BEFORE THE POLLUTION CONTROL HEARINGS BOARD

STATE OF WASHINGTON

AIRPORT COMMUNITIES COALITION, Appellant, CITIZENS AGAINST SEA-TAC EXPANSION, Intervenor/Appellant, vs. STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY, and PORT OF SEATTLE, Respondents.	PCHB No. 01-160

TRANSCRIPT OF PROCEEDINGS

DAY SIX

March 25, 2002
Lacey, Washington

ORIGINAL

Kim L. Otis
Certified Court Reporter
OTIS*KL441C9
GENE BARKER & ASSOCIATES, INC.
Certified Court Reporters
406 Security Building
Olympia, Washington 98501
(360) 943-2693

BE IT REMEMBERED that the above-entitled matter came on for hearing before the Pollution Control Hearings Board, Day Six commencing on the 25th day of March, 2002, and continuing through Day Ten, the 29th day of March, 2002. The hearing was conducted at the Environmental Hearings Office, 4224 6th Avenue SE, Rowe Six, Building, Lacey, Washington.

Sitting as the Washington State Pollution Control Hearings Board were KALEEN COTTINGHAM, presiding; ROBERT JENSEN, Board Chair, and BILL LYNCH, Member.

A P P E A R A N C E S

For the Appellant Airport Communities Coalition:

PETER J. EGLICK
KEVIN L. STOCK
MICHAEL WITEK
Attorneys at Law
HELSELL FETTERMAN
1500 Puget Sound Plaza
1325 Fourth Avenue
Seattle, WA 98111

RACHAEL PASCHAL OSBORN
Attorney at Law
2421 West Mission Avenue
Spokane, WA 99201

For the Intervenor Citizens Against Sea-Tac Expansion:

RICHARD A. POULIN
Attorney at Law
SMITH & LOWNEY
2317 E. John Street
Seattle, WA 98112

APPEARANCES

For the Respondent
Department of Ecology:

JEFF B. KRAY
JOAN MARCHIORO
THOMAS J. YOUNG
Assistant Attorneys General
OFFICE OF THE ATTORNEY GENERAL
P.O. Box 40117
Olympia, WA 98504-0117

For the Respondent
Port of Seattle:

GILLIS E. REAVIS
Attorney at Law
BROWN, REAVIS & MANNIN
1191 Second Avenue, Suite 2200
Seattle, WA 98101

ROGER PEARCE
STEVEN G. JONES
Attorneys at Law
FOSTER, PEPPER & SHEFELMAN
1111 Third Avenue, Suite 3400
Seattle, WA 98101

I N D E X

I N D E X

E X H I B I T S

NUMBER	DESCRIPTION	IDENTIFIED	ADMITTED
0015	Email from Peter Kmet to Kevin Fitzpatrick 9-11-00	6-0003	
0033	Email from Chung Yee to Kevin Fitzpatrick 9-11-00	6-0007	
0022	Email from Chung Yee to Kevin Fitzpatrick 6-13-01	6-0009	
0037	Email from Peter Kmet to Kevin Fitzpatrick 6-27-01	6-0011	
2126	Ecology Implementation Memo No. 3, 11-24-93	6-0011	
0607	Email from Chung Yee to Peter Kmet, 6-27-01	6-0014	
0262	USFWS Biological Opinion	6-0017	
0027	Email from Pete Kmet to Chung Yee 6/27	6-0022	
0080	Declaration of Edward O'Brien	6-0056	
0072	Agreed Order	6-0086	
0532	Letter from Tom Fitzsimmons to Kevin Stock 4-11-01	6-0087	
1254	Associates Earth Sciences Technical Memorandum - Anyalsis of Preferential Ground Water Flow Paths Relative to Proposed Third Runway	6-0089	
0073	Letter from Ching-Pi Wang to Ann Kenny re TCP Recommendation 6-22-01	6-0103	
2014	11/01 NRMP	6-0114	
0164	Handwritten notes from meeting	6-0126	

E X H I B I T S

NUMBER	DESCRIPTION	IDENTIFIED	ADMITTED
2018	Wetland Functional Assessment and Impact Analysis	6-0138	
0173	2-17-02 Memo to Ray Hellwig from Erik Stockdale	6-0196	
2025	How Ecology Regulates Wetlands 4/98	6-0205	

March 25, 2002

MS. COTTINGHAM: We are back on the record this morning. We are in the middle of cross examination by ACC of this witness.

MR. STOCK: Yes.

MS. COTTINGHAM: Or did we move on beyond that? No, that's where we were at. We were in the middle of a discussion, which I can't remember now exactly, and my notes aren't as clear as they probably should be.

MR. KRAY: Before we return to that, I have been asked a number of questions this morning about witness order. Would you like me to address that briefly?

MS. COTTINGHAM: Sure.

MR. KRAY: My understanding, and I haven't had a chance to confer with Mr. Young, but I am pretty sure this is accurate, is we will complete Mr. Yee and then we will move on to Mr. O'Brien, and then Mr. Wang, and then Ms. Walter, Mr. Stockdale, then, I believe, Mr. Whiting, depending, today or tomorrow. And I can give you an update at the end of day on how we are progressing and what we intend.

MS. COTTINGHAM: Okay. That's not much different than what you told us the other day.

MR. KRAY: I don't think it's different at

all, but I had forgotten and I was trying to scratch my head on exactly where we were, and the one question I had was with regard to Mr. Whiting, and I believe he comes after Mr. Stockdale. He's not even on your paper.

MS. COTTINGHAM: He is on there. I wrote it in a lightly-colored pen. He is over there.

MR. KRAY: I see. I believe that's accurate then.

MS. COTTINGHAM: Okay. So where were we when we left the other day? There was some concern about -- or did we go into a different subject?

MR. STOCK: I think we went into a different subject and I think it's probably appropriate just to start with cross examination again.

MS. COTTINGHAM: Great. Mr. Yee, you are still under oath from last Friday.

CHUNG YEE, Ph.D., having been previously duly sworn on oath or affirmed to tell the truth, the whole truth and nothing but the truth, further testified as follows:

EXAMINATION

BY MR. WITEK:

Q. Good morning, Mr. Yee. I will try to pick up where we left off on Friday afternoon.

You were asked to respond to the comments and concerns raised by Peter Kmet on the fill criteria; isn't that right?

A. Yes.

Q. And I think you said Mr. Kmet was an engineer, environmental engineer 5. So does that mean he is a senior engineer at the department?

A. As far as I know, he is an engineer 5.

Q. And isn't it true that you received emails from Mr. Kmet expressing Mr. Kmet's comments and concerns?

A. What dates are those emails, I guess? I've seen some emails from him, but I'm not quite sure which one you are referring to.

Q. I am just asking generally.

A. A few.

Q. Isn't it true that you were forwarded a copy of an email from Mr. Kmet where he said the sampling schedule was not sufficient? And that's Exhibit 15 if you want to refer to it.

A. Which page?

Q. The second to the last page and the attachment to the email. So isn't it true that for soils from port-owned sites and construction sites, Mr. Kmet recommended ten samples for every 2,000 cubic yards plus one sample for every additional 500 cubic yards?

MR. KRAY: Where are you in the exhibit, please, Mr. Witek?

MR. WITEK: This is the second to the last page on the attachment.

MR. KRAY: Okay.

MR. WITEK: And there's a box, the full box that you see on that page and you can see up above it where it says, "I suggest you go with something more like the one in our petroleum-contaminated soil guidance for construction sites in port-owned property this acknowledges," and then there's a table set up below it.

MR. KRAY: Thank you.

A. Your question is?

Q. So isn't it true that Mr. Kmet recommended ten samples for every 2,000 cubic yards plus one sample for every additional 500 cubic yards for port-owned sites and construction sites?

A. Yes, his table he recommended based on the petroleum-contaminated soil guidance, yes.

Q. Now, I want to ask about the next table. Isn't it true that for soils from native borrow pits, Mr. Kmet recommended 15 samples for sites between 50 and 500,000 cubic yards plus one sample for every additional 100,000 cubic yards?

A. Yes.

Q. Did you respond to Mr. Kmet's comments regarding sampling frequency?

A. I believe I was already off the project at the time. The email is dated September 11, 2000. I was no longer employed with Northwest Regional Office somewhere around February of 2001.

Q. So you were aware of --

A. I didn't do any additional work after seeing this email until I resurrect the job back in June 2001.

Q. So in June did you do any additional work on sampling frequency?

A. I looked at the sampling frequencies that was forwarded to me by Mr. Kevin Fitzpatrick. And in terms of the proposal, the sampling frequency is designed for sites that passes phase I environmental site assessment with low probability or no probability of on-site contamination. In view of that, I believe it is correct as is.

Furthermore, I have reviewed other documents, for example, the Washington State Department of Transportation specification guidelines, where they specify only one sample per 10,000 tons of recycled concrete, which may contain up to 20 percent asphalt concrete.

So in view of the fact that the sampling schedule in

the fill criteria is designed primarily for clean fill, in my judgment, it is sufficient. If it turns out the fill site has the potential for on-site contamination, the port is required to work closely with the Department of Ecology to come up with a more in-depth sampling frequency, sampling protocol, in terms of parameters and also in terms of frequency. That is available under the clean fill criteria as it stands in 401.

Q. Didn't you state in an email to Kevin Fitzpatrick that you did not change the sampling schedule because you thought the TCP sampling guidance for petroleum-contaminated soils may be too excessive for the project given the quantity of the fill?

A. Yes, because that was for contaminated sites. Personally, at this stage, I still don't know how to collect samples for a clean site. Under normal industrial practice, if I were to do a phase I environmental site assessment, which I have done in private practice, if a site turn out to be clean, I have no basis to ask for a client's money to do a soil sampling. So the point is I don't know how to do soil sampling for clean sites.

Q. So by "excessive," you meant expensive, didn't you?

A. By excessive in terms of the numbers, I have no basis.

Q. Do you recall me taking your deposition on December 17th?

A. Yes.
Q. Do you recall me asking this question and you giving this answer under oath at your deposition. This is page 34, line 4. Question: "I am trying to understand what you meant by too excessive. Do you mean that it would be expensive?" Answer: "It would be expensive, yes."

Do you recall that question and answer?

A. Yes.
Q. You were here on Friday when Mr. Fitzpatrick testified; is that right?
A. Yes.
Q. Do you recall Mr. Fitzpatrick testifying that it was -- I think counsel will correct me if I'm misstating what Mr. Fitzpatrick said, but I believe he said that he thought it was a mistake that gasoline, diesel and heavy oil were allowed under the numeric criteria.
A. The way the fill criteria --
Q. Do you recall that testimony?
A. Yes.
Q. Isn't it true that Mr. Kmet back in September of 2000 sent an email raising concerns about the allowable soil concentrations for diesel, heavy oil and mineral oil a year before the amended 401 certification was issued? And that's Exhibit 33 if you want to look at it. Do you see that?

MR. KRAY: Can you pause for a moment so I can get this in front of me?

MR. WITEK: Sure.

MR. KRAY: Go ahead.

Q. (Continuing By Mr. Witek): This is Exhibit 33, we're looking at the first page, and the third paragraph up from the bottom where it states, "As I relook at this attachment in the context of defining clean fill, the other values that jump out are those for diesel, heavy oil and mineral oil. Those proposed values may be protective, but they by no means define clean fill. You may want to go with the current method A value of 200 parts per million (ppm) for those."

So Mr. Kmet raised concerns about diesel, heavy oil and mineral oil back in September of 2000, correct?

A. Yes. He said that he may accept current method A value 200 parts per million for those contaminants.

Q. Can you tell me on Exhibit 1, which is the 401 certification, on page 17, what the allowable level is for gasoline, diesel and heavy oil?

A. On page 17 the gasoline is 30, diesel is 2,000, heavy oil is 2,000. These are now the current Model Toxics Control Act amended February 12th method A values.

Q. Thank you. So isn't it true that Mr. Kmet recommended that MTCA should not be used for the establishment of

fill criteria for the third runway project? And this is at Exhibit 22.

A. I believe he did say -- he said that in email, but, furthermore, I believe he recommended if we were to use MTCA, we would have to use other components of the MTCA for derivation of the fill criteria.

Q. Can you read for me the first two sentences on your email that's Exhibit 22.

A. "On Monday, June 11, Mr. Craig Thompson had a limited discussion with Mr. Pete Kmet of the headquarter toxics cleanup program on this project. Mr. Kmet recommended Model Toxics Control Act should not be used for establishment of clean-fill criteria for the Seattle-Tacoma International Airport third runway project." There's a "however."

Q. Go ahead, you can read it.

A. "However, if Model Toxics Control Act is to be used for this purpose, Mr. Kmet further recommends all other requirements of the MTCA, Model Toxics Control Act, should be applied for the establishment of clean fill criteria."

Q. Now, didn't you say in this same email that Mr. Kmet's recommendations are considered as department policy with respect to the third runway project?

A. Yes.

Q. I want to talk about practical quantitation limits now.

So if I understood your testimony, a practical quantitation limit is the lowest level of a constituent that can be detected with a particular test method?

A. No, I think that would be method detection limit.

Q. Okay. Can you briefly explain then what a practical quantitation limit is?

A. I will have to refer to the official definition in the Model Toxics Control Act.

Q. It's defined in the Model Toxics Control Act?

A. Yes, sir.

Q. So your prefiled testimony states that where there were multiple PQLs, you selected the one with the thumbs-up icon. Isn't it true that you thought that the thumbs-up icon was a recommended PQL value?

A. Yes, I thought it was recommended because in my review of the stuff earlier, I vaguely recall there is a basis for it, at the deposition I forgot what it was, but I still believe it's recommended and I have since identified the reason why it was recommended by my interpretation. That is, under the method A soil cleanup level, the cadmium, I believe, PQL was set at 2 milligram per kilogram. That happens to be the thumbs-up icon. Under the Ecology tech memo number 3, there is a second testing method for cadmium, and I believe the PQL for that is substantially

below 2 milligram per kilogram, I don't recall what that is, maybe .5.

Q. Do you have Exhibit 37? Do you recognize Exhibit 37 as the guidance for the use of the PQL tables that we talked about?

A. I don't recall this pages. My tech memo may look different.

Q. Would you rather look at your copy of the exhibit?

A. I prefer to look at the Ecology tech memo number 3.

MR. WITEK: Do you remember what exhibit number that was?

MR. KRAY: I don't. Sorry. 2126, Mike.

MR. WITEK: Thank you, Jeff.

Q. So can you turn to page I think it's II-4.

A. Okay.

Q. Now, is there some language in the second full paragraph that describes the thumbs-up icon?

A. Yes, sir.

Q. Can you read that for me, please?

A. "In some instances (indicated by a thumbs-up icon in the tables), the laboratories were able to attain a PQL lower than the federal PQL. For example, Table II for soil indicates antimony using Method 6010 attains a PQL range of 1.5 to 10 milligram per kilogram with a PQL of 16 milligram per kilogram ."

Q. So isn't it true that the thumbs-up is not a recommendation but an indication that there are other test methods available with a --

A. When I use the word recommendation, I thought I use it in the context of what Pete Kmet use or Ecology use in selecting the PQL for cadmium in the method A table. It's my word.

Q. The arsenic limit on page 17 of Exhibit 1 is 20 milligrams per kilogram; isn't that right?

A. Page 17; yes, 20.

Q. And you calculated the soil concentration limit for arsenic for the protection of groundwater to be 2.92 milligrams per kilogram; isn't that right? Do you want to look at your spread sheet for calculations?

A. Yes. No need.

Q. I have it here at Exhibit 25. It looks to me like it's the fourth page from the last in that exhibit.

A. Okay.

Q. So arsenic is set at 20 under the 401, and can you tell us again what you calculated the arsenic concentration limit for the protection of groundwater to be?

A. I have calculated it to be 2.92.

Q. And isn't it true that the cadmium concentration limit under the 401 is set at 2 milligrams per kilogram?

A. Yes.

Q. And isn't it true that you calculated the soil concentration limit for cadmium for protection of groundwater to be .69 milligrams per kilogram, and for the protection of surface waters, to be .09 milligrams per kilogram?
A. Yes.
Q. Isn't it true that although the 401 limits are set at 5 for selenium and silver based on the thumbs-up PQL that you calculated the soil concentration for the protection of surface waters to be .52 milligrams per kilogram for selenium and .28 milligrams per kilogram for silver?
A. Yes.
Q. You state in your prefiled testimony that your work on the project ended June 27th; is that right?
A. Yes.
Q. That was 2001?
A. Yes.
Q. So, in light of that, you had no role in developing or reviewing the SPLP work plan; is that correct?
A. No.
Q. Well, let me clarify that. By "no," you mean, no, you had no involvement in developing or reviewing the SPLP work plan?
A. I have no involvement.
Q. I'd like to look at Exhibit 607, which is going to be in

a different binder. This is an email that you sent to Mr. Kmet and Mr. Fitzpatrick; is that right?

A. Yes.

Q. It looks like you were responding to some additional concerns raised by Mr. Kmet in the portion --

A. Actually, I responded because I felt that Mr. Kmet did not review the draft fill criteria and provide me with detailed comments, so I was concerned that they weren't being reviewed so I resend it.

Q. Do you see on page 1 in the third paragraph, I think, from the bottom, where Mr. Kmet states, here it says, "There are several elements to this recommendation. First is the list of chemicals of concern. I am recommending we use the list in table 749-3. While lengthy, this list represents the more commonly occurring contaminants that have information on potential terrestrial ecological impacts. Only those suspected of being present at the site would have to be tested beyond those you are already specifying they test for."

Did I read that correctly?

A. Yes.

Q. And didn't you in fact respond to this specific comment up above?

A. I did not respond to that comment up above. What I responded to was the earlier work of scope I lined out to

Mr. Kevin Fitzpatrick that I am supposed to look into terrestrial evaluations. And I responded saying that, yes, I have, but I've used a different table. I'm trying to detail to Mr. Kmet that I have used a different table.

Q. Can you read the first two sentences beginning with the words, "Since I have."

A. First paragraph? Second paragraph?

Q. That's right.

A. "Since I have actually reviewed many of the borrow site ESA reports, I think entire table 749-3 listing may not be applicable. Many of these sites are virgin borrow pits."

Q. Can you read the next sentence?

A. "Knowing that, if you all think it is appropriate to incorporate the entire list, then it will be done."

Q. So it was your testimony that your work on the project ended on June 27th; is that right?

A. Yes.

MR. WITEK: We don't have any more questions.

MR. POULIN: I do have some questions.

EXAMINATION

BY MR. POULIN:

Q. Good morning, Mr. Yee. I am Rick Poulin on behalf of CASE.

Please turn to page 18 of the 401 certification, that's Exhibit 1?

A. Eighteen?

Q. Yes.

A. Okay.

Q. And that page includes condition E(1)(c), "Fill Sources."

A. Okay.

Q. You are familiar with this provision of the 401?

A. Only that it was forwarded to me, the working copy.

Q. You understand that the fill materials for the 404 projects are limited to three sources as identified in condition E(1)(c)?

A. Yes.

Q. And one of those is state-certified borrow pits?

A. Yes.

Q. You testified that state-certified borrow pits are those that have passed review by the Washington Department of Transportation?

A. I did not say that.

Q. Did not say that. What is your understanding of what a state --

A. I have no idea what state-certified borrow pits are.

Q. You have no idea?

A. None.

Q. Are you aware that the United States Fish & Wildlife

Service prepared a biological opinion concerning the effects of the proposed master plan updates including the third runway?

A. I read through a Fish & Wildlife report. I'm not sure we're talking about the same one.

Q. Let's look at Exhibit 262, that's the biological opinion.

MS. COTTINGHAM: The number again?

MR. POULIN: 262. It should be in a deposition exhibit binder.

Q. And please turn to page 40 of that exhibit. I'd like you to look --

MR. KRAY: Pardon me, my copy of the exhibit does not have page 40; in fact, it does not have any even-numbered pages.

MR. POULIN: I'm sorry to hear that. Well, I'm just going to cover --

MR. KRAY: Can I read off of yours as you go along?

MR. POULIN: Certainly, yes.

Q. I would like to direct your attention to the fourth and fifth sentences which state, "State-certified materials" - this is the fourth and fifth sentence in the last paragraph on page 40 - "State-certified materials are those that the Washington Department of Transportation has found to have geotechnically suitable material. The

Washington Department of Transportation testing does not include testing for contaminants."

Was it your testimony that you're not aware that that's what Washington Department of Transportation certification involved?

A. Yes, I'm not aware of it.

Q. Do you have any basis to disagree with that statement?

A. I have no basis.

Q. And I would like to clarify your testimony concerning the synthetic precipitation leaching procedure. You did not recommend the adoption of that provision in the 401?

A. No, sir.

Q. And you were not consulted in the adoption of that procedure?

A. No, sir.

MR. POULIN: No further questions.

MS. COTTINGHAM: Any redirect?

MR. KRAY: Thank you.

EXAMINATION

BY MR. KRAY:

Q. Mr. Yee, how did the sampling criteria in the 401 - this is the chart on page 16 of Exhibit 1, bottom of the page - compare to the Department of Transportation sampling criteria you described for recycled concrete?

A. The table on page 16, if we look at the less than 10,000 yards, assuming a density of 1.3 tons per cubic yard, the sampling numbers in the 401 is higher, requires higher samples than Washington State Department of Transportation specification of one sample per 10,000 tons.

Q. What type of sites are the sampling criteria in the 401 designed to address?

A. The sampling schedule and the parameters required for sampling is designed for sites that have been shown after conducting a phase I environmental site assessment under ASTM 1527 or something, to have no on-site contamination, so we're talking about essentially a clean site.

In the event a site has been found to have on-site contamination or has a high probability of on-site contamination, the port is required to consult with Department of Ecology to come up with a sampling plan, including more detailed or expanded scope for the substances, analytes, and a different sampling frequency.

Q. Could you please refer to Exhibit 607 again. Hopefully it's there in your set.

A. Yes.

Q. First of all, Mr. Witek asked you about the second paragraph where it says, where you wrote, "Knowing that, if you all think it's appropriate to incorporate the

entire list, then it will be done." Did anyone respond to this and tell you it was appropriate to incorporate the entire list?

A. No.

Q. There's also a reference in here to table 749-3. My understanding of your testimony was that you used a different table. The question is, why did you use a different table?

A. Before answering, I'd like to have the copy of the Model Toxics Control Act for reference.

Q. I can provide you with -- is there a particular portion that you're interested in?

A. The threshold evaluation procedures.

Q. Okay. I better give you the whole thing so you can find it. Unfortunately, I do not have extra copies. This is the same copy we used the other day, gentlemen, is that right? And please identify for the board which portions of the act you're referencing.

A. Right now I'm looking at WAC 173-340-7490. Lists out the threshold ecological evaluation procedures. For my threshold ecological evaluation, I've used the simplified threshold ecological evaluation procedures outlined, listed out in 173-340-7492. Under (2)(c)(ii), the Model Toxics Control Act list out the procedure for conducting a simplified threshold ecological evaluation. Under (ii)

they actually cite the table, I will read: "No hazardous substance listed in Table 749-2 is, or will be, present in the soil within six feet of the ground surface at concentrations likely to be toxic, or with the potential to `bioaccumulate, based on bioassays using methods approved by the department."

If I drop down further, "If a hazardous substance listed in Table 749-2 does not have a value listed, then this subparagraph applies." That is, you're done with evaluations. So if I apply the value listed in Table 749-2, I am essentially complete. What Mr. Kmet referenced Table 749-3 is for site-specific threshold ecological evaluation procedures. That's shown in 173-340-7493.

Since I'm kicked out of procedures, I am essentially done. So that's the reason I alluded in my email that the table referenced by Mr. Kmet may not be appropriate. In any event, I have not received emails or voice mail from Mr. Kmet telling me that the procedure I use for determining the threshold ecological evaluation is incorrect.

Q. Mr. Yee, I'm going to ask you to refer to Table 749-2, and I can provide copies to everyone so that we can follow along. And my question specifically is in regard to footnote A. Could you please read footnote A?

A. "Caution on misusing these chemical concentration numbers. These values have been developed for use at sites where a site-specific threshold ecological evaluation is not required. They are not intended to be protective of threshold ecological receptors at every site. Exceedances of the values in this table do not necessarily trigger requirements for cleanup action under this chapter. The table is not intended for purposes such as evaluating sludges or waste. This list does not imply that sampling must be conducted for each of these chemicals at every site. Sampling should be conducted for those chemicals that might be present based on available information such as current and past uses of chemicals at the site."

Q. Is the provision in Table 749-2 consistent with your understanding of the sampling requirements in the 401?

A. Yes.

Q. Did Mr. Kmet ever provide you with a detailed review of the numbers you used in the 401?

A. No.

Q. Would you please look at Exhibit 27. I'm going to direct you to page 2, the first full paragraph which begins, "The method specified." Would you please read that to yourself. And Exhibit 27 is an email from Mr. Kmet to you on June 27th; is that correct?

A. Yes.
Q. Are you familiar with the methods specified in WAC 173-340-740(7)?
A. Yes.
Q. What provisions of the acceptable fill criteria in the 401 prevent Ecology from requiring the port to use those statistical test methods?
A. In the event that require --
MR. WITEK: I am going to object, it's leading.
MR. KRAY: I believe the question was "what." The witness is welcome to use whatever information he has. I'm not directing him to any particular provisions.
MS. COTTINGHAM: I'll overrule it.
A. The fill criteria as currently stated allows Ecology to increase sampling frequency, increasing analyte requirements, depending on the result of the phase I environmental site assessment. So they are allowed to use the provision listed in 173-340-740(7).
Q. There was some discussion about your use of the term excessive and related to expensive. In your use of excessive, was there anything else you would reference other than expense?
A. Well, in terms of what I said earlier, I was thinking in terms of the numbers. I'm not quite sure how the

sampling protocol or sampling frequency requirements for a clean site. The fact that a site is clean, I'm not quite sure what it is I'm supposed to do with it in terms of collecting samples, how many sample it requires. The samples required right now the way I termed it is simply confirmational more than anything else, because in requiring a sampling schedule for a site that has passed the phase I environmental site assessment, Ecology is always moving beyond what's the normal required under standard industrial practices.

Q. Would you please turn your attention back to Exhibit Number 22. Do you have that in front of you?

A. Yes.

Q. In the middle of that exhibit there is a sentence regarding Mr. Kmet and your reference to Mr. Kmet since his recommendations. Mr. Witek asked you about that sentence. Was that sentence based on your impression of Mr. Kmet's rule?

A. Yes.

MR. KRAY: No further questions.

MR. REAVIS: I have just a few questions.

EXAMINATION

BY MR. REAVIS:

Q. Mr. Yee, could you just describe for us briefly what's

meant by the use of the term MTCA method A?

A. The way I interpret it, it simply refers to the method A table calculated for various contaminants. The list is not all encompassing, it's only a limited list. And if I remember correctly, it actually consists of two tables, one is for restrictive land uses. There is actually one for industrial purposes. For the fill criteria listed in the 401 is actually not for -- I have selected not from the table for industrial properties, but, rather, from unrestricted land uses.

Q. So can you tell me in accordance with the MTCA regulations where is it allowable to place MTCA method A soil?

A. Could you repeat the question.

Q. Can you tell us whether there are any restrictions on the ability to place MTCA method A soil in connection with cleanup activities?

MR. WITEK: Object. Calls for a legal conclusion.

MR. REAVIS: Let me lay a foundation.

Q. Do you work with MTCA method A in the course of your work for the toxics cleanup program?

A. I work with the MTCA regulations including method A, yes.

Q. And do you in fact work at cleanup sites where method A is the goal for the cleanup method A numbers?

A. Actually, currently I've used -- I do Navy sites and, actually, I use method C for industrial property, which are higher values.

Q. Well, if you could then briefly, I don't want to take a lot of time with this, but just describe for us what other methods there are in MTCA besides method A.

A. There is method B. Method B essentially is the method I've used to derive these fill criteria for protection of groundwater and surface water. There are other methods, for example, method B, to derive soil concentration for protection of, let's say, direct contact. I didn't use that because I don't think it would be appropriate to use a soil criteria for protection for direct contact or ingestion, in this case, because it won't happen.

Q. So by direct contact, you mean direct contact with humans or animals?

MR. WITEK: Leading. Object.

Q. (Continuing By Mr. Reavis): What do you mean by direct contact?

A. Direct contact meaning essentially soil ingestion, eating the soil.

Q. You described method A as having a table with numeric numbers, with numeric criteria?

A. Yes.

Q. Does method B have such a table or is there something

else required to apply method B?

A. Method B you have to do first analysis to derive these numbers.

Q. And is that what you describe in your prefiled testimony as having done?

A. I have done method B for substances that do not have method A values.

Q. Let me ask you then about Exhibit Number 1, which is the 401 certification, just to clarify whether or not you had any role in development of the table that is found on the very last page of that exhibit. Flip over to the very back of that exhibit.

MR. WITEK: I'm going to object. There is no foundation for this.

MR. REAVIS: I'm just asking if he had any role in developing it.

MS. COTTINGHAM: Overruled.

A. From glancing at it, I believe the first column.

Q. Okay.

A. And the last column.

Q. Mr. Witek asked you a number of questions about some of these numbers that you derived, for example, for cadmium, selenium and silver. And you gave him some numbers, I believe, or at least confirmed his numbers. Can you tell me whether those numbers that you talked about, and that

would be 2.92, I believe, for arsenic, .69 for cadmium, or .09. My question is do you know whether or not those calculated numbers are above or below natural background?

A. For arsenic, since the Table 740-1 is in front of me, for arsenic, the cleaner level I have used is the method A 20 milligram per kilogram. Under footnote B, it has been adjusted for the natural background for soils, so for arsenic, it is for soil. For cadmium, I know that is adjusted for practical quantitation limits.

Without looking further, I don't know what the others is based on.

Q. Let me ask you then a couple of questions about this Exhibit 607, which is the email from Mr. Kmet, and your response. Can you just read to yourself that first paragraph in Mr. Kmet's email, just below the middle of that page?

MS. COTTINGHAM: Can you repeat the exhibit number.

MR. REAVIS: 607.

Q. Have you had a chance to review that?

A. Yes.

Q. Is Mr. Kmet's recommendation there relating to water quality or to some other concern?

A. The first paragraph --

MR. WITEK: Objection, no foundation.

MR. REAVIS: Well, the witness has testified about the table and the terrestrial ecological table. I'm just trying to address whether that's an issue for water quality or not. I think he knows the structure of the regulations and the table and so forth. If you would like for me to ask him a few more questions, I can do that.

MS. COTTINGHAM: Lay a foundation.

Q. (Continuing By Mr. Reavis): Mr. Yee, do you know what the terrestrial ecological table is meant to address, what particular environmental issue?

A. Yes.

Q. And what is that?

A. I believe there's animals, plants, wildlife.

Q. Okay. And is that table derived, to your understanding, in order to protect water quality or to protect those plants and animals?

MR. WITEK: Object, leading.

MR. REAVIS: I think he said it was designed to protect plants and animals. I'm just asking him whether water quality was a concern, and if you would like, I can ask him.

Q. Is water quality a concern to your understanding or was it a concern in the derivation of the values on that terrestrial ecological table?

A. To my understanding, no.

MR. REAVIS: I think that's all I have. Thanks.

MS. COTTINGHAM: Any board questions?

MR. JENSEN: Yes.

EXAMINATION

BY MR. JENSEN:

Q. I want to clarify one thing in this certification on page -- I think it relates to pages 15 and 16. Do you have those?

A. Yes.

Q. Does the phase I testing require sampling?

A. Let me clarify, once again, I guess there's been some confusion. Phase I environmental site assessment is simply a background check in terms of historical records, assessor's records, plant operating records or even, in this case, I've included environmental records controlled by -- put together by Ecology, EPA, aerial photographs, on-site inspection, interviews with owners, operators, site reconnaissance off the site, and also generally requires site reconnaissance of surrounding sites to make sure there won't be any run-on contamination to the site of interest. So phase I we don't do soil samples.

Q. Okay. Thank you.

MR. LYNCH: No questions.

EXAMINATION

BY MS. COTTINGHAM:

Q. Earlier this morning you were asked to kind of summarize some of your calculations, and I want to make sure I captured them correctly. You said cadmium you adjusted for practical calculation, and then you said arsenic and I believe you said adjusted for natural background. Did I catch that correctly?

A. No. I did not adjust it. The Ecology staff or the group that put together the MTCA regulation adjusted those. Those are adjusted in the documents, in this one.

Q. In the regulations or in the 401?

A. In the regulations. I have simply used them.

MS. COTTINGHAM: No further questions.

Any questions as a result of board questions?

MR. KRAY: Yes, Miss Cottingham.

MR. WITEK: Actually, I have one question. Go ahead. Sorry. Go ahead.

EXAMINATION

BY MR. KRAY:

Q. Mr. Jensen had asked you about phase I and whether it requires soil sampling. Does the 401 require sampling of

materials that pass a phase I assessment?
A. The 401 fill criteria do require collecting soil samples even for sites that pass phase I ESA.
Q. And when you do a phase I, would you also review material that included prior sampling in other instances?
A. Yes. That would be part of the historical review.
MR. KRAY: No further questions.
MS. COTTINGHAM: Go ahead.

EXAMINATION

BY MR. WITEK:

Q. Miss Cottingham asked you about arsenic and natural background. Do you recall that?
A. Yes.
Q. Can you tell us what the natural background level is for arsenic?
A. Without the document in front of me, I refer simply to the Model Toxics Control Act, it simply says, has been adjusted for natural background.
Q. Well, we do have a document I think that we discussed in your deposition that talks about natural background, don't we?
A. Right.
Q. Why don't we take a look at that.
MS. COTTINGHAM: Which exhibit are you going

to?

MR. WITEK: Well, I'm looking for it.

Q. Okay, can you look at Exhibit 26, I'm sorry, 25, the very last page of the exhibit. I believe this is a table that you prepared.

A. Yes.

Q. So can you tell me for arsenic what the method A cleanup level is for arsenic?

A. It is 20.

Q. And do you have the natural background for arsenic on that chart?

A. Yes.

Q. Can you tell us what that is?

A. It's 7.

Q. And, in fact, when there was a method A standard for a constituent, wasn't that the one that was adopted into the 401 certification?

A. Yes.

Q. Thank you.

MS. COTTINGHAM: No further questions? You're excused.

MR. KRAY: Come on up next witness. Mr. O'Brien.

MS. COTTINGHAM: Do we have a problem with the clock there that we need to adjust?

MR. KRAY: I guess the question is board questions run against the party who called the witness.

MS. COTTINGHAM: Yes.

MR. KRAY: What about the follow-up, so I do follow-up, obviously, it runs against me, but if it's cross on the follow-up --

MS. COTTINGHAM: It runs against them.

MR. KRAY: So I was in error on that. It should have been running against you.

EDWARD O'BRIEN, having been first duly sworn on oath or affirmed to tell the truth, the whole truth and nothing but the truth, testified as follows:

EXAMINATION

BY MR. YOUNG:

Q. Would you state your name and spell your last name, please.

A. My name is Edward O'Brien, O-'-B-R-I-E-N.

Q. You are employed by the Department of Ecology; is that correct?

A. Yes.

Q. And you have submitted prefiled testimony in this matter; is that correct?

A. Yes.

Q. And in your prefiled testimony you discuss the Ecology 2001 stormwater manual; is that right?
A. Yes.
Q. What's been your role with regard to that manual?
A. My role in the manual development was to be the lead person in the development of volume 1 of that manual, to be the lead in developing parts of volume 5; volume 5 is in regard to treatment, volume 1 is in regard to minimum requirements and site planning.

And then I also was a support person in volume 3 which has to do with hydrologic analysis.

Q. Can you just very briefly summarize your qualifications for the board, please.
A. My qualifications. My education is that I have a bachelor of science degree in engineering science from the University of Notre Dame. I have a master's degree in environmental health engineering from the same university. And I have been employed by the Department of Ecology for about 22 years, about 11 years working issues regarding municipal waste water treatment and about 11 years working on various projects on stormwater management.
Q. And, now, with respect to the Ecology manual that you were the lead person on, the portions that you mentioned, when was that manual published?

A. The manual was published in September of 2001.
Q. In your testimony you talk about the manual taking a presumptive approach to the question of metals removal from storm water from industrial properties. Can you describe that, please, for us.
A. Yes. I'll do my best. The manual is a presumptive approach to meeting the technology-based and water-quality-based requirements of the Clean Water Act and state water pollution control statutes.

When Ecology was developing the manual, it had to look at the quality of stormwater runoff from samples taken both within western Washington and Oregon as well as around the nation. And when it did that, it saw that the concentrations of dissolved metals coming from certain land use types, particularly, industrial and commercial land use types and high-use type road systems, that the concentration of certain dissolved metals exceeded our water quality standards.

That presented a problem for us in that the manual -- the presumptive approach is that Ecology assumes that if you apply the minimum requirements and the best management practices in the manual, it will presume that the discharge will not cause a violation of the standards.

What the data seemed to indicate to us was that from

these industrial commercial sites, and high-use roads, was that it couldn't make that presumption in all cases any longer. We couldn't make the presumption that if we applied basic treatment facilities to the storm water, what we refer to as our standard or basic treatment facilities from the storm water coming from those lands use types, that Ecology could presume that there wouldn't be a water quality standard violation.

So what Ecology did was to make up what is called an enhanced treatment menu of best management practice options that applies to the industrial and commercial land use sites and the high-use road systems. And the idea is to try to restrict treatment choices from those land use types to the types of facilities that Ecology believes has a potential to have a higher level of dissolved metals removal than the selection from the wide broader assortment of best management practices in general.

So, in summary, Ecology tried to get a higher level of dissolved metals removal from certain land use types discharging to certain types of water bodies - so it applies only also to certain types of water bodies - to try to get a higher level of dissolved metals removal so that it could continue to take a presumptive approach that if you applied those facilities, Ecology could

continue to then presume that in most cases the discharges would not be causing the violation of standards.

Q. Now, does the manual allow for that enhanced menu to be overridden based on site-specific analysis?

A. Yes, it does. There is a minimum requirement, it's actually an enabling minimum requirement number 9 in volume 1 that specifically says that on a watershed scale, when a watershed plan is done, the minimum requirements and the types of best management practices you apply can be altered based on the recommendations of a watershed plan that then still meets the goals of the Clean Water Act.

Also, in the manual it allows for a case-by-case overriding of, in other words, a site-specific overriding of the recommendations in the manual where you have more specific information or where Ecology, someone may believe that a more specific analysis to determine what may be necessary to meet water quality standards should be done.

Q. And which is preferred from your standpoint, the site-specific analysis or the application of the presumptive approach in the manual?

A. I suppose it depends on your objective. What's preferred for in general where there are lots of projects going on,

we, Ecology, allows this presumptive approach to be used, but where the department has concerns about whether the presumptive approach will work or whether anyone else has concerns about whether the presumptive approach will work, actually providing site-specific information will give you more assurance on whether the goals will be achieved, the necessary requirements will be met and the goals will be achieved.

Q. And is the SeaTac Airport an appropriate place in your view to apply the site-specific approach?

MS. OSBORN: Objection, no foundation.

MS. COTTINGHAM: Any response to that?

MR. YOUNG: I can lay a foundation.

MS. COTTINGHAM: Okay.

Q. (Continuing By Mr. Reavis): You are generally familiar with SeaTac International Airport, are you?

A. Yes, generally familiar.

Q. Are you generally familiar with the types of runoff, stormwater runoff associated with the airport?

A. In a general way I'm familiar with the types of stormwater runoff that comes off the SeaTac Airport.

Q. Would you say based on --

A. I'm also familiar with, somewhat familiar with the size of the watersheds that SeaTac discharges into.

Q. Based upon that knowledge, what is your opinion with

regard to whether a site-specific approach is appropriate at SeaTac?

MS. OSBORN: Objection. This witness doesn't know what's going on at SeaTac at a level that he would be able to testify about that. He has a very general knowledge.

MS. COTTINGHAM: Do you want to lay a foundation?

MR. YOUNG: I think he said he had a knowledge of the airport and understanding of the type of storm water and the watersheds.

MS. COTTINGHAM: I am going to overrule the objection and allow the questioning:

A. Could you repeat the question.

Q. Based upon your understanding, is SeaTac an appropriate place to apply a site-specific approach?

A. My opinion is that it is an appropriate place to do a site-specific approach because it's a very -- the land use size in relation to the size of the watershed makes potential impacts of SeaTac disproportionate to the types of commercial -- the size of the commercial developments and residential developments that presumptive approach usually applies to, and that size in relation to the size of the watershed makes it more likely that it will -- that it may be having an impact and so you probably want

to take a closer look on what impact that land use would have on those water bodies.

Q. In the manual there's a number of references to the data in regards to the effectiveness of BMPs for treatment of storm water. Are you familiar with that?

A. Yes, I am.

Q. And how would you characterize that data?

MR. POULIN: Objection, vague.

MS. OSBORN: I will join in the objection. I certainly would like to know what Mr. O'Brien is specifically talking about.

MS. COTTINGHAM: Would you clarify your question.

Q. (Continuing By Mr. Young): In your prefiled testimony you make reference to the fact that the manual does not set a performance standard for removal of metals from storm water; is that correct?

A. I think what it says is that the manual doesn't establish a specific performance goal for removal of dissolved metals for treatment options that are listed under the enhanced treatment menu.

Q. Why does it not do that?

A. It doesn't do it because there isn't a lot of data available nationwide, at least data that I could find, on the reliable efficiency of different treatment BMP

options for the removal of dissolved metals, there just isn't a lot of information out there, so to try to set a performance goal, and for each one of these -- we have different treatment menus, and for each menu Ecology tried to establish a general performance goal, not an effluent limitation, but a performance goal that it believes generally that the BMP options listed under each one of those menus may be able to achieve, if designed and maintained properly, and in trying to set a performance level for BMPs and enhancement, there just wasn't sufficient data to put a specific number down.

So what it did was to say that Ecology believes that the BMPs that it does list in that menu should do a better job at dissolved metals removal than the list of BMPs that are on the basic menu, simply because of the removal mechanisms and redundancy that are in some of the options under the enhanced menu.

Q. What is Ecology doing, if anything, to get more data?

A. What is Ecology doing? Because of this lack of information, Ecology has been working with some of the representatives of municipal groups and some consultants to establish a testing protocol to evaluate the performance of both our existing treatment facilities, or best management practices, and ones that may come on in the future, identified in the future, and ones that we

are interested in testing, to see just how well they perform.

So we are establishing this testing protocol, and we have been working with groups outside the state that are doing something similar, as well as enlisting some help from people with expertise from outside the state to establish a testing protocol. And then Ecology will try to encourage that testing to occur. For newly-developed systems and for existing systems, the strategy is to potentially put monitoring requirements into NPDES stormwater permits for some of the municipalities. That's just our intent at the moment.

MR. YOUNG: Thanks. That's all the questions that I have for Mr. O'Brien.

MS. COTTINGHAM: Mr. Pearce.

MR. PEARCE: No questions, thank you, Your Honor.

MS. COTTINGHAM: Why don't we take a 10-minute break and come back and do the cross examination.

(Whereupon, a recess was taken.)

MS. OSBORN: Ms. Cottingham, before we get started with cross examination, we could use an evidentiary clarification here.

Ecology submitted the 2001 stormwater manual as a proposed exhibit, Exhibit 1266. And it is listed in the

master exhibit list, and I think it's admitted for a limited purpose and ACC has posed a hearsay objection to it. Mr. Young's interpretation is that by virtue of the fact of the witness referencing the manual and us not raising an objection, the manual is now admitted for all purposes.

We actually don't object to the admission of the manual, but I would like clarification, does an exhibit have to be referenced specifically as an exhibit put before the witness in advance or is it just any reference in prefiled testimony and oral testimony adequate to get an exhibit in?

MS. COTTINGHAM: I thought when we had this discussion the other day, that it would be when an exhibit is offered, the burden then shifts to the objecting party to raise it, and that if you fail to raise it, then it's allowed in for all purposes.

And one of the things that I was going to talk to the parties about, I have been keeping some really good notes when those objections do come up, but I think before we conclude this hearing, there will be exhibits that won't be referenced and, thus, no objections made, and I would like to clarify before we go completely off the record as to the admissibility of all exhibits and for what purpose.

MS. OSBORN: SO the party that wants an exhibit in needs to actually make an offer if it is objected to on the list; is that correct?

MS. COTTINGHAM: That's the way I understood it. So you didn't actually offer it in, you just referenced it, correct?

MR. YOUNG: Our understanding was, I guess, that if the exhibit was referred to --

MS. COTTINGHAM: It is already in the record, but for the limited purpose, so I don't think you need to reoffer it a second time, but there needs to be some sort of indication enough to trigger the need to object, and we did not set that forth in our earlier notion.

MS. OSBORN: So would the reference in prefiled testimony be enough to trigger the objection?

MS. COTTINGHAM: I don't think that that would.

MS. OSBORN: How about reference in oral testimony?

MS. COTTINGHAM: I think reference in oral testimony would give you the opportunity to raise your objection.

MS. OSBORN: Okay.

MS. COTTINGHAM: And did I hear you say that you have no continuing objection to this exhibit?

MS. OSBORN: That's correct, we waive our prior objection.

I have a second --

MR. YOUNG: I just want to say something, which is that it was our understanding that if the exhibit was referred to and not objected to, then it was deemed to be admitted for all purposes.

MS. COTTINGHAM: That is correct.

MR. YOUNG: And so that's what we have been operating on up until this point in time, so I just want to make that clear.

MS. COTTINGHAM: But we do need to have something to allow it to give the other side the ability to step forward, and so mere reference in the prefiled is probably inadequate.

MR. YOUNG: Okay.

MS. OSBORN: A second question that we have has to do with the process of direct and redirect.

We noted that Mr. Pearce did not ask direct questions of Mr. O'Brien, and the way that we have been operating on this side of the table with our witnesses was that if we didn't do direct, then we didn't ask redirect questions, and we're wondering whether that could be clarified as to what's appropriate in that circumstance.

MR. POULIN: I would like to state, Miss Cottingham, I acidulously avoid any redirect of ACC witnesses unless I had asked direct questions in the first case, and my view, and I think it's appropriate, is that if you don't have any direct questions, you, in effect, have waived your ability to conduct redirect because, otherwise, you're just sand bagging the opposition then and I don't think that's appropriate.

MS. COTTINGHAM: Do you have any comments on the other side?

MR. PEARCE: Well, Your Honor, the purpose of the redirect I thought was to deal with issues that came up on cross, and while I didn't have any direct questions for Mr. O'Brien -- I can always ask him one direct question. It makes sense to limit the redirect to the scope of cross to me. You said the other day we have been pretty liberal with this, but with the intervenor and with the multiple parties, things may come up through the cross, the cross can extend beyond the scope of what we just talked about and extend to his entire prefiled testimony. So I guess rather than going through the charade of me asking him one question so I have the ability to ask him questions if something else comes up on cross that we think is important, I'd rather just be able to ask him questions that don't go beyond the scope

of cross.

MS. COTTINGHAM: As I said yesterday, we are a little different because of the nature of the prefiled testimony and then the direct, so let's try not to abuse the situation and we'll still allow some redirect, hopefully limited, by both parties. And with that we move to ACC.

MS. OSBORN: Thank you.

EXAMINATION

BY MS. OSBORN:

Q. Good morning, Mr. O'Brien. You've testified that you have been, it sounds, intimately involved in preparation of the 2001 Ecology stormwater manual; is that correct?

A. Yes.

Q. Were you involved during the preparation of the review draft of this document?

A. Yes, I was.

Q. And how long did the review stage or phase of the document go on?

A. We started to really get cranked up and work on the manual in earnest in early 1999, so it was about a two-and-half-year process from the time Ecology had identified a set of staff to really start working the issues and to put out a final manual.

Q. Did you issue a public review draft?
A. We issued two public review drafts, yes.
Q. When was that?
A. I think one is dated in August of 1999 and another, I believe, is dated August of 2000.
Q. Does the Ecology manual, as I am going to refer to this document, generically define AKART for stormwater discharges?
A. Does it generically define AKART? I think there are statements somewhere within volume 1 that says that on a generic basis, the application of the manual satisfies the AKART requirement, application of all known available and reasonable technology, under state law.
Q. Now, you stated in your prefiled on page 4, lines 15 through 17, that under the Ecology manual, the third project would result in use of facilities from the enhanced treatment menu; is that correct?
A. Page 4?
Q. Lines 15 through 17.
A. Yes.
Q. And you go on to say that this is because the port is an industrial or commercial operation discharging to fish-bearing streams; is that correct?
A. Yes.
Q. And the goal of the enhanced treatment menu is to control

for dissolved metals; is that correct?

A. To reduce, yes, dissolved metals concentrations as well as to still perform -- meet the goals that were set for basic treatment as well.

Q. If you are trying to control for dissolved copper, for example, does the enhanced treatment menu call for use of biofiltration alone?

A. Can I open up the manual itself so we can go to what it says to do?

MR. YOUNG: Yes. It's Exhibit 12.

MS. OSBORN: Actually, I have asked a yes or no question.

MR. YOUNG: I think he is entitled to look at the manual if that's what he wants to do.

MS. OSBORN: Maybe we can get a yes or no answer first.

A. I'm not sure that I can answer you -- could you ask the question again?

Q. The question is, does the enhanced treatment menu call for the use of biofiltration alone when you're trying to control for dissolved metals such as copper?

MS. COTTINGHAM: I think it's appropriate that he look at whatever you're referring to.

MS. OSBORN: Miss Cottingham, I ask Mr. O'Brien this question in his deposition and he

answered. We didn't have the stormwater manual in the room and he gave me a great deal of information about what was in the stormwater manual at that time.

I need to have an answer to my question here.

MS. COTTINGHAM: Well, he said that he did not know if he could answer the question without looking at it.

Q. (Continuing By Ms. Osborn): Then perhaps we can refer to your deposition. I asked you, if you recall, "If you're trying" --

MR. PEARCE: I object to referring to his deposition for impeachment purposes. He hasn't been able to give an answer yet.

MS. OSBORN: You're right. We don't have an answer to my question of yes, no, or I don't know.

MS. COTTINGHAM: I think I heard him say - we could have the court reporter read it back - I think I heard him say, "I don't know if I can answer without referring to the manual."

Q. (Continuing By Ms. Osborn): Then I will continue with my quote from your deposition. You recall your deposition took place in December; is that correct?

A. Yes.

Q. In the deposition do you recall this colloquy between yourself and me. "If you're trying to control for

metals, would you use biofiltration facilities?" Answer: "If you're trying to control for what kind of metals?" Question: "Say copper." Answer: "Dissolved or particulate?" Question: "Dissolved." Answer: "So for dissolved you would not use a biofiltration swale by itself, you would use it in combination with another the manual would recommend, would allow you to use it in combination with another treatment BMP."

Was that your answer at the deposition?

A. If you're reading from my deposition, yes, that was my answer.

Q. Is that your answer now?

A. Let me explain my trying to be careful with the answer. There's different -- the term biofiltration can refer to different types of facilities, so I just wanted to be clear that if your question is in regard to would a biofiltration swale as defined in the manual essentially just be able to be used by itself to meet the enhanced treatment menu, the answer would be no, it has to be used in combination, but there is potentially another treatment type in that menu that could be considered to be biofiltration, so that's what I was trying to be careful about.

Q. And how long have you known that biofiltration standing alone, as you have discussed it, will not control for

dissolved metals?

A. How long have I known? I can tell you the only information that I can recall on performance of biofiltration swales, that there was a study done, I don't remember what year, some years ago, by King County that had I think where they took some dissolved metals removal data and they had very low dissolved removal levels. And then on a national basis, the national data doesn't really tell you much about what bioswales do in dissolved metals, it just says it will do less than total metals. So that's been at least sometime during the development of the manual over the last two years.

Q. And so if you're trying to control for dissolved metals, would you, for example, use sand filters?

A. An amended sand filter is an option under the dissolved metals, under the enhanced treatment menu as well as a basic sand filter essentially in combination with another treatment type.

Q. I was going to ask you about that, whether you might also use treatment combinations?

A. Right. There's a number of combinations that involve use of a sand filter.

Q. Now, you state in your prefiled testimony, again at page 4, lines 5 and 6, that, "The risk of causing standard violations is greatly reduced by the application of the

appropriate treatment BMPs indicated by the manual"; is that correct?

A. Let me read the whole sentence here. Says, "For most standard residential and commercial projects, the risk of causing standard violations is greatly reduced by the application of appropriate treatment BMPs..."

Q. And you say further down that, "The Ecology manual would result in use of the enhanced treatment menu."

A. Yes.

Q. Do you know whether the port's stormwater plan utilizes the enhanced treatment menu or the types of facilities called for in the enhanced treatment menu to control for dissolved metals?

A. I haven't reviewed the treatment proposal of the port.

Q. So you don't know whether it does or not?

A. No.

Q. Does the Ecology stormwater manual address control of glycols?

A. The Ecology stormwater manual doesn't directly address the removal of glycols because it's one of many organic pollutants that could come from various sources, so we haven't developed, for instance, a menu that you should use if glycols are an issue.

Q. Now, you have stated in your prefiled testimony at least a couple different places that application of the Ecology

manual would not guarantee compliance with state water quality standards; is that correct?

A. Yes.

Q. So if you want to know that a stormwater discharge will comply with state water quality standards, would you apply controls other than what are contained in the manual?

A. Maybe and maybe not. It depends on what your site-specific study results in. You have to do your study and then decide what treatment methods would be most appropriate.

Q. The Ecology manual also calls for maintenance of base flows in streams by recommending the use of infiltration facilities; is that correct?

A. Could you say that again, please, make sure I got it all.

Q. The Ecology manual calls for maintenance of base flows in streams by recommending the use of infiltration facilities, stormwater infiltration facilities?

A. What the manual does is it puts an emphasis -- it tries to encourage developments to use infiltration as a first option, meaning infiltrating storm water into the ground, in order to try to maintain natural stream flows as much as possible, encourages people to do that.

Q. And you discuss that in your declaration that was submitted in support of Ecology's opposition to the

motion for stay; is that correct?
A. I don't specifically know the legal construct in which my statements were made.
Q. I'll have you take a look at Exhibit 80.
A. Yes, that's my declaration.
Q. And specifically take a look at paragraph 14.
A. On which page? Paragraph 14, okay, on page 4.
Q. And in that paragraph you discuss what you have just stated, sort of the general emphasis or recommendation of using infiltration facilities; is that right?
A. Yes.
Q. Does the Ecology manual call for use of anything other than infiltration facilities for low-flow maintenance?
A. There's only one other aspect that we provide in the manual for that would help with base flows, and that is when you're at the development site itself, the manual requires the application, at least for residential projects, the application of what we call on-site stormwater management practices, trying to infiltrate storm water at the development site like, for instance, right at the base of a roof directly or to disperse the storm water through a vegetated area, like along a residential lawn. So prior to the storm water getting into a stormwater collection system, to do whatever we can at the site for however it's going to be developed to

try to get some water into the ground or to maximize that opportunity.

Q. So infiltration at the site or infiltration at the facility; is that right?

A. Right. But the manual is primarily applied in commercial and residential sites that are not on the scale of the project in question, and so to ask the smaller commercial sites or even a relatively large commercial site or residential developments to take other actions other than to try to change how they develop the site somewhat to get storm water into the ground is kind of, is going beyond what might be reasonable for those types of projects.

Q. Now, have you ever encountered or heard of the use of a large detention facility that detains storm water for months at a time and then meters it out later for low-flow mitigation purposes?

MR. PEARCE: Objection, vague. I don't know what large is.

MS. COTTINGHAM: Do you want to put some framework around that?

Q. (Continuing By Ms. Osborn): Have you ever heard of a stormwater detention facility, the use of a stormwater detention facility to detain storm water and meter it out months later for low-flow mitigation?

A. Not prior to this project I had not heard that.
Q. If dissolved metals are contained in the storm water that's detained for low-flow mitigation, is it possible they will discharge to streams?

MR. PEARCE: Objection, speculative.

MR. YOUNG: Object, it's vague.

MS. COTTINGHAM: You want to restate your question.

Q. (Continuing By Ms. Osborn): If dissolved metals are contained in the storm water that is detained in a facility designed for low-flow mitigation as we just discussed, will those dissolved metals be discharged to streams as part of the low-flow mitigation?
A. I will have to answer it I guess in a couple ways. The manual requires treatment as well as flow control prior to discharge, so whatever metals are in the raw stormwater runoff after treatment will likely be discharged to the stream. A detention facility itself probably won't offer much additional dissolved metals removal especially if it's a concrete type structure, so whatever is in the storm water after treatment will be discharged, and no treatment method is 100 percent effective, so there will be some dissolved metals left. Whether your treatment is before detention or even after detention, which can be the case, there will be some

dissolved metals in the discharge.

Q. Do you know if there's any after treatment involved in the port's low-flow mitigation plan?

A. I don't have that knowledge.

Q. Thank you. That's all I have.

MS. COTTINGHAM: Mr. Poulin.

EXAMINATION

BY MR. POULIN:

Q. Good morning, Mr. O'Brien, I'm Rick Poulin on behalf of CASE.

You mentioned the 1998 King County surface water design manual in your prefiled testimony?

A. Yes.

Q. Ecology has not determined that compliance with the 1998 King County manual constitutes AKART, has it?

A. Actually, I think the Department of Ecology -- I will do the best job I can in answering your question. If I'm getting off track, you can let me know, I am sure you will.

The Department of Ecology has to review the King County manual, 1998 King County manual, for compliance with a municipal stormwater permit requirement to determine whether it's equivalent to the 1992 Ecology manual, so review the '98 manual in that regard and

determine the King County manual to be equivalent to our 1992 manual as required by their municipal stormwater permit.

We have not done an evaluation or any type of official evaluation of the King County 1998 manual in regard to the equivalency with this manual, and because this manual now sets a new level for AKART, that will be a new test for the King County manual, and that hasn't been done yet.

Q. So, in short, the answer is no?

A. Well, what we did originally, we determined the King County manual to meet the AKART requirement as required under the existing permit, but we have a new target now, and when we reissue the municipal stormwater permit for King County, we'll reestablish the new target for their stormwater management for new development and redevelopment to be this manual, so then they will take some action in regard to, or they will simply submit their '98 manual and ask us to determine it to meet this manual, to meet the equivalent of this manual or not. And so that decision will be made in the future. And that's why I said it was a difficult answer.

Q. And so that decision has not been made either?

A. No, that second decision has not been made.

Q. And you personally have not reviewed the proposed master

plan update projects to determine whether they satisfy the minimum requirements of the 1998 King County manual?

A. Could you give me that again? The master plan update, are you talking in regard to this project?

Q. Yes.

A. So could you give me the whole question again.

Q. You have not reviewed those projects to determine whether they comply, whether they satisfy the minimum requirements of the 1998 King County manual?

A. I have not.

Q. And Ecology has not determined that those proposed projects, the master plan update and third runway, Ecology has not determined that they satisfy the minimum requirements of the new stormwater management manual for western Washington?

A. I don't know if other people in Ecology have, I know that I haven't.

Q. You have not?

A. I have not.

Q. You're not aware of any other decision?

A. I'm not aware of any other decisions.

Q. Now, with respect to the stormwater management manual for western Washington, which you primarily focus on in your prefiled testimony, you state, "The application of the generic presumptive approach does not guarantee

compliance with water quality standards"?

A. Yes.

Q. Is that right?

A. Yes, that's correct.

Q. And you also state that, "Applying the treatment selection process in the stormwater management manual to the third runway would result in the use of the enhanced treatment menu."

A. Yes.

Q. But if I understand, you also state that even the use of the enhanced treatment options would not guarantee compliance with water quality standards?

A. Yes.

Q. At the end of your prefiled testimony you state, "In this particular case, from the limited data I have seen, I could not conclude that dissolved metals in Seattle Tacoma International Airport's storm water would or would not likely exceed water quality standards after the application of treatment options from the basic treatment menu."

A. Yes.

MR. PEARCE: Could you refer me where you are reading from, Counsel.

MR. POULIN: Sure. That's page 6, paragraph 10, last sentence of the main paragraph.

MR. PEARCE: Thanks.

MS. COTTINGHAM: Which exhibit or is that a deposition?

MR. POULIN: The direct testimony, the prefiled testimony of this witness, Mr. O'Brien.

Q. And these questions address the limited data that you've seen. You didn't review the 1997 stormwater receiving environment monitoring report?

A. No, did not.

Q. I believe that's Exhibit 426.

And you did not review the results of the reasonable potential analysis performed by Lisa Austin Zinner?

A. Let me tell you what I did review so I can cut to the chase maybe. Lisa Zinner, at the time, had somehow sent me a single table that showed either average or median values of stormwater quality from SeaTac Airport. I don't remember whether it was one discharge point or multiple, but it was a table of median values.

Q. And what year was this?

A. I don't remember, sometime ago, I don't recall how far back, but after Lisa had worked on the project, but it was more than a year ago, probably more than a year and a half ago, but beyond that I probably can't get more specific. So I saw that table and so this statement was just in regard to the values in that table. And I don't

know what the genesis of that table was, what report generated it.

Q. So you didn't review the results of the whole effluent testing conducted at SeaTac?

A. No, I did not.

Q. You haven't reviewed any of the annual stormwater monitoring reports?

A. No.

MR. POULIN: No further questions.

MS. COTTINGHAM: Any redirect?

MR. YOUNG: I have none.

MR. PEARCE: I have a couple based on cross if that's permissible.

EXAMINATION

BY MR. PEARCE:

Q. Good morning, Mr. O'Brien. My name is Roger Pearce for the Port of Seattle.

Could you remind me again when the 2001 stormwater management manual for western Washington was published?

A. It was published in September of 2001.

Q. Do you know when the existing NPDES permit for the Port of Seattle for the Seattle Tacoma International Airport was issued?

A. No, I don't.

Q. Are you aware of any new NPDES application from the airport to Ecology?

MS. OSBORN: Objection. This is outside the scope of the cross examination.

MR. PEARCE: No, this is about the application of the manual, what it applies to, which is what you asked him about.

MS. OSBORN: We asked nothing about the NPDES permit.

MR. PEARCE: You asked about the manual. I want to know what it applies to.

MS. OSBORN: This is exactly the type of information that should have come out in direct examination.

MR. PEARCE: If I knew that they were going to ask him about the 2001 --

MS. COTTINGHAM: Why don't you lay a foundation on whether he has any information about this, because I heard him say he had very little actual review of SeaTac-related permits, so why don't you lay some foundation and then you can ask him.

MR. PEARCE: Perhaps I should just ask him generally.

Q. Will Ecology apply the 2001 manual to NPDES applications on a going-forward basis from September 2001 going

forward?

MS. OSBORN: We continue to object as being outside the scope of direct, his prefiled and our cross examination.

MR. POULIN: It also calls for speculation. There is no foundation that that knowledge is within this witness's purview.

MS. COTTINGHAM: I'm going to allow the question, the narrow question you just asked.

MR. PEARCE: Thank you, Ms. Cottingham.

Q. Can you remember the question?

A. No. Could you repeat it.

Q. I'll try. Do you know whether Ecology will be applying the 2001 stormwater management manual for western Washington on a going-forward basis to NPDES applications?

A. Yes, we encourage both -- the permits that I am involved in we will be endeavoring to use the manual, and then we encourage our permit writers and other industrial permittees to use the manuals as a reference to decide potentially what to do with those permits.

Q. And that would include the enhanced treatment menu in the 2001 manual; is that correct?

A. Yes.

Q. And I believe you testified that additional requirements

can be required based on a site-specific study; is that correct?

A. Yes.

MR. PEARCE: That's all I have. Thank you.

MS. COTTINGHAM: Any board questions?

MR. JENSEN: I have none.

MR. LYNCH: I have a couple.

EXAMINATION

BY MR. LYNCH:

Q. Thank you for your testimony today.

In your testimony you said that Department of Ecology was establishing a testing protocol regarding testing requirements for the different BMPs. My understanding, from a previous occupation that I had, that new protocols were being developed for testing in 1999 for testing and approving new BMPs. Just so I can understand this better, were those incorporated into the new stormwater manual and is what you're talking about in your testimony today that these protocols are being updated, or were you saying that the protocols in 1999 for testing and approving BMPs were not incorporated into the stormwater manual?

A. I'm not aware that Ecology had any official BMP testing protocols back in 1999. The department would approve on

like a grant-specific basis, if someone applied for a grant to test a specific stormwater treatment BMP, we would approve a scope of work for monitoring that BMP, the sampling plan that was proposed under that grant to monitor that BMP, but Ecology did not have to my knowledge any type of specific testing protocol for treatment BMPs. We still don't. We have been working with this committee and we're just about done with it and it's referenced, it's referred to in the last volume of this manual that it will soon be coming out and we will publish it at our website and then we'll try to apply it. But we haven't had an official test or testing protocol prior to this.

Q. But they were originally -- I am trying to remember correctly, you can correct me, wasn't a group put together in 1999 to develop --

A. It's probably the same group. I mean, I don't remember -- I'm not the Ecology lead representative on that group. I have participated in some of the meetings. I don't recall when it got started. It actually got started originally by some of the municipalities who banded together to try to put something in, and then I believe that was the original genesis, and then Ecology, when we were updating the manual, said, okay, we need this, too, we are going to play with these folks and try to make it

useful to them and to us. So it's a mixture of municipal folks and some Ecology folks and some technology development folks who have been participating.

Q. So the 2001 -- what's happening now regarding the testing and approving these BMPs, it's not an update, it's just still the continuation of what started in 1999?

A. Yes.

Q. Okay. I have another question to try and understand a little bit better about these enhanced treatment methodologies that kicked in.

In your testimony you said that even with treatment there will be some metals in the storm water that will still -- if there's a release of this storm water to augment flow, that even after treatment, there will still be some metals in the water. In these enhanced treatment provisions, I'm still trying to understand this a little bit better, is there anything that is triggered or automatically kicked in if there are concerns with a 303-D listing, for example. Is there anything that says if you are concerned with a 303-D listing, you should use these particular or we recommend that you use particular types of treatment?

A. If there's a water body that's listed on the 303-D list for dissolved metals, the regulatory approach is Ecology eventually has to get around to doing some type of total

maximum daily load and a water cleanup plan. Within that context, the relative contribution of storm water to the dissolved metals load would have to be taken into consideration and a strategy developed potentially to reduce the load of dissolved metals in urban storm water. And that's how the manual could be used.

So someone could try to figure out how much could we reduce the dissolved metals load by in this watershed if we were to retrofit existing stormwater discharges using the enhanced treatment menu in this manual, and how much extra dissolved metal loading may there be from all the new development that's projected in this watershed if we use the enhanced treatment menu. And right now there isn't a good way to estimate what that loading may be because there isn't a lot of data on just how much reduction we will get of the dissolved metals load through application of these treatment facilities.

So, you know, they'd have to assume some number, but it would be hard, so that's why we are trying to get some more information so that you could with this protocol, so the studies that -- someone who is doing the TMDL in trying to determine what we are doing with storm water would have a better way to estimate what the loading after treatment would be.

Q. I understand your answer.

A. Okay.
Q. If there was a TMDL established based upon metals in the water, do you have a sense for -- I think I heard you say earlier that a sand filter would be one of the acceptable methods of treatment.
A. A basic sand filter in combination with something else is what's listed right now. There's a separate listing just for an amended sand filter, which would be referring to a filter that has some other chemical characteristics in it, some other chemicals in it that, based on some limited data up in the city of Bellevue, does a pretty good job of dissolved metal removal.
Q. So do you have a sense how long it would take to put in, say, you have a swale in place or some other sort of filter in place, how long it would take to put in like a sand filter to help assist in the treatment?
A. How long it would take?
Q. How long it would take to put in something like that.
A. Unless you had some restrictive site constraints that would require some more engineering to make enough space available to you, I don't think there's any extraordinary time period of getting something in place, you know, design, construction. It's hard for me to estimate how long for a project as big as the port because you are talking about much larger facilities, and I don't have

any knowledge of land availability in the area, and so for me to make a comment that maybe would be used to do a timing estimate, I think is pretty speculative and difficult.

Q. Okay.

MS. COTTINGHAM: Any questions as a result of the board's questions?

MS. OSBORN: I have one quick one.

EXAMINATION

BY MS. OSBORN:

Q. Mr. Lynch asked you about the use of sand filter, amended sand filter. That is the type of treatment technology that you would use if you knew that you were trying to control for dissolved metals; is that right?

A. That's one of the options we list in the menu, and Ecology has a little note in there that cautions municipalities that the extent to which they allow that use is somewhat up to them because we only have testing at one site and not a lot of long-term performance testing, so because it's still -- for instance, because we don't have sufficient data from that site that would meet our new protocol, we would want more data. We are saying we are allowing its use on this menu because it's one of the few that we have some information on that

seems positive.

MS. OSBORN: That's all I have.

MS. COTTINGHAM: Any other questions?

MR. POULIN: Yes.

EXAMINATION

BY MR. POULIN:

Q. Mr. O'Brien, you have now reviewed the port's NPDES permit, have you?

A. No.

Q. You haven't reviewed the port's December 2001 NPDES permit renewal application?

MR. YOUNG: I am going to object. This is beyond the scope of the board's questions.

MR. POULIN: It relates directly to the application of BMPs and it's also a follow-up on the recross that broke new ground on the application of BMPs under the port's permit.

MS. COTTINGHAM: The question allowed will be directly related to the board's question, so to the extent that it is related to his questioning about the testing protocols and that general area, you may ask a question.

MR. POULIN: The board did ask about the future application of BMPs, did it not?

Q. You don't know what BMPs the port has proposed to implement in its future NPDES permit or SWPPP, do you?
A. No.
Q. And you don't know whether those BMPs satisfy the minimum requirements of the stormwater management manual for western Washington?
A. No, because I haven't reviewed them against the manual, no.

MR. POULIN: Thank you.

MS. COTTINGHAM: Any other questions?

MR. YOUNG: No.

MR. PEARCE: No.

MS. COTTINGHAM: You're excused.

Who is your next witness going to be?

MR. KRAY: Mr. Wang. We're back on track now.

MS. COTTINGHAM: Let me ask a question. The board has another hearing-related matter unrelated to this case at noon, and it might be best if we took a lunch break now and came back at, let's say, quarter after 1, so that will give the board some time to eat before we have to deal with another matter.

MR. KRAY: That's fine.

MS. COTTINGHAM: Thank you.

(Whereupon, a recess was taken.)

MR. STOCK: Ms. Cottingham, before the clock starts, we have a housekeeping matter and preliminary matter with respect to Mr. Wang's testimony.

The housekeeping matter is we've now designated, pursuant to the board's order on the motion to publish depositions, those excerpts of the depositions that we are asking to be published, and we will deliver copies to the port and Ecology this afternoon of our designations.

And then on the preliminary matter, Mr. Witek will raise that with respect to Mr. Wang's testimony.

MS. COTTINGHAM: Mr. Wang was not one of the identified employees?

MR. STOCK: Mr. Wang, no, he was not.

MS. COTTINGHAM: Okay. I thought there was a relationship.

MR. WITEK: Miss Cottingham, did you want to hear about our other --

MS. COTTINGHAM: No, I have a question forming in my mind about the designations. You're not going to hand them into the board until after Ecology has had and port have had a time to take a look at them.

MR. STOCK: That's right, pursuant to your order, that makes sense. It's just to start the clock running on their designation.

MS. COTTINGHAM: Mr. Wang, the court reporter

will swear you in.

CHING-PI WANG, having been first duly sworn on oath or affirmed to tell the truth, the whole truth and nothing but the truth, testified as follows:

MR. WITEK: Ms. Cottingham, could we discuss our preliminary matter before Mr. Wang begins testifying because our preliminary matter has to do with his testimony.

MS. COTTINGHAM: I misunderstood. I thought he said now you will examine the witness. You're right. I misunderstood. Yes, you may.

MR. WITEK: Our concern is really based in large part on your order, I think, that was issued on Friday granting appellant's motion to strike certain prefiled testimony and limit oral testimony.

MS. COTTINGHAM: On Mr. Garland?

MR. WITEK: Actually, I believe this was some of the things that were done in response to Kelly Whiting, so this was the motion after the Garland one.

MS. COTTINGHAM: Okay.

MR. WITEK: In looking at the board's order on the bottom of the first page, it states that "Any party is prohibited from relying on information created after

February 28." And our concern is that looking at the second-to-the-last sentence on Mr. Wang's prefiled testimony, he describes things he did and things that he conveyed to other people, which we understand was by memo, on March 6th, 2002. So we'd like to have that stricken from the prefiled testimony and we'd like to have Mr. Wang precluded from giving any testimony about it today.

MS. COTTINGHAM: The scope of this order was on the low-flow plan, a plan that was required pursuant to the 401 certification. Is this the same reference?

MR. WITEK: This is not the low-flow plan, but this is another plan or report that's required pursuant to the 401 certification, and that's in condition (F)(1) in the certification, and it's on page 19 of 33 in the September 401 certification. And you can see on the bottom line that it's BMPs to prevent interception of contaminated groundwater by utility corridors and a plan to monitor potential contaminant transport to soil and groundwater via subsurface utility lines that was required to be submitted to Ecology by November 9. So it's not the low-flow plan, but it's another one of the sort of plans and reports that was called out to be produced after issuance of the certification.

MS. COTTINGHAM: My intent in this order was

the narrow prohibitions as evidenced by the redacted documents here. Rather than deal with these as they come up like this, is there any way to characterize this in a motion?

MR. STOCK: Ms. Cottingham, may I speak up, please?

MS. COTTINGHAM: You may.

MR. STOCK: Yes, it is along the same vein that with respect to any plans or reports pursuant to the board's prehearing order, any plan or report done pursuant to the 401 that was referenced on the port's list. If there was work done after February 1, I think, pursuant to the prehearing order, the port and Ecology are barred from relying upon that information. The way you applied it to the low-flow analysis and Ellingson and Brascher's testimony was to use the February 28 date as a cut-off in terms of any document produced after February 28th.

For purposes of clarification and to apply this throughout the remainder of the proceeding, we are requesting that the port and Ecology be precluded from relying upon anything after February 1. And this would fall into that category.

MR. REAVIS: Could we address that? Let me explain to you the dates here because I don't believe

that that's been provided.

The report that's at issue that's called out here was actually submitted in October of last year, well before the November 15th deadline, so that report has been in for a long time. There's been depositions on this particular report. There's nothing really new here. The only new thing is not a new document. I think the previous motion with regard to the low-flow plan dealt with a document that was submitted on March the 6th, a new report. And I understood the board's ruling to be, well, that report can't come in and you can't reference that report, but the witnesses can talk about work they have done, conclusions they have reached apart from the report itself.

And this sentence in Mr. Wang's prefiled testimony does exactly that. He just says I have reviewed this report that's several months old and I concur that those BMPs are adequate. So I think this is my understanding exactly what was ruled on with regard to the low-flow plan. Similarly, Mr. Brascher can say we've reviewed these issues and we believe these issues raised by Mr. Whiting are inconsequential. I think we had that discussion the other day. This in our mind is the same issue applied to this witness, to say simply I have reviewed this material and I concur with it. We're not

trying to get in any additional documents here. And the report that's called out in the 401 has been in for a long time.

MS. COTTINGHAM: Can you point to me in his prefiled testimony where you're reading from?

MR. STOCK: It's the last page of his prefiled testimony, page 5, the last sentence of his prefiled testimony, "On March 6th, 2002, I conveyed to Ms. Kenny that I concur with the proposed construction BMPs and the monitoring plan and recommend their immediate implementation." He conveyed that to Ms. Kenny by a memo and we received, that night that I went back to the office last week, we received that memo pursuant to our Public Disclosure Act request.

MS. COTTINGHAM: Is that memo an exhibit or will it be an exhibit in this --

MR. STOCK: No, it is not an exhibit and I think it's properly excluded as an exhibit pursuant to the prehearing order.

And with respect to the board's order on the low-flow plan, the board ordered "But those witnesses may not indicate either in prefiled testimony or in oral testimony what the port or Ecology has done since February 28th." And it was my understanding the board picked up the February 28th date from the prehearing

order in terms of that being the absolute discovery cut-off.

MS. COTTINGHAM: To modify or change a plan that's required by the 401 certification. And I don't see him doing this in his testimony here. I don't see any modification to a plan required by the 401 certification, so for that reason, I'm going to overrule your motion to exclude his prefiled testimony.

And with that, we will start the direct examination of Mr. Wang.

MR. KRAY: Thank you.

EXAMINATION

BY MR. KRAY:

Q. Good morning, Mr. Wang. Would you please spell your name for the record.

A. Good afternoon. Ching-Pi Wang, C-H-I-N-G hyphen P-I W-A-N-G.

Q. Are you employed by the Department of Ecology?

A. Yes, I am.

Q. In what capacity?

A. Presently I am an environmental engineer 4.

Q. Could you please summarize your education and your professional qualifications for the board?

A. I have a bachelor's degree from Vassar College in

history. I have a master of science degree in geological engineering from the University of Idaho with a specialty in hydrogeology and groundwater modelling.

I am a registered professional engineer, civil engineer, state of Washington. I worked for a number of years for Golder Associates and Dames & Moore. They are consulting engineering firms. My work was in hydrogeology, groundwater modelling, field sampling of soils and groundwater, hydrogeologic characterization and interpretation of all the data.

At the Department of Ecology presently, I am a unit supervisor of a staff of hydrogeologists, environmental engineers, environmental scientists and public development specialists.

We are responsible for the execution of cleanups of contaminated sites under the Model Toxics Control Act. I consult with the staff members, I assist as needed on technical matters, I provide advice.

Prior to that role, I joined Ecology as a hydrogeologist 3 and advanced steadily up to my present position.

Q. Mr. Wang, what role have you played in developing conditions for Ecology's 401 certification to the Port of Seattle's master plan updates?

A. I was asked to participate most recently through the

preferential flow paths analysis of the scope of work specified in the agreed order between Department of Ecology and Port of Seattle. That segment of work was a contributory part to the 401 certification.

Q. Would you please review Exhibit 1, which is the September 401 certification. I believe that that's somewhere near you. Can you please identify for the board which portion of the 401 your work related to?

A. If I remember, it's (F)(1).

Q. Page 19, perhaps.

A. Yes. Page 19, condition (F)(1), and it continues on to page 20. There are four items.

Q. Have you prepared prefiled testimony in this matter?

A. Yes, I have.

Q. What subjects did you address in your testimony?

A. Groundwater flow beneath the airport operations and maintenance area, contaminant transport, identification of contaminant sources, identification of the lateral and vertical extent of contaminants beneath the AOMA, airport operations and maintenance area. I also looked at preferential flow paths beneath the AOMA.

Q. I believe you used the term pathways analysis and related terms. What is a pathways analysis?

A. Pathways analysis, also referred to as preferential flow paths, are pathways or conduits or routes of least

resistance for the flow of groundwater and for the flow of contaminants.

Q. Would you please summarize your principal conclusions on the subjects that you reviewed.

A. Yes. The contaminants in the groundwater have not migrated very far. And I have figures I can show you. And the other principal conclusions are the perched aquifers flow generally in a direction away from the third runway. The flow in the Qva aquifer, the regional water table aquifer, is to the west and northwesterly. The subsurface utility lines are not deep enough to affect the Qva aquifer, and there appears to be very limited contaminant migration in the subsurface utility lines.

Those are the principal conclusions.

Q. Who did you provide your conclusions to?

A. Ms. Ann Kenny.

Q. How did you become involved in the pathways analysis?

A. I was asked to. There's two phases in which I was involved. The first phase I assisted Roger Nye, who was the project manager for SeaTac. I advised him on the groundwater modelling portion of it. Then later I advised John Wetfield, who was the subsequent site manager, and then in approximately February or March, the site was transferred to me for management and I became

involved in the execution of the pathways analysis portion of it for the 401 certification.

Q. Pardon me for interrupting. You said February or March. What year was that?

A. 2001.

Q. Please continue.

A. From there the scope of work was not specified in an agreed order for the pathways analysis, it was simply a statement, conduct preferential flow path analysis. That brings in a lot of considerations in the topic of hydrogeology and contaminant transport. From the data that I requested and the representations of the data I requested of the port and port contractors, I reached my conclusions.

Q. Why did Ecology do a pathways analysis?

A. It was originally part of the scope of work for the agreed order to analyze the location and distribution of contaminants beneath the AOMA. In any geologic system there are pathways of least resistance that groundwater and contaminants flow preferentially.

Q. What part of the September 401 addresses the pathways analysis in Exhibit 1?

A. It would be embodied in all the conditions of F(1).

Q. So what was the relationship between the agreed order that you described earlier and the 401?

A. It's an extracted relationship. The agreed order specified a pathways analysis with the intent of conducting the analysis for the groundwater beneath the AOMA. In my conversations with staff members, I tried to understand how did the pathways analysis become involved with the 401 certification. I never got a clear answer to that, but, nevertheless, it became a component of it. So I did my work as requested, and that's all I have to say about it.

Q. Would you please refer to Exhibit Number 72. It might be in a notebook next to you. Is this the agreed order that you've been referencing?

A. Yes.

Q. How well has the port complied with this order?

A. Very well.

Q. And in what regard?

A. There is a scope of work; they have complied with virtually all the scope of work.

Q. What portions are still outstanding?

A. The execution of the groundwater numerical model and the final report, the draft and final reports for that segment of work.

Q. Are those portions of the agreed order required under the 401?

MR. WITEK: Object; leading.

Q. What is the relationship between those portions of the agreed order and the 401?
A. None that I see.
Q. Would you please refer to Exhibit 532. Are you familiar with this document?
A. Yes, I am.
Q. How is it that you're familiar with this document?
A. This document was provided to me most recently, and I'm copied on it in April.
Q. Mr. Wang, if you could speak up just to make sure the court reporter and the board hear your responses.
A. The question was how did I become aware of this letter?
Q. Correct.
A. Well, two ways; first way was I was copied on it.

MR. WITEK: Object; hearsay, lack of foundation.

MR. KRAY: I believe that's what I am attempting to establish, Your Honor.

MS. COTTINGHAM: Was this objected to on the matrix?

MR. KRAY: Let's look. No, it is not.

MR. WITEK: We'll withdraw our hearsay objection but leave in the lack of foundation one.

MS. COTTINGHAM: Okay.

Q. (Continuing By Mr. Kray): Do you recall the question,

Mr. Wang?

A. I recall the question is how did I become aware of this letter.

Q. Correct.

A. I am copied on the letter dated April 11th, 2001, and most recently, I was given another copy of it to refresh my memory last week.

Q. And what does the letter say with regard to the relationship between the 401 and the groundwater study, I'm sorry, the agreed order?

A. The letter states an opinion in which there is no relationship between completion of the agreed order and the 401 certification, and that opinion is stated on page 2, the second full paragraph, the last sentence there. "We have carefully considered your request and concluded it is not necessary to hold up a decision on the 401 application pending completion of the groundwater study under the agreed order." The rest of the letter elaborates on that decision.

Q. This was the opinion of the director of the Department of Ecology?

A. Yes.

Q. What exhibits have you prepared or relied upon in reaching your conclusions regarding migration of subsurface contaminants?

A. One key exhibit is an analysis of preferential groundwater flow path analysis, and that exhibit is a culmination of iterations of work, of representations and analyses of data that are analyzed, manipulated and scrutinized for analysis.

Q. Would you please refer to Exhibit 1254. Got it?

A. Yes.

Q. Are you familiar with that document?

A. Yes, I am.

Q. Does that document contain some of the exhibits that you were just discussing?

A. Yes.

Q. Do you have enlargements of those exhibits with you here today?

A. Yes, I do.

Q. Using those exhibits, would you please explain to the board which potential pathways you evaluated?

A. Yes. There are some key hydrogeologic terms I need to clarify to help explain this.

Q. Please do so.

A. May I stand?

Q. Please.

A. The question posed to me initially was, are there any preferential flow paths, will groundwater flow towards the third runway and will contaminants also follow.

The scope of the work entailed on figure 2 of the exhibit, this is the AOMA area, that is exclusively what we looked at in the agreed order. Preferential flow path was extracted to support the flow in certification.

Here are the two existing runways, here is the third runway.

Q. Pardon me for interrupting, Mr. Wang. This exhibit, is this also in the board's materials so if they wanted to refer to it directly, they could?

A. Yes. It would be in the back, figure 2. All the other figures I have here are also in the back.

To start with, you have to understand the geologic system, you have to understand what controls flow, what prevents flow and how contaminants occur and how they migrate. One of the key things you have to do is take a look at subsurface conditions.

Here is a cross-section, a three-dimensional block diagram. And what are all the viable preferential flow paths? Well, first of all, the question, are there flow paths? The answer is yes. And a key question then becomes, how viable are they and how extensive are the contaminants that flow along those pathways?

So just marching through the geology of it, starting from the bottom going up, here is the Qva aquifer, Qva is the designation for geologic medium. It's a regional

unconfined water table aquifer. The top of the water table is about 60 to 90 feet below the ground surface here.

Between ground surface and water table, there is a saturated, a partially unsaturated zone. It's partially saturated by this brown layer right here, that's referred to as till, and you will hear that term a lot. Till is a geologic medium that is very competent, generally impermeable, very strong, deposited as the glaciers outwash, as the glaciers melted and deposited their load. The key thing about till is it's highly variable in its composition.

So knowing that basic information, I look for the different pathways. For example, flow can go right off the top of the till, flow can seep right through the till. And item 3 right here on figure 2, the till has gaps in it, it has pathways in it that groundwater can flow through.

Another means of transport through the till, from ground surface to the till to the aquifer below, is through man-made structures like the transit tunnel, for example, or any utility lines such as this utility corridor depicted right here.

Holes in the till could occur because the till is not deposited in that area. That's shown right here,

number 5. There can be multiple layers of saturation of the till. Till is very -- imagine it like inter-fingering like this, and you'll have different kinds of layers, some more permeable than others, sometimes inter-fingering or separated or there's a lack of deposition; hence, you have preferential flow vertically down those gaps. And also you could have hang-ups of flow between different layers right below each other.

The pink represents contaminants that have preferentially flowed to those pathways. You could also have preferential flow paths in utility corridors that excavated the till or, similarly, any deep foundations that dug up the till and removed it.

MR. POULIN: Your Honor, I think it would be more appropriate to have Mr. Wang present his testimony in response to direct questioning from the department.

MR. KRAY: Your Honor, I think that we have all been quite patient with the witnesses giving some lengthy testimony, I think that will move the hearing along, and Mr. Wang is providing responses to my question that takes him a little while to explain this, this isn't simple stuff, and I'd ask that he be allowed to continue.

MS. COTTINGHAM: I'm going to allow him, being mindful, of course, that he did file prefiled testimony, so to the extent this should be a summary, why don't we

move forward and try and be efficient.

MR. KRAY: Thank you.

A. I will hit on the key highlights and then you can ask me questions. Where are the contaminants? They're in the yellow. They're in the perched zones.

MS. COTTINGHAM: Do we have a copy of this in our document as well?

THE WITNESS: Yes, this is your figure 3.

MS. COTTINGHAM: Behind the map.

A. I asked the port contractors to look at all the data identified for me, all the areas of contamination in the perched zone right here, and the yellows depict the area of extent of the contamination. I further asked that they identify the outer limits of it by showing me the wells that are clean in groundwater and in soil. And both the contaminated and the clean wells --

MS. COTTINGHAM: Can you pull it up higher so we can see what you're pointing to.

A. Both the clean and contaminated wells are shown here in detail. There are data bases that we call up to identify specific wells if you're interested in that.

The blue lines out here represent the very outer limits of known contamination into soil. Those are from the hydrant lines.

Your figure 4, if you could turn to that, please, I

don't have a display of that. The blue lines and the yellow area show the flow directions. One remarkable thing is they flow everywhere, generally not towards the west, they're a very localized flow. Hence, the importance of this figure, the value of spending time and understanding this conceptual model. Ground flow is very localized in the upper perched zone; localized is the key word.

Moving on to the next layer, this figure, your figure 2 in the AOMA area, shows the same figure as -- shows the flow directions in the lower aquifer right here. The flow is to the west, northwesterly.

Same set of analyses occurred. Show me all the contamination. And similar to identifying the extent of the contamination in the perched zone, I wanted to find out the extent of the contamination in the outer boundaries where the wells and the groundwater and the soil are clean. Hence, you have the pink, blues, they represent different kinds of -- this would be your figure 5. The pinks and the blue hatched areas represent contamination in the Qva aquifer. The blue and red lines represent different wells that show the wells that are contaminated and the wells that are clean.

Again, the blue, outer limits of soil contamination. Key point that I see from here is over the years of

information and years of quarterly groundwater data collected, the configuration of the contamination area doesn't change much. There's hardly any noticeable change. It's very localized and it doesn't move very far.

And, finally, close to the end, this last figure, figure 7 -- is not the last figure, but this figure is very complicated because it shows --

MS. COTTINGHAM: This is not the same as our figure 7.

MR. KRAY: Pardon me, number 7 doesn't match up in the materials. Number 7 is actually something more like this one here.

A. Your figure 8. This is a figure of all the utility lines at the airport, including the two runways, the third runway, and the AOMA, dotted line.

These yellow areas here are the contaminants in the perched zone and the pink and the blue cross hatched area are the contaminants in the lower aquifer.

The thing I look at this and I say, well, they're still there, they haven't moved. And the wells that are on the down gradient, or the downhill side of the contaminant plumes are clean and they have been clean. To me that's direct evidence that contaminants in that area, in the source area, haven't migrated towards the

well, hence, westward towards the third runway even though there are pathways that exist there.

So why not? So why don't we have contaminants flowing from the contamination area to the third runway? Here is a cross-section along the flow path, this line right here.

Q. What figure is this, Mr. Wang?

A. This figure is your 5 -- is your figure 6.

These large figures were produced prior to the production of these reports. That's why the figure numbers don't quite match up.

So draw me a cross-section, show me what's going on in the subsurface utilities with respect to the Qva aquifer, this blue line down, the perched zones, which are right here. And I see first there is a great distance between the third runway and the AOMA, okay. Then I see the gray rectangular structures here, they represent subsurface utility lines. They are shallow and they do not intercept Qva aquifer. There is no till from this area to over here. The contamination in Qva aquifer is isolated right here. This well right here becomes very important because it's down gradient on the western side of the AOMA in the direction of groundwater flow towards the third runway, and it's clean, similar with this well.

Here is another cross-section that looks at just this area right here. When I spoke to the topic of groundwater wells that are clean and dirty, this is what I mean. This well here represents the outer limit on the down gradient side of the contaminant plume. This well is on the down gradient side and it's clean. These contaminants have been there for many, many years. They exist below the preferential flow path areas, they have had opportunity to travel, they haven't. And the most direct evidence of any contaminant travel are through monitoring wells placed in the areas of contamination, placed into areas where contaminants are likely to go.

That's all I have to say.

Q. Were you asked to address proposed construction BMPs?

A. Yes.

Q. Who asked you to do that?

A. I asked the port to produce best management practices for the monitoring of contaminants in subsurface utility lines.

Q. Please look at Exhibit 1298.

A. 1298 is blank.

Q. You can certainly have my copy. Is it blank on the board's copies?

MR. LYNCH: I have a copy.

Q. If you will briefly review this document. Are you

familiar with this document?
A. Yes, I am.
Q. How is it that you're familiar with it?
A. I'm familiar with it in two ways. It was a condition that I proposed to be included in the 401 permit for the monitoring of contaminants in subsurface utility lines, and then I reviewed the product, which is this, to see if it complied with my request to meet the condition of the permit.
Q. And what was your conclusion?
A. Yes, it does meet the conditions of the permit for this section.
Q. What was the basis of your conclusion?
A. It's a very well thought-out plan. The approach is very similar to what I would propose also in this geologic condition, this highly-dissected condition. It takes into account the complexity of the geology, the history of construction of all the utility lines, and the occurrence of the contaminants and how they're likely to move.
Q. Were you also asked to work on a plan to monitor potential contaminant transport of soil and groundwater via subsurface utility lines?
A. A plan to monitor, is that what you said?
Q. My impression is that if you'll look at this exhibit, it

appears there is more than one.

MR. POULIN: Objection. The question seems to be more in the nature of testimony.

MR. KRAY: Fair enough.

Q. Would you please review the exhibit.

A. Okay. Any particular part?

Q. Take a look at page 2 of the exhibit and then take a look at page 4 of the exhibit.

A. Page 2 being -- there's a cover letter and then --

Q. Correct. That page. If you look at the top of that exhibit, please. Then would you also look at page 4 at the top of the page.

A. Where the bullet says, "Groundwater levels in" --

Q. I believe you're looking at page 5.

A. Okay. Page 2 refers to proposed construction of best management practices to prevent interception of contaminated groundwater by utility corridors.

Q. What does page 5 refer to?

A. It is a plan to monitor potential contaminant transport to soil and groundwater via subsurface utility lines.

Q. Is it your understanding that this is a separate component? Are these two different things?

A. They are two different things of the same part.

Q. Okay.

A. You need one and the other to make a whole.

Q. Have you reviewed both of those?
A. Yes.
Q. Are your conclusions the same with regard to each of them?
A. Yes.
Q. Did you reach a conclusion regarding whether or not you have reasonable assurance about these contaminants and whether they are likely to migrate?
A. Yes, I did.
Q. And what was your conclusion?

MR. WITEK: Object, calls for a legal conclusion.

MR. KRAY: Mr. Wang is an employee of the Department of Ecology and the Department of Ecology is charged with administration and enforcement of the laws at issue. I think the agency's opinion on these type of issues has some relevance to this hearing and should be able to testify as to that.

MS. COTTINGHAM: Similar to all the previous rulings, the board will allow it and will give it its weight.

A. Could you ask me the question again.
Q. Certainly. What is your opinion regarding whether or not you have reasonable assurance about whether these contaminants are likely to migrate from the aircraft

operation and maintenance area to the third runway construction area?

A. My opinion, based on reasonable assurance of the data I analyzed, is that it's very unlikely contaminants in the groundwater will migrate from beneath the AOMA to the third runway.

MR. KRAY: No further questions, Your Honor.

MR. REAVIS: I don't have any.

MS. COTTINGHAM: Mr. Witek.

MR. WITEK: Thank you.

EXAMINATION

BY MR. WITEK:

Q. Good afternoon, Mr. Wang. My name is Mike Witek. I have some questions for you.

I think you said earlier that the agreed order requires the port to prepare, I think you called it, a numeric model to predict groundwater flow and contaminant fate and transport; is that right?

A. Yes.

Q. And that model hasn't been completed yet, has it?

A. Correct.

Q. The preferred pathways analysis was focused on fate and transport via subsurface utility lines and through the perched aquifer; is that right?

A. That is one component of the preferential flow path analysis.

Q. Preferential flow path analysis does not consider impacts of borrow site excavation, does it?

A. Correct.

Q. The flow path analysis doesn't consider the impacts of construction dewatering either, does it?

A. It does not.

Q. Could we take a look at Exhibit 1. Can you turn to page 4 of 33.

MS. COTTINGHAM: In Exhibit 1, what page?

MR. WITEK: I'm sorry, page 4 of 33, Exhibit 1, the amended certification.

A. Yes.

Q. Mr. Wang, I think you said that you were primarily responsible for drafting condition (F)(1); is that right?

A. Yes.

Q. Do you see the language in section (1)(d) on page 4 of 33?

A. I do.

Q. Can you read that for us?

A. "In condition (F)(1) the plan to monitor potential contaminant transport to soil and groundwater via subsurface utility lines shall remain in effect as specified in that plan but in no event for a duration

less than eight years."

Q. Did you say anything about duration in the draft that you prepared and sent to Ms. Kenny for condition (F)(1)?

A. I do not recall that I said that.

Q. Would you take a look at your draft that you sent to Ms. Kenny. It's Exhibit 73.

A. Yes.

Q. You didn't say anything about a durational limit in this, did you?

A. That's correct.

Q. Let's go back to Exhibit 1, page 4 of 33, in the section (1)(d) that we were talking about earlier. Do you have that in front of you?

MR. KRAY: What was the exhibit?

MR. WITEK: It's Exhibit 1, page 4 of 33.

A. Okay.

Q. Mr. Wang, were you consulted on the language in section (1)(d) on page 4 of the certification?

A. No.

MR. WITEK: That's all we have.

MS. COTTINGHAM: Mr. Poulin.

MR. POULIN: Just a couple questions.

THE WITNESS: I need to clarify that, please.

MS. COTTINGHAM: Your attorney can bring that up on cross examination.

EXAMINATION

BY MR. POULIN:

Q. Mr. Wang, Rick Poulin for CASE. Would you agree that the Qva aquifer is known to be contaminated with constituents at levels exceeding MTCA cleanup levels?

A. Yes, I am, the condition does exist.

Q. And would you agree that the Qva aquifer fronts in places to Des Moines Creek?

A. Did you say fronts?

Q. Yes.

A. Fronts? Do you mean flows to? I don't understand the term fronts.

Q. If you prefer, flow.

A. Ultimately, yes, it does flow.

Q. In your analysis of the fate and transport of known contaminants at SeaTac International Airport, have you reviewed any documents indicating that contaminants have migrated beyond Port of Seattle property at the airport?

A. Yes, through the data that I looked at, I was able to conclude that contaminants beneath the AOMA have not migrated past the boundaries of the AOMA.

Q. The question involves migration beyond Port of Seattle property.

MR. KRAY: Asked and answered.

MR. POULIN: I believe he answered a different

question.

A. Well, if I understand your question --

MS. COTTINGHAM: Hang on just a second. They sound similar, I'm not sure they're exactly the same, so I'm going to allow the question.

A. Could you ask the question again, please.

Q. Are you aware of any documents indicating that contaminants have migrated beyond Port of Seattle property at the airport?

A. Yes, I am aware of documents that conclude contaminants have not migrated beyond the AOMA; by inference, contaminants in the AOMA have not migrated to the third runway. I think we're not connecting here.

Q. That's clear. No further questions.

MS. COTTINGHAM: Any redirect.

MR. KRAY: Yes, please.

EXAMINATION

BY MR. KRAY:

Q. Mr. Wang, if you look at page 4 of Exhibit 1 regarding the duration condition, do you have an opinion on what a proper duration would be for the type of work that you described as far as monitoring?

A. In my opinion, the duration should be indefinite; as long as the contaminants are there, monitoring should

continue. I also like to point out in (1)(d) I did write the condition for everything in that section except for the 8-year time period. So I don't want to leave the impression that I did not propose the plan, I did not recommend a proposal to monitor contaminants in the soil groundwater via the subsurface utility line; it's just the time period was not specified.

Q. Do you believe that condition D is consistent with your statement regarding indefinite duration?

MR. WITEK: Object, it's vague.

A. Indefinite? It doesn't say indefinite duration.

MS. COTTINGHAM: Hang on just a second. Repeat your question.

MR. KRAY: Okay.

MS. COTTINGHAM: I was writing.

MS. KRAY: Maybe I will rephrase it.

Q. Is it possible under condition D to monitor for an indefinite duration?

A. Yes.

MR. KRAY: No further questions.

MR. REAVIS: I have just one if I could in response to cross.

////

////

////

EXAMINATION

BY MR. REAVIS:

Q. You referred to a groundwater study required under the agreed order. Do you remember that?

A. Yes, I do.

Q. Is it necessary to complete that entire groundwater study in order to determine whether contaminants could possibly migrate from the AOMA to the third runway?

A. It is not necessary.

MR. REAVIS: That's all I have. Thanks.

MS. COTTINGHAM: I have one question for you.

EXAMINATION

BY MS. COTTINGHAM:

Q. The agreed order that you referenced, is that as a result of the AOMA being listed as a MTCA site?

A. Yes.

MS. COTTINGHAM: Any other board questions?

MR. LYNCH: That was my question.

MR. JENSEN: I have no questions.

MS. COTTINGHAM: You're excused. Thank you.

////

////

////

////

KATIE WALTER, having been first duly sworn on oath or affirmed to tell the truth, the whole truth and nothing but the truth, testified as follows:

EXAMINATION

BY MS. MARCHIORO:

Q. Would you please state your name for the record.

A. Katie L. Walter.

Q. Ms. Walter, Did you file testimony in this matter?

A. Yes.

Q. Could you please describe your educational background.

A. I have a bachelor's degrees in botany. I am a certified professional wetlands scientist with the Society of Wetland Scientists, and I am a certified Corps of Engineers wetland delineator.

Q. Have you had any additional training beyond your undergraduate degree in wetland science?

A. I have taken numerous different courses throughout the course of being a biologist.

(Whereupon, the court reporter asked the witness to speak louder.)

A. I have taken numerous different wetland-related courses through the years as a biologist.

MS. COTTINGHAM: You are going to have to speak up. This microphone does not broadcast so don't

speak just into it, you need to broadcast for the court reporter.

Q. What's your current employment?

A. I work for Shannon & Wilson as a senior principal biologist and natural resources manager.

Q. And how long have you worked with Shannon & Wilson?

A. I've been there for about seven years and I have been a consulting biologist for about 12 years.

Q. And is a copy of your resume' attached to your prefiled testimony?

A. It is.

Q. What responsibilities did you have with respect to Ecology's review of the port's application for a 401 certification?

A. I reviewed the NRMP and associated documents such as the functional assessment, and helped to review the reports, request changes from the port, and help to write the 401 conditions for that.

Q. And were you present when Ms. Azous testified?

A. Yes.

Q. And do you recall her testimony regarding the use of the Washington functional assessment method?

A. I do.

Q. And do you agree with that testimony?

A. I disagree that the Washington State functional

assessment methodology can be used on a large portion of the impacted wetlands associated with the proposed project because they are slope wetlands. The Washington State functional assessment methodology was developed just for riverine and depressional wetlands and has not been developed for slope wetlands.

Q. And do you recall Ms. Azous testifying with regard to the method that she would use for slope wetlands?

A. She suggested that she would use one of the 40 methods that was listed in the National Academy of Sciences book. I take issue with that because there isn't any method within that list that is both peer reviewed as well as regionally applicable to the wetlands on this site.

Q. And do slope wetlands function similarly to depressional wetlands?

A. No, they actually function quite differently. That's one of the reasons why the Washington State functional assessment methodology can't deal with slope wetlands. Slope wetlands don't tend to have ponding water, which typically provides water fowl habitat, oftentimes provides amphibian habitat and habitat for animals such as beaver and muskrat. And there's a whole host of differences between the types of functions that can be provided in a slope wetland versus depressional or other types of wetlands.

Q. Now, do you recall the testimony of Ms. Azous and Ms. Sheldon regarding wetland hydro periods?
A. Yes.
Q. And do you agree with that testimony?
A. No. The hydro periods -- they suggested that we should have developed or the port should have developed a baseline that was adequate to monitor the wetlands over the long term. In my testimony I cited a study, also in the National Academy of Sciences book, that suggested that even five years of monitoring data was not sufficient to establish a baseline that could be relied on for an accurate background picture so that you could then compare it post construction.
Q. Are there any other issues with respect to developing wetland hydro periods that you're concerned with?
A. I guess, additionally, if you couldn't develop an accurate baseline, you then couldn't take it a step further and say, if you did see a change, whether that change was as a result of the up-slope development, and then, further, if that change even resulted in any kind of functional impact to those lower wetlands, there is no way to quantify those things.
Q. And were you unconcerned with the possible impact to the hydro period of the down-slope wetlands?
A. No. We included in our 401 and, actually, there are

provisions in the NRMP that insure that if there were potential impacts from this up-slope development, that they would then be able to, A, detect those changes to the wetland area, and then take it a step further and modify it through adaptive management to insure that there is adequate dispersal of the water that's being available from the embankment and letting it go to the existing or the wetlands that remain in that area.

Q. Now, do you recall Ms. Azous' testimony with respect to adaptive management?

A. Yeah.

Q. And do you agree with that testimony?

A. I agree with her definition of adaptive management, but I don't think that it's unusual to use adaptive management on wetlands that remain on those down-slope areas. If we, as biologists, see that there may be a potential impact, we can make provisions for those through adaptive management to insure that the water coming through the channels get adequately dispersed to the wetlands on the down-slope area.

Q. And what factors make a wetland mitigation plan successful?

A. In my testimony, I describe the ten factors that Department of Ecology has listed in their second phase evaluation that they develop for looking at mitigation

and evaluating whether it was successful. And they list ten factors in there. And I'll just read those to you.

Essentially, they talk about an adequate source of hydrology. Using the same consultant from the beginning of the project through the delineation and through the mitigation as well as through monitoring. Good site selection. Oversight by regulatory agencies. Having a mitigation designer on site during construction. Having a good mitigation design. Using native plants. Making sure that there's maintenance post construction. Use of irrigation post construction to assist the plants through that first couple of growing seasons. And then use of hydrologic monitoring.

And the port has included or through our 401 conditions, we have insured that all ten of those factors will be accounted for during the construction and post construction.

Q. What's the monitoring period required by the 401 certification?

A. We have required a 15-year monitoring period, which is significantly longer than any other sites in Washington that I'm aware of typically. I know the race track had about a ten-year monitoring, which was one of the longest then, and we're now moving to 15 years.

Q. Do you recall Ms. Sheldon's testimony regarding forested

riparian buffer?
A. Yes.
Q. And do you agree with that testimony?
A. Ms. Sheldon assumed that the areas adjacent to the stream were not going to become vegetated through the revegetation plan. And if you look at in the NRMP, table 5.1-12.
Q. Exhibit 2014 and that's on pages 5-39 and 5-40.
MS. COTTINGHAM: Do we actually have this exhibit?
MS. MARCHIORO: You should.
MR. PEARCE: It is an Ecology exhibit.
MS. MARCHIORO: And should be referring to a map and you have a shortened version.
MS. COTTINGHAM: What number did you say?
MS. MARCHIORO: 2014. And that's a map she is also going to refer to. That's the appropriate size.
A. This table shows a list of the vegetation for the mitigation projects.
MS. COTTINGHAM: Can you repeat the page number?
THE WITNESS: It's 5-39 and 5-40.
A. The table shows a list of plants that are proposed for planting in the mitigation areas in Miller and Des Moines Creek basin. And as you can see across the top, it gives

different locations like the upland zone, the floodplain zones and the riparian zones, and then down the side are the list of plants. And each of those zones has a designation on which plants will be in there.

As you can see in the riparian zone, there are five different trees that will be planted in that location. Those trees are being planted at 280 trees per acre, which works out to about one tree every 12 feet, which is very typical of mitigation plans as well as typical of what you would see in the field post construction, or in a natural wetland.

Q. Natural wetland or a natural forest?

A. In a naturally-forested wetland.

Q. Okay. And what does figure 5.1-5 show?

A. 5.1-5, and we have a map here, a blowup, and I think you were given some others. You can see this is the Vacca Farm area and Lora Lake and this is the proposed stream. You can see a large area adjacent to that stream which includes the riparian planting zone which will be forested. And then a different suite of plants will go into the floodplain zones. And all of those zones have the vegetation that is most appropriately adapted for the hydrologic regimes of those areas, because each will be a different topographic area so each requires different types of plants that can adapt to the type of hydrology

that will be included there.

Q. In your opinion, will the port adequately mitigate for impacts to wetlands and aquatic resources?

A. I believe that the proposed NRMP and the associated 401 conditions adequately will replace potential impacts to wetland functions. I think that they have proposed a great deal of enhancement in areas that are undisturbed and which will also bolster those functions, and they have an adequate plan to do that.

MS. MARCHIORO: I have nothing further.

MS. COTTINGHAM: Mr. Pearce, do you have any questions?

MR. PEARCE: No questions on direct, thank you.

EXAMINATION

BY MR. EGLICK:

Q. Ms. Walter, do you know how many acres of upland areas are going to be disrupted, impacted by the third runway project?

A. I don't have an accurate count of that.

Q. Do you have any idea?

A. No.

Q. Let me ask you a question, isn't it true that as of January of this year, the book that you're quoting in

your prefiled testimony, "Compensating for Wetland Losses Under the Clean Water Act" from the National Academy of Sciences, you had never read that book, had you?

A. I had read pieces of it.

Q. Do you recall when I took your deposition January 17th and I asked you, "Are you familiar with the publication called 'Compensating for Wetland Losses under the Clean Water Act' Published by the National Research Council in 2001, copyright 2001 by the National Academy of Sciences," and you answered, "I have not read it, I have heard about it." Do you recall that?

A. Yes.

MS. MARCHIORO: Could you direct me to the page.

MR. EGLICK: That's page 35 of her deposition.

Q. So you were under oath then, weren't you?

A. Sure.

Q. Okay. Now, I notice you have included a number of provisions from that book in your testimony, and did you edit any of those or did you include full quotes?

A. I'm not sure what you mean by full quotes.

Q. Well, did you include the full quote on a particular topic that you quoted from in your testimony?

A. I used what I felt was appropriate.

Q. Well, isn't it true that the book that you're relying on

suggests that subjective best professional judgment in wetland functional assessment should not be relied on?

MR. PEARCE: Objection, lack of foundation.

MR. EGLICK: Well, she's already testified the words best professional judgment are used more than once in her testimony, in her written testimony, she didn't repeat it that much in her oral, but it's in her written.

MR. PEARCE: I don't think she characterized it as subjective.

Q. Let's strike the word subjective. Isn't it true that the book that you're relying on, "Compensating for Wetland Losses under the Clean Water Act" suggests that best professional judgment so-called wetland assessment techniques should not be relied on?

MR. PEARCE: Objection, lack of foundation.

MR. EGLICK: I think it's the foundation that needs to be laid. She cited this book, she has relied on it in her testimony and I'm asking her questions about her familiarity with this book that she cited and relied on.

MR. PEARCE: You're asking her about best professional judgment so-called.

MR. EGLICK: Well, that's my quote-unquote best professional judgment.

MS. COTTINGHAM: Go ahead and answer his

question.

A. I believe that the book also goes on to say --

Q. Could you please answer my question yes or no.

MS. MARCHIORO: Objection, argumentative.

MR. EGLICK: It's not argumentative. It's a yes or no question. We're on a very tight time line here and I'm entitled to have the witness answer my question before she moves on.

MS. COTTINGHAM: If it's a narrow question, answer narrowly, and you can bring it out in cross examination.

A. I believe the book goes on to say the best professional judgment is a --

MR. EGLICK: I am going to object again, Ms. Cottingham. It's just simply not answering the question asked.

A. I'm sorry why don't you repeat it.

Q. Why don't I read you a quote and you can tell me if this is accurate. Page 7 of the book you're relying on. "Dependence on subjective best professional judgment in assessing wetland functions should be replaced by science-based rapid assessment procedures that incorporate at least the following characteristics," and then it goes on to list a number of characteristics. Isn't it true that's what the book says?

A. I'm sure that's what the book says, but I also believe that it also says the best professional judgment is something that needs to be used if you don't have any other methodology.

Q. Well, your counsel can bring that out on examination, if you can find where that is.

Let me ask you another question.

MR. PEARCE: Objection, counsel is testifying.

Q. Tell you what, take a look at page 129, I happen to have an extra copy of the book, just above where it says, "The floristic approach," do you see the paragraph just above. Could you read that, please, for the board and into the record.

A. "Complete characterization" --

Q. No, I am sorry, the last paragraph before "The floristic approach."

A. "Most wetland scientists argue that science-based regionally-standardized procedures are preferable to best professional judgment in comprehensively evaluating wetland function for both impacted and mitigation sites."

Q. For both impacted and mitigation sites, isn't that what it says?

A. Yes.

Q. Go ahead.

A. "As a result, the general absence of a uniform approach

to assessing wetlands as multi-functional ecosystems has likely encouraged less complex wetland mitigation designs and rudimentary measures of achieving mitigation goals."

Q. Isn't it true that in your testimony you say that you have examined the functional assessment based on best professional judgment done by Parametrix for the port and that you are satisfied with the findings and conclusions of that best professional judgment-based assessment?

A. I found that the functional assessment performed by Parametrix was an adequate replication of the functions on those sites.

Q. And how many data sheets for the functional assessments that were performed by Parametrix did you review?

A. I reviewed their functional assessment methodology book.

Q. Okay. My question, though, was how many data sheets for their functional assessment did you review?

A. Well, it's kind of hard to answer because they have a narrative description of the wetlands and the functions that may be impacted out there.

Q. But they don't have any data sheets, do they?

A. Not all methodologies require a data sheet; I'm not sure that it would be necessary.

Q. They don't have any data sheets, do they, Miss Walter?

A. I'm not sure that they do.

Q. Right. And you didn't review any, did you, Miss Walter?

A. I reviewed the functional assessment methodology.
Q. A narrative description, which you could not check against any data sheets; is that correct?
MR. PEARCE: Objection, lack of foundation.
MR. EGLICK: The foundation is there.
MR. PEARCE: There is no indication the data sheets were required to check anything.
MR. EGLICK: Nobody has to show that they're required to ask a question as to whether or not she could review and approve a functional assessment without looking at a single piece of data.
MS. COTTINGHAM: I'm going to overrule the objection.
A. There was a great deal of data in the functional assessment methodologies, so I guess I think that a data sheet per se is probably inappropriate.
Q. So you think data sheets are inappropriate?
A. No, that's not what I'm saying.
Q. Let me ask you this, isn't it true that for wetland delineations, which is, I understand, a different process, but for wetland delineations, in fact, the port included all of its data sheets, didn't it?
A. There are data sheets, yes.
Q. And they're in Exhibit 1214, aren't they, if you go through appendix B to Exhibit 1214, wetland delineation

report is page after page of data sheets for each individual wetland as to how it was delineated; is that correct?

A. Sure. Data sheets are required for wetland delineations.

Q. Okay. But there are no parallel documents, are there, so that someone could look and see if they could replicate the same functional assessment as Parametrix came up with for all those wetlands, are there?

A. If you're talking about disagreeing with certain functions of the wetlands that they looked at, they have a list of which functions and how they were rated for every single wetland out there.

Q. Well, in fact, there are forms that are used, aren't they, for performing functional assessments, data sheets that are used for individual wetlands?

A. It depends on what methodology you're using.

Q. The peer-reviewed published methodologies use such forms, don't they?

A. Some of them do.

Q. Could you take a look, please, at Exhibit 2014, all the way in the back?

A. Is that the NRMP?

Q. It's the November 2001 NRMP, page 25 all the way in the back under attachment B, wetland ratings form for wetlands N8, N9 and N10 on the Des Moines Way Nursery

site. I don't know how else to help people to find it.

MS. COTTINGHAM: Which appendix?

MR. EGLICK: Attachment B, it's about this far back, it's got a blue sheet like this.

MS. COTTINGHAM: We don't have blue.

MR. EGLICK: If I may approach, I'll kind of --

MS. COTTINGHAM: Appendix A did you say, subsurface?

MR. EGLICK: Attachment B, so it's pretty far back.

MS. COTTINGHAM: Does anyone know what the attachment is to?

MR. EGLICK: It's attachment B and it is all the way in the back behind the tab that says appendices but it's one of several attachments discussing the new wetland mitigation site that was added in this November 2001 version. If I may approach. The witness has it.

MS. COTTINGHAM: Attachment C. What am I looking for?

MR. EGLICK: B.

MS. COTTINGHAM: I'm going to lean over and look at this board member's appendix.

Q. (Continuing By Mr. Eglick) Isn't what's behind this attachment B in Exhibit 2014 that's called "Wetland Rating Form for Wetlands N8, N9 and N10 on the Des Moines

Way Nursery Site," isn't this an example of the kind of data sheets that are filled out on a peer-reviewed wetland assessment method?

A. This is actually a rating form, it's not a wetland functional assessment methodology.

Q. But it's an example of a kind of form that's used in assessing wetland functions and rating them, isn't it?

MR. PEARCE: Asked and answered.

A. No.

Q. If you could turn to the next page, page 25, excuse me, page 26. Do you see where question 2 is?

A. Yes.

Q. And what does it say?

A. The irreplaceable ecological functions.

Q. Question was asked about irreplaceable ecological functions; is that correct? Now, did you attend a meeting in July 2001 with the Army Corps of Engineers concerning the port's proposed NRMP?

A. I attended a couple of meetings with the Corps; I'm not sure of exact dates.

Q. Well, in particular, didn't you attend a meeting in July 2001 where the discussion was about whether or not the port'S wetland functional assessment could be replicated?

A. I don't recall.

Q. Do you recall your deposition on January 17th, 2001,

where I asked you to read into the record a quote from your notes, Exhibit 164, and I said, "Could you read those into the record, please."

MS. MARCHIORO: Could you identify the page.

Q. Page 195. And your answer was, "1. Functional assessment is not replicateable. She is now looking at the raw data to see if it is similar." Do you recall that?

A. I believe you were talking about something either Gail Terzi or Muffy Walker said during that meeting that they were doing additional review at that time. I'm not sure taking it out of context is correct.

Q. Were they referring to the wetland functional assessment as not being replicateable; is that correct?

MS. MARCHIORO: Objection, calls for hearsay.

A. I don't know.

Q. Well, why don't you take a look, if you would then, in Exhibit 164 to your deposition. Do you have it in front of you?

A. Yes.

Q. And this is your handwriting and your notes; is that correct?

A. Yes.

Q. From an Army Corps meeting on July 11, 2001 that you attended?

A. Yes.
Q. Can you read me the first line with the number 1 next to it.
A. "Functional assessment is not replicateable."
Q. Okay. And was that a reference to some other functional assessment other than the one prepared by the Port of Seattle for its NRMP?
A. I don't know exactly what they were looking at.
Q. Well, were you there to talk about the Port of Seattle's NRMP for the third runway?
A. I actually don't remember the purpose of our meeting at this point.
Q. Well, that's not the question I asked you, Miss Walter. The question I asked you is whether you were at that meeting to talk about the Port of Seattle's NRMP for the third runway.

MS. MARCHIORO: Objection, asked and answered.

MR. PEARCE: Argumentative.

MR. EGLICK: I don't think it was answered.

MR. PEARCE: As Mr. Stock pointed out the other day, an attorney's tone can be argumentative and I think Mr. Eglick should cut it back a notch.

MR. EGLICK: I don't think the problem is in the tone so much as the witness is not giving direct answers to direct questions. The question was very

simple, and that is, what was the purpose of the meeting, wasn't it to discuss the Port of Seattle's NRMP, yes or no.

MS. COTTINGHAM: That's kind of a compound question. So why don't you ask not as compound a question.

Q. (Continuing By Mr. Eglick): Was the purpose of the meeting to discuss the Port of Seattle's NRMP?

A. I believe it was.

Q. Now, did you do any functional assessment yourself independently to confirm the conclusions that the port reached and reported in its functional assessment of wetlands?

A. No, I reviewed their functional assessment.

Q. The question is a yes or no question, did you perform any yourself?

MR. PEARCE: Argumentative.

MS. COTTINGHAM: Mr. Eglick, why don't you watch the tone with the witness.

MR. EGLICK: Well, I will, but I'm on a tight time frame and the witness is sliding away from the question rather than just saying "no" or "yes" and that would be the end of it.

MS. COTTINGHAM: I actually don't think she's sliding away from your question, so why don't you just

ask fairly straightforward questions.
Q. (Continuing By Mr. Eglick): Did you perform any wetland functional assessment yourself?
A. No.
Q. And you have already said that you didn't review any actual raw data from the port's functional assessment; is that correct?
A. Yes.
Q. So in determining that you were satisfied with the findings and conclusions, as you've said in your prefiled testimony, of the port's functional assessment, you relied on things other than, A, review by yourself, your own functional assessment; is that correct?
A. I reviewed their functional assessment to see if I agreed with it.
Q. And did you take that functional assessment with you out on to the site?
A. No.
Q. And gather data at a particular point and compare it to data that the port had collected at a particular point, did you do that?
A. I did comparisons of what I saw in the field.
Q. Did you gather data at a particular point and compare it to what data the port had gathered at a particular point?
A. No.

Q. Now, would you agree that the most stringent monitoring program is not effective if it is not based on adequate performance standards?
A. I believe that performance standards need to be something that you can monitor, certainly.
Q. So is that a yes?
A. I reworded it I guess in terms of how I felt.
Q. Well, would you agree that having a stringent monitoring system doesn't make a performance standard any better, does it?
A. Say that again.
Q. Would you agree that having a stringent monitoring system doesn't make a performance standard any better?
A. Yes.
Q. Now, would you agree that hydrology is the key driver of wetland function?
A. Not necessarily function, but it certainly is the driver of whether you have a wetland or not.
Q. Why don't you take a look at page 28 of that book that you're relying on. Do you still have that copy there?
A. No, you took it back.
Q. You're right, I did. I apologize.
A. What page?
Q. Page 28. Take a look at page 28. You see where the heading says, "Hydrological Function."

A. Yes.
Q. Could you read the first sentence under that section of the book entitled, "Hydrological Function," please?
A. Sure. "Hydrology is most often cited as the primary driving force influencing wetland development, structure, function and persistence."
Q. Go ahead, second sentence.
A. "Consequently, establishment of the appropriate hydrology is fundamental to wetland mitigation through either restoration or creation."
Q. Do you disagree with that?
A. No.
Q. Now, with regard to the performance standards established for the third runway, I believe you refer to a number of performance standards in your testimony, don't you, that you say are comparable to the ones discussed in this book from the National Academy of Sciences?
A. Yes, I have a table in my testimony that cites different things within the NRMP as well as what is listed in one of the appendices of the book.
Q. Okay. And what I'm interested in is if you look at page 6, your prefiled testimony, the end of paragraph 9, which one of these is a specific hydrology performance standard?
A. Three, delineation will establish assurance that wetland

hydrology is there.
Q. Well, I'll ask my question again. Which of these performance standards is a specific hydrology performance standard rather than a related one?
A. In order to delineate wetlands, you must have hydrology as one of those standards, so it's within the wetland delineation.
Q. So you're saying that a delineation is equivalent to a hydrology performance standard?
A. Wetland delineation has hydrology as a requirement and so, yes.
Q. Okay. Well, isn't it true, though, that there are direct hydrology performance standards that can be utilized?
A. There certainly is and, as I testified earlier, establishing a baseline for hydrology is very difficult to do and many years of data can often be unreliable.
Q. And could you take a look, please, at page 223 of the book that you're relying on, appendix E.
A. Yes.
Q. And you see at the top of the page the reference to a performance standard, the first sentence starts "Hydrology."
A. Yes.
Q. Could you read that first sentence into the record, please.

A. "Hydrology must meet wetland definition of the '87 Corps of Engineers wetland manual with saturation to the surface of the soil for 12.5 percent of the growing season."
Q. So that's a hydrology performance standard, isn't it?
A. Yes, through wetland delineation.
Q. Well, it's a hydrology performance standard through checking the saturation of the soil, is it not?
A. It's the way that wetland hydrology is defined within the wetland delineation manual.
Q. Now, what is the hydrology performance standard in the 401 that we're appealing here?
A. We require wetland hydrology to ten inches of the surface within the -- up to April 1st, I believe, which is typical of what the wicking moisture needs to go to the surface of the soil.
Q. Now, you say ten inches of the surface, so, in other words, if you have moisture - I think Ms. Sheldon was talking about this - if you have moisture at 9.99 inches, then that is recognized as meeting the performance standard; is that correct?
A. Yes.
Q. And this performance standard that you just read here in the National Academy of Sciences book at page 223 talks about, doesn't it, saturation to the surface of the soil;

is that correct?
A. It does say to the surface.
Q. Now, did you recommend that the conditions in the 401 include a requirement for preconstruction determination of hydrology for the wetlands at the site?
A. We had a 401 condition like that.
Q. And that's not in the 401 that's currently before the board, is it?
A. There is a condition for gathering preconstruction hydrologic monitoring.
Q. In fact, wasn't the word preconstruction removed between the August 401 and the September 401 that we're here about today?
A. I don't know the exact words that were changed.
Q. Well, would you agree with me that in the August 401 the word preconstruction was included in the requirement for hydrologic monitoring and that it's not included in the 401 that we're currently here today appealing?
A. I don't remember the exact wording.
Q. Well, we can check that later, but your recommendation was, was it not, for preconstruction establishment of hydrology, wasn't it?
A. I think so. I can't remember exactly.
Q. Well, do you recall testifying at your deposition on page 183 that you had recommended, quote, Ecology will require

bimonthly hydrologic monitoring before construction and for at least three years after completion during the wet seasons November through May, end quote. Do you recall that?

A. Yes.

Q. And you would agree, wouldn't you, that understanding wetland hydrology has a very big bearing on what you can and can't do successfully in terms of a wetland?

A. I'm not sure what you mean.

Q. Well, can you do successful wetland mitigation if you don't understand wetland hydrology?

MR. PEARCE: Objection, vague.

MS. COTTINGHAM: Restate your question.

Q. (Continuing By Mr. Eglick) Well, would you agree with this statement, Miss Walter: In terms of mitigation, certainly knowing how -- understanding a wetland's hydrology has a very big bearing on what you can and can't do with it successfully? Would you agree with that statement?

A. It sounds valid, I assume, if it's talking about whether or not you have hydrology. Doesn't necessarily equate to functions.

Q. Would you agree with the statement that it is likely that if you don't have an accurate picture of preconstruction, of preconstruction conditions in a wetland, then that

will inhibit the ability to determine later whether there has been degradation?

A. Potentially.

MR. EGLICK: I don't have any other questions. Thank you.

MS. COTTINGHAM: Mr. Poulin.

MR. POULIN: No questions, Your Honor.

MS. COTTINGHAM: Any redirect?

MS. MARCHIORO: Yes. Thank you.

EXAMINATION

BY MS. MARCHIORO:

Q. Miss Walter, to your knowledge, are there any science-based regionally-standardized methods available to apply to the wetlands on the third runway site for functional assessment purposes?

A. The wetland functional assessment methodology which was developed for riverine and depressional wetlands would apply to wetlands, all of the wetlands, except for the slope wetlands.

Q. And then in table H of the National Academy of Sciences report with the list of the 40 methods.

A. Yes.

Q. Are there any of those methods that are both peer-reviewed and regionally applicable to those wetlands at

the third runway site?

A. No, there isn't.

Q. And, to your knowledge, is the port collecting hydrologic monitoring data to date?

A. Yes, the port will have a full season of wet season data by the end of -- I believe May is the date, cut-off date in our 401, in addition to some other data that they collected prior to the direct requirement within the 401.

MS. MARCHIORO: I have nothing further.

MS. COTTINGHAM: Mr. Pearce.

MR. PEARCE: Very briefly.

EXAMINATION

BY MR. PEARCE:

Q. Can I ask you to look at Exhibit 2015. I believe we had 2014.

MS. COTTINGHAM: I believe that's the one we don't have.

MR. PEARCE: I think it may be 2016.

MS. COTTINGHAM: It could be one of the ones that is very large that you didn't --

MS. MARCHIORO: It's about that big.

MR. PEARCE: I may have misspoke. In fact, I did misspeak. It's 2018.

MS. COTTINGHAM: We do have that one.

MR. EGLICK: Are we doing 2015 or --

MR. PEARCE: 2018.

Q. Could you identify this document for us?

A. This is the wetland functional assessment and impact analysis. It assesses all of the wetlands within the master plan as well as the Auburn mitigation site.

Q. This entire notebook?

A. This entire notebook is the assessment of the wetland functions for the areas that may be impacted.

Q. How does this functional assessment compare to, for example, the WFAM functional assessments in detail?

MR. EGLICK: No foundation, objection. Objection, no foundation.

Q. (Continuing By Mr. Pearce): Are you familiar with the wetland functional assessment methodology?

A. Yes.

Q. Is that the functional assessment method mentioned by Ms. Azous and Ms. Sheldon?

A. Yes.

Q. Have you been trained in WFAM method?

A. I have been.

Q. How much detail do you get out of a WFAM functional assessment?

A. You get quite a bit of detail out of it, but the functions that are assessed in it are similar to, if not

the same, as all of the functions within this functional assessment methodology.

Q. Could you compare this functional assessment in terms of the amount of detail provided with your typical WFAM functional assessment?

A. They are similar.

Q. Are you familiar with the natural resource mitigation plan --

A. Yes.

Q. -- for the project?

A. Yes.

Q. Does it include target functions for the remaining wetlands and enhanced wetlands?

A. Yes.

Q. And you referred to the performance standards in the section 401 certification in your testimony, didn't you?

A. Yes.

Q. What types of performance standards are there in the 401 for wetlands?

A. In both the NRMP and the 401 they look at both wetland delineation as a performance standard to insure that the areas remain wetlands; look at transition of vegetative communities, this is for the down-slope wetlands, to insure there isn't a transition from a wetter community to a dryer community. In addition, there are standards

for the amount of revegetation that must occur and the cover and density of that vegetation in the newly-created wetland areas. I guess I can't think of any others right now.

Q. You mentioned a hydrology function, didn't you?

A. They require for the down-slope wetlands insuring that there's water within ten inches of the surface through the spring months as well as part of the hydrology requirement would be associated with the wetland delineation performance standard.

Q. Do you have any opinion about if those performance standards are met, whether the target functions in the natural resource mitigation plan will be provided?

MR. POULIN: Objection, leading.

MS. COTTINGHAM: I'm going to overrule that.

MR. PEARCE: I'm not sure it's leading, Your Honor. I'm asking her --

MS. MARCHIORO: She overruled it.

MR. PEARCE: I'm sorry. I must need to borrow Mr. Wang's hearing aid.

A. Can you repeat that, please.

Q. I'm not sure I could.

(Question read back by the Court Reporter.)

A. It is my opinion that if the NRMP and the 401 conditions are met, that those functions within the wetlands will be

provided.

MR. PEARCE: I don't have anything further. Thank you, Miss Walter.

MS. COTTINGHAM: Any board questions?

MR. LYNCH: I've got some questions.

EXAMINATION

BY MR. LYNCH:

Q. Thank you for your testimony today.

A. Sure.

Q. If some of this all seems a little bit new to you, I can understand that.

I have a few questions. When the wetlands are being reviewed for functions, are they reviewed individually?

A. Yes, each wetland was reviewed individually. They looked at the type of wetland that they had and then they went through the different functional assessment to insure that they had an accurate picture of each wetland and how it functioned for each of the functions that were assessed.

Q. And then after individual -- I assume this would be after the individual review, but is there then a review of how all these wetlands would enact as a whole?

A. Not necessarily making them compare or act as a whole, but looking at how -- it was almost like a trade-off,

looking at the functions that have been assessed and the potential losses of those functions and how that was going to be or how that would be made up in the mitigation plan. So that then you get this adequate trade-off and insure that there's actually either a net gain or sort of the same, you know, level of functions so that there isn't a decrease in wetland functions.

Q. Would you be able to identify any of the functions in the area of the three creeks as being scarce?

A. I know the port would like to have water fowl habitat as scarce, but, for the most part, because there are many wetlands out there, they all function at some level for every function, but many of those functions are quite low because of the urbanization effects and the impacts from the past encroachments and that type of thing, so off the top of my head, I need to look at the chart, but there are many functions like I think water fowl habitat came out fairly low and several of the other ones on the whole sort of across the board for all of the wetlands that they looked at.

MR. LYNCH: I think that's all my questions.

MS. COTTINGHAM: Do you have any questions?

////

////

////

EXAMINATION

BY MR. JENSEN:

Q. Do you have any breakdown between the slope wetlands and these other wetlands, what percentage of those are going to be filled by the runway project or impacted by the runway project?

A. There is a breakdown within the NRMP. I know that about 23 percent of the filled wetlands are considered slope wetlands, although, I could be wrong on my percentage there. It's a fairly significant amount that is.

MR. JENSEN: That's all I have.

MR. LYNCH: I've got one more question, I'm sorry, I forgot to ask.

EXAMINATION

BY MR. LYNCH:

Q. This is on page 7 of your prefiled testimony at the very top, the very first full sentence. You quote that "Although the NRMP does not provide for monitoring of any specific biologic index, the type of wetland impacts that will occur do not tend to impact a specific species and, therefore, do not warrant that type of monitoring."

I'm not sure how exactly to ask this question so I will just blurt it out and you can just be brutal in your response back to me. When I read that, I kind of got an

inference that because a number of species could be impacted, so it almost seems to me that the more species that you impact, the less need there is for monitoring. So I'm just wondering, is it useful -- are there any sort of indicator species you could monitor for? Is that helpful under these sort of circumstances?

A. That is kind of the idea behind the biological index. In wetlands like this, because they're common, there's no single species that needs this habitat to survive. Like I think I used the example of vernal pools in California. There are many species within vernal pools that can only exist there. In these kind of lowland Puget Sound wetlands, the type of wetland that's there doesn't have any specific species that just needs that type of wetland. So it wouldn't be necessarily appropriate, although, in the past, we have had requirements where they were concerned about, say, a western pond turtle or something like that they would need to make sure there were no detrimental impacts, but we don't have that kind of habitat there.

Q. That's very helpful. Now I understand better. Thank you.

MS. COTTINGHAM: Are there any questions as a result of board's questions.

MR. EGLICK: Yes.

EXAMINATION

BY MR. EGLICK:

Q. Ms. Walter, if 23 percent of the filled wetlands are slope wetlands, that means, doesn't it, that the remaining 77 percent could be assessed pursuant to a peer-reviewed method such as WFAM, doesn't it, what you were talking about earlier?

MR. PEARCE: Lack of foundation, objection, as to what WFAM is and what types of --

MR. EGLICK: Mr. Pearce, I really am going to object because we are running out my clock. Mr. Pearce asked questions about WFAM and now he is asking me to lay a foundation as to what WFAM is.

MS. COTTINGHAM: I'm going to overrule the objection.

MR. EGLICK: Thank you.

A. So that means I have to answer. I believe that if you were to start to use different types of methodologies for the different types of wetlands that you have out there, you would not then develop a comparative baseline, so it would be unusual to do more than one methodology for the different types of wetlands you had out there.

Q. Could you please address yourself to the question I asked. I don't want to appear to be at all badgering you, but I think my question was, if 23 percent are the

slope wetlands, then doesn't that mean the other 77 percent could be assessed using a peer-reviewed method such as the WFAM method that you discussed earlier?

A. If the remaining wetlands were depressional or riverine, then you could have used that, yes.

Q. And, incidentally, the WFAM method that Mr. Pearce asked you whether you are familiar with it, that does involve the use of data sheets, doesn't it?

A. Yes.

Q. And those are, therefore, something that when you present your functional assessment, other wetland scientists, him or her, he or she, can look at it and peer review those data sheets, can't he or she?

A. You could review those data sheets, yes.

Q. I think you answered a question about target functions under the NRMP post construction; do you recall that?

MS. MARCHIORO: Objection. This goes beyond the scope of the board's questions. That question was asked by Mr. Pearce.

MR. EGLICK: I'm sorry, I thought --

MS. COTTINGHAM: This is just related to the board questions.

MR. EGLICK: I understand. I thought that actually came up in a response to a board question as well, because the question was asked about whether the

functions were scarce and there was a whole discussion about that, so --

MS. COTTINGHAM: Repeat your question again.

MR. EGLICK: The question was about targeted functions post construction under the NRMP.

MS. COTTINGHAM: I'm not sure that that was part of the board's questions, but I will allow it in this.

MR. EGLICK: Thank you. I thought it was at least related.

Q. And is it your testimony that targeted functions under the NRMP are equivalent to the functions that existed in the wetlands preconstruction?

A. I'm not sure what you mean by targeted.

Q. Well, you used the term targeted functions, didn't you?

A. Was that in reference to a biological indices?

Q. I think it was in reference to determining whether or not a wetland was successful post construction.

A. Okay. So what was your question?

Q. My question is, if you are talking about a targeted function in the NRMP, is that equivalent to the function that existed in the wetland, preconstruction?

A. It's my opinion that the proposed NRMP adequately replaces the functions and values of the wetlands that are being impacted.

Q. So is it your testimony, then, that a targeted function for a particular wetland in an NRMP is equivalent to the functions that the wetland had preconstruction?
A. I'm not sure there's targeted wetland functions. I know that all of the wetland functions associated with the wetlands that exist there now will be replicated in the proposed projects.
Q. In the same amounts?
A. There's a balance the way that they're looking at them, yeah, I believe it would be the same.
Q. In other words, there's the same percent of a particular wetland function post construction as there is preconstruction?
A. Well, I don't know that you could call a wetland function by percentage. I know that there's been assessment of the wetland functions associated with the impact and there is a proposal to replicate or to replace those impacted functions within the mitigation.
Q. Okay. Let me ask it this way, isn't it true that the particular functions lost for particular wetlands are not necessarily being replaced in kind in basin?
A. There are some changes in basin because of issues with water fowl habitat, but, in general, there really isn't any notable changes besides that that I am aware of.
MR. EGLICK: No other questions.

MS. COTTINGHAM: Miss Walter, can I ask you to define WFAM for me.

THE WITNESS: That's the wetland functional assessment methodology. It was developed by the Department of Ecology and that's the one that's only been developed for the riverine and depressional wetlands.

MS. COTTINGHAM: Thank you.

Do you have any other questions as a result of the board's question?

MS. MARCHIORO: No.

MR. PEARCE: None, thank you.

MS. COTTINGHAM: You're excused.

I think the board would like to take about a 15-minute break and come back at 25 after.

MR. KRAY: Before we take a break, may I raise one issue?

MS. COTTINGHAM: Do you need the whole board?

MR. KRAY: I need you certainly.

MS. COTTINGHAM: Why don't I let the rest of the board members go and we'll stay on the record.

(Pause in the proceedings.)

MS. COTTINGHAM: Is everyone ready to take up this technical issue?

MR. KRAY: We've now been provided the deposition excerpts. We got those at some point during

the testimony of Ching-Pi, I think, or shortly before, so I wanted to let you know we now have those. I've skimmed these and have not started to dive into them, but I think my time estimate is off, and I'll tell you why. For example, the first one I have here is the deposition transcript of the director, Mr. Fitzsimmons. It's a 121-page transcript. ACC and CASE have designated pages 1 through 20, 28 through 31, 35 through 121. My brief review of this indicates that they have designated most of these transcripts, at least a substantial portion, so I need to let the board know I think it's going to take us some time to go through this. I will work as quickly as I can, but I'm not sure they've held true to the intent of going through and finding the key pieces of the transcript, which is precisely what we were concerned about in the first place.

MR. EGLICK: You know, sometimes it's better to wait until you've looked at something before you make the argument, and I don't know how to respond to Mr. Kray because I don't know what his objection is. The depositions of the director of the entire department of the Northwest Regional Office and of Gordon White, who is the head of the shorelands division, the person who signed the 401, are depositions that would typically come in generally for any purpose, whether designated or not,

that's the rule.

We went through --

MS. COTTINGHAM: Why don't I short circuit this a little bit. The requirement to have you highlight the portions that you thought were relevant were so that Ecology could look and see if anything else in the deposition should be included. My purpose in having you highlight them was for the ease of the board and not having you give us the entirety of the deposition. So although Mr. Kray is making the argument, it's really my limitation on you.

MR. EGLICK: I understand that. But the fact is that for the one he is raising, for example, this is the director of the department who is not involved on one issue alone, he is not Erik Stockdale, who is the wetlands guy, he is the director who is involved in a number of different aspects of the decision, and what we did was go through and eliminate portions that we thought were irrelevant, but I think the objection should come to a specific portion that Ecology can say this is not relevant, this is not information that the board should have in front of it, rather than, it's long. I mean, this was a five-year process and the deposition covered a lot of ground. But how does one respond to an objection that says, well, it's too long. It may be long, but

whether it's too long or not depends on the quality of what's been designated and that requires a more specific objection than what we've heard here this morning.

MR. KRAY: My objection is that it's burdensome to even ask us to go through the exercise. And I think, as you pointed out, Ms. Cottingham, my concern is it's burdensome on the board to dump the entire transcript into the record.

MR. EGLICK: Well, I take strong exception to that and I would point out that for ones that were folks who had more limited things to say, the designations are much more specific. Now, I do think it's going to be true that when it comes down to it and the board looks at these, I'm not sure the board is going to be particularly, you know, benefitted by the cut-and-paste approach anyway, but we did it. And here, for example, is Mr. White, and we've gone through specific page by page, line by line, so we have done that.

I think what Mr. Kray has done is picked the one that has the most general applicability to the entire case and he has picked that one and said, oh, my gosh, look what they have done. So I guess what I should do is say, yes, look what we have done on Gordon White, here is a whole list, and here as well, which took a long time to do, and I'm not sure it's going to work out. Here is

Draybeck, same thing.

MS. COTTINGHAM: And have you followed what I set forth --

MR. EGLICK: Absolutely.

MS. COTTINGHAM: -- in having a summary statement for each excerpt that says what it will be used --

MR. EGLICK: To the T, to the T. The work was done, I will tell you, because I did some of it myself over the weekend and had a delightful time not. There you go. There it is, there it is. Here is the designation explaining what it's for, what the purpose is. It's easy to pick on Mr. Fitzsimmons because he is the director so his comes in a little bit differently and covers a lot more ground because he is there on all the topics. But, yeah, we did the work.

Even Ann Kenny's, who I think would be pretty generally applicable, we did the work.

So I take exception to that.

MS. COTTINGHAM: Have you highlighted in the deposition.

MR. EGLICK: I think your order said we had an option, either highlight or give chapter and verse on pages and lines. And we gave pages and lines, and the reason is simple, because what we were concerned about is

if we highlight, then we have to copy what we highlighted and give it to Ecology and, of course, then the question is do you copy in black and white or do you copy in color so that your highlighting color looks different than Ecology's and so on and so forth. So what we gave Ecology was something that they can walk through, it's a road map, and I've done it, so I know it can be done because I sat and did it over the weekend. I checked some others that other people had done and you walk through and you say page so-and-so, line so-and-so to page so-and-so. And we followed it, it was laborious and onerous, but we were asked to do it and we did.

MR. KRAY: If you think it was laborious and onerous in the first place, it's going to be even harder to come back around and figure out where to make the objections and which ones to counter designate.

I just want to point out I picked Mr. Fitzsimmons, perhaps it is the most onerous of all of them, but the pattern is consistent. There may be a few of these where it's fairly light, but -- Mr. Hellwig is a 262-page deposition, and they have designated all of 7 through 262 pages. That's not a substantial cut in the workload for what it's going to take to read through that material. And I think I wasn't trying to pile on, I wanted to give a key example of what my concern is.

My concern at this point is time. I wanted you to be aware I think this is going to be onerous on us. I wanted you to be aware I think it's going to take the board some energy once we get done with this. I have no objection with the format that they have used here. In fact, I concur with Mr. Eglick, I think this format is probably more digestible than the highlighting way of going about it, particularly given the nature of the portions designated. I don't think I need to read 200-plus pages of a highlighted portion. My concern is that the bulk of the deposition transcripts in many instances have been designated which is why we were arguing against this in the first place.

MR. EGLICK: But I think the point has to be not, oh, this is so many pages, I mean, my gosh, we have in here how many exhibits that are for background that we didn't offer but that are things from four years ago and hither and beyond that respondents have insisted be put in the record. What we have offered are excerpts from depositions of the key people in Ecology who made the decision this year, or within the last 12 months anyway, that are before the board. If there is something in these designations that respondents say, oh, that's just irrelevant, there is some good reason why that is not helpful to the board, something that didn't have to be

done for all of this background stuff that came in, we'll be happy to argue it. But it's a little bit tough to hear counsel say, well, it's a lot - it's really not that much compared to a lot of other things - without any specific, I mean, if there is specific objections, we'll meet them, maybe we'll agree to take them out, but we did the work to go through and say should that go in, should that not, and I think it's clear we did that. And, you know, it's a little late to say, gee, we don't think the board should be burdened with reading. We haven't started that one. What we have done is said this is the key material.

MS. COTTINGHAM: Mr. Pearce.

MR. PEARCE: My concern is, you know, no matter how, it's a lot of material, it's a lot of material, and my concern is getting a counter designation back to you in 24 hours, you know, and we have a lot of witnesses to get ready for the board, and I would beg for an extension from the board. I have not had the opportunity to read through them so I don't know what would be appropriate, but --

MS. COTTINGHAM: I am willing to give a little more time on this. And when all of it is said and done, what I may have is Eric Lucas, our AAJ, come back through and to see if we need to narrow it in any way, shape or

form and how we'll deal with the objections.

MR. KRAY: My initial estimate was unrealistic given what we have now been provided and I will work diligently to do it as quickly as possible.

MR. PEARCE: -- to get it done before the end of the hearing to get to the board?

MS. COTTINGHAM: Mm-hmm.

MR. EGLICK: I guess the question is how much time are the respondents going to have because then we'll need -- the way the system is set up and we set up the form based on the board's order is we list our excerpts and so the forms all have a place where we list them, then under that there's a portion that says counter excerpts of respondents, because the order said if they wanted things in in response to what we put in, fine, and then objections of respondents, and then we're supposed to respond, under 1(c) on the first page of the form is "Basis for admissibility if challenged by objection." So if we are going to get all this done by Friday, and it's Monday, there needs to be enough time for us to respond to whatever these folks come up with. And I'm not saying don't give them more time, but we need some sort of schedule so we all know what we are doing.

MS. COTTINGHAM: Why don't we have an assessment back from you on Thursday morning.

MR. KRAY: Sounds good. Thank you.

MS. COTTINGHAM: There may be the opportunity to keep the record open for the sole purpose of this, plus what we need to resolve in terms of the admissibility of the evidence still outstanding.

MR. EGLICK: Okay.

(Whereupon, a recess was taken.)

MS. COTTINGHAM: We'll go back on the record.

MR. EGLICK: After thinking about it, I realize if we don't hear back from Ecology and the port until Thursday morning as to what their objections, counter proposals are with regard to the depositions, and then we're going to do closing on Friday, we may end up in a situation where we don't know what we can refer to in closing, and that would be a bit of a sticky wicket. In other words, we wouldn't know what portions we could refer to. Now, one thing we could do is assume the board can, you know, sort it out later, because it's not a jury trial, but that's the issue that comes up because of the extension of time.

If we are talking about extending closing to some other time, I guess it's not a problem, but otherwise it is.

MS. COTTINGHAM: We're not talking about that.

MR. EGLICK: I didn't think so.

MS. COTTINGHAM: Why don't we cross that bridge when we get to it on Thursday. I was going to ask the parties whether or not Thursday morning, before we started at 9:30, whether it would be possible to have a conference among all the attorneys to deal with some of the pre and post hearing matters that need to be discussed, things like the evidentiary status of all the evidence, the issue about the publication of the depositions, and one other matter I want to add on the table, and that is, the post hearing filing of draft findings of fact and conclusions of law.

MR. EGLICK: Okay. We would be happy to have the conference, I guess. If we just get their objections Thursday morning, we're not going to be in a position to respond, depending on what they are -- it could be something where we have to go back and do some reading and checking ourselves, so certainly we can deal with the other topics. That one is going to be tough if we just get their material handed to us and then we go into a conference on it.

MS. COTTINGHAM: Why don't we meet Thursday to talk about not the substance of any of this, but to lay out my ideas and come up with perhaps a process. Why don't we meet at 9 o'clock on Thursday morning.

MR. EGLICK: That makes sense. Thank you.

MS. COTTINGHAM: And with that, we are back on the record and we have a new witness before us. Miss Marchioro.

ERIK STOCKDALE, having been first duly sworn on oath or affirmed to tell the truth, the whole truth and nothing but the truth, testified as follows:

EXAMINATION

BY MS. MARCHIORO:

Q. Please state your name and spell it for the record.

A. Erik Stockdale, E-R-I-K S-T-O-C-K-D-A-L-E.

Q. Mr. Stockdale, did you file direct testimony in this matter?

A. I did.

Q. Would you please describe your educational background.

A. I have a double major in aquatic biology and environmental studies from U.C. Santa Barbara, and I have a master's in marine studies from the University of Washington.

Q. Do you have any professional certifications?

A. Yes, I am a certified professional wetland scientist.

Q. And have you had any training in wetland science since you've obtained your master's degree?

A. Yes, I have taken several hundred hours of professional

training and development in wetland delineation, function assessment, hydric soils, plant identification, mitigation design, environmental law and other course work.

Q. And how are you presently employed?

A. I am a senior wetland specialist with the Washington State Department of Ecology.

Q. How long have you held that position?

A. Since October of 1998.

Q. And did you have any position with the Department of Ecology prior to that date?

A. Yes, I was a wetland specialist from October of '92 until October of '98.

Q. And did you have any wetlands professional experience prior to joining the Department of Ecology?

A. Yes, I was a resource planner with King County for six and a half years where my primary duties related to wetland management in King County.

Q. And what types of wetland projects have you worked on while employed by the Department of Ecology?

A. I have worked on several hundred projects while at Ecology ranging from small projects, small single-family development, to large subdivisions, commercial developments, industrial facilities, development in the coastal zone in areas under the Shoreline Management Act.

I have appeared before EFSEC testifying regarding several energy projects including the Sumas Energy Facility and the Olympic Cross Cascade Pipeline and other similar projects.

Q. And is a copy of your resume' attached to your testimony?

A. Yes, it is.

Q. Could you please describe your responsibilities with regard to the port's application for a 401 certification.

A. I have worked on this project since its beginning, first time it was under review at Ecology, and I've worked on it since then. I have been responsible for and have been the lead technical staff reviewing the adequacy of the natural resource mitigation plan with respect to impacts to wetlands and aquatic resources.

Q. And will the port's project result in the filling of wetlands?

A. Yes, the project is anticipated to fill approximately 19.29 acres of wetlands. Of that there is approximately .92 acres of prior converted croplands that are affected in the Vacca Farm area. Those are agricultural wetlands that are not regulated by the Army Corps of Engineers. The public notice mentions that the state has jurisdiction over those wetlands that are over and above subject to regulation by the Army Corps of Engineers.

Q. And do you know what percentage of the wetlands that will

be filled are slope wetlands?

A. Yes, approximately 77 percent of the wetlands that are being affected by this project are slope wetland and 23 percent are either depressional or riverine.

Q. And was Ms. Walter incorrect when she stated that 23 percent of the wetlands were slope wetlands?

A. Yes, she actually had that reversed.

Q. And what is the condition or the quality of the wetlands that are going to be filled by the port?

A. If you don't mind, I'd like to have you take a look at this. All of the wetlands that are affected by this project are in an urban watershed.

MS. COTTINGHAM: Do we have this as an exhibit in front of us?

MS. MARCHIORO: It's an attachment to the direct testimony of Dr. James Kelley submitted by the Port of Seattle.

MR. EGLICK: Objection, no foundation.

MR. PEARCE: I don't believe we are offering for --

MS. MARCHIORO: It's a demonstrative exhibit that was prepared by the port's experts.

MR. EGLICK: Well, there --

MR. POULIN: There's no foundation to the demonstrative exhibit.

MR. EGLICK: Right. Where was it taken, when was it taken, that sort of thing, what is it demonstrating?

Q. (Continuing By Ms. Marchioro): Mr. Stockdale, are you familiar with how this demonstrative exhibit was prepared?

A. Yes.

Q. Could you describe how that demonstrative exhibit was prepared?

A. These two panels side by side are a GIS-generated graphic that you have as an exhibit. In your document it's a series of fold-out maps. This is a breakdown of this map. And what it indicates and what it portrays are the current conditions in the Miller Creek basin with Miller Creek draining in this area through this residential neighborhood. And then the same area depicting the project after the embankment is built. The wetlands that are affected, the slope wetlands that are affected by the project are in this location right here.

Q. And do you know where the data was taken to develop those demonstrative exhibits?

A. Yes, the wetlands that are superimposed on this ortho photo were field surveyed from the wetland delineation that was approved by the Corps of Engineers.

Q. Is that an accurate depiction in your opinion of the

wetlands that are shown at the Port of Seattle site?

A. Yes.

Q. So would you please, again, describe what are the impacts that are occurring to the wetlands, the quality of the wetlands at the Port of Seattle site?

A. Right. I was describing that the wetlands that are being affected by this project that are in an urban and agricultural setting and have been affected by human activity for decades. So while there are wetlands present in the basin, the level of function that they are currently providing are, in some cases, significantly depressed by the chronic human activity in the watershed.

Q. What is the port proposing as mitigation for the impacts to the wetlands?

A. I would ask you to turn to the table on page 4-13 of the natural resource mitigation plan.

Q. 2014.

MS. COTTINGHAM: What is the table again?

THE WITNESS: It's on page 4-13.

A. What this table summarizes is the various in-basin and out-of-basin wetland mitigation activities that are proposed for this project. There is a combination of wetland restoration and enhancement in basin as well as buffer enhancement, that is, the riparian corridor restoration project, as well as wetland preservation.

The wetland restoration totals approximately 12 acres and the wetland enhancement totals 22 acres, buffer enhancement is approximately 55 acres, and the wetland preservation is 23 and a half acres. That totals a little over 112 acres of in-basin mitigation.

In addition to the in-basin mitigation, there is an out-of-basin mitigation located in the Miller Creek basin in Auburn. Miller Creek is a drainage that drains down SR-18, down Peasley Canyon and then it drains roughly to the north and it joins the Green River fairly close to where the in-basin mitigation -- excuse me, the out-of-basin mitigation is located. That out-of-basin site is a combination of wetland creation and enhancement and buffer enhancement that totals 178 acres.

Q. And, in your opinion, will the port's mitigation plan result in a net environmental benefit?

MR. POULIN: Objection, leading.

MS. COTTINGHAM: I'm going to overrule the objection.

A. Yes, I believe it will.

Q. And why do you have that opinion?

A. Well, to be fair to the complexity of the plan, I would have to walk you through a lot of detail that's contained in the NRMP, and we don't have time for that, but this table was developed to try to provide a snapshot, if you

will, of the complexity of the plan. The in-basin restoration is going to provide a very significant amount of restoration in an urban watershed. In my prefiled testimony I mentioned that the riparian restoration that you see along Miller Creek right here, the restoration is an average of 100 feet on either side of Miller Creek, and 100 feet was actually measured from the outside edge of any wetlands that are associated with the creek, so the buffer totals an average of 100 feet on either side of the creek. And that unbuilding, if you will, of this urban watershed, totals 32 percent of the linear length of Miller Creek. And that unbuilding, as I mentioned in my testimony, is removing approximately 75 homes that occur within that creek and the removal of approximately 4.3 acres of imperviousness within that 200-foot buffer. That also includes the removal of septic systems in those homes and removal of structures and other -- the removal of invasive species and weedy species and so forth.

Also the in-basin mitigation also encompasses the restoration and enhancement of the Vacca Farm area of Miller Creek, and it's also going to decrease the present water fowl hazard condition that exists at the Vacca Farm and on the southern end of the runway in the Tyee Valley Golf Course where water fowl use the golf course.

Now, what you don't see as part of the natural

resource mitigation plan is the -- and I believe you've heard testimony about the stormwater management plan for the airport, where at some point in time, the entire airport is going to be retrofitted and its stormwater facilities are going to meet current standards. That will benefit the hydrologic conditions in Miller Creek.

Q. Now, Mr. Stockdale, did you provide a reasonable assurance opinion to Ann Kenny?

A. Yes, I did.

Q. And what was that opinion provided to Ms. Kenny?

A. I recommended to Ann Kenny that after spending the amount of time that I did reviewing this project, that the natural resource mitigation plan provides reasonable assurance that state water quality standards are going to be protected.

Q. And was that opinion rendered in September of 2001?

A. And in August of 2001, correct.

Q. Has the port's mitigation plan changed since September of 2001?

A. Yes, there are actually a couple of additions that were made to the natural resource mitigation plan. There was the addition of the mitigation at the Des Moines Way Nursery that you see up at the top, and there were also some refinements to the mitigation plan at the Lora Lake area where approximately an acre of fill along the

shoreline of the lake is going to be removed. Those are the two main changes that were made to the plan.

Q. What effect on your reasonable assurance opinion did those changes have?

A. Well, we made the reasonable assurance determination absent those additions to the plan, and I had reasonable assurance there and, if I could say, I have more reasonable assurance now because there is more mitigation that has been added to the plan since then.

Q. And how does Ecology evaluate whether a mitigation plan adequately compensates for impacts to wetlands?

A. The process that staff at Ecology use to evaluate mitigation plans is outlined in several of our guidance documents, but the process essentially entails a determination of what constitutes ecological equivalents between what is being lost and what is being gained as a result of the mitigation process.

But if I could, I would probably break it down into five steps. The first step that is taken is to determine what impacts are occurring from a project. I think that only stands to reason. And the way that that occurs is you start with a wetland delineation so that first you figure out what are the wetlands that are being affected and you come up with an acreage estimate of what is in the study area and then what is being affected by the

project.

The second part of that is to rate those wetlands with Ecology's rating system or something similar so that you have a sense of what type of wetlands are being affected. But, more importantly is the development of a function assessment for the wetlands that are being affected so that you can zero in on what are the functions that are being lost as a result of a project.

The second step in that process is to then determine what mitigation is necessary to offset those impacts and what opportunities exist within the basin to offset those impacts, what opportunities are there to provide meaningful and sustainable mitigation within the basin.

Once those two steps are done, the third step is applying the mitigation ratios. And the purpose of applying mitigation ratios is to establish a common form of currency, if you will, that you can use to compare various mitigation activities. And the reason that that's important is because there are different forms of mitigation, wetland mitigation. Wetland enhancement takes place within an existing wetland where, let's say, a wetland that is missing the plant community that you would expect it to have, like if it was a formerly forested wetland and the goal is to revegetate it into forest wetland, that being done in a wetland doesn't

increase the acreage of the wetland but increases the level of functions performed in that wetland. That activity is given a lower credit than wetland creation or restoration.

So once you apply the ratios, you come up with a common currency, which is what we would call a mitigation acreage credit.

The fourth step is then to determine whether the mitigation package that has been developed for the project, if the mitigation credits that result from that package offsets the impacts from the proposed project.

And once that determination is made, then the fifth step is to look at the natural resource mitigation plan, in this case, and make sure that the various elements of that plan have been well thought out, the engineering work has been done in terms of creating plans, that the planting plans match the anticipated elevations in hydrology in a given area, to make sure that the performance standards are addressed, the goals that are anticipated are being designed for, the mitigation, the contingency measures have been identified, and that an adaptive management approach is incorporated into the monitoring. That is the step at which Ecology brought Miss Walter in for review and assistance.

Q. Now, was that analysis applied to the port's mitigation

plan?

A. Yes, it was.

Q. Starting with step 1, how did Ecology evaluate the wetland impacts of the port's project?

A. Well, several of these steps were run in tandem through the life of this project because the port didn't have the -- they didn't have access to all of the properties in the buy-out area that they now have access to. So as the wetland delineation was being done on properties that they were acquiring, the function assessment data was being collected.

The function assessment method that was completed for the project is based, in my opinion, on best available science for this application and Ecology accepted the accuracy and applicability of that method. Similarly, while we weren't involved in verifying each wetland that was being delineated, the Corps of Engineers spent a considerable amount of time with the applicant in the field and we accepted the Corps of Engineer's verification of the wetland delineation in terms of its accuracy.

Q. Mr. Stockdale, is it common practice for Ecology wetland staff to accept the functional assessment based on best professional judgment without field checking the underlying data?

A. Generally, yes, we do accept the work that consultants provide. In this case, I reviewed the function assessment method and especially the narrative descriptions of the various wetlands that are described in the function assessment report, that narrative description is what is being discussed before you as best professional judgment. We can point to that in a minute. But that narrative does correspond to my independent field review of the wetlands that are being affected.

So, in this case, I didn't see a problem between what was being described in the function assessment and what my field review of these wetlands is.

Q. Now, with respect to step 2 that you described earlier, how was that step applied to the port's mitigation plan?

A. Well, three-plus years ago, I believe, before the port had access to the entire buy-out area, the wetland impact assessment based on the best detection methods that were available to the port at the time, because they didn't have physical access to many of the properties, the wetland impact estimate was about ten acres. I believe that that was the acreage of impact that was the first estimate in the first public notice issued by the Corps of Engineers.

Now, that changed subsequent to field delineation of the properties that were subsequently purchased. But at

that time the impact was about ten acres and the primary mitigation proposal was the out-of-basin mitigation in Auburn. It was a fraction actually of what is in the natural resource mitigation plan today.

The port made the case that we had to consider the out-of-basin mitigation and accept the out-of-basin mitigation for several reasons; one, they cited the FAA's concern and regulations with respect to bird-strike hazard and especially the creation of new bird-strike hazard or attractants within 10,000 feet of the runway. And we weren't questioning the concern over that, but we've worked on other projects where mitigation was being done within 10,000 feet of active runways. We had just approved the wetland mitigation bank at Paine Field, and one of the wetland mitigation sites is basically at the foot of the runway, and we made a case to the port that not only is it possible to provide wetland mitigation in basin, but it can be done in such a way that it doesn't increase the bird-strike hazard within that diameter or that radius, and, in fact, the mitigation that could be done in basin primarily at the Vacca Farm and at the golf course would actually decrease the current hazard that those areas have with respect to attracting water fowl.

So we spent a fair amount of time with the port and discussing with them that not only was there a need for

in-basin mitigation, but that was what we needed to see in the plan, so from that point we did see some in-basin mitigation being considered and we worked with the port and their consultants and that's when the Vacca Farm site began to be developed, or the concept was developed, that the concept at the Tyee Valley Golf Course was further refined as well as the riparian restoration on Miller Creek.

Q. Now, with respect to step 3, what credit did Ecology give to the port's mitigation plan?

A. I think there's been a fair amount of confusion about how Ecology applies its standard wetland mitigation ratios with respect to this project in particular, so what I'd like to do is to ask you to turn to page 6 of my prefiled testimony.

This table, table 1, and then table 2 and 3 at the following page, summarizes how we applied our standard wetland mitigation ratios. Now, there are several ways that we can apply mitigation ratios, and I mentioned how mitigation ratios are applied differentially depending on the type of mitigation action that is proposed. And one way is to apply the ratios the way that it's described in the NRMP on page 4-13. And applied that way, and I have discussed that in paragraph 8 of my prefiled, once you apply those ratios, you would expect the mitigation

credit to be double the goal that you're -- you would want it to be double the acreage of impact that is being, that will result from that project.

Now, another way to apply it, and that's the way that I have outlined it in table 1, is the standard way that we would say that we apply it at Ecology and, for example, as far as in-basin mitigation, under creation and restoration, we agree to a ratio -- actually, I agreed to a ratio of 1 to 1 for the removal of fill at Lora Lake, the removal of fill at the Des Moines Way Nursery, the removal of fill at wetland A-17.

The reasoning behind that ratio is that there's little question in my mind that that restoration action is going to be successful, because that fill is being removed from former -- from areas that once used to be wetlands. So the risk associated with that action is very low.

You compare that to wetland enhancement, and the discount rate, if you will, is 4 to 1, so the enhancement at the Des Moines Way Nursery, at Vacca Farm, the Miller Creek wetland enhancement, the enhancement of the fairways at Tyee Golf Course, the portions of the fairways that are wetland, because that activity is occurring at current wetlands, that activity is discounted at a rate of 4 to 1. So on and so forth.

So of the in-basin mitigation, the creation and restoration is 9.9 acres, and when discounted, results in 6.6 acres of mitigation credit. The in-basin wetland enhancement is 22 acres, 22.32, but when it is discounted, results in 5.56 acres of mitigation credit.

Then the riparian corridor restoration is close to 55 acres, but because it is discounted at a rate of 10 to 1, the mitigation credit is 5.53 acres of credit. And the in-basin preservation is discounted at a rate of either 10 to 1 or 20 to 1, resulting in, although it's 23 and a half acres, it results in 1.29 acres of mitigation credit. That total is of the 110.7 raw acres of restoration and enhancement that is being done in basin, it is discounted and results in 18.98 acres of restoration, of mitigation credit.

When you compare 18.98 to the impact of 19.29, you end up with an overall mitigation ratio of .98 to 1.

Now, granted, this ratio includes the mitigation that was added after we approved the certification, okay, but as I will get into it, I will explain to you why that's in addition to what we certified was giving us reasonable assurance.

Now, similarly, the out-of-basin mitigation totals 65.38 acres, and is discounted 21.45 acres of mitigation credit, resulting in a net ratio of 1.11 to 1.

Now, when Ecology applies its mitigation ratios, the goal, after you discount the various activities, is to end up with a net ratio of 1 to 1, in this project is resulting in a net ratio of 2.1 to 1, so the natural resource mitigation plan is providing double the amount of mitigation than what strict application of our wetland mitigation ratios would call for. And the reason for that is that we don't judge the accuracy or the adequacy of a mitigation plan solely based on ratios, but I think what I tried to do is to give you a shorthand summary of step 3 in our mitigation evaluation process.

Q. Now, Mr. Stockdale, were you present when Ms. Azous testified?

A. Yes, I was.

Q. And do you recall her testimony regarding the loss of wetland function in basin?

A. Yes.

Q. Do you agree with that testimony?

A. Well, I agree with part of it and I disagree with part of it. Miss Azous pointed out that there are four main functions that are being lost primarily in slope wetlands as a result of this project. And the function assessment supports that because her conclusion is based on the function assessment. And they include groundwater exchange, the trapping of sediments and nutrients, small

mammal habitat, and pasturing bird habitat. What I disagree with is that the in-basin mitigation proposal doesn't adequately mitigate for those lost functions.

Q. And how does the mitigation proposal mitigate for those lost functions?

A. Well, my prefiled testimony, especially with respect to the value of the in-basin riparian restoration, I outline six functions, six key functions that are provided by riparian zones, that starts on page 13 of my prefiled testimony, on page 24.

And without reading it to you, they include the production and delivery of large and small woody debris, food chain support, regulation of nutrient sediment and pollutant input to streams; moderation of water temperature and creation of thermal micro climate, habitat for wildlife, and, in this case, migration and dispersal corridors for wildlife.

And I think you can, by looking at this exhibit, you can see that the riparian corridor that is going to be reestablished in this area as a result of this project is a condition that once existed in this area but has been absent for many decades. So this restoration project is bringing back something that isn't being lost by this project but certainly has been missing in the affected basin for many years.

Q. And that's with respect to the riparian corridor and the last migration dispersal corridor?

A. That's correct. Now, in addition to the riparian restoration, as I mentioned, there is in-basin wetland restoration and enhancement. And if I could, I would like to show you some photos. I don't think you've seen at this point many photos of what is being lost. But the current condition at the Vacca Farm, this is the current condition.

MR. EGLICK: Objection, no foundation.

MS. MARCHIORO: I'll ask some foundation questions.

Q. Mr. Stockdale, what is the poster board you are referring to, what are those things?

A. These are photos that are attached to my prefiled testimony and these are photos taken of the Vacca Farm. The top photo was taken in November of '98, the bottom photo was taken, I believe, in March of '97 or April of '97.

Q. Were you the individual that took the photographs?

A. I took the top photo, Mr. Kelley took the bottom photo.

MR. EGLICK: We'd object to the -- can I voir dire.

MS. COTTINGHAM: You may.

MR. EGLICK: Were you present when Mr. Kelley

took the bottom photo?

THE WITNESS: I don't know if I was present that day or not. I visited the site dozens of times with Mr. Kelley and I don't recall if he took that photo when I was present or not.

MR. EGLICK: Well, I object, lack of foundation for the photo that he didn't take and he doesn't know whether he was present when it was taken and I don't know how he can then know when it was taken.

MS. MARCHIORO: I can ask another question.

Q. In your numerous visits to the Vacca Farm, does the photo on the lower half of that story board represent an accurate depiction of the Vacca Farm that you saw on your site visit?

MR. EGLICK: Objection as to the form of the question, vague. If there were a specific date, month, year, site visit, that might be another thing, but this question kind of covers a span, I think we are talking about four years, and doesn't establish, for example, what the site looks like today, for example.

MS. COTTINGHAM: I think the board is going to overrule the objection and give it due weight. While I understand your objection, we will allow it in.

Q. And you were describing --

A. I had just finished talking about the riparian

restoration, I was starting to talk about the in-basin wetland restoration and enhancement.

At Vacca Farm in the Miller Creek basin, these conditions are the conditions that the farm was in at the time that the application was submitted to Ecology, these are the current conditions. The farm, and what I mean by the farm, the areas in pink up here, this is what the Corps of Engineers determined to be prior converted. If you recall, I believe from Ms. Sheldon's testimony, what a prior converted cropland is is a wetland that meets the three parameters in our wetland delineation report but doesn't pond for more than two weeks during the growing season and is in agricultural use.

And that exemption was something that actually was added through the Farm Bill in Washington, D.C. in the early '90s, and it's not based on science, but because that area is a wetland and meets our criteria but is exempt from federal regulation because of that, so the Corps of Engineers is precluded from regulating it even though it is a wetland, a jurisdictional wetland.

Now, Miller Creek runs in a ditch that runs along in this location. The biological opinion that was written by the National Marine Fisheries Service describes for you the degraded condition of the ditch that was excavated for redirection of Miller Creek.

And wetland A-1 is this wetland right in this location here. But the majority of the Vacca Farm condition is depicted in these photos.

This is a photo of Miller Creek right here running in this ditch in this direction. Lora Lake sits right behind these trees right here. And this is Lora Lake right here.

Now, the Vacca Farm field, the largest field, and most of it is in pink, was used as a pumpkin patch, also used as a vegetable farm, but when I was there, this was taken just after pumpkin harvest and this is the disposal of the pumpkins that weren't sold at the stand, which was on Des Moines Memorial Boulevard right in this location.

And the irony to me was that this was an active bird-strike hazard attraction, they were disposing of pumpkins in that location. There were hundreds and hundreds of crows and starlings swarming this area at the time.

So although we have wetlands in that area, the conditions are highly altered, the farm is actually a chronic source of non-point source pollution to Miller Creek. There isn't a buffer, an adequate buffer on Miller Creek. The agricultural activities have depressed the level of wetland functions in that area.

Q. Now, with respect to step 4, what was Ecology's

determination regarding whether the proposed mitigation offset the impacts of the port's project?

A. I mentioned that the natural resource mitigation plan evolved over a period of three years, and it began as a plan that was, in my opinion, highly inadequate to a plan today that is providing double the amount of mitigation, and certainly in terms of raw acreage, tremendous amount of acreage compared to the amount of the acres of impact. And when we reached a point where I felt that the functions that were being affected were adequately mitigated, we were at a point where we approved that part of the port's project.

Q. Now, with respect to the final step, what was Ecology's conclusion regarding the success of the port's proposed wetland mitigation plan?

MR. POULIN: Objection, leading.

MS. MARCHIORO: I asked him what the conclusion was or --

MR. POULIN: With respect to this successful plan, which I believe is assumed. Question suggests an answer.

MS. COTTINGHAM: Restate your question.

Q. (Continuing By Ms. Marchioro): How did Ecology apply step 5 to the port's mitigation plan?

A. Once we agreed on the package of the various mitigation

elements, and we therefore determined that what was in the natural resource mitigation plan was the realm of actions that we were working towards to offset the impacts, we then turned our attention to the performance standards, to the monitoring plan, the contingency measures, and we built in numerous safeguards, if you will, to insure that the plan is going to be adequately implemented so that the impacts are adequately mitigated.

What's unusual about this plan, Miss Walter mentioned that there's a 15-year monitoring period for all of the restoration, all the mitigation elements, and while that's desirable and certainly the National Academy of Sciences report talks about the need to monitor some projects for a long period of time, it to date has been unusual for Ecology to require that length of a monitoring period.

So during that time if a situation arises where we are not meeting the performance standards that are stipulated in the mitigation plan, then we will be able to take the corrective actions necessary to move in the direction that the restoration actions are supposed to be. Each plan is going to be on a trajectory, if you will, for reaching certain plant survival standards at first; the survival is 100 percent of all the planted material. And if you talk to landscape people, they

think that that's an unacceptable standard because there is always mortality associated with plantings. None the less, that's a very strict standard.

So once we get 100 percent survival after year one, the plant establishment goals switch to a percent cover standard, so that in time, the idea being that, for example, for the establishment of trees, you're not going to get a forested condition within the first five years, but the idea is if you can get 30 percent canopy closure after, and I don't recall the standard that's in the plan, but if we're reaching certain percent cover standards at years three and five, the idea is that that plant community is moving in a trajectory to reach the goal of meeting that standard which is establishment of forested wetland.

Now, the last thing or another thing that comes to mind is that Ecology has obtained the -- we are getting the port to pay for three to five positions at Ecology that are going to be dedicated to provide oversight of this project. And that was desirable for several reasons. One is because we don't have the resources to provide the kind of oversight that this project is going to require. But given that that oversight, which is unprecedented, we are going to be keeping a very close eye on this project, so the -- one of the failures that

Ecology has brought to the table in terms of mitigation compliance is a lack of adequate oversight, and that was highlighted in our recent wetland mitigation report. That is not going to be the case here because we are going to have the staff necessary to insure that this plan is adequately implemented on the ground.

Q. Now, is there a hydrologic performance standard for wetlands in the 401 certification?

A. Yes.

Q. And can I have you look at Exhibit 1, the 401 certification from September, at page 8, please, do you have that?

A. Yes.

Q. Item K?

A. Item K.

Q. What is item K?

A. Would you like me to read it?

Q. Yes, please.

A. Item K on page 8 of the September certification reads, "In all areas where soil saturation is being monitored, the performance standards shall include the following conditions." And then, "Other wetlands with predominately mineral soils shall have groundwater within the upper ten inches from at least March to mid-April in years of normal rainfall."

Q. Were you here when Miss Walter testified?
A. Yes.
Q. And do you recall when she was asked a question about appendix E in the book "Compensating for Wetland Losses Under the Clean Water Act"?
A. Yes.
Q. And the performance standard with respect to hydrology, do you recall that question?
A. Yes.
Q. Let me ask you a question. Is the performance standard that was discussed with Miss Walter similar to the performance standard included in the 401 at item K?
A. The performance standard in the report states that "Hydrology must meet wetland definition of the 1987 Corps of Engineers' wetland delineation manual with saturation to the surface of the soil." And the performance standard in paragraph K states that "The groundwater must be within the upper ten inches." Both of those performance standards are the same, because although one calls for soil saturation to the surface and one calls for groundwater within ten inches, in the wetland delineation manual, the way we measure for soil saturation to the surface is we dig a hole and we measure, we let the groundwater equilibrate in the hole and then we measure the depth down to the water table,

and if you measure down and if the water table is at ten inches, you can presume that that water table is wicking the water up to the surface through capillary action and you can assume that the soil is saturated to the surface, so that's actually how you implement that performance standard in the delineation manual. So that is an identical performance standard.

Q. Mr. Stockdale, do you recall Ms. Azous' testimony regarding in-basin mitigation opportunities?

A. Yes.

Q. And do you agree with that testimony?

A. I agree with part of it and I disagree with part of it. Ms. Azous stated that there are other opportunities for in-basin mitigation, which there are, but that's not the important question. As I mentioned earlier, it's important to look for opportunities in a basin that are sustainable and will provide adequate mitigation for the impacts that are being sustained by the project.

But given that, the other question is, is additional mitigation necessary, because while there are other opportunities in the basin, there are few opportunities that provide the kind of mitigation that is proposed in the natural resource mitigation plan. That said, the proposal that we have approved does mitigate for the impacts from the project and, therefore, in my opinion,

additional mitigation isn't required because it's not necessary to mitigate for impacts in the basin because those impacts will be adequately mitigated for by the NRMP.

MS. MARCHIORO: I have nothing further.

MS. COTTINGHAM: Mr. Pearce.

MR. PEARCE: Very briefly.

EXAMINATION

BY MR. PEARCE:

Q. Could you just explain some of the colors on the map for us, Mr. Stockdale. Are existing conditions on the right?

A. Yes.

Q. And what are the light-green colors?

A. For example here, this light green are the existing wetlands that follow Miller Creek. It's the same color that is displayed on that map.

Q. Okay.

A. This is the wetland 43, for example, that's an existing wetland.

Q. Okay. And what's the darker or olive green?

A. This is the riparian buffer that is going to be reestablished in this area as a result of the natural resource mitigation plan.

Q. And how much of those in-basin wetlands are being

restored or enhanced, if I could refer you to table 4.1-3 of the NRMP.

A. Your question was --

Q. How much of those in-basin wetlands will be restored or enhanced as a result of the mitigation plan?

MR. EGLICK: Objection as to the form of the question; compound.

MR. PEARCE: Restored or enhanced. I don't think it was compound. I will restate.

Q. Could you look at table 4.1-3.

MS. COTTINGHAM: What exhibit?

MS. MARCHIORO: 2014. This is on 4.1-3.

MR. PEARCE: Table 4.1-3 on page 4-13 if that helps.

Q. How many acres are listed as restoration there?

A. There's 11.95 acres of restoration. Now, 2.05 of those acres are what are being -- those are the temporary impacts, those are impacts to wetlands from construction-phase stormwater ponds that are going to be in place for one to three years, after which they're going to be removed and those areas are going to be revegetated, so we're treating those separately. So not counting those, if you subtract 2.05 from 11.95, those are the 9.9 acres in table 1 of my testimony.

Q. And the wetlands that are being enhanced, how many acres

there?
A. 22.32 acres.
Q. And could you remind us how many wetlands are being, new wetlands are being created off site at the Auburn site?
A. There are 30 acres of wetlands being created at Auburn and 19.5 acres of wetland enhancement.
Q. If I could refer you back to the chart there, what does the gold color represent?
A. This?
Q. Yes.
A. This is the embankment.
Q. I'm sorry, the darker gold.
A. Here?
Q. Yes.
A. These are the wetlands that are going to be filled by the embankment.
Q. You were talking about the table at page 6 of your testimony. That uses a different discount rate in applying the mitigation credit ratios, doesn't it, from the discount rate that's applied in table 4.1-3 in the NRMP?
A. That's correct.
Q. Can you tell us the difference between those two discount rates?
A. Well, I describe that in paragraph 8 of my testimony.

And I apologize for the confusion because I probably could have taken care of this in the NRMP. Sometimes in the work that we do, I guess, I take it for granted that it makes sense and so -- there are different ways to apply the ratios, and the question is where do you apply the discount, okay. The way you would apply the discount in table 4.1-3 is after you calculate the in-basin mitigation credit, you would expect the in-basin mitigation credit to be double the acreage of the impact. Or you can start with a higher mitigation discount rate, such as on table 1 in my prefiled, in which case, what you're looking for is a mitigation credit after you total all the actions to be equivalent to the amount of mitigation, excuse me, the amount of acreage of wetlands that's being filled or affected by the project.

Q. Thanks.

A. But either way, what this demonstrates is that there is more than sufficient mitigation being proposed by the port to offset the impacts from the project.

MR. PEARCE: Those are all the questions I have. Thank you.

MS. COTTINGHAM: Mr. Eglick, do you have any cross?

MR. EGLICK: Yes, I do.

////

EXAMINATION

BY MR. EGLICK:

Q. Mr. Stockdale, thank you for coming here today. Did you ask that the port conduct bird-strike hazard monitoring at SeaTac Airport to determine whether there really would be a problem in the future with bird strike?

A. Yes, at one point, and we talked about that in my deposition, there is an email in the file where I suggested to the port that in order to assess a change --

Q. Is that a yes?

A. Yes, it is.

Q. And did any of that monitoring occur?

A. No.

Q. You were both talking about Ms. Walter's testimony and then I believe you were talking about Ms. Sheldon's testimony, weren't you, just a moment ago?

MS. MARCHIORO: Objection, vague.

MS. COTTINGHAM: Sustained.

Q. (Continuing By Mr. Eglick): Well, did you not just make comments upon Ms. Walter's testimony?

A. Yes.

Q. And did you not just make comments about Ms. Sheldon's testimony?

A. Yes.

Q. Wasn't Ms. Sheldon your first choice as the expert

Ecology wanted to hire to review the port's NRMP?

MS. MARCHIORO: Objection, relevance.

MR. EGLICK: Well, I think the witness is saying he disagrees --

MS. MARCHIORO: Objection, counsel is testifying for the witness.

MR. EGLICK: I was responding to an objection.

MS. COTTINGHAM: On the relevance.

MR. EGLICK: Right. I think the witness has said that he disagrees with Ms. Sheldon's judgment and agrees with Ms. Walter's on various things, and I think I am entitled as part of bringing out whether or not that disagreement is valid and whether that opinion is valid, that in fact his first choice as expert for Ecology was Ms. Sheldon. I mean, I can impeach the witness with that certainly.

MS. MARCHIORO: I still don't see the relevance of whether Ms. Sheldon would have been Mr. Stockdale's first choice in this matter. I mean Ms. Walter is the witness who is testifying for the Department of Ecology.

MS. COTTINGHAM: I think the board will allow the testimony but give it appropriate weight.

MR. EGLICK: Thank you.

Q. So could you answer the question then, Mr. Stockdale, wasn't Ms. Sheldon your first choice as the expert to

review the NRMP for Ecology?
A. Yes.
Q. Isn't it true that the port did not pursue all in-basin mitigation opportunities for the third runway project that's now before the board?
MR. PEARCE: I would object as vague. I'm not certain what basins we're talking about.
Q. In basin meaning the Walker, Miller Creek and Des Moines Creek basins.
MR. PEARCE: Thanks for clarification.
A. There still are in-basin opportunities, so I would have to say that they're not all pursued.
Q. And, in fact, you wrote a memo to the file, didn't you, confirming that you had told Mr. Kelley of Parametrix that if you were asked by this board, you would have to tell this board that the port had not pursued all in-basin mitigation opportunities; isn't that true?
A. Do you recall the date of that memo?
Q. Well, we discussed it in your deposition on January 23rd and it is Exhibit 173. Would you like to take a look at it. The date on it is February 17, 2000.
A. Yeah, I recall that.
Q. And what you were referring to, weren't you, was a head-water wetland in the Walker Creek basin; is that correct?
A. That's correct.

Q. And when I asked you at your deposition whether, referring to this Exhibit 173, this February 17, 2000 memorandum, whether or not you would still have to tell the board that all in-basin mitigation opportunities had not been pursued today, you said you would, didn't you?
A. That's correct.
Q. Let me just clarify something here so we know what we're talking about. It's true, isn't it, that the Auburn mitigation site is not what you would call in the impacted basins; is that correct?
A. That's true.
Q. So it's not in the Miller, Des Moines or Walker Creek basins; is that correct?
A. That's correct.
Q. Do you know what percent of the in-basin mitigation is actual wetland creation?
A. I don't believe any of it in basin is creation.
Q. So that would be a zero percent; is that correct?
A. That's correct.
Q. And then what percent of the in-basin mitigation would you consider wetland restoration?
A. How are you defining wetland restoration?
Q. Well, use whatever definition, for purposes of this question, at least - we'll talk about it later - you would consider appropriate.

A. Well, it's an important question, because as I describe in my prefiled testimony at great length, what is considered restoration and what is considered enhancement depends on how degraded the wetland is that the mitigation action is taking place in. And so it is ultimately the mitigation ratio that is applied to the action, not whether that action is considered restoration or enhancement, that is the important determination, because it depends on what are the present functions being provided in that area and what are the functions after the mitigation action takes place. So it's not to quibble, but for me to give you a percentage depends on what we're considering enhancement versus restoration.

Q. Well, didn't you testify in your deposition on January 23rd, without quibbling, I asked you on page 61, and what percent in basin, I asked you about in basin, what percent is wetland restoration, and you answered, "Well, I would probably ask you for a calculator, but it's about ten percent, I believe." Is that correct?

A. Yeah, I believe I did say that.

Q. As long as we're on Exhibit 173, which is in the Ecology or, excuse me, in the deposition exhibit binders, would you look at page 2, the second to the last paragraph, where it says, "I also told Jim," do you see that?

A. Yes, I do.

Q. Okay. That's Jim Kelley of Parametrix, the port's wetland consultant?
A. Yes.
Q. And do you see here where you said that you told Jim that Vacca Farm would, quote, need to be included in the enhancement category for ratio calculation, end quote, do you see that?
A. I'm sorry, what paragraph are you on?
Q. Second to the last paragraph on page 2 of Exhibit 173, the paragraph that starts, "I also told Jim," do you see that, then it says, "And therefore need" - referring to Vacca Farm - "need to be included in the enhancement category for ratio calculation."
A. That's correct.
Q. Now, let's look for a moment then at your table 1 on page 6 of your prefiled, if we could, please. And hold that thought of what you told Jim in Exhibit 173, if you would. Are you at table 1 on page 6 of your prefiled?
A. Yes, I am.
Q. Now, it looks like you have Vacca Farm in the restoration category as well as in the enhancement category, don't you?
A. That's correct.
Q. And the difference is, of course, if it's in the restoration category, whatever amount is in the

restoration category gets a more favorable ratio, isn't that correct, than if it were enhancement?

A. The mitigation ratio that is given is based on the increase in wetland function that is anticipated at that location, it's not a question of favor.

Q. Well, let's look at the line that says Vacca Farm restoration, and wouldn't you agree that you have given that a credit ratio of 2 to 1?

A. That's correct, 2 to 1.

Q. Whereas, Vacca Farm enhancement gets a ratio of 4 to 1; is that correct?

A. That's correct.

Q. Now, if you were to give all of Vacca Farm a 4 to 1 ratio in the enhancement category, then that would change the calculation as to what ratio of mitigation you have to wetlands lost, wouldn't it?

A. You could say that for any of these, yes.

Q. And let me ask you another question, where it says "Wetland Enhancement," and then you have the Vacca Farm enhancement category, you see that?

A. Correct.

Q. And you say mitigation area 5.7 acres. Do you see that?

A. That's correct.

Q. Does that 5.7 acres include Lora Lake which is over in that area?

A. Yes, it includes three acres of Lora Lake.
Q. Now, that includes, then, the surface of Lora Lake, doesn't it?
A. That's true.
Q. As part of the wetland enhancement, you have included three acres of the surface of Lora Lake, am I correct?
A. That's correct.
Q. And then I did want to ask you also, you would agree, wouldn't you, that pursuant to Exhibit 1, that's the 401 itself, that Ecology determined that the 2.05 acres of what you call temporary impact would be considered permanent; is that correct?
A. We considered it permanent from the standpoint that the temporary impact was longer than what is considered temporary for purposes of permitting, which is one year.
Q. Well, take a look, if you would, at page 10 of Exhibit 1, which is the 401 certification. Do you have that handy there?
A. Yes.

MS. COTTINGHAM: Page 10 did you say?

MR. EGLICK: Yes, page 10, Exhibit 1, that's the September 401 certification, section 4.

Q. And then if you look, Mr. Stockdale, at the third sentence in section 4, do you see where that is?
A. Sub paragraph A?

Q. Well, page 10.
A. The third paragraph.
Q. Right under the heading 4, "Mitigation for Temporary Impacts," then the third sentence in.
A. I am sorry, third sentence. I apologize.
Q. Okay. That's okay, it's hard to navigate with all these documents.
A. Right.
Q. Can you read that sentence that starts "Ecology."
A. "Ecology has determined that the impacts characterized as temporary in the NRMP are not temporal in nature because they will last for longer than a one-year period."
Q. Then doesn't it go on to say, "The agency considers the impacts to be permanent"?
A. Correct.
Q. Now, if you look back for a moment then at your page 6 of your prefiled table 1?
A. Yes.
Q. And you say, "Their mitigation ratio based on 19.29 acres of impact." Do you see that?
A. That's correct.
Q. Now, does that include these 2.05 acres that the 401 itself says will be considered permanent?
A. No.
Q. So that would change the ratio calculation as well,

wouldn't it?

A. If there were 2.05 acres of permanent impact as far as being filled, yes, but you'd have a higher number here to begin with.

Q. So, in other words, if we consider it permanent, then the number instead of 19.29 should bė 19.29 plus 2.05; is that correct?

A. If you had an additional -- now, what I had just previously mentioned to you, okay --

Q. Well, could you focus maybe on what I'm asking you.

A. I believe I am.

MS. MARCHIORO: You haven't allowed him to answer to know whether he is focussed or not.

MR. EGLICK: Well, because I think it's a "yes" or a "no" question.

Q. If you consider it permanent and you have got a total of permanent impact, then would you add one to the other?

A. We are considering it permanent from the point of view of permitting to address the temporal loss of functions, okay. And once they're not permanent in that the areas the 2.05 acres that are going to be occupied by the temporary construction phase ponds, those areas are going to be restored when the ponds are removed after one to three years, so they're not truly permanent the way that you're trying to see it. It's the temporal loss that we

were asking for additional permanent mitigation for.
Q. Well --
A. And so --
Q. I'm sorry, go ahead.
A. And so the error, if anything, is the way that I wrote the 401, it's not the way that the impacts are truly going to result from the project.
Q. So you're saying the 401 is in error when it says, "The agency considers these impacts to be permanent and has determined that additional in-basin mitigation is necessary in the Miller Creek basin"?
A. Well, what I said when I read that to you is that the impacts are not temporal because they're going to last for longer than a year, and, therefore, we were treating it as if they were permanent, but it's not a permanent impact like the other impacts from the project, which is that those wetlands once, you know, they are going to be filled and they're gone. So, if anything, the error that I'm referring to is using the word permanent.
Q. Now, when you submitted testimony to the board in opposition to the stay, didn't you tell the board then that the impact from loss of the 2.05 acres was going to be long term?
A. I'd have to read it if that's what it says.
Q. Do you recall?

A. No, I don't, I don't recall that.
Q. Well, that's Exhibit 172. Maybe we'll come back to that.
Let me ask you a question here about the ratios, and maybe if you could pull Exhibit 2025 to do that, which is this manual you're talking about, "How Ecology Regulates Wetlands," you're familiar with that?
A. Yes, I am.
Q. Now, in fact, you refer to this manual, don't you, in your prefiled testimony in paragraph, I guess it's paragraph 9, where you say, "The other method is to follow the general ratios contained in Ecology's guidance." This is the guidance you are talking about, isn't it, the published guidance in Exhibit 2025?
A. That's correct.
Q. All right, now, I just want to do a comparison here. If I look on page 16 of Exhibit 2025, do you have that handy, we're going to be moving back and forth between a couple of documents here so let's try and get them set up. Have you got page 16?
A. Yes.
Q. All right. And you have got at the top it says something, do you see where I am, it says, "The recommended ratios are as follows"?
A. Right.
Q. Okay. Now, it looks like you've got, for example, for

various types of wetlands, you've got different ratios depending on whether it's creation and restoration or enhancement. Am I reading this correctly so far?

A. That's correct.

Q. Now, for enhancement, it looks like the ratios you have, if I am correct, you've got 6 to 1, 4 to 1 and 4 to 1, depending on the type of wetland we are talking about enhancing; is that correct?

A. That's correct.

Q. Now let's look back at page 6, table 1, all right, of your prefiled. And I'm just trying to track this here.

And in this table you use the ratio of 4 to 1 throughout, you never use the 6 to 1; is that right?

A. That's correct.

Q. Now, are there any forested wetlands in any of these wetlands that you're categorizing as being part of wetland enhancement?

A. I don't know how much of the Des Moines Way Nursery is considered forested. The Vacca Farm area that is being enhanced is not forested.

Q. I guess I asked the question the wrong way, though. This is what you're offering in mitigation for impacting a wetland, is that correct, where it says "Wetland Enhancement"?

A. Say that again.

Q. I'm not being very clear. I will try again. Where you have enhancement listed as mitigation here and you list a number of different elements of enhancement, Des Moines Way Nursery, Vacca Farm enhancement and so on, do you see that?
A. Yes.
Q. Are any of the wetlands that are being impacted for which you're offering up this enhancement forested wetlands? Is that clear?
A. Yes.
Q. Terrific. So what's the answer?
A. Yes, some of the wetlands, primarily the slope wetlands that are being filled, meet the criteria of forested wetlands.
Q. In fact, if you look at -- so we've got 20 acres give or take of wetlands that are basically getting eliminated; is that right?
A. Yes.
Q. A full eight acres of those are forested wetlands, aren't they?
A. Yes.
Q. So if you're offering enhancement as a mitigation for eliminating a forested wetland, doesn't this, you know, guidance that Ecology publishes in Exhibit 2025, page 16, say that the ratio should be 6 to 1?

A. I can see your questioning, but the problem --
Q. Well, I really would like you to just answer whether it does or not if you would, please?
A. The general guidance, and I underline general and I underline guidance, is stated as you have it in front of you.
Q. Okay. I appreciate that.

Ms. Cottingham, I have got a ways to go and I was going to -- would this be a good time?

MS. COTTINGHAM: It would be a good time as long as everybody is --

MS. MARCHIORO: That's quite all right.

MR. EGLICK: Thank you very much.

MS. COTTINGHAM: We will stop the clock for today and, Mr. Poulin, in your designated role as time keeper, how much did the appellants use today?

MR. POULIN: Appellants have used one hour and 50 minutes on the --

MS. COTTINGHAM: Fifteen or five zero?

MR. POULIN: Five zero. Respondents two hours, 51 minutes, 26 seconds.

MS. COTTINGHAM: I'm going to do some calculations. Just so you're all aware, we are running about two hours ahead of schedule, but I can't tell from that number whether or not the remaining witnesses will

consume more than the two hours that we are running ahead of schedule. Tomorrow it would be nice if I could get an assessment from Ecology and the port about the remaining witnesses. And what order are we going in tomorrow?

MS. MARCHIORO: We'll complete with Mr. Stockdale, Mr. Kelly Whiting, and we will finish with Mr. Gordon White.

MR. STOCK: Does that mean you are not calling Ann Kenny?

MS. MARCHIORO: We will not be calling Ms. Kenny.

MR. REAVIS: And port witnesses would be Ms. Leavitt, Mr. Smith, Dr. Wisdom, Dr. Weitkamp.

MS. COTTINGHAM: Excuse me?

MR. REAVIS: Weitkamp and Mr. Fendt.

MS. COTTINGHAM: Okay. Perhaps the Ecology and port folks could go out, there's a flip chart right out here, if you could put the order for tomorrow. We have it right here, but bigger print would be helpful, if you could do that for me.

And with that, we will be adjourned until 9:30 tomorrow morning.

(Hearing adjourned at 5:00 p.m.)

C E R T I F I C A T E

STATE OF WASHINGTON)

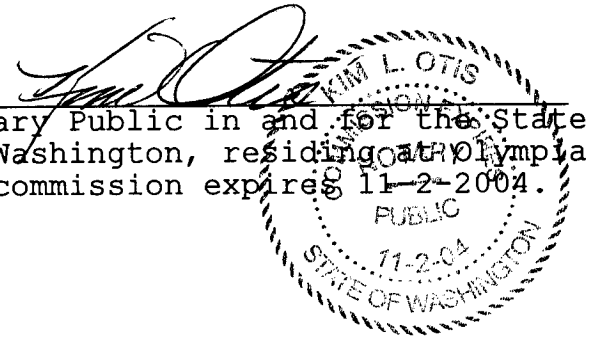
) ss

COUNTY OF THURSTON)

I, Kim L. Otis, a duly authorized Notary Public and Certified Court Reporter in and for the State of Washington, residing at Olympia, do hereby certify:

That the annexed and foregoing Transcript of Proceedings, consisting of pages 6-0001 through 6-0209, was reported by me and later reduced to typewriting by means of computer-aided transcription; that said transcript as above transcribed is a full, true and correct transcript of my machine shorthand notes of said proceedings heard on the 25th day of March, 2002, before the Pollution Control Hearings Board.

WITNESS MY HAND AND OFFICIAL SEAL this 6th day of May, 2002.



Notary Public in and for the State of Washington, residing at Olympia.
My commission expires 11-2-2004.

Kim L. Otis
Washington CSR No. OTIS*KL441C9
GENE BARKER & ASSOCIATES, INC.
406 Security Building
Olympia, Washington 98501