

Ottersburg Cross-Examination,  
PCHB No. P19-087c  
(4-23-2021)

## Hearing - Day 9

# Advocates for a Cleaner Tacoma, et al. v. Puget Sound Clean Air Agency, et ano.

April 23, 2021



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POLLUTION CONTROL HEARINGS BOARD  
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PHYSICIANS FOR SOCIAL	)	PCHB NO. P19-087C
RESPONSIBILITY; STAND.EARTH; and	)	
THE PUYALLUP TRIBE OF INDIANS,	)	
	)	
Appellants,	)	
	)	
v.	)	
	)	
PUGET SOUND CLEAN AIR AGENCY, PUGET	)	
SOUND ENERGY,	)	
	)	
Respondents.	)	

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VIDEOCONFERENCE HEARING

DAY 9

Pages 2049 - 2329

OLYMPIA, WASHINGTON

April 23, 2021

9:01 a.m.

REPORTED BY: CRYSTAL R. MCAULIFFE, RPR, CCR 2121

1 C R O S S - E X A M I N A T I O N

2 BY MR. THOMAS:

3 Q. Okay. Ms. Ottersburg, if you could please take  
4 a look at PTI 285.

5 MR. THOMAS: And, Mr. Perloff --

6 Your Honor, do we still have permission to  
7 put documents up without asking permission?

8 THE COURT: Yes, you do.

9 MR. THOMAS: Okay.

10 BY MR. THOMAS:

11 Q. And, Ms. Ottersburg, I'd like for you to scroll  
12 down and take a look at the e-mail that you sent on  
13 July 21st, 2017, at 11:16. And that's on page two of  
14 three of this document.

15 And do you have it?

16 A. Yeah, just looking at a couple things here to  
17 make sure I understand what this is.

18 Q. Yes. Please take a moment to review it, and we  
19 can talk when you're ready.

20 A. Okay.

21 Q. And this is an e-mail that you sent to  
22 colleagues on the permitting team as well as CB&I  
23 regarding Tacoma LNG modeling of SO<sub>2</sub>; correct?

24 A. Yes.

25 Q. And can you please read the first paragraph of

1 this e-mail aloud for us?

2 A. Can you blow it up for me, please?

3 MR. THOMAS: Yeah. Mr. Perloff -- nope.  
4 Mr. Perloff, the one at 11:16 a.m., please. Thank you.

5 THE WITNESS: We've prepared the emission  
6 calculations based on the new sulfur values and  
7 completed modeling. There was quite a jump in sulfur  
8 concentration for Case 1 and 2, as much as 160 times  
9 higher. And those cases are now showing SO<sub>2</sub>  
10 concentrations above the significance level.

11 So we need to refine our highly conservative  
12 assumption that all sulfur at the value guaranteed by  
13 the tariff all ends up in the flare inlet gas. I would  
14 like to discuss the possibility of estimating the amount  
15 of total sulfur that will end up in the flare versus  
16 exit with other fluid streams. Perhaps we could -- we  
17 continue to assume all H<sub>2</sub>S goes to the flare, but only a  
18 percentage of the other sulfur compounds present in the  
19 feed gas is flared.

20 Q. And this was true when you wrote it; correct?

21 A. Yes.

22 Q. Okay. You don't write untrue things to  
23 colleagues and clients; right?

24 A. Right.

25 Q. Okay. And the significance level that you're

1 discussing in this e-mail, is that an SO2 threshold in  
2 WAC 173-400-113, Table 4A?

3 A. Yes, those screening values we've been talking  
4 about.

5 Q. Okay. And looking at your discussion of tariffs  
6 in this e-mail, did the modeling that you're discussing  
7 in this exhibit, did the modeling utilize -- at that  
8 time did the modeling utilize the tariff limit for total  
9 sulfur?

10 A. I am not certain on that. I would have to look  
11 at the document that's referenced here.

12 Q. Did you perform any modeling utilizing the  
13 tariff limit for total sulfur?

14 A. Yes, we did.

15 Q. Okay. And were -- were you passing modeling  
16 when you did that?

17 A. Passing modeling?

18 Q. Yeah. Were the modeled impacts coming in over  
19 the thresholds in WAC 173-400-113?

20 A. Yes. We -- we might have modeled some  
21 concentrations above those values. It doesn't mean we  
22 pass or failed the model.

23 Q. Okay. All right. And the modeling submitted to  
24 the Agency did not utilize the total sulfur tariff  
25 limit; correct?

1           A.    No, we model based on the permit limits that,  
2    you know, similar to PTE where you incorporate any  
3    restrictions -- limits or operating restrictions into  
4    your emission calculations for the model.  So because we  
5    proposed that stringent SO2 limit, we would not have  
6    modeled -- modeled any values any higher than that limit  
7    to submit to the Agency.

8           Q.    Yeah, but those -- those permit emission limits  
9    didn't exist at the time you were doing your modeling;  
10   right?

11          A.    They were created as a result of the modeling  
12   to -- to create a stringent limit that the facility  
13   can't exceed to -- to demonstrate that we were -- we  
14   were below those screening levels.

15          Q.    Okay.  Now, coming back to the WAC, I think you  
16   told me that the height of the flare was raised to  
17   105 feet so that modeled impacts did not exceed the  
18   thresholds in WAC 173-400-113, Table 4A; correct?

19          A.    Right.  Yeah, raising stack heights improves the  
20   dispersion and reduces the ground level concentrations.

21          Q.    And there's been a lot of testimony in this case  
22   over the last couple of days indicating that the  
23   thresholds in WAC 173-400-113 are relatively  
24   unimportant.

25                   And can you give us your understanding as to why

1 PSE raised its flare stack to keep modeled impacts below  
2 those threshold?

3 MS. DOLD: Objection to the extent it is  
4 characterizing -- I don't think anyone has testified in  
5 this hearing that any aspect of a WAC was unimportant.  
6 That was the language that Mr. Thomas just used.

7 THE COURT: Mr. Thomas?

8 MR. THOMAS: Your Honor, if I may have a  
9 little bit of leeway, I think there's been a fair amount  
10 of testimony to that effect, respectfully.

11 THE COURT: Can you rephrase, because I  
12 don't think there's been testimony that the WAC is  
13 unimportant.

14 MR. THOMAS: Sure. Okay.

15 BY MR. THOMAS:

16 Q. Ms. Ottersburg, can you -- can you tell us why  
17 PSE was taking significant efforts to make sure the  
18 threshold in this regulation were not being exceeded?

19 A. Yes, I think, as I stated, that PSE was  
20 committed to minimizing impacts from the facility and  
21 those are just sort of a quantitative target that  
22 provides sort of a level that we felt was a good one to  
23 reach, you know, towards that goal.

24 Q. Okay. And would it be fair to say that Tacoma  
25 LNG switched its burners -- its original burners to low



1 NOx burners in the flare to be able to meet WAC  
2 173-400-113's NOx thresholds?

3 A. No, that was not the reason.

4 Q. It wasn't?

5 A. No.

6 Q. Okay. All right. Let's -- let's actually take  
7 a moment --

8 MR. THOMAS: Oh, the Tribe moves to admit  
9 PTI 285, Your Honor.

10 THE COURT: Any objection?

11 MR. FRANK: No.

12 THE COURT: PTI 285 is admitted.

13 (APTI 285 was admitted.)

14 MR. THOMAS: And, Mr. Perloff, if we could  
15 please call up RA-132, please. And, Mr. Perloff, if we  
16 could go down to Condition 17.

17 BY MR. THOMAS:

18 Q. And, Ms. Ottersburg, do you have -- are you  
19 looking at this screen with all of us here?

20 A. I have the screen. I can pull it up if that's  
21 easier.

22 Q. Whatever works best for you.

23 And you're familiar with Condition 17 in the  
24 order of approval; right?

25 A. Yes.

1 Q. And for NOx, there are multiple emission limits  
2 tied to different burners; fair?

3 A. Yes.

4 Q. And we have .023 tied to the large warm burner  
5 and less stringent factors for the small burners;  
6 correct?

7 A. Yes.

8 Q. Okay. And you have the understanding that there  
9 are certain scenarios where the large warm burner and  
10 one of the small burners will be operating at the same  
11 time; right?

12 A. Right.

13 Q. For example, if Tacoma LNG is -- is liquefying  
14 and at the same time there's purging going on, the large  
15 warm burner and the small cold burner will be operating  
16 at the same time; right?

17 A. Right.

18 Q. Okay. And so -- you know, both this .023 and  
19 .060 emission limit, you know, are -- are in play at  
20 that time; correct?

21 MR. FRANK: Object to form. I don't know --

22 THE COURT: I'm sorry. Mr. Frank, I didn't  
23 hear exactly what your objection was.

24 MR. FRANK: He just said that they were both  
25 in play, and I was just unclear what that meant to say

1 that they are "in play."

2 THE COURT: Mr. Thomas?

3 MR. THOMAS: Yeah, it's fine.

4 BY MR. THOMAS:

5 Q. There's -- there's scenarios where both of those  
6 burners are operating at the same time; correct?

7 A. Yes, that can happen.

8 Q. Okay. And let's take a look at RA-68, page 45.

9 And, Ms. Ottersburg, this is -- well, the final  
10 engineering worksheet, yes?

11 A. Yes.

12 Q. And I want to take a look at the table, at the  
13 bottom of this page.

14 Do you see that, entitled "enclosed ground flare  
15 worst case"?

16 A. Yes.

17 Q. And you see the NOx row, yes?

18 A. Right.

19 Q. And these are the worst case NOx emissions that  
20 you calculated in your emissions spreadsheet, yes?

21 A. Yes.

22 Q. Okay. So -- all right. Let's take a look at  
23 those.

24 MR. THOMAS: And let's pull up RA-36. And  
25 let's go the summary tab.

1                   Mr. Perloff, no. I want the -- the RA-36  
2 that is the Excel spreadsheet, please.

3 BY MR. THOMAS:

4       Q.    Ms. Ottersburg, you have a copy of RA-36;  
5 correct?

6       A.    I'm opening it, yes.

7       Q.    Okay. And you were just discussing this with  
8 Mr. Frank a little bit ago.

9                   And if we could take a look at the summary tab,  
10 Tab 14 of this exhibit, and the numbers we were looking  
11 at -- well, first of all, your modeling included -- your  
12 air dispersion modeling included worst case for NOx; am  
13 I right about that?

14       A.    In terms of emission? The modeled of the  
15 emission rates?

16       Q.    Yeah.

17       A.    Well, yes. We included all of the operating  
18 scenarios in our modeling, not just the worse case.

19       Q.    But in the worst case, though, is depicted here  
20 in this summary tab, Tab 14; right?

21       A.    The -- right, the worst case emissions are  
22 depicted here.

23       Q.    Okay. And the numbers we were looking at in the  
24 engineering worksheet are found in Columns E and F of  
25 Row 9; correct?

1 A. Yes, it appears to be.

2 Q. All right. Let's go to Tab 8, which is Case 5,  
3 which you and Mr. Frank were talking about a little bit  
4 earlier. And if we could go up. And if we can again  
5 look in Row 9, Columns F and G. We've got the same NOx  
6 numbers; right?

7 A. They could be, yeah. They look the same. I  
8 can't say they are identical. Because the numbers used  
9 to generate that summary tab are the numbers on a  
10 scenarios tab which include this Case 5 as well.  
11 There's a few steps involved from getting from Case 5 to  
12 the summary tab through that scenarios tab. So I just  
13 don't want to misstate something about the relationship  
14 between summary and Case 5 tab.

15 Q. Do you want me to go back and look at Tab 14, or  
16 will you take my word for it?

17 Do you want to confirm they are the same?

18 A. Well, I'm just saying that there's some  
19 equations and significant figures that are not shown  
20 there. The numbers look the same. I'm just saying they  
21 might not be the exact same referenced in the  
22 spreadsheet.

23 Q. Okay. Sorry. Go ahead.

24 A. The pounds-per-hour and the ton-per-year numbers  
25 that are shown there agree with the summary tab.

1 Q. Okay. So in Row 9 we see an emission factoring  
2 of .023; correct?

3 A. Yes.

4 Q. So purported the worst-case emission  
5 calculations and air dispersion modeling used in  
6 emission factor used a .023 and not a .06; correct?

7 A. Well, for Case 5 we used an emission rate based  
8 on .023, but there were other modelled scenarios for NOx  
9 that included the emission factor for .06 that were all  
10 modeled and we found the maximum of all of those modeled  
11 scenarios. So the maximum emission rate in this  
12 emissions spreadsheet doesn't always translate to the  
13 worst-case modeled concentration for various reasons of  
14 dispersion that the model does these calculations on.

15 So I can't say that the -- the maximum emission  
16 rate in the model was -- was what we're seeing here,  
17 necessarily.

18 Q. But -- but -- operation of the large warm burner  
19 and the small cold burner, for example, were not  
20 addressed in these calculations to come up with worst  
21 cases?

22 MR. FRANK: Objection. Mischaracterizes her  
23 testimony.

24 MR. THOMAS: Well, Your Honor, it was a  
25 question. She can say yes or no.

1 THE COURT: Why don't you repeat the  
2 question.

3 MR. THOMAS: Okay.

4 BY MR. THOMAS:

5 Q. Here we just established those are the worst  
6 case emissions, and they are tied to a single emission  
7 factor. And we were discussing a little bit earlier  
8 that the large warm burner and the small cold burner  
9 could be operating in tandem, meaning that there would  
10 be the large warm burner emitting at .023 and the small  
11 cold burner emitting at .06. And I'm wondering how that  
12 scenario is addressed in your emissions calculations to  
13 come up with worst case?

14 A. That would be on the scenarios tab that I  
15 mentioned. So that is where we did the additions of the  
16 various combinations of burners and also the various  
17 combinations for operation of scenarios for those  
18 burners. So you will see in the scenarios tab where we  
19 have added those emissions together and then that is  
20 what is used for each of the modeled scenarios in there.

21 Q. And so why did that sum not make it to the  
22 summary figure that wound up in the engineering  
23 worksheet?

24 A. I think it does. The summary -- the summary tab  
25 references the scenarios tab where we do that addition.

1 Q. Okay. If you could show me what you're talking  
2 about. Let's go back to Tab 14.

3 A. So if you click on the NOx, E9, you'll see that  
4 equation for just the cell E9. The equation at the top  
5 of the spreadsheet there, "max index scenarios." So it  
6 is kind of a complicated equation, but we're finding the  
7 maximum from the scenarios tab. And the scenarios tab  
8 is where we've added our combinations of -- and I can  
9 maybe explain a little bit too that the small cold  
10 burner has very, very small NOx emissions. So they are  
11 just not showing in these significant figures. I think  
12 maybe if you looked in detail, you would see that  
13 there's a very tiny amount of NOx emissions being added  
14 by the cold burner that might even be showing up in this  
15 tab if we showed more digits of that number.

16 Q. Do you want to show me in the scenarios tab what  
17 you're talking about?

18 A. Sure. So click on the scenarios tab. Column  
19 AK. NOx is Row 8.

20 Yeah. So that Column AK and AL are finding the  
21 maximum of all of the different scenarios. The  
22 liquefying case, so we were talking about specifically  
23 the large warm burner and the small cold burner, and  
24 that's under Columns AG and AH.

25 So as it indicates in the title of those columns



1 that is the addition of the large warm burner and -- and  
2 the small cold burner emission rates. So -- yeah,  
3 that's -- that's where we did the addition of those two.  
4 And if you can see the emission rate of the LNG  
5 transfer, which is in the cold -- the small cold burner,  
6 burns the LNG transfer emissions -- the gases, and those  
7 you can see some of the numbers are, you know, 1.3 e to  
8 the minus one, as very small numbers. So it's just not  
9 sort of appearing in -- like I said, the number of  
10 digits that were showing in that table, but they are  
11 added in there.

12 Q. Yeah. But I want to focus only on the flare and  
13 not the transfer vaporizer piece.

14 A. That's not -- those are the flare transfer cases  
15 that are burned in the small cold burner of the flare.

16 Q. All right. Let's pull this down and I want to  
17 talk about BACT a little bit. And let's pull up PTI  
18 164, please.

19 And can you please identify this exhibit for us?

20 A. Bill Steiner wrote me an e-mail March 27th,  
21 2019, it looks like.

22 Q. Okay. And I want to talk a little bit about the  
23 March 26th, 2019, 4:45 p.m. e-mail that you were  
24 recipient of this from Mr. Steiner; correct?

25 A. Yes, that's what it looks like.

1 Q. And this correspondence concerns BACT, best  
2 available control technology; correct?

3 A. Yes. Sorry. I was looking at the rest of the  
4 document real quick to make sure I understand what this  
5 all is. Okay.

6 Q. And can you please read the paragraph starting  
7 with "After reviewing the TCEQ BACT."

8 Can you read that into the record for me?

9 A. After reviewing the TCEQ BACT guideline with you  
10 today, I've rethought my concerns about Freeport LNG  
11 slightly. Their permit didn't present anything new for  
12 flares that TCEQ didn't already have in their guidance.  
13 Since the TCEQ says 99 percent or C3 and less, we'll  
14 just go with that and the vendor letter will support it.  
15 If Ralph suggests that we add 98 percent or larger E  
16 compounds and tries to use Freeport as an example, we  
17 could then point out all of the reasons why Freeport is  
18 not a relevant example. Until then, there's no reason  
19 to mention Freeport.

20 Q. Okay. And you understand that like Tacoma LNG,  
21 Freeport is a facility that makes LNG; correct? It's a  
22 liquefaction facility?

23 A. It liquifies LNG and then exports it. It's an  
24 export LNG facility, so that part is pretty different.

25 Q. Okay. And do you understand that they have a --

1 a thermal oxidizer at Freeport that they utilize to  
2 address the waste gas in their production process?

3 A. Yes, if I remember right they have a thermal  
4 oxidizer. I can't say for sure on my memory on that.

5 MR. THOMAS: Okay. We can pull that one  
6 down. Your Honor, move to admit PTI 164.

7 THE COURT: Any objections?

8 PTI 164 is admitted.

9 (APTI 164 was admitted.)

10 MR. THOMAS: Let's take a look at PTI 162,  
11 please.

12

13 BY MR. THOMAS:

14 Q. All right. Another one from Bill Steiner to you  
15 and others. Can you please identify this exhibit for  
16 us?

17 A. It's an e-mail January 24th, 2019, to Tom Wood,  
18 Keith Faretra, and myself and Jim Hogan.

19 MR. FRANK: Your Honor, I don't have my list  
20 in front of me, but this is one we have alleged it  
21 privileged. And this is from Bill Steiner to who he  
22 understood was the counsel that he was communicating  
23 with, Mr. Wood. And again we discussed this before the  
24 hearing, I think, the other day and I know you are still  
25 waiting to review that. But we're about to get some

1 questions about what we would view as a privileged  
2 document.

3 MR. THOMAS: Your Honor, if I may?

4 THE COURT: Mr. Thomas.

5 MR. THOMAS: First of all, I'm make a record  
6 on the fact that Your Honor ruled on, you know, this  
7 document and documents like this. I would also point  
8 out that this exact issue came up last week in the SEPA  
9 proceedings with correspondence from Mr. Wood. And, you  
10 know, based on the fact that Your Honor had already  
11 decided the issue, it was admitted. This is not  
12 attached to Dr. Sahu's report. It's being utilized with  
13 this witness and it doesn't even bear a confidential  
14 stamp at this point.

15 THE COURT: Mr. Frank, so when you say it's  
16 something that I'm supposed to look at, this is not --  
17 my understanding is the only thing I'm looking at were  
18 things that were attached to Dr. Sahu's declaration.

19 MR. FRANK: This one might not be on his  
20 list. Sorry. Just doing it from memory, Your Honor.  
21 But regardless of whether it's on Dr. Sahu's list, it's  
22 the same objection I meant that we were speaking about  
23 with respect to those documents that were on Dr. Sahu's  
24 list. So it's the same situation. So we understand  
25 that you allowed these to be discovered even though they

1 were in our view privileged and I just want to make my  
2 objection to that for the record.

3 THE COURT: Okay. And I'm going to allow  
4 Mr. Thomas to admit it, because, yes.

5 MR. THOMAS: All right.

6 THE COURT: Mr. Perloff is raising his hand,  
7 though. So I'm -- I'm concerned that Mr. Perloff needs  
8 something.

9 MR. PERLOFF: I apologize, it was a miss  
10 click.

11 THE COURT: All right. You're not the only  
12 one do that.

13 Okay. So I have just admitted, I believe,  
14 PTI 162.

15 MR. THOMAS: So moved. If Your Honor is  
16 granting the motion, I'll proceed to discuss it with the  
17 witness.

18 BY MR. THOMAS:

19 Q. All right. Ms. Ottersburg, do you see the BACT  
20 section No. 2 in this correspondence?

21 A. Yes.

22 Q. Okay. And do you see the final paragraph there  
23 starting with "regarding flare VOCs"?

24 A. Yes. They are tiny, but -- if you want me to  
25 read it, I need it blown up.

1 MR. THOMAS: Mr. Perloff, if you wouldn't  
2 mind blowing that paragraph up, please. Thank you.

3 BY MR. THOMAS:

4 Q. Okay. And do you see -- second sentence in this  
5 paragraph, there's a period and then a comma and it  
6 starts -- first of all, there's a letter being discussed  
7 in this paragraph, is there not?

8 A. A memo. An unsigned vendor memo.

9 Q. Do you see the sentence that says, "Keith leans  
10 towards sending the letter along with recent suggestions  
11 in Matt's 1/11 e-mail"?

12 A. Yes.

13 Q. Can you tell us, is the letter being discussed  
14 here the LFG letter that's been discussed in these  
15 proceedings?

16 A. I can't say for certain. I would be guessing  
17 based on the -- the description.

18 Q. Yeah. What's your best recollection and, you  
19 know, using this to refresh that recollection?

20 A. Again, I would just be guessing.

21 Q. Okay. Is it your understanding that the Keith  
22 being used here is referring to Keith Faretra?

23 A. Yes.

24 Q. Okay. There were no other people named Keith on  
25 the permit application team, right?

1 A. Not that I'm aware of.

2 MR. FRANK: Okay. Let's pull this down.

3 And, Your Honor, 162 has been admitted.

4 THE COURT: Yes.

5 MR. THOMAS: And let's go back to the  
6 engineering worksheet. So let's pull up RA-68 and go to  
7 page 43, please.

8 BY MR. THOMAS:

9 Q. Okay. And I want to look at that top paragraph.  
10 And, Ms. Ottersburg, do you see the sentence there that  
11 reads: In the past 12 months, the maximum total sulfur  
12 concentration reported by Williams Northwest Pipeline  
13 was .603 grams per HCF reported as H2S and the maximum  
14 H2S concentration was .238 grams per HCF per day?

15 A. It is "grains." Yeah.

16 Q. Grains per HCF.

17 Did I say "grams"?

18 A. Yes.

19 Q. Sorry about that. I don't think -- you did take  
20 a look at Attachment D with Mr. Frank. So let's pull up  
21 RA-57 again.

22 And let's talk about a .603 number.

23 MR. THOMAS: Mr. Perloff, RA-57 is hopefully  
24 an Excel spreadsheet.

25 BY MR. THOMAS:

1 Q. And, Ms. Ottersburg, if you have it up. You  
2 talked about this with Mr. Frank. This spreadsheet was  
3 submitted to the Agency, and as we just saw,  
4 incorporated into it's engineering worksheet; correct?

5 MR. THOMAS: Mr. Perloff, this is not the  
6 spreadsheet. We're looking for RA-57, please.

7 BY MR. THOMAS:

8 Q. I'm sorry, Ms. Ottersburg?

9 A. Yeah. Yes. This is the calculations.

10 BY MR. THOMAS:

11 Q. And let's go over to the Williams Sumas tab and  
12 let's take a look at Column H, Row 4.

13 And can you tell us what is significant about  
14 the cell at Column H Row 4?

15 A. Column H Row 4 maximum .603.

16 Q. Yeah. So -- so that's the maximum that was  
17 utilized in the Agency's worksheet; right?

18 A. I'm sorry. I'm not remembering the number.  
19 It's been a long day. But, yeah, it should match.

20 Q. Now, if you select that cell and you look in the  
21 bar above you see an "equals max" and then in  
22 parentheses C27 and then a colon and a C691?

23 A. Yes.

24 Q. And that means -- I don't want to  
25 mischaracterize your spreadsheet. Tell me if I'm wrong



1 here. But that means .603 is the max that occurs  
2 between Rows 327 and 691 in Column C; correct?

3 A. Right.

4 Q. And there are a few hundred rows of data before  
5 Row 327; correct?

6 A. Right.

7 Q. Okay. And, for example, if we look at Row 37 --  
8 well, and in those -- those rows before Row 327 there  
9 are many total sulfur figures that are well above .603;  
10 correct?

11 A. I don't know about well above, but there are  
12 some that are greater than .603. Maybe a few.

13 Q. Okay. If we look at Row 37, we've got 1.019.  
14 Do you see that?

15 A. Yes.

16 Q. Okay. And it's not quite double .603 but it's  
17 close; would you agree?

18 A. Well, almost. But relative to the other numbers  
19 it's an outlier and, you know, doubling is sort of a  
20 relative term. You've got to look at the full data set  
21 to understand that if that's a statistically significant  
22 difference.

23 Q. Okay. But -- but speaking of full data sets,  
24 this number in Row 37 and, in fact, none of the rows,  
25 you know, up to Row 327, were in the analysis that you

1 submitted to the Agency; correct?

2 A. Right. They illustrate that the sulfur  
3 concentration was decreasing -- sorry.

4 THE COURT: Mr. Frank, what's your  
5 objection?

6 MR. FRANK: In his question, Mr. Thomas  
7 suggested that none of this was submitted to the Agency.  
8 But we've already established that this document was  
9 submitted to the Agency with all this data, so.

10 MR. THOMAS: That wasn't my question at all.  
11 Nobody disputes that the data was submitted to the  
12 Agency. What I asked her and what she answered was  
13 whether her analysis utilized that data. And she said,  
14 no, it didn't and that --

15 THE WITNESS: Yes. Sorry. I didn't mean to  
16 interrupt your question.

17 THE COURT: I think we were all talking over  
18 each other. So let's just do that last question and  
19 answer one more time.

20 MR. THOMAS: All right.

21 BY MR. THOMAS:

22 Q. So did -- with the understanding that all of the  
23 data was submitted to the Agency, the actual analysis  
24 that you performed did not use any of the data before  
25 Row 327; correct?

1 A. Yeah. We just used the last 12 months. And you  
2 can see the concentrations were decreasing over the full  
3 period and that's why we selected to use the last  
4 12 months of data.

5 Q. Okay. We can pull this down.

6 And did you hear Mr. Stobart's testimony this  
7 morning that CB&I calculated Tacoma LNG's emissions  
8 using vendor data in lieu of AP-42 emission factors?

9 A. I don't remember that specific section. Sorry.

10 Q. Okay. Can you tell us why Landau utilized AP-42  
11 emission factors for certain pollutants?

12 A. Well, when we don't have vendor data, we have to  
13 use something and those were sort of last resort I guess  
14 it's called sometimes. But those are the best available  
15 factors for -- for combustion calculations. We have to  
16 use AP-42 in lieu of any vendor data.

17 Q. Did you hear Mr. Stobart say that he provided  
18 you all the vendor data that he used to do calculations  
19 when he didn't use AP-42?

20 A. Say that again. I'm sorry. He provided vendor  
21 data?

22 Q. Yeah. He said this morning that he didn't use  
23 AP-42. He used vendor data and he said he provided you  
24 with all the data that he used?

25 MR. FRANK: I'm going to object. This

1 mischaracterizes Mr. Stobart's testimony. He didn't  
2 specify what vendor data there was. It was a very  
3 general statement. He didn't specify that there was  
4 vendor data for any particular pollutant.

5 MS. DOLD: I would also add to the  
6 objection. I think Mr. Stobart was clear he did not  
7 personally do emission calculations. So to the extent  
8 it's being ascribed to him personally, I would object on  
9 that basis as well.

10 MR. THOMAS: Your Honor, I corrected it to  
11 be CB&I. And Mr. Stobart did provide that testimony  
12 this morning. I'm just asking.

13 THE COURT: I'm going to allow it.

14 BY MR. THOMAS:

15 Q. All right. Ms. Ottersburg, please go on.

16 A. Okay. So they did provide vendor emissions data  
17 for certain pollutants; specifically, NOx, CO, and VOC,  
18 and some information for the sulfur mass balance  
19 calculation that we did.

20 The rest of the emission pollutants that we have  
21 to calculate, we have to get emission factors from  
22 somewhere. So most of those came from AP-42  
23 particularly the PM, and then some of the toxics and  
24 HAPs. And then there were other -- other sources  
25 available for toxics and HAPs that are listed in our

1 emission spreadsheet, the sources of that data. There  
2 were several used. So we used a combination of both  
3 vendor data and emission factors when the vendor data  
4 was not available.

5 Q. Okay. And on emission calculations and  
6 modeling, do you recall telling me at your deposition  
7 that you did not personally do that work? It was  
8 performed by junior staff?

9 A. Yeah. Under my directions, they performed the  
10 calculations, and then I do the senior review of those  
11 calculations.

12 Q. Okay. And Landau did not initially use the tide  
13 flats data; correct? It used Sea-Tac; right?

14 A. No, that's not true. We used both in our  
15 initial modeling submitted to the Agency. And then they  
16 requested that we add the other station. So it was a  
17 combination of tide flats and Sea-Tac for the first set.

18 Q. Okay. And just little bit more about some of  
19 the testimony that you provided to Mr. Frank.

20 There's a bluff across the Hylebos Waterway from  
21 the flare. You're aware of that; right?

22 A. The bluff, yes.

23 Q. And based on the modeling, will people living on  
24 that bluff facing the facility be impacted more so by  
25 the increasing of the height of the flare to 105 feet?

1 Did the modeling show anything about that?

2 MR. FRANK: I'm going to object to the  
3 extent he's talking about people being impacted. A, I  
4 don't know what that means, and B, it's -- I guess I  
5 don't know what that means.

6 THE COURT: Mr. Thomas, can you clarify.

7 MR. THOMAS: Sure. I can try.

8 BY MR. THOMAS:

9 Q. Did the modeling show increased impacts to areas  
10 on that bluff as a result of raising the stack height to  
11 105 feet?

12 A. Increased impact as a result of raising the  
13 stack -- I want to make sure I understand your question.  
14 Yeah. I don't know. I did not look at the locations of  
15 the predicted impacts from the model before and after  
16 the stack was raised. It is not typical to do that when  
17 you're doing a screening level analysis. And as I  
18 mentioned, it's just used to find a maximum. All we  
19 care about is the maximum and, you know, those can occur  
20 anywhere really. And, you know, the model is not  
21 specific enough to pinpoint exact location. It's just  
22 capturing dispersion conditions and a variety of those.  
23 And we just find the worst-case, the highest impact  
24 predicted by the model to compare against those  
25 thresholds. So the location and the time that it was

1 predicted is not as important as that maximum value.

2 Q. Okay. And just very briefly, we were talking  
3 about -- you and Mr. Frank were talking about RA-93,  
4 which is the South Coast factors document. Do you  
5 remember that?

6 A. Yes.

7 Q. All right. And you called them the most -- the  
8 most stringent factors; right?

9 A. Yeah. They -- they were -- well, they -- they  
10 were more conservative so they were higher than other  
11 emission factors that we found in our research of  
12 guidance documents.

13 Q. And what data did you look at before selecting  
14 South Coast factors?

15 A. We looked at EPA document from 1995 and the  
16 Texas guidance document.

17 Q. Okay. And you're saying the South Coast factors  
18 were higher than EPA factors? That's your testimony?

19 A. Yes. If you -- if you look at them, directly  
20 you've got to do some conversions, but those are --  
21 South Coast is way higher than EPA's emission factors.  
22 And also EPA emission factors are based on total organic  
23 compounds. That includes the methane and ethane. The  
24 South Coast factors are based on VOC, so the methane and  
25 ethane are not included in that total and they are still