b>best (20)</b> 51:15;55:4,18;58:9;	
117:10,15	61:9;62:22;74:21,23;	1
barriers (2)	76:15;81:3;87:15;88:21;	
61:13;123:11	90:21;93:7;107:8;	
barring (1)	108:18;111:12;124:16;	
101:19	126:18,21	
<b>based (16)</b> 10:4;18:20;20:3;	<b>better (9)</b> 28:17;29:9;32:10;	1
22:22;35:3;40:8,14;	35:12;67:18;72:9;104:6;	
45:2,4;53:5;54:15;	107:10;109:2	
56:12;71:23;98:20;	beyond (2)	1
108:2;121:18 basically (16)	23:15;112:12 biologist (1)	1
14:14,23;16:6,20;	11:14	
20:16;28:21;37:18;	bird (6)	1
38:13;45:6;55:11;77:8;	11:18;23:18,19;42:20;	
100:14,21;104:14;113:2,	43:2,2	1
23 basis (5)	<b>birds (17)</b>	1
39:13;40:5;49:11;	22:12;27:5,8;39:3,9, 11,14,22;40:8,14,21;	]
52:4,23	42:21,21;43:6;44:15,23,	1
bat (15)	24	
9:20;11:18;14:8,12,	bird's (1)	1
19,21;17:10,17,21;	40:16	1
18:24;19:19,20;20:7; 26:12;27:10	<b>bit (9)</b> 23:5;28:10;67:12,18;	]
bats (15)	68:10;78:10;106:2;	]
13:18,24;16:4,6,12;	108:20;121:22	
17:4,5,13,18;20:20;39:4,	bladed (1)	
9,11;40:21;44:15	42:12	
<b>beach (1)</b> 101:12	<b>blades (1)</b> 40:9	
Bear (1)	blast (4)	1
19:14	94:1,6;95:3;106:18	
bearings (1)	blasted (4)	1
92:22	94:3,23;95:5;123:17	-
became (1)	blasters (1)	]
97:22	93:10	

blasting (43) 72:21;73:5,12,14,15, 21;74:17,22;75:4;76:16; 78:3;80:21,22;87:16,23; 88:4;90:22;91:1,4,15,23; 92:1;93:8,12;94:10,10, 18;95:2;97:8;105:22; 106:23;107:7,12;108:2; 121:4,10,13,15,17,21; 122:8;123:21,23 blasting's (1) 91:11 blind (1) 44:14 blocking (1) 99:20 blowing (1) 89:1 **BMP** (2) 90:5;94:5 Board (1) 31:3 bodies (1) 36:2 border (2) 83:9,12 **both** (11) 12:20;44:21;51:7; 52:17;68:12,21,23;77:8; 109:18;121:20;125:19 bottom (3) 21:23:22:3:102:6 break (4) 51:12;100:12,21; 124:15 breakdown (1) 101:19 breakdowns (1) 103:5 breeding (2) 16:3;36:4 bridge (1) 117:24 brief (2) 32:5,8 briefly (4) 25:24;50:7,14,23 bring (3) 46:12;92:12;99:21 Broader (1) 109:12 Brook (15) 58:21,23;59:5,6,14,19; 60:8;63:13;64:2;65:8, 12,21,22,24;66:21 **Brustlin** (3) 47:13,15,17 buffer (1) 117:5 buffers (3) 96:15;117:8,9 build (2) 87:12;95:22

building (3) 60:2.22:91:9 built (7) 61:1;64:14,14,18,18; 67:24;117:24 bulk (1) 79:10 burden (2) 125:22,24 Bureau (5) 50:12;57:2;107:17; 109:18;111:6 **BUTTOLPH (51)** 5:13,14;13:5,6,8; 15:20;21:6,10,14,16,22; 22:1,1,7;24:23,24;25:2, 6,9,10,15,16,18,19,21; 26:9,10,13,23,23;29:13; 30:3,9,14,17,18;31:1; 32:23;34:9,12,15,16,16; 37:10,12;38:21;45:24; 46:2;66:9,10;125:11 Buttolph's (1) 30:21 buttressing (1) 65:13 С C-9.1(1) 86:1 C9-1(1)119:7 calculate (1) 24:6 calculation (3) 6:14:10:6:71:5 calculations (1) 10:4call (1) 26:11 calling (2) 16:14,17 calls (13) 13:20,21;14:9,21,22; 15:21,21;16:10,21;17:8, 10;18:18,19 came (6) 49:8,10;52:8;58:8; 71:3.8 can (55) 7:5;9:1;15:3;19:2,21; 20:1,4,9,16,20;28:7; 30:7,10;47:20;50:4; 51:14;53:21;55:4;67:20; 72:9;75:24;79:7;80:2,9; 82:13;83:2;84:23;85:1, 1,3;87:12;90:4,21;93:3, 6,12,15,16,18;94:1; 99:21;100:4;102:3,15, 17;104:4;108:8,18; 110:22;114:10;116:13; 117:2,12;123:15;126:22

canopy (1) 18:6 capacity (3) 6:8.17:11:13 car (1) 101:11 carbon (1) 6:14 carcasses (3) 45:6.8.9 care (3) 90:17;98:13;108:9 careful (1) 41:11 carry (1) 38:8 carrying (1) 100:11 cars (1) 60:24 case (15) 16:16;17:16;27:23; 30:6;35:1;38:11;76:1,2; 80:7,13;101:2;104:15; 118:5;127:2,5 cases (1) 73:11 cash (1) 71:7 cause (2) 8:8:105:3 caused (4) 28:2:59:13:73:22; 98:16 causes (1) 119:9 cautioned (2) 11:5;47:2 Cell (1) 101:22 central (1) 109:5 Century (1) 63:2 certain (5) 18:8;71:2;78:6; 121:19;125:24 certainly (13) 30:7;64:20;78:19; 81:11;93:18;99:16; 100:7;101:20;116:6,8; 123:16;126:23;127:4 certificate (2) 84:6;89:22 cetera (2) 67:14;70:6 CHAIRMAN (102) 5:2,8,12,14,16,19,23; 6:7;7:13,16;9:12;10:20; 11:2;13:2,4;15:5,18; 21:16;24:24;25:4;30:3, 10,16;31:3;32:19,21; 33:5;34:5,11;38:23;

6:14.17 39:5:44:6:45:15,18,22; clarification (2) 46:3.10.21:49:17:51:6.9. 13,20;52:2,19;53:7,12, 111:19:112:8 15:54:4,8,11,14;55:5,20; clarify (5) 10:20;45:23;51:19; 57:24;58:14;63:6,20; 65:3;66:8,13;75:24; 67:12;110:12 76:8;79:23;80:3;82:1, Clark (10) 15:83:4:85:11.15.19; 58:21,23:59:5,14,18; 60:8;64:2,2;65:8;66:21 97:1;102:14,17;103:2, 19,20;104:5,21;105:20; clause (1) 107:14;108:13;110:11, 37:18 clear (10) 15,24;111:9;112:24; 25:8;48:14,20;57:9; 113:6,12;116:23;119:1; 120:3,8,11,22;121:2,6; 63:22;70:7,9;74:16; 123:1;124:2,9,22;127:13 89:9:113:17 Chairman's (1) clearing (7) 66:10 72:14;105:14;114:12, chance (2) 16;117:4,8,15 28:19;60:20 clearly (1) change (18) 80:7 12:16;15:23;21:4; climate (4) 24:9;29:2;30:17;32:3; 63:1,10,15;64:8 59:13,18,22;63:1,9; climatic (2) 64:12;70:23;71:23;87:7; 64:15.19 89:8;116:16 climatology (1) changed (4) 62:24 67:9;98:18;109:15; close (2) 110:10 36:8;72:14 changes (8) Closer (1) 64:15,19:66:23:92:19: 46:9 109:19,23;110:7;116:12 closest (2) 31:24:83:11 changing (1) 60:5 closing (1) characteristics (3) 8:3 42:19:64:13,17 Coast (9) 22:15,15,17;23:13,14, check (3) 51:11:57:2,6 22:24:3,5,6 Cherian (6) coin (1) 54:19;56:14;103:24; 125:20 colleague (1) 104:4,8,14 Cherian's (3) 5:11 collect (1) 6:15;7:2;112:1 Cheryl (2) 61:14 5:17;66:11 collected (4) 12:17;19:9;36:12; chief (1) 106:22 40:15 collision (1) Christine (1) 41:10 58:17 circles (1) coming (5) 16:12 17:24;41:2;55:3; circling (1) 101:17:117:17 17:24 comment (4) circulated (1) 38:12;41:11;99:5; 123:4 51:23 circumstances (3) commented (1) 43:21;80:10;103:3 69:21 citation (2) comments (12) 38:14,17;50:11,18; 82:16,17 cite (1) 51:1,3;62:19;107:6; 15:6 109:17,24;125:12,13 civil (2) commercial (1) 47:12:87:1 79:12 claimed (2) **Commission** (4)

84:5;89:6,7,21 commitment (3) 28:14,21:102:15 commits (1) 27:20 committed (4) 24:14;26:1;27:6;28:1 **Committee (19)** 5:4;7:9,9;9:6;11:22; 32:16:33:3.4.6.8:51:21: 53:1,6;56:6;62:2;75:1; 82:23:83:23:110:10 committing (1) 27:17 common (1) 72:6 companies (4) 80:5;121:22;122:8,9 company (15) 8:21;74:11;75:18; 84:7,9:86:24:87:9,17,24; 88:1;93:9,12,14;100:2; 121:17 compare (2) 20:9,21 comparison (1) 121:14 compilation (1) 74:2 compile (1) 104:11 complete (3) 9:12:61:7:127:4 completed (1) 60:11 completion (1) 125:1 comply (2) 26:15;89:14 component (1) 69:14 components (2) 69:5;100:3 comprehensive (1) 26:16 comprise (1) 96:20 comprised (1) 16:19 concentrated (1) 94:24 concentrations (1) 95:2 concern (19) 33:11,23,23;35:14,20; 41:1,21;43:6;56:17; 59:3;61:8,20;94:16; 106:2,17,22;107:19; 112:13;126:8 concerned (5) 40:21;42:2;72:1; 93:20:105:11 concerning (1)

5:4 concerns (10) 41:13:54:23:62:4; 73:22:99:6:107:2: 120:14;125:14;126:12, 16 conclude (3) 19:21,22:36:23 concluded (2) 14:3:38:16 conclusion (3) 29:20:37:24:96:8 conclusions (1) 30:11 concrete (2) 92:14;125:5 condition (11) 83:17;84:6;88:18; 93:6;102:19,21;107:17, 20,20;108:8;122:6 conditions (23) 59:10;62:3,21;75:1; 76:14;79:4;81:3;87:6, 14;88:22;89:3,5,7,14,14, 18,22;90:1,2;103:3; 107:16;116:19;122:22 conduct (12) 11:17:24:20:26:7; 38:8;45:19;46:12;58:1, 7,8;122:10;126:15; 127:8 conducted (8) 19:10:20:6:24:16: 26:3;30:22;38:2;44:22; 46:5 conducting (1) 46:1 conference (4) 49:8,10;52:7;125:12 confidential (6) 6:9.16.18.20:9:8:10:9 confidentiality (1) 9:1 confluence (1) 59:13 confused (2) 18:2;19:14 connecting (1) 22:19 connection (1) 20:17 consensus (1) 70:7 consequences (1) 101:2 consider (9) 18:15,19,23;23:3; 35:8;37:13;83:23; 102:22;124:15 considered (4) 15:22;55:11;79:4; 99:14 considering (1)

37:15 conve constraint (1) 105:9 conve constraints (1) 109:7 coope construct (1) 88:6 copies constructed (2) 28:13;62:17 copy ( construction (18) 61:8,10,14;80:23; corner 81:5:86:19:87:3.3.8.8. 16;89:20;90:5,16,18; corpoi 92:14:100:7:117:19 construction-phase (1) 62:5 consult (2) corpoi 38:9;116:8 consultant (3) Corps 10:13;87:22;108:3 Consulting (2) 11:15:111:5 corpse contained (9) 12:13,20;15:13;49:22; correc 50:10;82:22;106:4; correc 111:24;113:22 contains (1) 54:17 correc contaminated (5) 73:5:94:17:95:6; correc 97:22;106:11 contamination (10) correl 60:7.9:61:20:62:14. correl 16:72:20:73:23:76:11: 78:17:79:18 context (1) correl 52:3 contiguous (1) correl 115:3 continually (1) corrid 43:17 continuation (1) corrid 119:19 continues (1) Couns 64:8 contractor (4) 86:20,22,24;108:21 Couns contrast (1) 8:10 count control (10) 59:11:61:11:87:16.19: counti 88:20,22,23,23;89:17; 109:21 counts controlling (1) couple 41:22 controls (2) 61:17;123:10 controversy (1) 64:20 couple conversation (1) 68:11 course conversations (1) 68:21

	GROTON WIND, LLC
onversion (1)	24;126:6,21
106:8	court (6)
onverts (2)	9:5,6;11:5;47:3,19;
106:10,15	85:12
poperating (1)	cover (4)
9:20	22:3;33:2;44:24;
opies (4)	127:18
49:12;51:12;82:23,24	coyotes (2)
opy (3)	45:10,11
21:8,12,18	Craig (3)
orner (2)	49:18;50:15;51:1
92:23;93:4	Craig's (2)
orporate (13)	50:18;51:3
26:10,21;27:13,14;	create (1)
28:4,8,9;29:1,2,5,24;	123:21
32:5,7	created (1)
orporate-wide (1)	8:9
27:9	creating (3)
orps (7)	60:3;78:19;100:5
68:11,22;69:11,21;	creation (1)
70:5,9,19	69:17
orpses (2)	creatures (2)
39:14;44:17	41:1,23
orrected (2)	criteria (1)
63:24;64:3	121:18
orrection (1)	cross (3)
44:23	86:18;91:5;117:6
orrections (4)	cross-examination (21)
12:12;48:24;49:5,6	13:3,7;39:1;44:11;
orrectly (3)	45:20;46:1,6,13;57:23;
16:11;80:14;114:3	58:1,7,18;65:4;66:12,15;
orrelate (2)	82:3;85:17;124:23;
40:4,4	125:2;126:15;127:8
orrelated (2)	cross-examining (1)
19:6,16	120:12
orrelating (1)	crossing (3)
19:20	67:22;69:6;117:2
orrelation (1)	crossings (1)
37:4	67:14
orridor (3)	cross-section (1)
56:12;114:11,14	8:13
orridors (1)	cross-talk (1)
36:2	85:13
<b>bounsel (4)</b>	crows (1)
5:21;32:12;49:14;	45:10
126:14	crush (1)
ounsel's (1)	94:8
127:7	crusher (1)
ount (1)	94:14
35:4	crushers (1)
ounting (2)	88:19
37:1;44:19	crushing (4)
ounts (1)	88:8,13,23;108:19
45:4	culvert (1)
ouple (8)	109:20
81:13;86:19;94:12;	culverts (4)
95:9;97:4;104:8;125:8;	60:18;67:14;68:2;
126:17	118:3
oupled (1)	currently (2)
19:9	68:3;117:21
ourse (10)	cut (3)
30:23;36:8;37:21;	65:23;119:6,8
42:16;63:2;64:7;125:18,	cutouts (1)
72.10,03.2,04.7,123.18,	Cutouis (1)

99:17 cuts (3) 91:17,23,24 D daily (2) 39:13;45:8 damage (1) 98:20 damaged (1) 17:14 data (22) 11:1;12:16;14:3; 18:24;19:4,8,9;20:4,11, 14,16,21;21:1;26:24; 28:6,6;29:3;31:23; 36:12;40:4,14;57:2 date (1) 9:10 dated (9) 31:4;49:9,12,13,24; 51:3;52:22;53:13;70:19 dates (1) 81:18 day (6) 53:3;58:9;60:23; 120:15;127:15,17 days (8) 34:13,22:36:11:81:13, 21:90:14.15:104:8 deal (6) 55:18,22;58:6;103:3, 16:125:5 dealing (5) 55:17;58:10;69:18; 109:14:124:16 dealt (1) 125:11 decision (6) 90:5;107:17;116:7,19; 124:4.14 decisions (2) 107:16;116:4 deeper (1) 94:13 defer (5) 58:3;73:14;86:12; 107:8;110:18 deferred (1) 103:22 defining (1) 95:20 definitely (2) 43:1;117:7 degrees (1) 65:10 deliberations (2) 102:18,22 delivered (1) 100:2 delivering (2) 99:13;103:5 develop (1)

**Department** (2) 61:21:115:24 depends (1) 105:5 **DES (36)** 50:11,16;52:4,5; 55:11,15,17;62:1,6; 67:21:69:8:70:5.7:71:9. 11,14;74:21,24;75:2; 79:3:82:10:87:13:88:22; 89:4,8;99:4;107:16; 108:1;111:7;115:16; 116:5,8,15;118:16,21; 125:17 describe (3) 56:5;67:13;75:24 described (1) 113:20 design (9) 69:9;74:4,8;75:11; 80:15,16;81:2;87:1; 96:14 designate (1) 44:7 designated (2) 77:19;127:18 designed (3) 74:12;79:19;116:14 designers (1) 87:10 **DES's (3)** 61:23:76:13:123:5 detail (5) 10:21;55:2;68:20; 108:7.20 detailed (2) 38:10:68:10 detect (3) 17:8;18:11;79:5 detected (1) 16:13 detecting (2) 14:19;17:10 detection (3) 13:18;14:5;15:1 detections (3) 16:2,3,5 detector (7) 13:20,21;14:15,22; 16:10,17;17:11 detectors (7) 14:1,20;16:1,7,18,22; 18:14 determination (2) 34:1;35:15 determine (4) 10:7;30:8;31:13; 102:19 determined (3) 36:16:98:16,19 devastating (1) 101:3

97:9 developed (1) 36:18 developing (1) 74:21 development (2) 36:4;68:16 diameters (1) 88:14 difference (9) 14:4,6,7;16:1,6,8; 18:16,22:64:16 different (12) 14:13:18:23:23:14: 24:6,7;83:23;85:2,18; divide (1) 87:21,24;106:16;110:14 differentiate (1) 14:20 difficult (5) 23:7;35:6;40:3;69:13, Docket (3) 17 difficulty (1) 41:21 diligence (1) 37:21 dimensions (1) 7:24 direct (19) dollar (1) 6:4;11:7;12:3,21; 33:21:34:15:46:12,22; **Don** (1) 47:7:68:12.23:72:13; 104:15:114:15.18.18: 118:21:120:18:127:8 directed (1) 105:19 done (20) directive (2) 26:21:35:20 directly (7) 29:8;72:2;74:17; 76:24;92:17;104:12; 122:20 **DOT** (1) director (1) Doug (2) 47:14 **Directors** (1) 31:4 down (25) disagree (2) 30:21;31:20 discovered (1) 98:1 discovering (1) 98:11 discuss (2) 102:18:110:23 discussed (5) 52:8;54:20;55:15; 70:5;122:12 dozen (1) discussing (1) 41:23 **DR (16)** discussion (8) 10:2,8:32:20:54:10; 68:15;85:14;118:16; 119:4 discussions (2) draft (1)

40:11

80:10

125:6

60:15

115:3

65:9

126:11

112:9

72:1

75:2

78:1

123:10

110:9

118:23

69:2;111:3 89:5 disequilibrium (1) drainage (1) 59:10 distance (2) drains (2) 78:22;121:19 58:21;64:2 distinguish (1) dramatic (1) 65:17 distribution (1) drawings (2) 8:13,15 disturbance (2) drawn (1) 41:23;61:13 107:21 disturbances (1) dredge (1) 111:15 disturbed (1) drilling (1) 98:22 drink (2) 62:11,12 **Division** (1) drinking (4) 73:22;76:23;97:13; 99:1 5:4;12:3;47:22 drive (2) document (10) 16:13:101:11 15:14,17;21:24;53:8; driving (1) 78:8;85:22;86:15;90:13; 118:2 107:15;118:13 droughts (1) documents (1) 63:4 dryer (2) 63:3,3 due (7) 37:21:40:11,15:72:20; 81:6;114:16;126:12 donation (7) duly (2) 69:24;70:11,16;71:7; 11:4:47:2 83:15.16.19 during (22) 14:2,15,17;16:19; 38:21;39:20;40:19; 17:3,7,8,17;18:11;33:14; 57:7:67:16;88:8:90:8, 34:13:35:4:49:7:51:11; 61:8;68:1;73:21;74:2; 10,14;93:5;95:10;96:18; 99:10;108:23;109:1; 81:5;87:16;96:13; 121:4,12,22;122:1,22 121:15 dust (5) 88:18,22,23,23;89:1 dvnamite (1) 5:11;89:12 59:16 Е 23:16;26:14;29:14; 61:1;65:12,22;81:6,16, 20;86:17;92:20;100:5, Eagle (3) 13,21;101:11,19;105:6, 37:15,17,19 9;106:12;112:23;113:3, eagles (10) 19,24;122:17;123:15 34:14,18,19;35:1,2,17, 18;36:1,6;43:15 downhill (1) earlier (4) downstream (1) 37:4;78:7;90:19; 120:14 early (2) 54:24;100:1 earth (2) 37:8;38:23;39:6,8; 92:9;94:11 41:20;44:3,10;58:14,15; earth-removal (1) 65:1:66:6;78:7;111:1,2, 78:3 8:116:24 **East (8)** 22:15,16;23:13;24:3,

5;27:20;37:7;45:11 eaten (1) 44:17 Ed (1) 56:13 effect (7) 27:17;40:19;41:14; 61:24;101:9;107:11; 126:3 effected (1) 73:6 effectively (2) 123:2;124:13 effects (3) 41:18;62:10;126:7 eight (1) 34:13 either (8) 7:5;48:24;77:18; 78:16,19;81:13;91:7; 93:19 elaborate (1) 23:4 elevation (1) 20:22 eliminate (1) 119:23 elimination (1) 119:22 else (4) 6:4;73:15;77:13;93:19 e-mail (2) 7:13:51:24 emergency (5) 101:4,21,24;103:13,16 emigration (1) 40:12 employed (1) 11:12 emulating (1) 59:9 encircling (1) 17:22 encompass (1)  $28:2\bar{2}$ end (5) 7:5;8:22;30:6;102:10; 104:14 enforcement (1) 80:17 engaged (1) 74:21 engineer (2) 47:12;50:20 engineering (1) 74:4 **Engineers** (3) 69:11,21;96:13 England (2) 23:16:122:8 enough (2) 18:9:100:7 entered (1)

107:5 enters (3) 58:24:59:20:102:6 entire (3) 16:21:35:6:77:12 entrance (2) 78:9;92:21 environment (2) 41:8;126:5 environmental (9) 47:15,16;61:22;74:3; 87:1;105:4,16;115:14,24 **EPA (7)** 68:11,21;69:20;70:5, 9,17:72:7 episodic (1) 22:22 equilibrium (2) 40:22;41:22 equipment (5) 99:21;100:7,12;103:5; 117:19 equivalent (2) 71:7.15 erosion (9) 60:20;61:11;73:21; 74:17;87:16,18;88:20; 89:17;109:20 especially (5) 19:2:37:6:88:7:115:8: 126:13 essentially (2) 15:20;107:22 establish (1) 76:19 Established (2) 33:3:53:2 estimate (1) 35:3 estimating (1) 37:1 et (2) 67:14;70:6 ether (1) 97:13 evaluating (1) 31:8 **Evaluation** (2) 5:4;11:22 Evan (1) 5:21 even (4) 37:13;43:2;59:16; 109:10 event (5) 22:22;28:17,20;33:23; 35:14 events (6) 16:23,24;17:3;23:3; 28:23:42:24 eventually (2) 70:11,19 everybody (2)

100:20;111:20 expect everyone (5) 5:3;42:1;47:20;48:19; expect 124:17evidence (2) expect 30:11:126:1 exact (3) expen 15:4:16:9:81:18 exactly (5) experi 59:1:71:2:93:17; 103:9;111:21 experi **EXAMINATION (3)** 11:7;46:22;47:7 expert example (5) 22:4;43:14;69:6,16; 103:12 expert examples (1) 31:22 expert excavation (3) 78:11;80:20;91:7 explai exception (1) 92:21 Excuse (6) explai 34:5;46:6,11;90:15; 101:23;111:18 explai excused (1) 124:13 explai executed (1) 108:7 exhausted (1) expres 43:23 Exhibit (61) extend 6:12;7:23;8:6,12,18; 9:18;12:10;21:6,9; extens 25:13,15;26:18;29:13, 13;31:1;32:11,14;35:13; extens 46:17,18,20;48:1,4,12, 15,16;49:19;50:6;53:9, extent 10,22;56:9,24;57:1;58:4, 6,10;82:20;89:2,10,11; extra 102:20;103:2,7;106:1; 107:5;108:5,12;110:17, extrap 18,21;112:2,4,5;113:21, extren 23;116:3,4;120:12; 124:5,15 exhibits (7) 9:8;11:1;21:18;24:23; eyebal 25:19;26:9;56:6 existence (1) 16:24 existing (6) facilit 59:10;60:12;67:23; 68:3;109:13;117:20 **Exit (8)** fact (8 74:6,6,7,18;79:20; 80:13,21,23 expansive (1) 112:15 factor expect (7) 7:9;17:1,3;21:2;39:17; factor 42:17;96:22 expectation (1) fair (5 124:19

xpectations (2)	126:15	fi
123:6,8	fairly (12)	
spected (1)	7:20;9:21;61:11;	fi
101:19	78:11;89:16;101:1;	
xpecting (1)	103:12;109:5,19,23;	fi
43:4	116:11,12	fi
<b>xpense (1)</b> 122:1	<b>falcon (1)</b> 42:1	11
xperience (3)	fall (6)	fi
55:17;74:13;98:8	13:21;14:3;26:21;	
xperimental (1)	34:13;35:5;44:17	
40:18	familiar (4)	fi
kpert (6)	30:4;32:24;33:7;36:8	
8:8;73:14;88:4;93:11;	far (10)	fi
95:8;108:3	40:20;56:2;79:13;	6*
<b>xpertise (3)</b>	88:16;91:4,15;92:12;	fi
40:8;43:5;84:3 <b>xperts (4)</b>	96:21;105:22;106:22 farms (1)	
75:3;79:19;80:1;107:7	22:11	fi
<b>xplain (6)</b>	faster (1)	11
14:6;15:20;36:13;	84:23	fi
68:10;76:10;108:6	fatalities (3)	
xplained (1)	17:17;23:11,24	fi
49:11	fatality (1)	
xplaining (1)	22:20	
57:6	feature (1)	fi
xplanation (6)	65:17	
6:14;7:24;14:12;55:7,	Federal (4)	
21;71:18	33:4;35:21;38:9; 115:18	
<b>xpressed (3)</b> 54:24;63:11;120:14	fee (3)	fi
stended (1)	69:24;83:16;84:5	11
81:14	feeding (1)	fi
xtension (1)	60:8	
65:7	feel (3)	fi
xtensive (1)	40:15;72:9;78:6	
29:23	feet (13)	fi
xtent (2)	76:18;78:4,13;82:11,	
66:1;88:11	13;84:12,18;90:22;	fi
xtra (1)	91:14;97:7;114:13;	e.
21:12 stranglation (3)	115:2;119:4 fellow (2)	fi
xtrapolation (3) 36:14,20,24	43:24;65:1	Fi
stremely (6)	fertile (1)	
31:12,21;32:3;37:7,8,	56:16	
10	few (9)	
yeballing (1)	29:22;39:9;40:6;	fi
78:12	42:16;54:1;67:10;	
	104:23;120:20;122:7	fi
$\mathbf{F}$	field (6)	_
-924 (1)	11:17;33:10;37:20;	Fi
cility (1)	56:9,20;114:4	e:
8:2 act (8)	<b>fields (1)</b> 59:8	fi
14:11;17:21;43:12;	figure (12)	
55:1;72:12;74:23;76:21;	28:2;55:22;62:21;	fi
99:9	71:3;75:19;76:3;77:4;	
actor (2)	82:5,17;102:9;103:15;	fl
6:18;44:23	112:16	
actors (4)	figures (2)	fl
6:8;24:7;28:2;41:6	82:22;83:1	~
<b>nir (5)</b>	figuring (1)	fl
41:19;55:13;80:4,9;	103:15	

ile (1) 114:9 iled (4) 9:9;57:15;76:4;125:10 iling (1) 112:4ilings (1) 49:11 ill (7) 84:11,12,18:88:14; 94:13;111:15;119:6 (2)92:13:94:13 ilter (2) 123:10,11 inal (5) 90:4;107:16,17;116:4, 19 inalized (1) 87:5 inally (2) 58:23;70:14 inancial (7) 8:18,22;9:2,7,10; 69:19;70:23 ind (13) 16:9;40:6,7;82:9; 84:22,23;85:3;86:22; 92:11;97:12,22;125:23; 126:2 inding (4) 19:4;20:19;51:7;97:22 inds (1) 94:20 ine (1) 124:7 iner (1) 88:15 ire (1) 103:13 i**rm (3**) 5:9:87:1:122:17 First (11) 13:11;18:18;24:17; 26:16;27:14;28:6;71:1; 113:21;118:11;125:1,9 irst-year (1) 26:4 iscal (1) 8:23 Fish (1) 70:6 ive (6) 34:14,18;35:1,17; 96:2;101:14 ix (1) 97:20 lagged (1) 56:18 lags (1) 56:20 lat (2) 99:18;101:8

Fletcher (1) 59:17 flight (1) 43:9 flow (2)59:10;86:16 flows (1) 94:24 flushing (1) 98:22 fly (4) 36:23;40:8;43:11; 104:19 flying (3) 16:12;18:9;37:1 focus (3) 61:23;62:1;70:10 folks (3) 58:20;109:19;115:20 follow (11) 29:7,15,18,22;54:9; 61:9;66:17;76:15;87:15; 93:10;102:14 followed (2) 27:10;87:24 following (9) 27:12;28:15;29:4,11, 19,24;31:7;32:7;47:1 follow-up (5) 116:24;120:6,20; 122:12:123:20 Follow-ups (1) 120:22 footprint (1) 80:22 foraging (10) 14:21;16:5;17:4,9,19; 18:2,5,5,6;36:3 Forest (1) 69:14 forested (2) 24:19:26:6 foresters (1) 68:1 forget (1) 121:1 form (4) 69:23;71:21;106:10, 16 formal (1) 27:22 formed (1) 52:4 forms (3) 8:17;23:19;83:20 forth (5) 26:19;45:10;99:12; 101:6;117:14 Forty-six (1) 103:1 forward (1) 26:22 found (6)

39:12:57:7:84:4; 19:18;33:6;69:4;72:6; Gravel (23) 24:36:1.5 help (7) 86:20:97:15:99:1 80:4:86:8.20.22.24: 6:4:11:3.4.6.11.12: Hampshire (11) 11:17;20:1;23:23; 11:22;39:21;50:16; foundations (1) 96:20;110:19 12:2,7;15:3,7,11,24; 73:2:74:13:84:23: 57:1;61:21;63:1,10: 121:24 generalities (1) 123:11 37:9;39:3,8;45:20;46:6, helpful (1) four (3) 72:3 11;60:4;122:16;124:23; 67:21;69:8;73:19;76:13 42:7,8;54:2 generally (4) 125:2;127:4 hand-delivering (1) 7:7 18:22;19:16;78:15; frame (1) **G-R-A-V-E-L** (1) 21:18here's (2) 114:24 7:2 11:11 handed (4) 22:9:65:12 frames (2) 32:13;49:17;50:4; Heritage (2) generous (1) gravels (1) 26:19:101:18 71:16 92:13 52:21 57:2:111:6 frankly (1) gets (2) Gravel's (1) handle (3) high (6) 101:8;124:17 105:19,21:107:9 14:15;18:9;60:23; 71:2 41:21 freak (2) **GETZ (79)** Great (2) handled (1) 66:2;79:17,21 22:23;42:24 5:2,12,16,19,23;7:16; 25:24;83:6 higher (5) 110:14 free (1) 9:12;10:20;11:2;13:4; greater (4) handles (1) 14:2;20:19;24:17; 78:13;79:13;80:24; 26:4;28:2 30:6 15:5,18;24:24;30:3,10, 108:10 Friday (5) handling (1) 16;32:19,21;34:11; 108:6 highway (1) 49:7;51:23;54:24; 38:23;39:5;44:6;45:15, green (2) 76:16 74:5 69:15;117:22 56:11;57:10 Hill (3) 18,22;46:3,10,21;51:6, Hang (1) front (2) 13;52:2;53:7,12,15;54:4, Groton (51) 101:23 43:15;66:2;86:17 49:18:90:7 8,11;55:5,20;57:24; 5:5,10;9:3,7;13:19; Hangen (3) hiring (1) 24:14.20:26:1.6:31:8: 47:13,15,17 full (4) 58:14;65:3;66:8,13; 87:21 24:15;26:1;82:16,17 75:24;76:8;80:3;82:1, 50:10;56:10;58:22; Hansen (2) historic (3) fully (1) 15;83:4;85:11,15,19; 60:16;65:7,20;66:1,3,22; 50:1.19 126:4.10.11 95:3 97:1;102:17;103:2,19; 67:3,4,6;70:15;75:8,10; happen (6) historical (1) functioning (1) 104:5,21;107:14; 16:23;18:1;42:24; 77:21;78:18;79:14;83:9, 115:21 108:13;110:15,24; 12;85:4;88:7;90:23; 74:14;81:5;104:15 history (1) 61:17 fund (5) 111:9;112:24;113:6; 91:16,19,21;92:18;93:4; happened (1) 42:19 69:24;70:1,11,17; 116:23;119:1;120:3,8, 99:11,24;102:7;103:4; 23:3 hit (3) 83:24 11,22;121:2,6;123:1; 105:7,9,13;113:3,19,23, happens (5) 91:9,10,12 funding (2) 124:2,9,22;127:13 24;114:1;125:6 14:17;17:22;29:14; HMANA (2) 41:3:71:21 Gittell (1) Groton/Rumney (1) 97:14:103:15 31:4.15 further (12) 7:19 83:13 hard (2)HMANA's (1) 10:8,10,13;28:21,22; given (11) ground (6) 36:22:104:1 31:23 12:19;15:22;31:15; 39:12,14,22;44:17,24; 68:10;91:12;109:1; harm (1) hold (3) 57:11 41:2102:24;120:11;124:3 116:21;120:18;122:21, 34:19;35:1;71:10;79:16; Groundwater (4) 22 88:2;121:10;122:19; Harrington (12) hole (2)106:12.13 76:3,19;97:6,10 6:5,6,23;97:2,3,5; future (5) 125:18 21:17;64:19;74:14; 102:13:103:8:107:20: Hollow (32) gives (2) group (4) 19:23:20:8 90:9,10 44:7:46:1:66:7:125:11 120:4.5.9 58:22:60:16:65:8.20; goes (10) groups (1) Harrington's (1) 66:1,3,22;67:6;75:9,10; G 65:12;77:21;107:18; 9:19 107:24 77:22:83:9,12:85:4; 112:23;119:20;123:2; guardrails (1) haul (1) 88:7;90:24;91:16;92:18; 93:4;99:11,24;102:7; 125:9,12,13,21 99:21 gain(1)65:13 107:10 Goland (3) guess (33) hauled (1) 103:4;105:7,9,13;113:3, 17:22;25:24;26:11; 9:17;53:13;57:6 123:17 20,24,24;114:1;125:6 gaps (1) home (1) 38:13 golden (5) 29:18,21;34:21;36:21, hear (5) 34:18;35:2,18;37:15, 47:20;58:9;110:16; gates (1) 23;45:22;53:6;55:5,10; 102:1 102:7 17 66:17;67:17;68:8;75:16; 120:13;125:2 homeowner (1) Good (22) 76:15;77:7;80:7;86:4; heard (1) 122:3 gauge (1) homeowners (1) 21:2 5:2,7,12,13,16,17,19, 89:13:94:4:95:14; 107:6 gave (1) 20,23;11:9;13:9,10; 102:19;108:3,4,6,16; hearing (8) 122:2 homes (5) 19:1;23:10;28:19;47:9; 115:22;118:4,15; 5:3;21:5;23:24;30:1; 33:1 66:17;90:2;97:24;102:2; 46:15;75:19;125:13; 82:12;90:23;91:13; gears (3) 119:10;120:6 21:4;24:9;30:17 108:16,17 guidance (1) 127:13 121:13,18 government (1) height (4) honest (2) 125:5 **GEIGER** (26) 5:7,8;7:4,22;8:3;9:16, 35:21 Guidelines (3) 18:6,7,10,12 80:15,19 **GPS** (1) 23;10:14,23;11:8;13:2; 33:3,5;56:19 heights (1) honestly (3) 15:10;21:7,12;25:9,12, 56:21 8:14 72:5;80:2;81:16 Η 17:34:5:41:16:76:6: grab (1) held (1) hope (1) 86:6;111:18;112:7,20; 87:11 21:5 25:2 113:5,11 Granite (2) habitat (7) Hello (1) hopefully (3) 9:7;12:1 20:22;34:2;35:16,23, 44:13 24:11;35:12;125:4 general (11)

hoping (2) 7:4:92:7 hour (2)42:22:102:11 hours (4) 42:4;101:15;109:10, 11 house (1) 103:13 houses (3) 83:10,11;121:11 humans (2) 41:15.18 hundred (2) 20:5;43:20 hundred-foot (1) 56:12 hundred-foot-wide (1) 114:11 hydraulic (1) 59:9 Ι I-93 (2) 74:1;80:13 IACOPINO (36) 6:11;7:1,12,17,23;8:6; 9:14,18,24;10:14,17,24; 15:12;21:22;22:5;51:8, 18;52:10;53:9,14,19,21, 23;54:7;82:20;103:1; 111:10,11,22;112:17,21; 113:17;114:2;119:1,2; 125:15 Iberdrola (17) 8:20;9:3,19;26:11; 27:6,9;28:1;29:1,4,17, 24;86:21,22;87:3,21; 89:24:98:5 **ID** (2) 86:3:113:21 idea (5) 9:15;19:23;21:2; 72:14;108:23 identification (9) 46:19;53:10,24;55:6; 56:8;110:21;112:6; 114:5,8 identified (3) 61:15;77:4;112:18 identify (4) 38:13;76:18;90:21; 98.9 ignorant (1) 97:11 II (5) 76:7;82:19,21;86:6,7 imagine (2) 7:20:9:21 immediate (2) 98:17:119:8

[	GROION WIND, LLC
44.10	··· · · · · · · · · · · · · · · · · ·
44:18	include (3)
impact (28)	68:23;88:22;97:18
8:11;27:5,8;65:6;	included (2)
71:10,10,13;72:2,13,16;	12:9;62:2
74:3;78:15;79:6;85:23;	includes (1)
86:2,10,11;96:6,18;	53:15
105:4,17;115:12;	including (3)
117:14;119:9,12,15,23,	68:12;73:23;126:4
24	incorporate (2)
impacted (1)	69:8;102:3
73:12	increase (1)
impacts (22)	15:22
24:5;27:8,15,18;	increased (4)
68:13,23;71:24;75:6;	14:18;16:7,18;78:16
78:23;95:15,17,19;	incredulous (1)
105:15;109:7;114:15,16,	59:15
18,20;115:21;116:12,15;	incurring (1)
117:11	116:14
imperative (1)	indeed (1)
61:9	51:22
impervious (3)	independent (4)
59:24;60:5;78:20	58:5;79:13;115:1;
imperviousness (1)	118:22
78:17	index (5)
implement (2)	14:8;19:1;20:8,12,19
26:15;97:9	indicate (4)
implementation (2)	13:18;23:1;26:20;
26:18;80:16	33:11
implemented (1)	indicated (3)
107:23	22:13;54:22;70:20
implicated (2)	indirect (6)
113:7;125:20	68:13,23;72:15;
implicates (1)	105:14,15;114:16
126:9	individual (2)
implications (1)	14:21;84:12
59:4	individuals (1)
important (6)	37:14
29:7,21;35:7,22;	industrial (1)
96:16;118:15	31:9
imposed (2)	industry (1)
79:4;89:18	80:5
improve (2)	inexperienced (1)
67:17;68:6	43:3
improved (1)	inferred (3)
60:18	34:1;35:16,23
improvement (1)	inflated (1)
73:18	16:6
improvements (2)	influence (2)
64:12;65:19	24:8;41:9
inadequate (2)	influencing (1)
31:8,13	41:6
inaudible (1)	information (32)
40:20	7:18;8:4,10;10:1,5,9,
Inc (1)	15;12:13;22:19;37:23;
9:3	49:9;50:15;51:4;52:8,
incident (1)	11;53:4;54:21;55:4,11,
43:3	21;56:13;69:19;70:12;
incidents (1)	75:22;102:23;104:9,12;
41:10	
	111:6;112:10;125:16,
incline (3)	19;126:13
65:10,14;66:19	initial (5)
inclined (1)	71:1,5;72:8;84:15;
58:3	113:15

initially (1) 109:13 injured (1) 43:2 in-lieu (1) 69:24 input (2) 31:16:105:20 inquire (2) 55:9;80:4 inspection (1) 90:5 installation (3) 117:16,19;119:17 installed (2) 68:4;80:18 instance (3) 112:19;119:18;125:10 instances (1) 18:12 insufficient (1) 31:11 intake (1) 77:5 intended (1) 58:8 intends (1) 108:1 intention (1) 25:3 intentionally (1) 37:19 interaction (2) 42:17:126:10 interconnect (8) 8:2;12:15;52:18; 56:14:57:3,12:110:13; 123:14 interconnection (6) 53:3:54:18:55:2: 105:3;112:22;113:9 interconnections (1) 111:4 interest (2) 36:15,21 interested (1) 108:19 interesting (1) 53:1 interim (1) 56:19 intermittent (1) 118:4 37:23; internal (2) 69:12;109:1 **INTERROGATORIES (9)** 97:5;105:1;108:15; 111:2,11;117:1;119:2; 120:5;121:9 interrupt (1) 104:3 Interstate (2) 73:18:74:1

interval (1) 45:7 intervenor (6) 5:14,18;43:24;44:7; 58:17:65:2 into (27) 10:21;11:19;34:7; 43:11:47:18:58:21:59:5; 60:8,8;65:23;66:2; 67:17:69:9:77:10.21; 91:12;93:4;100:8; 101:21;102:3;106:10, 12;107:5;117:13;120:6; 122:24;123:15 introduction (2) 52:21;78:17 inventories (1) 96:19 invert (1) 68:5 investigation (2) 56:10.18 invisible (1) 44:15 involve (2) 105:13,14 involved (9) 24:7;48:9;73:19,24; 74:4,11,17;87:17;93:9 involvement (1) 80:8 involving (1) 88:24 **IRI** (1) 9:7 isolate (3) 41:5,9,13 issue (12) 58:5;69:10,22;71:22; 74:6:80:8:102:16: 107:19;108:2;120:13; 124:16:125:18 issued (3) 62:1;84:6;89:23 issues (18) 55:7,17;73:20,21; 74:18;77:15;104:10; 113:6,7,9;120:16; 121:14;124:5;126:1,9, 15,19,20 items (1) 126:3 iterative (1) 54:22 it's- (1) 40:2 J **Jim** (1) 5:14 jointly (2) 48:10,16

immediately (1)

July (13)	93:3	74:13	101:17	magnitude (1)
49:9,12,13,18,24;	largest (4)	letter (16)	LLC (5)	18:22
50:18;51:3,11,14,22;	84:11,12,18;119:9	31:2,7,16;49:12,13,18,	5:5,10;9:4,8;50:10	main (4)
70:12,13;110:8	last (7)	21,23,24;50:19,20,24;	located (6)	61:23;78:20;94:22;
juncture (2)	11:10;12:1;49:7;	51:3,22;53:13;70:19	56:20;76:18;77:1,5,	119:20
45:23;125:14	62:23;66:18;79:16;	level (4)	19;78:21	Maine (2)
June (5)	121:1	28:13;68:7;93:2;	locating (1)	39:20;43:15
14:16;49:23;50:14,24;	late (1)	102:18	56:22	maintain (1)
70:2	52:24	leverage (1)	location (6)	61:2
jurisdictional (2)	later (2)	72:11	82:14;85:20,23;86:18;	maintenance (2)
117:10,11	30:13;58:9	<b>LEWIS (18)</b>	106:14;112:19	60:1;90:6
justification (1)	latitude (1)	5:17,18;66:11,13,14,	locations (3)	major (2)
71:18	30:4	16;73:10;76:9;81:23;	8:1;110:3,6	73:22;92:13
juvenile (1)	law (1)	92:16;120:19,20,24;	loci (1)	majority (5)
43:2	5:9	121:3,8,9;123:19,24	40:13	16:3,5;17:17;76:21;
	laying (1)	Lewis's (1)	loggers (1)	77:9
Κ	39:22	80:12	68:1	makes (3)
	layperson (1)	liaison (1)	logging (5)	23:7;28:16;40:3
keep (5)	19:22	68:16	60:14;64:11;67:16,24;	making (2)
89:1;94:22;104:6;	lead (1)	lie (1)	117:21	30:5;93:9
117:17;123:8	50:20	76:22	long (7)	manage (2)
Kent (5)	learned (1)	lieu (1)	17:6;45:9;60:11;61:4,	11:17;123:9
111:1,2,8;116:24;	74:13	83:20	6;81:6;108:4	management (13)
117:1	least (8)	life (3)	longer (1)	61:10;74:22,23;76:15;
kept (1)	16:16;55:21;56:7;	27:16;42:19;63:14	45:1	81:3;87:15;88:21;93:8,
96:16	63:14;95:23;102:23;	likely (9)	43.1 look (16)	22;94:19;107:18;108:7;
	105:3,15	33:12,18;34:1;35:16,	13:23;18:17;62:6;	123:5
<b>key (2)</b> 35:22,24			72:8;80:20,21;82:12;	
	leaving (1) 123:12	18;40:2;83:8;104:19; 115:11		<b>manager (2)</b> 11:14;47:12
killed (1)			89:2;90:4;99:14;100:3;	
22:12	lecture (1) 62:24	<b>limit (1)</b> 61:12	101:20;116:16;117:5; 121:23,23	many (14)
kind (8)				11:17;14:19,22;16:2;
22:21,23;36:22;65:13;	leftover (1)	limited (3)	looked (3)	36:22;37:1;39:11,13,22;
104:1;109:11;119:10;	106:3	59:23;61:13;92:12	100:1;112:11;114:14	40:7;43:12;45:4;68:2;
122:9	legal (1)	line (13)	looking (19)	103:9
knowledge (1)	63:22	8:14;22:6;83:13;	6:16;10:22;14:9;	map (4)
123:4	Lempster (3)	84:16;91:6,21;111:12,	20:12;21:8;23:22;30:20;	54:18;76:2,4;112:2
known (7)	24:16;26:3;39:21	23;112:22;121:5,11;	31:22;78:23;79:5;83:8;	maps (1)
37:23;57:4,8;69:23,	lengthy (2)	123:22;125:7	84:14;100:19;103:17;	100:20
24;72:15;73:11	25:20;81:17	linear (1)	105:6,10;118:14;	mark (1)
Kristen (2)	Leo (98)	117:7	119:11;125:20	55:6
53:12;57:6		line-of-sight (1)	looks (2)	marked (10)
kV (3)	48:3,6;49:2,3;50:20;	8:15	34:17;125:16	12:9;46:17,18,20;
8:1,2;113:7	57:9,11,17;59:9,21;	lines (7)	lot (7)	48:1,4;51:13;56:7;
L	60:11;61:6;62:17,20;	36:3;114:13,15;117:3;	20:19;24:11;30:5;	110:21;113:20
L	64:9;65:16,19,24;67:2;	122:14,18,19	77:14;96:18;99:7;	Mars (1)
lah angkang (1)	76:13;77:1,4,16,24;78:2,	link (1)	114:13	43:15
laboratory (1)	9;82:12;83:8,11;84:22;	107:15	low (9)	material (9)
41:3	85:6,8;86:13,16,21,23;	list (4)	18:13;22:17;23:18;	51:14;52:3;88:13,24;
lack (1)	87:1,5,10,18;88:2,9,20;	9:13;104:6,11;126:3	37:7,9,11,24;38:1;65:6 lower (6)	92:3;94:15,18;106:18; 107:12
22:18	89:13,24;90:7,10,12,14,	listed (3)		
Lake (2)	20;91:3,18,20,22,24;	57:2,7;73:17	18:7,12;27:24;42:18;	materials (5)
36:9,10	92:6,19;93:11,16,21,23;	listen (1)	59:8;94:10	88:10;92:7;105:23,24;
land (3)	94:4,9,20;95:4,8;97:17;	29:1	low-intensity (2)	111:24 matter (6)
59:22;71:7;96:12	98:4,14;99:3,23;100:16,	literally (1)	60:21;61:2	matter (6)
landowner's (1)	24;101:16,24;102:9;	13:23	low-intensity-use (1)	31:19;42:10,13;74:23;
115:9	108:21;109:1,9,17;	little (13)	64:10	80:4;81:21
landscape (2)	110:3;115:8;119:3,8,10,	21:4;23:5;28:10;61:8;	lunch (4)	may (30)
65:18;96:21	20,24;121:16;122:3,7,	67:18;68:10,20;74:10;	124:11,15;127:11,16	7:11;10:8;44:4,24;
large (7)	16;123:7,23	78:6,10;99:10;108:20;	ЪЛ	58:3;69:16;74:11;80:1;
82:24;88:14;99:13;	less (9)	122:12	Μ	88:16;91:9,9,13;92:9,11;
100:12;102:6;103:11;	18:1,4;39:23;59:22;	live (1)		93:9,11;95:1,5;102:22;
119:14	60:20;63:4;96:9,10,21	62:15	machinery (1)	103:24;104:7;105:13;
larger (1)	lessons (1)	living (1)	99:13	106:8;108:2;110:1;
		I	1	l

20:8

5:22

32:3

61:19

102:9

76:11

15:3

73:9

44:24

98:3

96:3

miss (1)

mile (1)

113:8;114:23;118:1; 125:16.16 **Maybe (20)** 19:24;28:24;29:8; 50:7;54:7;55:16,18; 63:16;65:9;92:10;97:10; 101:14;104:5;105:18; 107:4;108:1;110:9; 114:23;124:6;126:18 **MAZUR (28)** 37:8;38:23;39:2,6,7,8; 41:20,24;44:2,3,4,10,12; 58:14,15,19;63:8,21,24; 64:5,23;65:1,2,5;66:5,6, 22:78:7 mean (34) 15:2;19:21;20:2; 23:13;38:6;42:15,20,24; 43:8;53:6;63:24;65:17; 72:4;77:1;81:9;83:16; 84:1;88:16;92:3,20; 93:11;94:5,18,20;95:1; 97:8,11,14,20;99:3; 101:10;103:8;115:8; 122:16 meanders (1) 58:23 meaning (1) 95:22 means (2) 13:24:99:11 meant (1) 61:6 measure (2) 91:10;126:23 measures (2) 79:6:126:12 mechanisms (1) 96:4 medical (2) 101:4:103:13 meeting (2) 70:4,6 meetings (1) 69:2 Members (2) 5:8,24 memo (2) 56:17;57:5 memorandum (2) 70:13,14 mentioned (6) 49:21;65:6;66:19; 90:20;92:2,16 met (5) 8:19;18:14;70:2; 71:11;108:8 meters (1) 65:14 method (2) 56:21;98:12 methodologies (1) 38:14

mitigated (1) methods (1) 63:16 **MICHAEL (4)** mitigation (21) 47:4.11:50:1.19 67:12:68:12.16.17.22. Michelle (1) 24;69:5,10,12,23;70:1,8, 15,18,21;71:9,13;72:7; microphone (4) 83:21;84:3;98:12 11:19;44:4,9;47:18 modification (2) middle (2) 63:11,18 modifications (1) 18:13:22:8 mid-October (1) 64:6 moment (1) might (23) 95:10 15:15,15;16:13;21:2; moments (1) 29:1;32:10;40:10,12; 54:1 42:6;43:10,10;47:18; Monday (2) 59:5,19;65:10;81:15; 6:7;51:23 103:4;104:2,16;105:23; money (2) 7:19;83:23 112:3,16;115:16 migrating (5) monitor (7) 17:7,21;18:2,5,8 27:16;40:19;45:8; migration (12) 76:20;87:18,19;98:10 14:17;17:5,7,17; monitored (2) 30:22,23;31:14,21;32:2; 58:20;93:18 monitoring (21) 33:14;35:5;36:17 Mike (7) 24:15,21;26:2,8;27:7, 50:20;62:5;84:22; 18,21;28:2,14,18,21; 86:12,13;114:23;115:7 40:13;61:16;62:6,9; Mike's (1) 80:16;87:17,22;97:15; 98:10:109:21 monitors (1) 61:15 miles (2) month (2) 42:22:102:10 10:18:14:16 mind (5) months (3) 62:20;65:15;72:4; 63:5;81:9,9 112:13,15 more (44) minimal (4) 7:11;9:14;10:9;17:8; 78:10;79:2;105:7,9 20:10;22:13,24;23:5; minimize (2) 25:8;28:10,12;29:23; 75:6;79:7 39:19,23;40:15;45:11; minimizing (1) 50:15:53:20:55:2,4,16, 17;60:17;61:8;63:4; minor (11) 68:20;69:17;71:20,24; 78:12;91:7;109:19,23; 72:3,17;73:16;77:11; 110:1,4,6;116:12,13,16; 81:20;85:16;91:11; 119:24 105:19;106:2;108:20; 112:15;118:15;122:12; minute (1) 123:20;125:5 minutes (3) morning (20) 102:11,12:103:10 5:2,7,12,13,16,17,19, misinterpretation (1) 20.23:6:1:11:9:13:9.10: 39:14,23;47:9;58:8; 66:17;112:9;126:20 mortality (25) missing (1) 19:6,11,17,20,24;20:3, 11,19;21:1,3;22:17; misspoke (1) 23:15,18,19;24:8,17; 119:10 26:4;27:19,24;37:6,6,24; mistaken (2) 40:5:44:15:45:2 15:15:32:14 most (13) mitigate (1) 15:7:28:14:40:2.2: 60:14;62:1;77:11;88:9;

92:2;96:14;110:2,4; nearby (4) 121:21 mostly (2) 121:11 88:24:90:23 motion (3) 6:19;9:9;125:10 107:7 Mountain (1) 59:17 23 move (5) 32:11:85:1,17:106:13; need (24) 117:12 moving (3) 17:6,18;46:22 much (16) 15:1;18:7;19:7;23:14; 39:3,8;42:13,18;79:7; 80:24,24;86:16;91:11; 98:12;106:17;118:9 muck (17) 93:22,24;94:3,5,17,19, needs (5) 20,23;95:1;106:11; 107:18:108:7:122:12.13. 122:5 23;123:5,8 **MULHOLLAND (23)** 72:9 5:20,21;32:17;45:19, 21;46:8;52:19;54:15; 82:1,2,4;83:5,6,7;85:18; 89:12:95:13:105:22; 105:15 113:12;121:2,3;124:19, 21 Mulholland's (1) nest (2) 54:13 38:2.18 multiple (3) 16:13;17:10,14 43:15 must (4) new (24) 30:22;73:9;125:23; 126:2 Ν N1(1) 119:13 123:22 N5(1) newer (1) 119:13 126:13 N6(7) 86:18;116:22;119:6, 36:9,10 12,14,22;120:1 news (3) name (7) 9:19;11:9,10;47:9,11, Next (11) 14;121:1 name's (1) 11:11 NANCY (5) night (4) 47:5,16;48:11;76:2; 105:8 nights (4) natural (4) nine (1) 41:8;57:2;111:5;126:5 nature (1) 5:24 43:7 Neal (1) 31:3 near (4) 36:3;83:11;90:23;93:5

24:16:26:3:43:16: necessarily (4) 17:16;20:2;40:16; necessary (4) 29:23;86:10;123:21, 6:2,5;7:11;10:8,21; 24:22;27:16;55:24; 59:16;63:20;66:1;81:4; 90:17;92:8,11;93:1; 94:10;99:3;100:9; 101:24;114:20;115:16; 122:22;124:8 needed (3) 55:1;86:17;100:1 44:3;69:11;81:1,2; negotiate (1) negotiation (3) 72:5,7,11 Neither (1) nervous (2) 40:13,16 nesting (1) 8:15;11:21;21:17; 23:16:39:20:50:16:57:1; 61:21;63:1,10;67:21,22; 69:7;73:19;74:23;76:13; 97:21:98:22:105:12; 116:15;122:8,14,19; Newfound (2) 97:23,24;98:1 8:6;9:17;18:18;25:15, 20:63:1,15,18:64:7; 93:14:105:18 13:20,21;16:10;44:18 14:14;16:7,18,22 nitrate (2) 97:13,13 nitrates (10) 94:18;95:2,6,8;97:24; 105:23;106:3,3,11;

123:12 nitrogen (2) 106:21,22 noise (2) 41:7:109:7 none (3) 33:19;45:17;58:13 non-toxic (1) 106:10 normally (1) 96:22 north (4) 78:22;86:9;119:16,21 Northeast (3) 23:17:24:19:26:6 northwest (1) 92:23 note (2) occur (6) 5:24;35:7 noted (1) 13:24 notes (1) 109:22 notice (1) 104:11 noticed (1) 73:17 notifications (1) 101:16 November (2) 52:22:53:13 **number** (17) 15:4:16:9:42:6:50:2; 53:22;60:23;62:2,7; odds (1) 67:13;77:4;83:14;86:2; 93:21;99:9;101:5; off (17) 103:11:113:15 numbers (6) 14:10;16:14;21:23; 22:2:56:8;83:2 **NWR8 (1)** 86:3 0 oath (1) 12:22 object (6) offset (1) 6:21;34:7;41:16; often (2) 52:20;63:21;79:23 objection (2) 52:23;70:18 once (6) obligation (1) 126:6 obligations (1) one (48) 118:18 observation (1) 42:5 observations (2) 35:8.9 observe (2) 28:20:42:10 observed (9)

35:6

9:10

65:17

34:1

103:11

123:18

6:21

10:21

6:15

24:18:26:5:27:9; 94:12;95:9;96:2;100:10; 29:17;34:14,18;35:2; 101:4;102:5,10,23; 42:3.14 105:15,21;106:9;115:5; observing (1) 120:24;123:20 ones (2) obtained (3) 89:8:98:5 7:20;9:21;92:15 one-year (3) obtaining (1) 27:6,17:31:13 ongoing (2) obvious (1) 60:14:64:10 online (1) obviously (2) 57:2 89:4;109:12 only (14) occasionally (2) 12:14;28:18;33:24; 33:24:35:15 35:15;41:11;42:3;59:24; occasions (3) 60:24;73:5;103:18; 40:6,7;43:1 107:4;117:14;119:24; 122:7 17:17;28:20,23;35:16; on-site (2) 100:19;121:15 27:21;94:14 occur' (1) onto (3) 91:6;100:9;102:8 occurred (9) open (2) 16:2,3;18:13;35:8,9; 5:3;92:6 73:21;74:7,18;80:23 open-water (1) occurring (3) 36:2 78:4;79:12;121:10 operation (3) occurs (5) 60:1,15;108:21 28:18;29:19;32:2; operational (6) 75:4:106:9 19:3;20:11,14;22:16; October (8) 24:18:26:5 13:12.15:24:11:25:6: operations (2) 31:4;33:4;56:11:116:5 68:2:108:19 opinion (7) 31:18;33:10,13;79:1; 105:2,16;106:20 21:8;32:17,20;42:21; opportunities (2) 54:8.10:62:10:78:12: 17:14:42:17 82:5;85:11,14;92:4,21; opportunity (5) 99:19:109:4:120:12; 30:12:55:8:124:17; 125:4;126:19 off-flow (3) opposite (1) 59:18;63:13;64:1 66:20 officer (1) opt (1) 70:14 off-line (1) option (2) 87:21;124:6 order (4) 9:1;34:23;88:6;125:23 orders (1) 17:1:40:2 18:22 orientation (1) 11:23;22:2;60:11; 53.5 61:6;87:5;110:22 original (8) 47:24;48:9,15,24; 58:2;68:24;76:5;93:6 8:6;10:9;14:14,15,21, 24;16:17;18:14,17; originally (1) 22:11,15;23:14;24:15, 69:7 23;26:1;27:22;28:15,18, **Orr** (1) 22;31:10;32:6,12,16; 5:9 34:16;37:13;42:11; ought (1) 23:3 52:16:55:8:58:16:61:24; 63:21;73:16;77:6;82:15; ourselves (1)

63:12 out (46) 14:23:16:8:18:16: 22:2,11;28:2,22;31:2; 32:13,15;35:20;38:8; 49:17;50:4;53:11,24; 54:16;55:22;60:15,18; 61:16;62:22;67:24; 73:10;79:9;80:6,19; 82:9;93:2;94:23;97:12, 22;98:15,22;100:9,23; 101:15;102:1;103:15, 15;106:15;114:4; 117:17;121:18;123:8,11 outflow (1) 59:4 outlet (1) 68:5 outset (1) 27:12 outside (2) 77:19;117:9 outstanding (1) 11:1 over (19) 16:19;20:5;30:23; 37:20;42:4;59:7;63:1, 15,18;64:7,21;66:23; 68:15;94:13;117:24; 121:4,11;122:20;124:15 overall (2) 13:18:59:21 overlooks (1) 77:23 overseen (1) 81:4 oversight (1) 88:3 own (4) 69:12;79:1;118:12; 121:18 oxygen (1) 106:9 Р package (12) 49:22;61:12;67:13; 68:12,17,22;69:1,5,11; 70:8,18;72:9 packet (4) 49:17;50:3,8;51:10 pads (1) 92:14 Page (29) 13:11,13,14,15;21:6,8, 11,20,21,23,23;22:2,3,6, 8;24:10;25:1;26:16,17, 18;30:19;33:22;35:13; 67:12;68:9;83:2,3; 84:16;113:1 paid (1) 7:19

panel (9) 46:12,22;58:12;59:3; 75:17:103:22:107:6; 108:18:124:13 paper (2) 24:12:82:24 paragraph (3) 27:2:29:14.16 parallel (1) 58:21 paraphrase (2) 106:17:110:1 pardon (1) 30:15 parking (1) 60:2 part (34) 22:21;38:5;48:1,4,12, 15,16;49:22;50:3;51:10; 66:24;67:2;68:14;72:11; 75:8,21:76:13:77:21; 78:20;87:6;88:20,21; 89:11,17,22;90:1;95:4; 97:17;110:4;112:10; 115:23;118:6;121:16; 125:15 participate (1) 57:10 particular (9) 18:12:26:20:35:20: 44:9:58:4.6:59:17; 67:20:72:8 particularly (1) 43:7 parties (16) 6:20;8:19;30:4;32:15; 51:23;52:9,10;55:9; 58:3;104:10,12,17; 126:14,18,22,24 partners (1) 75:2 parts (3) 6:12;75:8;112:21 pass (2) 33:13;118:20 passed (3) 20:10;53:11,24 passes (1) 102:7 past (3) 31:23;104:7;119:12 Patch (27) 5:11;47:8;48:19,22; 49:16,20;51:6,9,16,18; 52:1,6,12,13;53:18; 54:12,14;55:13,23; 57:22;63:6,20;79:23; 89:9;103:20;104:20; 124:7 path (1) 43:9 patterns (3) 31:13;32:1;60:6

SUSAN J. ROBIDAS, LCR NO. 44

Pause (1) 95:12 payment (2) 83:15,20 PC (2) 32:14;35:13 peak (1) 32:2 pending (1) 124:13 people (12) 28:24;61:15;77:14; 84:3;89:4;93:12,15,16; 99:8;101:16;103:14; 121:21 per (3) 13:20,21;16:10 perceive (1) 59:4 percent (7) 14:1;16:19,20;43:21; 96:9.11.20 peregrine (2) 42:1,12 peregrines (1) 43:6peregrine-use (1) 37:20 perennial (1) 117:24 performed (1) 56:10 performing (1) 121:20 perhaps (4) 16:12;29:2;59:6;92:5 period (14) 14:16,17,18,24;16:1,4, 20;17:4,7,9,18;35:3; 81:14,17 periodically (1) 17:22 permission (1) 66:11 permit (31) 50:12,17;51:2;62:3; 69:1,20;75:1,21;76:5; 79:4;82:10,22;83:17; 87:13,14;89:3,5,7,8; 93:7;107:15;111:15,16; 114:20,22;115:5,12,14; 116:1.2.9 permits (3) 109:14;115:16,18 permitted (2) 6:21;127:5 permitting (2) 87:2,12 person (1) 93:17 personal (1) 116:10 personally (1)

74:12 perspective (1) 63:23 Pete (1) 68:15 PETER (2) 47:6,14 phone (1) 101:22 photographs (4) 53:17,20;54:3,5 physiological (1) 40:11 pick (3) 42:21;94:12;125:1 piece (1) 97:18 pieces (4) 53:16;58:5;99:13; 100:12 **pile (10)** 93:22.24:94:6.17.19. 21;107:18;108:7;123:5, 8 piles (2) 94:23;95:1 pipes (1) 92:11 place (8) 72:21:75:5:76:10: 84:13:94:12:98:9.15: 114:14 placement (3) 88:24:90:15:117:12 plan (25) 26:12;27:10,20;28:16; 29:18,19:38:15:49:8; 78:12;88:21;89:17;90:6; 97:7,10;99:17;102:3,15; 103:14,16;109:12,15,19, 22;121:17;123:5 plans (16) 29:22;38:10,12;61:22; 76:10;84:22;87:2,4,7,11; 100:18;109:24;110:7,9; 119:11;122:22 planted (1) 45:6 please (7) 5:6;11:9;21:7;25:13; 28:7:36:13:65:3 plenty (2) 92:8,8 Plymouth (2) 21:5;62:23 pm (1) 127:16 point (18) 10:22;35:22;44:8; 46:4:49:14:54:16.21; 55:6:80:19:85:24:96:2: 97:21:100:22:104:2: 118:16;123:3;124:8;

126:16 pointed (2) 73:10:79:9 poles (5) 114:15;117:12,12,17; 118:6 policy (13) 26:10,13:27:13,14; 28:4,9;29:2,5,11,15; 30:1:32:6,7 pollutants (1) 106:23 polluted (1) 77:15 pools (1) 56:16 portion (14) 63:21;66:22;67:3; 75:10;91:16,18,19,21; 92:18;99:11,24;113:21; 115:17:117:22 portions (3) 74:5,8;100:16 posed (1) 31:9 position (3) 31:17;34:20;59:19 positive (1) 107:2 possibility (2) 73:13;122:15 possible (9) 8:1:41:2:50:23:62:13: 72:20:94:1:114:19: 117:14;118:9 possibly (2) 79:7:118:7 post-construction (21) 19:4,6,11,17,20;20:11, 16,18,24;22:20;24:15, 21:26:2.7:27:7.18.22: 37:5;43:13,17;44:22 potential (12) 27:4;38:1;42:4;64:3; 75:6;78:23;98:10,11; 101:6;104:10;106:23; 107:11 potentially (2) 17:10;122:16 practices (8) 61:10;74:22,24;76:15; 81:4;87:15;93:8,10 pre- (1) 49:5 pre-blast (1) 122:10 precautions (2) 75:5;80:5 precisely (1) 31:17 pre-construction (20) 18:24;19:5,8,10,13,15, 19,23;20:4,7,12,14,18,

21;22:19;27:3;31:11; 37:5:40:4:43:16 predators (2) 44:18:45:5 predict (5) 23:7;36:22;39:19; 64:18;104:2 prediction (1) 23:11 preferred (1) 69:22 prefiled (26) 12:3,8,13,21,21;24:10, 12;25:5;47:21;48:2,5,10, 11,15;49:1,1,6;54:19; 58:1,2;67:11;68:9; 75:23;84:15;112:1; 120:18 prehearing (4) 49:8,10;52:7;125:11 preliminary (1) 22:13 premarked (2) 49:19;50:5 premises (1) 45:5 prepare (1) 55:9 prepared (5) 9:2;50:9;106:8; 126:17:127:1 preponderance (1) 126:1present (8) 6:1;33:11,15,18; 35:18;58:17;70:4; 116:17 presented (1) 75:19 presents (1) 53:6 preservation (4) 69:15,17;71:8,15 preserve (1) 71:12 presiding (1) 6:21 presumably (2) 13:19;58:20 presumption (1) 29:18 pretrial (1) 42:2 pretty (4) 70:9;86:16;99:15; 110:6 previous (3) 14:2;51:22;116:24 previously (3) 90:20:116:3:119:3 primarily (1) 74:2 prior (4)

90:15,15,17;121:13 private (6) 66:21,24;67:3;82:7; 91:16:102:8 probabilistic (1) 36:13 probability (1) 14:18probably (11) 8:5;9:17;46:8;61:24; 101:1;102:1,11;103:12; 109:4;116:16;118:1 problem (10) 41:5,7,12;53:6;97:20; 98:10,11,13;99:1;106:16 problems (1) 10:9procedure (3) 44:14,19;104:6 procedures (1) 76:16 proceed (7) 65:3;121:6;124:12,18; 126:21,23;127:1 proceeding (1) 55:1 proceedings (1) 95:12 process (7) 30:5:54:23:87:5; 94:14:96:14:118:5: 126:12 processing (1) 88:12 produce (1) 14:22 products (1) 106:18 professional (1) 31:18 Professor (1) 7:19 profile (1) 6:17 program (8) 76:20;89:15,17;97:10, 17;98:9,14;99:4 project (65) 8:17;11:14;12:1; 13:20;20:21;24:17;26:3, 20:27:5,7,16:28:12; 31:24;33:15;35:10;36:5, 7;37:19;38:6;47:12; 56:23;59:13,23;60:11; 61:7;62:21;63:13,22; 64:10,14;69:9;72:22; 73:20,24;74:2,3,9;75:9, 12;77:18,20,22;78:22; 79:13;81:1,6;89:19,20; 90:2,3:95:17,22:96:10, 11,12,17;98:16,20; 111:14;112:11;114:8; 115:1,17,23;126:2

		· · · · ·	1	1
projects (19)	34:22;119:13		87:10;90:16;94:7;95:8;	88:19
19:2,3,12;20:6,10,13,	providing (2)	R	98:11;105:6;118:20	re-emphasize (1)
15,15;22:16;23:16,16,	19:1;51:1	K	reason (9)	125:8
18;24:19;26:5;27:20;	proving (1)	rain (1)	18:4,23;27:15;43:8;	refer (6)
28:14;29:22;31:9;100:3	125:24	63:5	70:22;93:2;94:19;107:4;	14:11;24:23;25:14;
project's (1)	provision (2)	raise (1)	112:7	72:12;84:13;118:11
64:18	101:13,21	105:20	reasonable (4)	reference (1)
proof (1)	provisions (4)	raised (6)	37:15;42:23;80:6;	72:13
125:22	62:8,8;99:17;101:9	10:7;52:7;105:22;	96:18	referenced (1)
propagation (1)	proximity (2)	107:19;120:23,24	reasonably (1)	74:24
40:20	40:9;108:24	raises (1)	94:1	referred (4)
propagations (1)	PSNH (2)	55:7	reassurance (3)	52:17;62:5;76:3;83:14
41:14	8:2;113:10	Randall (1)	63:11,18;64:7	referring (7)
proper (1)	<b>PSU</b> (1)	31:3	recall (7)	21:23;22:6;25:19;
99:21	62:23	random (4)	72:18,23,24;73:7;	67:2;74:7;77:6,16
properly (1)	Public (13)	22:21;23:4;40:15;	81:6;104:14;124:10	reflected (1)
68:4	5:21;21:5;31:16;	96:22	receive (1)	112:16
property (9)	32:12;60:22;66:23;67:2;	randomly (1)	55:21	regard (4)
59:1,7;60:14;65:7;	92:18;99:11,24;126:5,	40:10	received (5)	30:1;61:20;116:1,13
91:6;102:8;112:11;	14;127:7	randomness (1)	38:14,16;50:15,24;	regarded (1)
115:9;117:23	publicly (4)	23:8	116:5	116:11
proportionate (1)	8:21;37:23;39:17;	range (7)	receives (2)	regarding (14)
15:23	75:22	18:10;20:23;24:18;	61:24;64:1	7:18,24;36:11;41:14;
proposal (11)	purpose (2)	26:5;27:19,24;39:17	receiving (1)	42:1;49:8;50:16;63:12;
52:18;68:6;69:18;	56:11,15	ranges (2)	71:21	105:21;108:18;110:12;
70:21;71:1,5,11,14;72:8;	purposes (1)	14:9,10	recent (1)	111:4;119:4;121:3
78:18;113:15	113:18	raptor (3)	15:7	regular (1)
propose (3)	push (1)	30:22;38:2,18	recently (5)	40:5
38:11;57:24;102:21	59:6	raptors (3)	22:12;31:15;32:13;	regulated (1)
proposed (29)	put (11)	36:22;37:6;43:14	67:21;68:7	76:16
12:15;18:10;20:6;	61:11;75:5;88:21;	rare (3)	recess (5)	regulating (1)
28:13;31:7;33:12;35:19;	89:16;98:9,15;101:9;	33:24;35:14;101:2	46:12,14;124:11;	109:14
38:13;53:5;56:14;57:3,	106:10,14;117:13;	rate (4)	127:11,14	regulations (3)
5,12;58:22;61:18;71:11;	122:17	14:1;15:1;19:24;44:15	recessed (1)	69:12,16;93:18
87:14;89:3,22;90:22;	puts (3)	rates (12)	127:16	<b>regulatory (1)</b> 109:13
91:1,2;103:3;105:2; 114:7;115:23;122:15,	28:13,21;84:5	13:18;14:5;19:12;	recollection (3)	
20;123:22	<b>putting (4)</b> 10:12;19:7;97:21;	20:20;24:18;26:5;27:19,	70:3;73:4;75:16	<b>reiterate (1)</b> 64:9
proposing (4)	10:12;19:7;97:21; 118:5	24;28:3;45:2;59:12;60:6	recommend (4) 83:22;84:7;89:6,21	relate (2)
59:23;65:20;67:19;	118.5	rather (2)	recommendation (4)	19:2;62:3
99:23,05.20,07.19, 99:23	Q	104:19;124:3	62:1,2,7;74:24	related (2)
protect (1)	Y	ratios (1)	recommendations (1)	72:2;76:24
121:20	qualifying (2)	71:13	114:17	relates (2)
protection (6)	61:4;62:19	ravens (1)	recommended (2)	13:11;55:14
26:12;27:10;37:16,17;	quality (5)	45:10	76:13;89:15	relation (2)
68:5;87:10	61:21,23;63:12;76:19;	ravine (2)	reconsider (1)	19:12;20:13
protections (1)	126:5	65:24;66:4	31:18	relative (2)
89:18	quantify (2)	<b>reach (3)</b> 113:4;115:4;126:22	record (19)	23:18;35:20
protocol (2)	20:3;39:15	read (4)	5:24;7:8;11:10;32:18,	relatively (1)
36:14,19	quantities (1)	26:14;33:2;34:7;42:2	20,22;34:7;46:22;47:10;	85:3
protocols (1)	92:12	reading (3)	54:9,10,12;85:12,12,14,	Reliable (1)
31:8	quarters (2)	25:1,1;90:12	16;102:24;124:23;126:8	12:1
prove (1)	8:23;9:4	ready (1)	recorded (1)	reluctant (1)
126:6	quick (1)	25:11	16:21	78:7
provide (19)	32:6	real (1)	records (2)	rely (2)
6:13,17;7:10;8:5,9;	quickly (3)	49:6	57:4,8	77:2,14
9:2;10:5;14:12;21:7;	9:22;66:17;85:3	realistic (1)	redirect (4)	remainder (1)
44:23;55:4;56:4;69:18;	Quincy (2)	9:10	43:10;124:3,6;125:4	127:2
70:16;71:6,6,14,17;88:3	62:15;113:14	really (24)	re-drawn (1)	remaining (1)
provided (8)	quite (9)	19:1,23;22:23;23:9,	8:13	87:5
54:21;56:13;70:11,19;	67:23;71:2,15;72:6;	21,23;27:1;36:24;42:10;	reduce (1)	remedial (2)
111:23;112:1,9;114:4	78:21;79:2;89:19;101:3;	53:2;58:16;65:11;71:3,	76:11	98:6,21
provides (2)	121:22	20;74:16;78:18;83:15;	reduction (1)	remember (3)
F-0,1400 (#)	121,22	20;74:16;78:18;83:15;		

56:1;60:14;81:16	7:8;1
remind (1)	require
73:2	10:10
removal (4)	91:24
88:11,12;91:14;92:1	require
remove (4)	8:15
93:24;94:5,7,11	
	114:9
removed (2)	122:
70:17;88:10	require
removing (1)	59:1
106:11	researc
Rendall (52)	41:4
46:24;47:5,16,16;	reserve
48:11,14,18;52:14,16,	102:
22;56:2,9;57:1,18,20;	reserve
67:10,20;68:14;72:18,	6:12
23;73:1,8;75:19;82:8,11,	18;9:
19;84:11,13,17,19,21;	108:
85:10,20,23;86:1,7,9,12;	resider
95:15,19,24;96:5,9;	77:1
106:5,7,21;107:1;114:6,	resider
10;117:3,20;118:11	14:1
Renewables (1)	resider
9:3	90:2
Rennie (3)	resider
49:18;50:16;51:1	33:1:
Reno (1)	105:
5:9	residue
Renovables (1)	105:
8:20	107:
repeat (6)	resolve
25:13,24;28:7;41:20;	106:
68:18;91:20	resour
rephrase (1)	69:3;
28:9	105:6
replied (2)	resour
50:17;51:2	31:1
report (6)	respect
14:12,22;15:4,6;	7:8;2
32:24;114:11	113:
reported (1)	respect
22:12	57:14
Reporter (4)	respon
11:5;47:3,19;85:12	54:2
reporting (1)	respon
97:18	30:1
reports (2)	98:1
8:22;39:16	respon
represent (1)	50:1
5:9	respon
represented (1)	11:1
75:17	respon
represents (1)	50:2
105:16	respon
reputable (2)	104:
121:17,21	rest (1)
request (6)	56:2
7:18;10:10;26:24;	result (
29:3;50:15;123:2	27:5
requested (4)	78:1
38:5;52:11;70:22;	resulte
76:17	109:
requests (2)	results
requests (2)	Louits

7:8;11:1	22:20,20;24:17;26:4;	
require (8)	37:5,22;56:9,18;107:23	ri
10:10,13;24:11;69:16;	resume (4)	
91:24;111:14;115:12,23	73:17;124:24;127:14,	ri
required (8)	17	11
8:15;38:18;113:10;		
	resumed (1) 46:15	
114:9;115:6,19;120:1;		ъ
122:5	returned (1)	R
requirements (4)	93:5	
59:11;61:12,15;87:15	reuse (3)	
research (1)	94:3,7;105:24	
41:4	reused (5)	
reserve (2)	106:4,19;107:12;	
102:20;108:5	122:13,23	
reserved (11)	reusing (1)	
6:12;7:18,24;8:7,13,	95:5	
18;9:19,24;11:1;103:7;	revetments (1)	
108:12	65:22	
residences (3)	review (5)	
77:10,11;108:24	61:23;89:5;99:4;	
resident (5)	115:24;125:17	
14:16,17;16:4;17:4,9	reviewed (2)	ro
residential (1)	61:22;89:24	
90:23	reviewing (1)	ro
residents (6)	79:3	
33:15,17;76:22;	reviews (7)	
105:11;109:2,5	15:14,17;78:8;85:22;	
residue (4)	86:15;90:13;118:13	ro
105:21;106:3,18;	revisit (1)	
107:11	15:18	ro
resolved (1)	ridge (6)	
106:16	36:3;85:5;86:9;109:3;	
resource (9)	119:16,21	
69:3;70:1,4;71:4;84:2;	ridgeline (1)	
105:6;111:7,17;115:14	43:18	ro
resources (3)	ridgelines (2)	10
31:10;76:4;126:11	24:19;26:6	ro
respect (7)	ridges (1)	10
7:8;26:11;29:5;103:4;	59:16	R
113:9;123:9;125:22	right (61)	K
, ,	5:3;11:2;13:15;16:15;	
<b>respective (1)</b> 57:14		
	24:12,13;25:20;36:10;	ro
respond (3)	37:2;46:3;50:3;52:12;	-
54:23;80:9,11	54:11;58:24;60:13,18;	ro
response (5)	64:11;65:19;66:23;77:8,	Ì
30:19;54:12;79:16;	20;78:2,9;80:3;81:22;	Ì
98:18;127:12	82:5,7,10;83:9,11,16,17,	
responses (1)	24;84:8;85:20;86:4,5,	Ì
50:11	14;87:19;89:8,23;91:15;	Ì
responsibilities (1)	92:6,19,21;93:1;95:7,9,	
11:16	18,23;98:5,14;99:8;	Ì
responsible (2)	106:8;108:13;112:17,	ro
50:21;79:3	23;118:8;119:20;	
responsive (1)	121:11,17	ro
104:13	right-of-way (1)	-
rest (1)	93:1	R
56:22	ringing (1)	
result (7)	101:22	ru
27:5;57:1,5;74:21;	riparian (1)	Ì
78:16;95:17;107:21	117:8	ru
resulted (1)	risk (15)	Ì
109:19	18:1,4;31:9;37:13,22;	Ì
results (9)	38:1;42:18;60:7;63:4;	R
		1

76:11;79:1,7,13,17,22	5:1
risks (1)	76::
31:14	92:
<b>river (16)</b>	<b>Rum</b>
36:2,7;58:24;59:2,5,6,	91:
7,14,20;60:9;62:15;64:1,	<b>run (</b>
2;77:9,18;113:14 Road (65)	103 runo 593
58:22,23;60:16,17; 62:15;65:6,8,9,11,20,20; 66:1,3,19;67:3,6;75:10;	17 <b>runs</b>
77:22;78:10;83:9,12; 85:4;88:7,15;90:24; 91:7,16;92:13,18,20,21;	58:
93:4;99:11,15,15,20,20, 24;100:4,5,6,13,14,17, 19;101:17,19;102:1,7;	<b>safe (</b> 98:
103:4;105:7,10,13;	safet
113:3,14,20,24;114:1;	12
117:20,23;118:4,9;	Saler
119:19,20;125:6	79:
roadbed (1)	<b>same</b>
94:15	8:1
roads (10)	14:
60:3,21;61:1;67:24;	56:
68:3;88:6,23;109:4;	993
110:3;122:17	samp
roaming (1)	343
44:18	<b>samp</b>
<b>rock (18)</b>	36:
88:8,11,12,14,19;91:9,	97:
10,12,14,24;94:3,9,11, 23;95:5;108:19;123:15, 17	Sand 92:
<b>role (1)</b> 74:1	Sara 44 satisf
room (2)	70:
60:2;114:13	saw (
Roth (5)	43:
45:19;46:5,7;124:20;	<b>sayin</b>
125:3	23:
round (1)	42:
102:9 route ( <b>30</b> )	54: scale 80:
12:15;52:18;54:18; 55:2;56:15;57:4,11; 92:22;100:9;110:13,19,	<b>scave</b> 45:
20;111:13,20,22;112:10,	scave
12,14,14,23;113:2,4,13,	44:
14,16,19,24;116:7;	scave
120:7;125:6	44
routes (1)	sched
105:3	6:2
routine (2)	<b>scien</b>
122:4,7	47:
RSA (1)	<b>SCO</b>
125:21	53:
rule (2)	11
6:22;127:1	searc
rules (5)	38
67:22;69:13;71:9,11,	searc
14	44:
Rumney (11)	searc

5,18;26:24;67:6,8; :22;77:6;79:10;91:18; 2:18;121:5 nney/Groton (1) :5 (2) 08:21;122:20 off (5) ):11;60:6,10;64:13, (4) 3:21;75:7;77:8,8 S (1) 3:24 ty (1) 26:5 m (1) 20:20 e (16) 12;12:2,19,23; :19;17:10,11,13; :21;57:13,15;90:11; 0:6;110:3,5;113:1 ple (4) :13,20,23;36:17 pling (6) 5:11,13,19;76:20; 7:7.10 d (2) 2:5,10 **1h (3)** :1,4;65:2 fied (2) :17,21(1) 3:16 ng (13) 3:2,6,7,22;29:12; 2:23;43:5,20;47:20; :4;95:6;97:23;117:16 (2) ):20,21 enged (1) 5:10 enger-removal (1) :21 engers (2) :19;45:1 dule (3) 24;26:19;127:8 ntist (1) ':17 **TT (6)** 3:21;108:14,15; 0:11,22;120:15 ch (1) 8:18 ch-efficiency (1) :21 chers (1)

44:23 searches (1) 38:2 season (8) 10:7,15:16:9,21:17:5: 30:23;35:7;36:17 Seasons (1) 31:11 second (10) 24:20;26:7,17;27:2; 28:1;29:13,16;32:18; 82:15;122:11 section (3) 97:6;98:24;117:22 sediment (1) 61:14 seeing (2) 100:1;102:14 seek (4) 41:3;115:14,16; 116:19 seeking (1) 6:18 seemed (1) 70:7 seems (4) 30:5;44:14;86:16; 103:10 select (1) 92:13 selected (2) 87:18:108:22 senior (1) 47:16 sense (2) 47:18;72:6 sensory (1) 40:22 sentence (1) 35:23 separate (8) 50:24:53:16:111:14; 114:8;115:8,9,10;127:18 separately (1) 120:16 September (2) 32:2;70:20 sequencing (1) 109:21 series (1) 95:14 services (3) 47:15;61:22;116:1 session (5) 72:19;75:17;88:5; 127:15,17 set (5) 49:9;81:3;83:5;87:11; 89:17 sets (2) 53:16;54:5 seven (2) 22:12:31:23

seven-day (1) 45:7 several (6) 22:16;30:24;31:22; 37:21;39:16;55:7 shall (1) 27:13 sheet (3) 22:3;86:1;119:6 sheets (3) 8:10;82:24;110:9 shift (3) 10:18;70:10,14 shifts (1) 101:7 short (2) 61:5,7 short-term (1) 61:5 show (6) 19:16;22:17;24:17; 26:4;27:4;82:6 showed (2) 23:17;43:13 shown (1) 37:21 shows (2) 49:17:75:20 shut (3) 81:6,16,20 side (7) 59:7:65:14:66:3.20: 77:18:91:7:100:20 sides (2) 77:8:125:19 sight (1) 8:14 sighting (2) 42:10.12 sightings (4) 42:3,8,11,13 signed (2) 50:1,19 significant (16) 14:4;15:22;18:15,20; 28:10,12,17;42:13,15; 72:21;75:10;96:15,16; 105:16;109:15;116:15 similar (11) 13:20;15:1;20:7,22; 24:16;26:2;32:1;39:19; 60:12;107:19;120:16 simple (1) 101:10 Sinclair (4) 45:16,17;58:11,13 single (1) 17:8 sit (1) 99:20 Site (59) 5:3;11:22;17:6;33:12, 24;34:2;35:15,17,19,24;

38:11:39:13:42:4:43:22; 45:7:57:10:59:10:60:6. 8,10,13,17;61:16,17; 62:10,17;64:3,11,12,13, 17;70:2;76:17,19;78:9, 22;86:8;88:10,10;91:12; 92:3,4,7,8,12,15;98:17; 100:8,9;102:4;105:24; 106:19;107:13;109:1,5; 112:11:123:12,17,18 sites (10) 14:10;19:9;20:22,23; 21:1;31:24;44:22; 115:21;126:4,10 situation (4) 74:14;79:20,22;81:7 situations (1) 103:17 six (2) 96:2;101:14 size (5) 7:24;60:19;80:22; 96:17;101:14 sketch (2) 53:5;54:16 skidder (4) 117:20,23;118:2,9 skip (1) 95:11 skyscrapers (1) 23:20 slightly (1) 70:15 slopes (1) 60:4 small (3) 60:2;99:15;103:12 snapshot (1) 31:13 snow (1) 63:4 soaring (1) 36:4 Society (1) 69:15 somebody (6) 73:15;87:11;93:19; 97:21;101:10,24 somehow (3) 10:12;17:24;122:23 someone (3) 71:4;100:6;101:3 somewhere (1) 86:18 soon (3) 7:21;91:5;94:1 sorry (17) 21:10,15,19;25:7,10; 26:17;32:8;39:6;48:20; 67:3;79:20;86:4;89:12; 91:20;101:23;116:4; 121:1 sort (11)

40:10:61:5:65:24; 68:6,15;78:12;83:19; 91:3;97:8;104:3;125:17 sought (1) 75:2 sound (6) 10:4,11;40:11,20; 41:14,17 sounds (9) 23:9,11,12:28:24; 29:2,6;81:15;110:1,1 source (2) 62:14:92:3 south (1) 100:20 Southern (1) 73:18 Spain (1) 8:21 speak (8) 11:19:44:3:47:18; 75:8;88:17;98:4;103:23; 115:20 speaking (4) 47:19;66:23,24;78:15 special (1) 56:17 specialty (1) 92:10 species (10) 24:6;31:14;33:11,22, 23:35:4.14:37:14:57:3.7 specific (7) 37:18;38:17;66:21; 70:22;71:24;73:16;74:5 specifically (6) 11:18;39:21;67:15; 72:17;74:22;76:12 speculate (1) 79:24 speeds (1) 42:21 spell (2) 11:10;98:15 spill-control (1) 62:8 spinning (1) 17:13 spot (1) 83:8 spread (1) 106:15 spring (1) 13:22 square (5) 84:12,18;94:2;115:2; 119:4 square-foot (1) 115:11 stab (1) 105:5 stabilized (3) 60:12;61:7;68:5

stable (1) 60:17 stack (1) 21:14 staff (1) 27:21 staging (1) 109:3 stamp (1) 87:7 Stamped (1) 87:2 stand (2) 63:24;64:3 standard (1) 111:15 standpoint (1) 59:9 Stantec (2) 11:15,16 stapled (1) 54:5 start (10) 26:13;46:13;47:23; 49:2;82:5;83:8;90:17; 100:10;103:14,15 starters (1) 33:7 starting (1) 6:3 starts (1) 109:4 state (10) 11:9;24:14;30:21; 38:9;47:9;62:23;69:24; 96:19;106:13;115:18 stated (1) 31:17 statement (4) 31:20:34:7:54:13:74:3 statements (6) 8:19,24:9:3,4,7,11 states (1) 31:7 station (2) 78:11;110:13 statistic (1) 36:19 statistical (4) 18:20;36:14,20,24 statistically (3) 14:7,13;18:23 status (3) 6:10;111:3;126:8 stay (1) 66:4 steep (2) 65:10;66:19 Steltzer (9) 10:3;25:4;104:22,23; 105:1,18;107:3;108:10; 123:3 step (1)

97:14 steps (1) submitte 107:22 step-up (3) 8:1:110:13:112:19 still (3) 45:24;110:5;120:14 stockpile (1) Subsecti 106:14 stone (1) 88:15 Subset ( stones (1) 92:14 substanc stop (3) 49:16;99:1;101:7 substant stopped (1) 98:19 substatio stopping (1) 17:6stormwater (1) 61:16 sufficien straight (3) 48:20;65:11,12 stratified-drift (1) suggest 77:17 stream (8) 67:14,22;69:6;86:16; suggeste 117:2,13,18;118:1 streams (6) 56:16:117:4,6,9; suggesti 118:2,4 strikes (1) suggesti 17:20structural (2) summar 121:12,16 summar structures (1) 23:20 stuck (2) 100:6:101:13 studied (1) summer 106:7 studies (22) supplem 9:20;10:12;13:19; 19:15,16,17,18,18,23; supplem 22:11,13;23:22;31:10, 11;33:10;37:24;38:8; 39:18;40:2,18,24;43:12 study (10) 14:2,2;18:17,17,18,18; 27:22,23;28:15;38:15 stuttered (1) supply ( 91:3 Subcommittee (6) supporti 5:8;6:1;46:4;97:2; Sure (43 120:23;125:3 subject (2) 112:5;124:10 submit (5) 6:19;8:22,24;12:7; 99:3 submittal (1) 110:8 submittals (1)

	, _	
50.0	06.14.00.9.104.17.	
50:9	96:14;99:8;104:17;	
submitted (21)	105:8,19;106:6;111:20;	t
9:1;12:2,4;15:8;31:16;	113:1;117:18;118:23;	
38:12;47:21,24;48:10,	122:23;124:17;126:13	t
14;49:13;52:4;68:24;	surface (4)	
69:3,20;70:9;109:13;	62:9;73:6;94:24;123:9	t
110:10;111:6;112:9;	surfaces (1)	
116:3	60:5	t
Subsection (1)	surprised (2)	
125:22	75:16;81:19	te
Subset (2)	survey (5)	
107:18;110:9	10:4;37:5;40:7;	
substances (1)		4
	121:18;122:10	t
76:17	surveys (13)	
substantial (5)	11:18,18;14:5;19:10,	
61:12;64:15;78:3;	11,19;20:7;27:3;30:22;	
89:16;91:11	37:20,20;121:12,16	t
substation (2)	Susan (1)	
8:2;113:7	5:8	
subsurface (1)	suspend (1)	
73:7	125:10	t
sufficient (2)	swim (1)	
34:20,22	62:11	
suggest (5)		+
	swimming (1)	t
29:9;58:7;79:11;	59:1	
124:12,24	swing (1)	t
suggested (4)	93:3	
28:11;32:4;69:7;	switch (1)	t
101:20	78:11	
suggesting (4)	switchback (1)	
29:21;77:7,13;107:4	85:7	
suggestions (1)	switching (1)	
suggestions (1) 104:18	<b>switching (1)</b> 91:8	
104:18	91:8	
104:18 summarize (1)	91:8 switchyard (1)	
104:18 summarize (1) 50:8	91:8 switchyard (1) 112:14	т
104:18 summarize (1) 50:8 summarizes (1)	91:8 switchyard (1) 112:14 sworn (6)	Т
104:18 <b>summarize (1)</b> 50:8 <b>summarizes (1)</b> 56:17	91:8 <b>switchyard (1)</b> 112:14 <b>sworn (6)</b> 11:4,6;47:2,4,5,6	
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1)	91:8 <b>switchyard (1)</b> 112:14 <b>sworn (6)</b> 11:4,6;47:2,4,5,6 <b>system (2)</b>	T t]
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16	91:8 <b>switchyard (1)</b> 112:14 <b>sworn (6)</b> 11:4,6;47:2,4,5,6	tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3)	91:8 <b>switchyard (1)</b> 112:14 <b>sworn (6)</b> 11:4,6;47:2,4,5,6 <b>system (2)</b> 40:13,17	
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4	91:8 <b>switchyard (1)</b> 112:14 <b>sworn (6)</b> 11:4,6;47:2,4,5,6 <b>system (2)</b>	t] t]
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4)	91:8 <b>switchyard (1)</b> 112:14 <b>sworn (6)</b> 11:4,6;47:2,4,5,6 <b>system (2)</b> 40:13,17	tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4	91:8 <b>switchyard (1)</b> 112:14 <b>sworn (6)</b> 11:4,6;47:2,4,5,6 <b>system (2)</b> 40:13,17	t] t]
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4)	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2)	t] t]
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6	tl tl tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20)	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2)	tl tl tl T
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7;	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7	tl tl tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7; 30:20;48:5,11;49:1,6;	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7 talked (5)	tl tl tl T tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7; 30:20;48:5,11;49:1,6; 54:17,19,20;56:5;58:2;	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7 talked (5) 57:19;87:13;88:5;	tl tl tl T
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7; 30:20;48:5,11;49:1,6; 54:17,19,20;56:5;58:2; 67:11;104:12;111:24;	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7 talked (5) 57:19;87:13;88:5; 90:19;96:4	tl tl tl T tl tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7; 30:20;48:5,11;49:1,6; 54:17,19,20;56:5;58:2; 67:11;104:12;111:24; 112:3;120:19	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7 talked (5) 57:19;87:13;88:5; 90:19;96:4 talking (9)	tl tl tl T tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7; 30:20;48:5,11;49:1,6; 54:17,19,20;56:5;58:2; 67:11;104:12;111:24; 112:3;120:19 supply (2)	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7 talked (5) 57:19;87:13;88:5; 90:19;96:4 talking (9) 23:13;42:20;87:20;	tl tl tl tl tl tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7; 30:20;48:5,11;49:1,6; 54:17,19,20;56:5;58:2; 67:11;104:12;111:24; 112:3;120:19 supply (2) 73:23;97:14	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7 talked (5) 57:19;87:13;88:5; 90:19;96:4 talking (9) 23:13;42:20;87:20; 91:17;111:19;112:22;	tl tl tl T tl tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7; 30:20;48:5,11;49:1,6; 54:17,19,20;56:5;58:2; 67:11;104:12;111:24; 112:3;120:19 supply (2) 73:23;97:14 supportive (1)	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7 talked (5) 57:19;87:13;88:5; 90:19;96:4 talking (9) 23:13;42:20;87:20; 91:17;111:19;112:22; 113:2,2,18	tl tl tl tl tl tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7; 30:20;48:5,11;49:1,6; 54:17,19,20;56:5;58:2; 67:11;104:12;111:24; 112:3;120:19 supply (2) 73:23;97:14 supportive (1) 70:8	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7 talked (5) 57:19;87:13;88:5; 90:19;96:4 talking (9) 23:13;42:20;87:20; 91:17;111:19;112:22; 113:2,2,18 Talks (1)	tl tl tl tl tl tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7; 30:20;48:5,11;49:1,6; 54:17,19,20;56:5;58:2; 67:11;104:12;111:24; 112:3;120:19 supply (2) 73:23;97:14 supportive (1) 70:8 Sure (43)	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7 talked (5) 57:19;87:13;88:5; 90:19;96:4 talking (9) 23:13;42:20;87:20; 91:17;111:19;112:22; 113:2,2,18 Talks (1) 90:5	tl tl tl tl tl tl tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7; 30:20;48:5,11;49:1,6; 54:17,19,20;56:5;58:2; 67:11;104:12;111:24; 112:3;120:19 supply (2) 73:23;97:14 supportive (1) 70:8 Sure (43) 7:16;10:15;15:5;	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7 talked (5) 57:19;87:13;88:5; 90:19;96:4 talking (9) 23:13;42:20;87:20; 91:17;111:19;112:22; 113:2,2,18 Talks (1)	tl tl tl tl tl tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7; 30:20;48:5,11;49:1,6; 54:17,19,20;56:5;58:2; 67:11;104:12;111:24; 112:3;120:19 supply (2) 73:23;97:14 supportive (1) 70:8 Sure (43)	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7 talked (5) 57:19;87:13;88:5; 90:19;96:4 talking (9) 23:13;42:20;87:20; 91:17;111:19;112:22; 113:2,2,18 Talks (1) 90:5	tl tl tl tl tl tl tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7; 30:20;48:5,11;49:1,6; 54:17,19,20;56:5;58:2; 67:11;104:12;111:24; 112:3;120:19 supply (2) 73:23;97:14 supportive (1) 70:8 Sure (43) 7:16;10:15;15:5;	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7 talked (5) 57:19;87:13;88:5; 90:19;96:4 talking (9) 23:13;42:20;87:20; 91:17;111:19;112:22; 113:2,2,18 Talks (1) 90:5 tall (1) 23:20	tl tl tl tl tl tl tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7; 30:20;48:5,11;49:1,6; 54:17,19,20;56:5;58:2; 67:11;104:12;111:24; 112:3;120:19 supply (2) 73:23;97:14 supportive (1) 70:8 Sure (43) 7:16;10:15;15:5; 25:15;29:10;30:16; 32:15;34:6;45:23;47:11,	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7 talked (5) 57:19;87:13;88:5; 90:19;96:4 talking (9) 23:13;42:20;87:20; 91:17;111:19;112:22; 113:2,2,18 Talks (1) 90:5 tall (1) 23:20 task (1)	tl tl tl tl tl tl tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7; 30:20;48:5,11;49:1,6; 54:17,19,20;56:5;58:2; 67:11;104:12;111:24; 112:3;120:19 supply (2) 73:23;97:14 supportive (1) 70:8 Sure (43) 7:16;10:15;15:5; 25:15;29:10;30:16; 32:15;34:6;45:23;47:11, 19;51:12;61:17;62:9;	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7 talked (5) 57:19;87:13;88:5; 90:19;96:4 talking (9) 23:13;42:20;87:20; 91:17;111:19;112:22; 113:2,2,18 Talks (1) 90:5 tall (1) 23:20 task (1) 74:8	tl tl tl tl tl tl tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7; 30:20;48:5,11;49:1,6; 54:17,19,20;56:5;58:2; 67:11;104:12;111:24; 112:3;120:19 supply (2) 73:23;97:14 supportive (1) 70:8 Sure (43) 7:16;10:15;15:5; 25:15;29:10;30:16; 32:15;34:6;45:23;47:11, 19;51:12;61:17;62:9; 63:16;67:7;68:19;75:4;	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7 talked (5) 57:19;87:13;88:5; 90:19;96:4 talking (9) 23:13;42:20;87:20; 91:17;111:19;112:22; 113:2,2,18 Talks (1) 90:5 tall (1) 23:20 task (1) 74:8 tech (2)	tl tl tl tl tl tl tl tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7; 30:20;48:5,11;49:1,6; 54:17,19,20;56:5;58:2; 67:11;104:12;111:24; 112:3;120:19 supply (2) 73:23;97:14 supportive (1) 70:8 Sure (43) 7:16;10:15;15:5; 25:15;29:10;30:16; 32:15;34:6;45:23;47:11, 19;51:12;61:17;62:9; 63:16;67:7;68:19;75:4; 77:1,6;79:5;80:17;	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7 talked (5) 57:19;87:13;88:5; 90:19;96:4 talking (9) 23:13;42:20;87:20; 91:17;111:19;112:22; 113:2,2,18 Talks (1) 90:5 tall (1) 23:20 task (1) 74:8 tech (2) 75:17;88:5	tl tl tl tl tl tl tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7; 30:20;48:5,11;49:1,6; 54:17,19,20;56:5;58:2; 67:11;104:12;111:24; 112:3;120:19 supply (2) 73:23;97:14 supportive (1) 70:8 Sure (43) 7:16;10:15;15:5; 25:15;29:10;30:16; 32:15;34:6;45:23;47:11, 19;51:12;61:17;62:9; 63:16;67:7;68:19;75:4; 77:1,6;79:5;80:17; 82:16,17;84:15;87:23;	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7 talked (5) 57:19;87:13;88:5; 90:19;96:4 talking (9) 23:13;42:20;87:20; 91:17;111:19;112:22; 113:2,2,18 Talks (1) 90:5 tall (1) 23:20 task (1) 74:8 tech (2) 75:17;88:5 technical (4)	tl tl tl tl tl tl tl tl tl
104:18 summarize (1) 50:8 summarizes (1) 56:17 summary (1) 53:16 summer (3) 13:22;17:3;63:4 supplement (4) 15:8;61:19;89:10; 114:24 supplemental (20) 12:8,21;13:12;25:5,7; 30:20;48:5,11;49:1,6; 54:17,19,20;56:5;58:2; 67:11;104:12;111:24; 112:3;120:19 supply (2) 73:23;97:14 supportive (1) 70:8 Sure (43) 7:16;10:15;15:5; 25:15;29:10;30:16; 32:15;34:6;45:23;47:11, 19;51:12;61:17;62:9; 63:16;67:7;68:19;75:4; 77:1,6;79:5;80:17;	91:8 switchyard (1) 112:14 sworn (6) 11:4,6;47:2,4,5,6 system (2) 40:13,17 T table (2) 53:16;117:6 talk (2) 52:23;99:7 talked (5) 57:19;87:13;88:5; 90:19;96:4 talking (9) 23:13;42:20;87:20; 91:17;111:19;112:22; 113:2,2,18 Talks (1) 90:5 tall (1) 23:20 task (1) 74:8 tech (2) 75:17;88:5	tl tl tl tl tl tl tl tl

72:19 technology (1) 63:17 telling (1) 98:2 tempted (1) 19:21 tenth (1) 96:11 term (7) 60:11;61:4,5,6,7; 111:21:113:13 terms (10) 10:11:14:8:22:19; 23:14;41:6;49:5;97:11; 106:21;108:8;111:19 terrain (11) 50:12,17,22;107:17; 109:18;111:16;114:22; 115:1,5;116:2,9 testified (5) 11:21;41:17;80:7; 93:8;96:6 testify (1) 55:16 testimonies (2) 39:16;57:14 estimony (33) 6:4,15;12:3,8,13,14, 21,22;13:12,16;15:16; 24:10:30:12,20:42:3; 47:22:48:2.5.10.12.15: 49:1,6:52:15:54:19; 56:5;58:2;67:11;84:15; 94:2;112:1;119:3;127:4 Thanks (1) 89:12 there'd (1) 99:2 therefore (3) 29:23:76:23:121:13 thermal (1) 36:4 Thibodeau (1) 5:22 thinking (1) 29:7 third (3) 26:18;29:16;55:10 though (3) 10:19:29:3:74:19 thought (10) 10:18:51:10:58:6; 66:22;71:14;80:1,6; 81:20;84:21;116:10 threshold (1) 115:4 throughout (5) 23:17;30:23;42:16; 56:22:77:12 thrust (1) 94:22 timber-harvesting (1)

68:1 times (7) 14:19;16:11,13;22:13; 71:12:83:14:99:9 time's (1) 20:10 tire (2) 99:18:101:8 titled (1) 76:3 Tocci (1) 127:7 today (12) 5:10;7:5;12:22;50:20; 52:21;57:16;58:17; 59:12;104:15;106:8; 125:14;126:19 together (5) 10:12;50:5;61:11; 88:21;89:16 told (4) 9:16:10:18:67:9:100:4 tomorrow (4) 7:6;8:5;104:17;126:20 took (2) 14:23;99:3 top (1) 86:17 topic (2) 85:2,18 topography (1) 59:20 total (4) 35:4;59:22;96:11,12 totality (1) 35:5 touch (1) 65:21 touched (1) 67:7 tow (1) 100:8 towards (2) 66:3;83:1 tower (1) 18:14 towers (1) 61:2 **Town** (11) 26:23;67:2,4,6;76:22; 77:5,13,14;83:9,13;91:6 towns (1) 96:19 town's (2) 73:23;75:7 traded (1) 8:21 trail (1) 65:11 trajectory (1) 43:10 transformer (2) 8:1;112:19

SUSAN J. ROBIDAS, LCR NO. 44

			1	1
transit (1)	63:17;110:5	16:14;17:13;18:8;	vehicles (3)	washed (1)
102:5	turn (6)	21:15,17,18;38:6;42:21;	23:20;60:24;102:6	94:21
transmission (6)	6:3;11:3;68:14;80:6;	44:9;46:12;49:8;52:8;	verbal (1)	water (16)
111:23;114:12;	93:4;125:3	60:24;65:10;66:17;	127:12	61:21,23;62:9,12,14;
122:14,18,19;123:22	turnout (1)	70:23;71:8;75:9,10;	verify (1)	73:6,7,22,23;76:18,23;
transportation (1)	99:17	77:10,21;85:4;92:6,21;	50:4	89:1;94:24;97:13;99:2;
100:2	turnouts (2)	94:12;97:20;99:9;100:4,	versus (7)	126:4
transporting (1)	99:23;100:6	8,15,17;101:23;102:14;	17:5,8,21;18:5,17;	waters (1)
123:14	two (33)	103:13;104:2;118:20;	23:13;113:14	123:9
trapped (1)	6:11;8:23;9:4,14;	119:20;122:17;125:1,15	vetted (1)	wave (3)
100:22	13:19;14:5,10,14;16:6,7,	update (4)	84:2	40:11,20;41:14
traveled (1)	18,18,21,22;25:19;	10:22;12:14;56:4;	VHB (6)	way (19)
60:22	28:15,19,22;31:24;	57:19	50:9;56:13;74:3,8,16;	23:10;55:18;57:15;
traveling (1)	34:18;35:2,4,17;37:14;	updated (1)	87:20	71:8;75:9;77:7;86:10,
60:24	42:3;50:9;52:16;53:16,	110:8	via (4)	17;100:23;102:23;
traverse (1)	20;54:5;55:8;105:18;	updates (5)	50:18;51:3,23;70:12	107:8;108:4;109:16;
56:12	109:20	12:12,18;48:24;52:15,	vicinity (2)	119:11;126:14,15,18,21,
traversed (1)	two-night (2)	16	119:5,8	22
114:11	14:24;16:16	upgrade (1)	victims (1)	weather (3)
treat (1)	type (7)	74:5	44:16	22:22;40:15;41:7
110:16	72:15;74:14;101:21;	upgraded (1)	view (4)	week (2)
treated (1)	102:15;109:7;122:10;	60:16	33:19;100:22;112:15;	9:17;62:23
116:11	125:18	upgrades (3)	114:10	weekly (1)
treatment (4)	types (3)	67:19;69:6;99:23	village (1)	61:16
6:16,18,20;124:14	71:24;115:15;120:16	upland (1)	77:10	weeks (1)
tree (1)	typically (2)	117:8	visit (3)	81:21
18:6	98:7,8	use (13)	12:15;56:11;57:10	weigh (1)
trend (1)		20:20;33:12,18;35:18;	visits (2)	124:17
32:1	U	36:2;59:22;60:13,21;	33:24;35:15	weight (3)
trials (3)		61:3;88:9,14,24;113:13	visual (2)	19:8;55:8;125:18
44:21;45:3,4	Ultimately (1)	used (7)	8:8,10	wells (14)
tried (1)	125:19	8:10;56:22;61:4;	voltage-level (1)	72:20;73:4,11;76:18,
86:11	unacceptable (1)	88:15;113:13;117:21;	113:9	20;77:5,5,15;82:7,14;
triggered (1)	71:19	123:18	Volume (8)	90:21;97:7,24;106:24
115:2	unaudited (3)	useful (1)	12:5;15:13;48:2;76:7;	weren't (2)
Trimble (1)	8:24;9:2,4	126:23	82:19,21;86:6,7	32:15;107:7
56:21	under (9)	uses (1)	voluntary (1)	west (10)
trouble (1)	12:22;26:21;33:3;	113:15	83:19	22:11,15;23:13,19,22;
51:7	75:7;80:10;115:10,11,	using (5)		24:6;45:12;84:24;85:5;
truck (7)	11;127:18	20:7;100:22;111:21;	$\mathbf{W}$	109:3
92:20;99:18;101:7,8,	undersized (2)	114:1;118:8		wetland (12)
8,13;103:10	60:19;68:3	usually (1)	wait (1)	56:20;75:21;84:11;
trucking (1)	understands (1)	18:6	110:22	86:2,2,11;96:19;105:9;
79:12	111:21		waiting (1)	114:20,20;117:13;
trucks (9)	understood (1)	V	120:9	119:12
93:3;99:12;100:4,11;	118:8		walk (2)	Wetlands (31)
101:5,5,17;103:5,9	unfortunate (1)	vacation (1)	57:11;70:2	50:12;51:2;53:4;
true (4)	42:11	101:11	Walker (51)	55:14;56:16,19,22;
20:2;22:18;24:2,4	unit (1)	value (1)	46:24;47:6,14,14;	58:20;61:24;72:14;76:5;
try (9)	56:21	41:1	48:8,13,16;49:4,5,22,24;	82:6,21;95:15,17,20,23;
30:4,7;54:9;55:1,4;	University (1)	Vanasse (3)	50:9;52:8;57:21;61:19;	96:10,15,16,20;109:18;
75:4;85:12;92:3;127:6	62:24	47:12,15,17	68:15,18,24;71:1;73:16;	114:9,19;116:1,9,13;
trying (6)	unless (5)	variable (2)	74:1,16;75:13,15;76:2;	119:5,9,14,23
17:20;40:19;54:23;	29:19;58:3;84:22;	31:12,21	78:15;79:9;80:13;81:8,	what's (18)
62:21;88:9;97:22	110:19;124:5	variables (6)	10,15,19;83:14,18,20;	12:9;27:1;44:19;48:4;
turbine (15)	unlikely (2)	22:22;40:16;41:5,9,	84:1,9,24;85:3,7,9;	51:13;58:9;69:23;79:12;
8:14;18:7,10;31:9;	115:3,5	13,22	105:5;108:17;110:7;	88:2;101:12;102:5;
33:2,5;40:9;42:23;43:9;	unreasonable (6)	various (2)	111:5;114:23;115:18;	111:3;113:20;114:7;
86:18;100:11;116:22;	27:4,8;29:17;96:7;	88:13;100:11	116:6,18,20;118:19	124:16;125:20,21;
119:6,18,22	126:3,7	vary (1)	warm (1)	126:20
turbines (12)	unusual (2)	32:3	64:8	whereby (1)
17:13,15;39:13;41:2;	17:1,23	vehicle (4)	warming (2)	67:13
43:8,11,14,18,19;44:16;	up (40)	100:8,13,21,22	63:14,15	WHEREUPON (4)
	<b>*</b> ` <i>'</i>	, - , , <u>,</u>	, -	

		GROION WIND, LEC	
11:4;46:14;47:1;	14:5		
127:15	wondered (2)		
white (1)	68:20;73:19		
15:13	wondering (1)		
whole (4)	6:10		
21:14;43:4;100:14,16	woodlands (2)		
wide (2)	69:15;117:22		
56:12;99:16	word (2)		
widen (5)	35:24;61:4		
65:20;66:1,2;93:2;	words (2)		
100:1	60:21;88:13		
widening (2)	work (17)		
66:20;78:10	10:13;16:1;38:10,11;		
width (1) 114:12	39:12,20;60:7;64:3;		
wife (3)	71:13;75:12;80:14; 96:13;118:6,21;121:19,		
58:16;59:15;62:12	22;122:9		
wife's (1)	worked (2)		
59:3	73:18;79:19		
wildlife (3)	working (3)		
11:14;31:10;70:6	67:23;74:8;75:2		
Wind (27)	worry (3)		
5:5,10;9:3,7;18:7;	60:9;62:13,16		
20:6;22:11;24:14,16,20;	worth (1)		
26:1,3,7;27:19;28:12;	96:1		
29:22;31:9;33:2,5;	wrong (5)		
44:16;50:10;56:10;	15:21;73:3;81:21;		
63:17;70:15;78:18;	94:17;119:11		
79:14;100:3	v		
Windham (1)	X		
79:21 windrose (3)	V number (1)		
10:1,5,11	<b>X-number (1)</b> 18:19		
winter (1)	10.17		
63:5	Y		
wire (1)	-		
53:5	yard (1)		
withdraw (1)	91:8		
34:9	year (20)		
withdrew (1)	8:23;12:1;24:15,17,		
35:12	20;26:1,7;28:1,18,19,22;		
within (32)	31:10,12,12,21,21;40:7;		
16:8;18:9;20:23;	42:16;81:9,12		
27:19,24;35:9;39:17;	years (11)		
40:7,9;57:3,4;71:4;	13:19;27:21;28:15;		
76:18;78:4,20;82:11,13;	30:24;31:23;37:21;63:2,		
90:21;91:13;96:10,12, 22;97:7;98:24;105:23;	14,16,19;64:8		
106:18;111:24;114:13;	<b>year's (1)</b> 28:6		
117:4,8,11;121:19	yesterday (4)		
without (4)	7:2;8:19;10:3;53:2		
9:1;28:5;35:6;116:14	7.2,0.17,10.3,33.2		
witness (22)	Z		
13:2;15:3,7,11,14,17,			
24;21:13,17;25:14;30:8;	Zero (4)		
37:9;38:24;41:17;44:9;	40:1,3,5,7		
78:8;85:22;86:15;90:13;	zone (3)		
118:13;123:7;127:7	77:19;78:5,14		
witnesses (8)			
47:1;55:16;57:22;			
83:1;112:8,13;123:4;			
124:9			
wonder (1)			