PUBLIC HEARING

SYDNEY TAR PONDS AND COKE OVENS SITES

REMEDIATION PROJECT

JOINT REVIEW PANEL

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V O L U M E 16

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| HELD BEFORE: | Ms. Lesley Griffiths, MCIP (Chair)<br>Mr. William H.R. Charles, QC (Member)<br>Dr. Louis LaPierre, Ph.D (Member) |
| PLACE HEARD: | Sydney, Nova Scotia |
| DATE HEARD: | Tuesday, May 16, 2006 |
| PRESENTERS: | TD Enviro Inc.<br>Mr. Jim Kramer<br>Mr. Tony Rojek<br><br>Ms. Marlene Kane |
| APPEARANCE: | Sydney Tar Ponds Agency:<br>Mr. Frank Potter<br>Mr. Donald Shosky<br>Mr. Greg Gillis (AMEC)<br>Dr. Malcolm Stephenson |

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# I N D E X  O F  P R O C E E D I N G S

--- Upon commencing at 1:02 p.m.

THE CHAIRPERSON: Good afternoon, ladies and gentlemen. We will begin the afternoon session today.

We will begin with housekeeping matters. After that, the -- what we are doing this afternoon is -- the Panel will be asking questions of the Sydney Tar Ponds Agency, and we have booked the time from 1:00 till 4:00 to do that. However, within that time, at the end -- we had earlier in the proceedings received two formal requests from Sierra Club and also from Dr. Ignasiak for additional time to place questions to the Agency.

So, we are responding to that, and we will provide time for both of those parties to ask questions. However, we will not be having a general participant questioning time this afternoon.

We will then take a break, and this evening we have two presentations by TDE and by Ms. Marlene Kane.

Before we begin with the Panel questions, I would like to see if we have any undertakings to be placed.

So, Mr. Potter?

MR. POTTER: Thank you, Madam Chair. We have three that we'll hand in today. No. 23 is

information on costing and destroying all of the sediments in the Tar Ponds with a cost estimating table, and I'll mention that we've tried to keep the table similar to -- I think it was Undertaking No. 9, where we've identified costs before, just so it's clear how the components all fit together.

Undertaking No. 53 and No. 54 are both hand-ins, and they are providing information on the remediation process and criteria and results from May 11th, and also on May 11th, No. 54 was the height of the sea wall. So, we'll be handing those in. Thank you.

THE CHAIRPERSON: Thank you, Mr. Potter.

Does anybody else have an undertaking that they wish to put on the record?

We will -- then we are going to -- no?

MS. MACLELLAN: Just a point of clarification, if I may, Madam Chair?

The other day when I asked how much time we would each be allowed to ask questions of the Tar Ponds Agency, I understood that we could all ask questions, and I would like some time to ask the Tar Ponds Agency some questions, please.

THE CHAIRPERSON: Ms. MacLellan, we'll take that under advisement and get back to you at the break.

THE SYDNEY TAR PONDS AGENCY:

--- QUESTIONED BY THE JOINT REVIEW PANEL

THE CHAIRPERSON: Mr. Potter, we have been -- the Panel has been under the impression, because you told us so, that the -- you provided us with information as to what you consider to be obviously the project -- what you consider to be the alternatives to the project, and also the alternative means of carrying out the project, as it was -- it was mentioned yesterday by one of the questioners.

There have been a number of references during the hearings to things that your design team has been investigating, and particularly with reference to the tar cell, which obviously leads us to wonder whether you have any additional approaches that you are now considering to be alternative means of carrying out the project.

So, yesterday you indicated that there might be something you might want to provide us with some further information about, and very specifically for the record, I believe what I asked was that -- you had indicated that -- removing incineration from the project, and having total encapsulation of the Tar Ponds sediments, and presumably some other method of dealing with the materials on the Coke Oven Site that were

scheduled to go to the incinerator, but originally you'd informed us that this could not be considered an alternative means of carrying out the project, because it would not meet -- strictly meet the terms of the Memorandum of Agreement, which lays out parcel removal and destruction incineration -- parcel removal and destruction and parcel encapsulation.

So, would you like to clarify where we are today?

MR. POTTER: Certainly. Thank you, Madam Chair. I'll try to walk through this.

What we indicated in the EIS Report -- I'll refer to Section 2.13.2 -- refers to the alternative that we identified as an alternative means of being assessed. That alternative, as you indicate, is the non-incineration alternative, where we would solidify the PCB material in the Tar Ponds, as well would have to deal with the two components on the Coke Ovens Site, the tar cell and Coke Oven Brook.

If we go back to -- I think it's May 3rd when Public Works and Government Services appeared as a presenter, they likewise spoke to the fact that the -- you know, the EIS did identify an alternative and that the MOA had accommodated that -- had a process in place to accommodate the alternative means.

We did indicate in the EIS that initially the -- at first assessment -- that the alternative identified would not be in compliance with being -- I think it would be technically feasible. But then we put a qualifier in that it would require a change to the MOA, and perhaps the best way of explaining that is to go back to the relevant sections of the MOA, and I'll try to walk through this somewhat quickly.

The two key sections in the MOA are Section 1.2 and 1.3, and Section 1.2 starts with -- and I believe again Mr. Swain addressed this in his testimony on the 3rd of May:

"Subject to a joint [--] assessment and to Section 2.1..."

And Section 2.1 just refers to the cost.

"...the project shall include..."

And it describes five elements that -- the project would involve the removal and destruction of the PCBs in-place treatment, and the remaining contaminant material using bio-remediation and solidification, engineered containment of both sites, site restoration and landscaping, and the last element being the ongoing future maintenance and monitoring.

They were the key five elements.

Now, if you go to Section 1.3 of the MOA

-- I won't read this in its entirety, but it indicates:

> "The parties shall enter into an agreement describing in detail the specific elements of the project over a 10 years period...

And I'll skip a little bit here. But then it says:

> "...which shall not exceed the scope of the work described in subsection 1.2 above."

The intent of Section 1.3 -- and we did go back just to make sure that they were -- fully understood this, with the Justice Counsel that prepared the MOA -- the purpose of Section 1.3 was to allow for the project to be modified.

And the only way the project could be modified under -- from Section 1.2 would be to remove a component. You could remove one of the five elements. You could not add a new element to the project. That's why the wording was such that it read, "Which shall not exceed the scope of the work described in Section 1.2."

So, that would allow you to remove an element from the project. That could be land farming on the Coke Oven Site, it could be the PCB incineration component.

So, that's how the MOA addresses that and that's why we did put that qualifier in the EIS, and we obviously have to clarify that. We do consider that the -- while the original description did not meet all of the original proposed elements of the MOA, the MOA wording under Section 1.2, 1.3 does provide for that consideration.

Therefore, that's why this -- this alternative is considered to both technically and economically feasible within the intent of the MOA, and as contemplated would be an alternative means to be assessed during the process.

So, we did look at the alternative means in terms of all the EISs components, in terms of assessing it with the interactions with the VECs and the ECs and deemed it to be fully assessed under the EIS that we submitted.

THE CHAIRPERSON: So, now an approach that is minus incineration is now, you're saying, formerly on the table, as far as you're concerned, as an alternative means of carrying out the project. And you've just stated that as far as you're concerned you feel that the EIS fully assesses that alternative, even though, in fact, you did not set out to fully assess that alternative.

MR. POTTER: The EIS does refer to that, and I could ask that of Mr. Gillis and Mr. Duncan to go back to that section, but there is a section in the EIS that would refer to that point that we did assess the alternative means. I think it would be 2.13.2, I guess, if we can just ---

THE CHAIRPERSON: Perhaps before -- while you're turning to that, perhaps I can ask -- so this alternative means of carrying out the project, could you perhaps spell out exactly what the components would be. I understand that the incinerator would be gone with all the things that were attached to that, and that you would solidify the -- all of the sediments in the Tar Ponds. There would be no removal of sediments in the Tar Ponds, correct?

MR. POTTER: That's correct. That's correct. The components that disappear would be everything associated with the Victoria Junction Site, the incineration component, of course.

There'd be -- the transport aspect of moving material from the Tar Ponds to the VJ site would disappear. The water processing, material handling components at the -- down by the Coke Ovens would disappear, because that would no longer be required.

What would be -- then additional would be

the solidification of the two areas where we were going to excavate the PCBs sediment and the tar cell and that very small portion of sediment in the bottom of Coke Oven Brook would -- those two components would have to be solidified or addressed through solidification.

THE CHAIRPERSON: Solidification in-situ?

MR. POTTER: Yes, the -- more than likely -- there's a small amount of sediment just sitting in the bottom of the brook. That conceivably could probably be picked up and moved to -- you know, it could be taken to the tar cell site. It's a very small volume. You know, if absolutely necessary it could be solidified in place, but it might be just more practical to move it to just a couple of hundred feet over to the tar cell to be solidified there.

I don't think we've addressed that in detail, if that had to be solidified in place. But it's possible that could be moved and solidified more conveniently with the tar cell.

THE CHAIRPERSON: Do you feel you've addressed in detail the solidification of the tar cell?

MR. POTTER: We've looked at it. The Tech memo does address that, and Mr. Shosky can expand on that further if necessary.

But we did look at it, as indicated in the

Tech memo. There was just an initial look and some mixtures applied. The Tech memo did indicate that we are confident that with, you know, further testing we will find the right -- correct cemen0t mixture to achieve a desired solidification criteria for that site.

THE CHAIRPERSON: You have to remind me. Does the Tech memo address containment of those solidified materials?

MR. POTTER: I'll ask Mr. Shosky to respond to that one.

MR. SHOSKY: The same criteria would hold true for the tar cell that holds true for the Tar Ponds area, the same unconfined compressive strength at this point and also the same hydraulic conductivities.

We might do some additional work on the cap there. There's been some discussion about thickness of the cap in that area, but basically the design would still be conceptually equivalent, at this point.

MR. POTTER: I should add, as well, that the work around the tar cell was going to be covered. Likewise, when the solidification was taking place there, there'd be a cover over the cap, because of the level of tar in the tar cell.

THE CHAIRPERSON: You mean the work would be carried out under cover? That's what you're referring

to?

MR. POTTER: Correct. Unlike the solidification in the Tar Ponds, which we didn't deem requiring any covering, the tar cell did -- it was deemed that we would be likely covering that as well.

THE CHAIRPERSON: But when I mentioned containments, so -- the containment of those solidified material would be provided by the perimeter containments of the Coke Ovens -- the whole Coke Ovens Site, there would be no additional structural elements introduced?

MR. SHOSKY: That's correct. It would all fall in the same footprint of that containment system already designed for the Coke Ovens, and also it would still maintain a cap and then, as Mr. Potter said, we would probably take the sediments from Coke Oven Brook and move them over to be processed underneath the enclosure, that all the processing would take place in the tar cell enclosure?

MR. SHOSKY: Yes, Ma'am.

THE CHAIRPERSON: And the ultimate destination, then, would be the tar cell material?

MR. SHOSKY: Yes, Ma'am. That's correct.

MR. CHARLES: Mr. Potter, in the MOU and those criteria that you listed, there's reference to destruction of materials. Incineration isn't necessarily

specified as the method of destruction. Is that true?

I'm just wondering how tied in and where in the MOU or in the EIS or in the terms of reference of the Panel, do we get tied in to incineration as a sort of recognized, required part of the project.

MR. POTTER: That would be the first element of Section 1.2.

It refers to the removal and destruction of PCBs from the Tar Ponds, as well as the removal and destruction of the contents of the tar cell and the Coke Ovens site with a proven technology such as high temperature incineration and single use ---

MR. CHARLES: So there is reference to incineration in there as an example of destruction?

MR. POTTER: Yes. Yeah.

MR. CHARLES: So it's not a requirement of the MOU?

MR. POTTER: No.

And as I indicated, Section 1.3 does allow you to remove an element from that Section 1.2.

And if full solidification were to be considered with the alternative means, that that whole first bullet would be removed completely.

MR. CHARLES: Yeah, I guess I'm just wondering how satisfied you are that the stuff in the tar

cell, which is apparently pretty nasty stuff, and you wanted to -- or had planned to incinerate initially, can be dealt with to solidification and stabilization.

Now I know you're going to turn to Mr. Shosky to answer -- have him answer that question, but how confident are you? Is it a more difficult problem than dealing with what's in the Tar Ponds themselves for SS?

MR. POTTER: We're quite confident that the work -- the SS work necessary to solidify the tar cell can be accomplished.

We've gone back over the past year or two and thoroughly reassessed the levels in the tar cell.

The original estimate was about 25,000 tonnes of coal tar material based on some reasonable amount of sampling.

We actually went back and did an even more thorough sample -- test pitting of the tar cell area and, you know, that more recent testing suggested, you know, the levels of tar cells -- of the tar in that tar cell would be even less than what we first contemplated.

So, we're quite confident that it can be solidified, and I will ask Mr. Shosky to expand on that.

MR. CHARLES: Because the original testing didn't do very well with that material, I think. It was

suggested that it might not work that well, but I gather you've made further investigation.

Just a second complimentary question. Is your level of comfort based on other places that have dealt with a similar type of material?

MR. POTTER: I'll pass that to Mr. Shosky.

MR. CHARLES: Yes.

MR. SHOSKY: Yes. Based on my experience, I've cleaned up over 50 manufactured gas plant sites in my career, dealing with a lot of heavy tars. Usually there's some form of treatment involved with that.

Typically, in the United States, we're asked to take down the benzene concentrations substantially prior to removal of that material.

Once the material has been treated, the choice of the utility company is to either take it off to a landfill or leave it in place, and the results that we got in the Tech memo, while they were disappointing for the cement, at that point in time when we were doing the testing, we didn't -- we had decided not to, at that point, use some more aggressive approaches which would include the use of Quicklime and things like that in order to raise the temperatures of the tars high enough in order to get a thorough mixing to occur that results in a much stronger, stabilized product.

Since we're doing all this material handling under cover, during the course of my career I've done 10 jobs under cover in densely populated urban areas, and have not had a problem with odour emissions controls, provided that everything is managed appropriately on site, and we have not had any problems with meeting performance criteria once we go to the more aggressive chemical additives.

MR. CHARLES: Am I correct in assuming that this kind of material has a lower organic content than you have in the Tar Ponds, particularly the south pond?

MR. SHOSKY: Well, the interesting thing about the tar cell material is that it -- the tar itself is very highly concentrated tar when you encounter it, but it's surrounded by a lot of materials that are of less tarry compound.

And the materials that we did our stabilization testing on for the Tech memo were the highly concentrated tars.

And it's a more difficult material to deal with than the stuff that's in the Tar Ponds, because of its viscosity and high concentrations of organics, but it's not impossible to treat that material.

And the project that I had given you to

look at, the Taunton Massachusetts Project, the one that, even though it's smaller, was similar to the project that we have with the Tar Ponds now, is similar types of material that we stabilized with cement at that location.

MR. CHARLES: Okay, one final -- it's not a question, I guess, it's clarification.

You're going to do the excavation -- or treatment -- not excavation, treatment, of the tar cell material, under cover. But as far as the rest of the solidification and stabilization on the Tar Ponds themselves, that will not be done under cover, am I correct in that?

MR. SHOSKY: Based on risk analysis that was performed by Dr. Magee and the investigations done by AMEC, it was determined that we wouldn't be exceeding any levels that made covering that area necessary.

MR. CHARLES: And that remains your position?

MR. SHOSKY: Currently it does, yes.

MR. CHARLES: Thank you.

THE CHAIRPERSON: Could you just remind me, how many tonnes of material there are in the tar cell?

MR. SHOSKY: There's 25,000 tonnes in the cell area itself, and then another 13 to 1,500 tonnes in

the stream sediments.

THE CHAIRPERSON: Now, does this require any kind of drainage alterations at all?

When originally in the EIS, the solidification of the Tar Ponds, was presented, we didn't have any details at that point of any internal drainage, and since I understand it's a different issue, being in an estuary -- estuarine environment, but do you have to make any drainage modifications of the tar cell if you're going to solidify those materials?

And associated with that is the cap. What is the design of the cap? Is it the same as the Coke Ovens cap, or the same as the Tar Ponds cap?

MR. SHOSKY: We would probably, by choice, upgrade the cap of the tar cell over to match what we have at the Tar Pond area.

But there would not be any additional drainage changes.

THE CHAIRPERSON: And there are no complications -- regulatory complications?

For example, if you choose to move the sediments from the Coke Ovens Brook and treat them somewhere else? It's all one site? It doesn't make any difference? Is that correct?

MR. SHOSKY: I believe that's correct,

because we had intended on moving them anyway.

So the process of excavation -- excavating the sediments and moving them to a treatment zone would have been similar to what we did with the incinerator.

THE CHAIRPERSON: Yeah. That makes sense.

Well, how about costs?

You indicate that you're putting this on the table as technically and economically feasible.

Obviously, you're removing relatively costly elements, but what information can you provide the Panels on the breakdown of costs for this?

MR. POTTER: In the undertaking No. 23 today that we submitted for looking at the incineration of all the costs, and again, I mentioned we were trying to use that same table format. So, in that submission, we've included in that table, or actually Table B, I guess it would be called, the costing.

If you pull out the incineration component, you would have to, of course, bump up some of the solidification costs.

I'll ask Dr. -- he's almost a doctor now. I'll ask Mr. Shosky to -- just to walk through that for a second.

MR. SHOSKY: The base amount that we started with originally under our undertaking 9 was 400

million. We -- off of the table that I gave earlier this week.

What we did, when modifying that for -- to stabilize all the sediments was -- is that we took that element out of incineration and removed it and put it over into sediments. Or not -- just stabilizing all of the PCB material and the tar cell, and the price came back at -- or the cost came back to about three hundred twenty-seven point five million. It would be an inclusive of everything.

Now, the things that would not be included in that number would be any additional treating of materials under cover beyond the tar cell, and things of that nature.

So, we've -- this would be a comparison to what it would just removing the incinerator element.

THE CHAIRPERSON: But you don't get to keep the change? Is that what we clarified earlier? Is that right?

MR. POTTER: The federal government keeps the change, the province doesn't.

As we've explained in the funding formula, the province essentially pays up front the -- roughly speaking, the federal government pays the back end.

THE CHAIRPERSON: Well, I think if my

colleagues don't mind -- they probably do, but there we are. I will -- I would just like to keep going, while we're on the subject of alternatives, we may want to come back to some aspects of this new development.

But I would like to go back to the alternatives that were assessed under the RAER process, and then subsequent to the RAER process, I've just got a few questions.

And I'd just like to work -- basically work from Table 2.13-2 in the EIS. And that's the table that's entitled, "Summary of RAER Options as Alternatives to the Project."

You also included in that -- however, this is not only RAER options. You've included options that were developed subsequent to the RAER reports that were looked at, and some of which subsequently, basically, became the description of the project that we have on the table.

And really, I guess I would like to focus mainly on what was said here about Option 3 for both -- Option 3 for the Tar Ponds remediation and Option 3 for the Coke Ovens.

And we've had a lot of talk about that, and a lot of assertions one way or another, and I'm sure we're going to hear more.

But right now, I wonder if you could tell us -- and maybe you could start off with a list of advantages and benefits and disadvantages and adverse effects for both of those Options 3, and tell us more about how you understood that those were assessed. Now -- and what is the meaning of some of the things that are down here.

So, really, we'd like to, I think, have a fuller idea of the reasons why you concluded where -- what strengths you saw in this option, and why you ultimately concluded that it was not -- could not be brought forward as an alternative means of carrying out the project, as not being economically and technically feasible.

Do you want me to keep asking questions, or ---

MR. POTTER: We're getting tired, but we're not that tired, really.

No, Mr. Kaiser is going to respond to the questions on the table.

MR. KAISER: Just to, I guess, maybe restate one of your questions. You want to have an explanation of how we saw the advantages compared to the disadvantages of RAER Option 3 as a starting point?

THE CHAIRPERSON: I think a good way to

address this right now would be to look at those two -- what was written in the -- in this table, in the EIS, under the two columns, Advantages and Disadvantages, and for those -- for the -- for Option 3 for the Tar Ponds and then Option 3 for the Coke Ovens, and maybe just go through those bullets and tell us a bit more.

Then if you've got some additional things you want to say, that's good, too.

But let's go through the bullets, since we've got them there.

So under, "Tar Ponds Option 3 Alternative", the advantages that were identified were that there would be socioeconomic benefits from almost exclusive use of local resources and that both ponds would be remediated.

Do you have anything you want to add to those two bullets?

MR. KAISER: I guess at this point in time there's not a lot to add to those bullets. The RAER options were compared based on evaluation criteria that were developed through a consultative process. We then compared each of the options to those evaluation criteria and in this case, the socio-economic benefits due to the use of local resources was deemed to be a clear advantage. As well, the fact that both ponds would be

remediated to, you know, pre-industrial waste deposition scenarios, that also rated highly and was deemed to be an advantage.

THE CHAIRPERSON: I mean, what I noted was that there was no mention of the fact that there was complete removal of the contaminants. It was not noted there as an advantage but anyway we'll let that one go. So when it comes to the disadvantages could you -- you've indicated -- the table indicates that there would be increased health and environmental impacts from this alternative, a limited technology track record, a high remediation risk, high cost with low probability of success. I mean, what we've been -- what we heard from other presenters have suggested that this was -- that this option was thrown out on the grounds of cost alone.

So I'm trying to get some clarification of how -- what your evaluation of this option. Why would there be increased health and environmental impacts for example?

MR. KAISER: In particular to that particular bullet, due to the fact that we're looking at a multi-phase or multi-step process in order to get all of these components that are bundled into this option up and running and get all of the steps accomplished to make the remedy a success, you have to go through, you know,

many instances where you move material around and you treat material or manage material, all of those factors tend to, you know, be an increased potential risk so it's factors such as that that tend to, you know, score this as a bullet. I think as well, Mr. Shosky wanted to add to this particular answer.

MR. SHOSKY: Yeah, when looking at the disadvantages for this particular technology, they're numerous and I've had experience with all of the technologies that are listed under this item, including the coal burning. For a long time, I did a lot of coal burning in the early 90's for power plants where we would take coal tar, waste material and burn it in power plants. At that point in time it was believed that power plants were a good way to get rid of that.

It was all state-of-the-art type of air emission control equipment and things like that. Well, over the last ten years or so we found that the power plants aren't quite the panacea that they were laid out ten or 15 years ago when coal burning was starting to be popular for a lot of different types of waste. I coal burned at five -- four different power plants here in the U.S. and I did some test burning in Australia using that same technology, where we would basically go in and take the coal tar residues and mix them with coal and burn

them at a power plant.

Well, power plants are really reluctant to take that material now for a variety of different reasons. The studies have shown that only seven percent of the feed stock can actually be the soil that you're putting into the power plants at any one particular point in time without having large impacts on the power plants themselves.

The other problem that occurs is that there's no good -- there's typically no good storage handling facilities for this material so basically you would be taking the material from here, putting it in a truck and hauling it off to a power plant and putting it in a pile. In a sense just removing it from point A to point B to be burned over some period of time which typically is not a controllable variable in most regulatory environments.

In addition to that the power plants really don't, at this point in time, have the emission control systems to handle the dioxins that come out of them or mercury concentrations, things of that nature which is what this material has the potential for generating through DENOVO and things like that. When the materials go out of the stack they change into dioxin because they're not cooled fast enough and it creates

quite a large problem on a more regional basis than on -- than locally.

So you've got the increased health impacts, not only locally but on a much wider scale. I've also been involved with a number of different soil washing techniques some of which have been experimental, some of which have claimed to be pretty good. Under the different types of material, use of different surfactants and things like that, without you know -- we had actually in this area, had actually teamed with a small soil vendor, soil washing vendor from B.C. to do work on the adjacent site to the Tar Ponds. And we had very mixed results with that. And he had very good surfactants, very good system in mind of how to conduct that.

So you start adding these things together and you start saying, you know, the predictability of success is very low. Contractually, it becomes very difficult to control it. And it continues to have a high risk of failure and which is why we chose not to back that particular technology. And you know, it's just not -- you know my opinion, we had a lot of other people look at this as well and it's -- you know, it's a big problem right now with just using the straight coal burning or soil washing technology.

THE CHAIRPERSON: Your comments about coal

burning, do they apply also to cement kilns? Cement kilns, the burning conditions are different from power plants, generally?

MR. SHOSKY: I can pass that question over to Dr. Walker but it's my understanding that because the stack heights are even lower on the cement kiln plants, that there's a higher chance for those other toxins to form. Dr. Walker, would ---

DR. WALKER: I think the bigger problem in terms of burning in any other facility is the risk of permitting. That the -- it simply places a big risk on the operation of the cement kiln or the power plant. And in the case of a local utility did turn down the possibility of burning the Tar Ponds sludge because of the business risk involved and the public exposure to criticism.

THE CHAIRPERSON: But in terms of the actual process of burning such materials or such alternative fuels or synthetic fuels or whatever in a cement kiln compared to a power plant, are there significant differences from your perspective in terms of environmental impacts?

DR. WALKER: I think it depends on the specific power plant that's involved and the specific cement kiln. There are air pollution controls on cement

kilns but I think the fuel is generally clean enough that they don't have as much as the power plants. Certainly not as much as they would in, for example, Point Aconi. But perhaps more than they had in the older generations.

THE CHAIRPERSON: So you are saying to us that from your perspective this option was not -- it was not costs alone that took this off the table.

MR. SHOSKY: Not at all. There's a lot of technical reasons why it's a problem.

THE CHAIRPERSON: Now, when we look at -- there's probably nothing -- when we look at option 3 for the Coke Oven site you've indicated that this would be coal burning is the proven technology for PAH destruction.

MR. KAISER: That's correct. Proven to a limited degree.

THE CHAIRPERSON: I think we had some confusion on the other day when there was some discussion about this option or version of this option. I think we have on the record -- not confusion from you but some confusion about what happened to the PAHs in this particular option but it's my understanding that the PAHs do get destroyed in this option, is that right?

MR. KAISER: That's correct. I think the confusion was that there was a statement that PAHs

weren't part of the fuel product. But actually they are definitely part of the fuel product and do presumably get destroyed at the facility that uses that fuel.

THE CHAIRPERSON: Okay. And I guess when we look at the disadvantages that you've identified for the Coke Oven site are more or less the same. You referred to long duration here, increased health risks due to excavation, increased long term liability. Well, I've just got one more question about this table. I'm -- I was curious when I went through it how, under "Disadvantages" and for a number of options you've identified ongoing liability as being as being a disadvantage.

However, when it comes to the options that -- you know what does constitute an ongoing liability and why would it be -- why would any option that didn't -- that ends up with some contaminants being left on site would not -- is there not ongoing liability for all options? Now, for example, the option, Coke Oven 6 which is the one that in fact, is forming the core of the project, you referred to ongoing maintenance and monitoring required. Well, that's fair enough. That's -- we know that and we've presented that. Do you believe that there's no ongoing liability involved with the current proposal?

MR. KAISER: No, actually we do believe that and I guess should have added that as a bullet on its own or maybe clarified the bullet but definitely that is what is meant because we will have materials here that must be monitored and facilities that must be maintained. We see that and as has been discussed that would become a provincial responsibility.

THE CHAIRPERSON: Okay, thank you.

DR. LAPIERRE: Good afternoon and thank you for the opportunity to ask a few more questions. I would like to go back to a question I asked on Day 1 and it relates to the Tar Pond -- the Coke Oven site. Now if I go back to the Coke Oven site in relation to water and water that's going to eventually be left to percolate through the polluted material that's still left there. But if I'm not correct I want you to correct what I'm going to tell you.

My understanding is that you have an area that's fairly polluted to bedrock. That you're going to put in a plan for diversion of the water table which should eliminate some of the water that's going to percolate through the polluted site. You are going to control surface water. You're going to cap the area, however listening to Dr. Li last night, the cap does have a permeability which you indicated at ten to the minus

six I think which could allow up to 1,000 gallons of water through it a day.

The question I had asked is eventually you still have water that's going to infiltrate under your barrier. The water table is not only surface. It goes to bedrock. So you still have water at the base and essentially you have an open system where whatever leaches through the system will get into or drain away from through the bedrock, either on surface or through a fractured bedrock which you've indicated is fractured.

Now the question I had asked originally was, where will this water finally end up? And the question I had is if it'll follow and move down to the bottom and get to the base of the Tar Ponds. I have a little problem with that because I'd like to understand -- get a better understanding of the fractures in that bedrock. I'm not certain that all the fractures would lead down to the bottom of the hill. There could be fractures that lead sideways and eventually they could lead out to the harbour.

And my question is, how certain are you that the pollution left on that Coke site once you put the cap on it and you divert your water, I'm sure you'll agree you're still going to have water that's going to percolate either through the cap or underneath that that

water will not reach the ocean with contaminants that you wouldn't want out there. And I guess the -- that's my first question.

The second one is, if you had encountered that problem, could you put in place a pump and treat system which would, if you had some very specific end points on what you allow -- what you will allow as water flowing over that contaminant site. How many gallons, how much water would you allow to percolate through it. Could you, if it went beyond your end point, consider placing a pump and treat system to ensure that the water from the Coke Site as it percolates through the system doesn't get to the harbour?

MR. POTTER: I'll ask Mr. Shosky to address that. You do understand that on the Coke Ovens Site we do currently have a groundwater treating system for -- we're going to catch the water at the bottom of the Coke Ovens and contain it, treat it, discharge it again, so -- but I'll ask Mr. Shosky ---

DR. LAPIERRE: Yeah, but I'm thinking more water at depth.

MR. POTTER: Deeper, yes, I understand that's -- yeah.

MR. SHOSKY: Okay. The area where the deeper contamination exists is near the area of the Tar

Cell area and the plan is, of course, to either remove and treat that material by incineration or stabilize it.

Once that's done, and once the cap's in place, we feel that the source would be removed, so what we'll be dealing with is the residual materials that are left.

Based on the modelling that's been done by our hydrogeologists, it appears that that water, potentially contaminated water, would daylight underneath the monolith in the Tar Pond area, which is one of the reasons we have the control mechanisms there to relieve the water pressure and check for contamination that might collect in that area.

Of course it is possible to monitor and put in a pump-and-treat system or try some additional treatment mechanisms, like in-situ oxidation using potassium permanganate or some other chemicals that have been proven to work on these coal tar derivatives. There are a number of different in-situ treatment techniques that could be used.

Those, unfortunately, would be looked at in a lot more detail during the detailed design phase, so I can only speak at this point in hypothetical terms, but it's my understanding that from the modelling that I see it would end up -- more than likely the water from that

area would end up underneath the Tar Ponds.

MR. KAISER: I'd like to add, too -- you asked about the fractures in the bedrock, and you're correct, the fractures don't all go in the same direction, and as Mr. Potter said in his opening statement fractured bedrock is a particularly difficult scenario in which to recapture any contamination that exists, also as Mr. Shosky has just spoken to.

But the, I guess, overriding point is when you have groundwater you have regional flow, so there's a particular direction which can be determined in which that groundwater is generally moving, and that's the -- sort of the basis upon which you approach the problem. You determine the direction of the regional flow and then you address any issues that exist.

DR. LAPIERRE: I understand that, and I think that's what you're trying to address with your sheet piling and deviating the surface water.

However, I'd like to be assured that you're going to have some end points beyond which you would be ready to intervene if, you know, your best guess did not achieve what you thought they were going to achieve. I'd like to be assured that the process in the final design would address that.

MR. SHOSKY: There'll be components in the

final design that'll address that in detail. That's one area that's going to go through a lot more investigation as far as those hydraulic pathways at the deeper levels.

MR. POTTER: I should add, too, that is one of the advantages of those drains in the ponds. If we do -- we can monitor those, if we do start to see anything showing up -- and I do want to emphasize that we're not expecting massive contamination. I don't want to have that impression, that we have a lot of contamination moving off the Coke Ovens Site.

We know that in the -- on the Coke Ovens Site in the deep fractured bedrock that the DNAPLs have gone down into the fractures, it's typically about the upper 5 metres of the bedrock that has that fracture in it, and the contaminants have dropped into those fractures and remain there. All the sampling we've done on that site indicates that those DNAPLs are staying there and are not moving.

We will monitor for any soluble components that might come off the site, and as I say, the safety check down on the Tar Ponds is that we have those drains, we can watch for anything showing up and we'll have the very discrete, known location and if something were to show up we could, you know, of course, go back to where that drain might be first detecting it near the leading

edge of the SYSCO property on that side where it would come from, we can deal with treating it, and that's what some of the designs would have to take a look at, is if something shows up how would we deal with it and how would we treat it.

But we feel it's a very robust system with a lot of checks built into it, that if something unexpected happens we can detect it, we can deal with it and we can treat it.

DR. LAPIERRE: Well, that leads me to a second question, that leads me -- now you've got the water down to the -- below the monolith, and I just want to get back at this -- a few questions I have on that drainage system that you're going to have.

I mean, I can understand that you've got water coming in under the monolith, you've got a drainage system that's going to allow that water to move to the top and then you've got a series of canals and ditches under the cap that would allow it to move towards, I understand, your drainage system.

Now, I want to be sure I understand, because I just think maybe I didn't understand correctly the first day. I can't see how you could do what I understood.

Once these pipes are going to all join

together someplace, if it's -- each one of them is going to empty into the canal, my understanding was that they would be closed or valved and that you would monitor them.

I can hardly see that you would have, you know, 20, 30 or 100 pipes coming in there, each one of those monitored, headed, and then a valve on them and then that you would test that.

I don't know -- I don't understand how you're going to do that. Will they be free-flowing into the canal, or will you just test the water periodically to see what what's coming in is clean, or will it be a closed system that'll only go in once you've tested and you're sure it's clean? I just don't understand.

And you may not be at that phase of the design where you can reassure me, because I think if your system is correct, this water collection system to me is a very important one, because that's going to be the safety valve if the -- either the material moves from below or contamination moves from the Coke Ovens Site.

This is really your last chance of capturing it before it goes out into the canal and out to the harbour. So, I'd like to understand that, if I could.

MR. POTTER: I'll ask Mr. Shosky to try to

elaborate on that.

MR. SHOSKY: We don't have all the design details at this point, but I can tell you conceptually how we've decided to approach the problem.

One is that we know right now based on the information that's been collected over time and the hydrogeologic model that has been built up for the site that there are certain areas of that model that need more data in order to fill in those voids.

Once that's filled, once those data voids are filled, the actual spacing of those drain lines will be determined, because we'll have a better understanding of where the highest potential is that we may have impacts into the monolith.

And then right now the plan is to have each one of those drains individually piped and monitored separately periodically for chemical parameters to make sure that we're not having a problem with either the monolith or the deeper waters that may be contaminated coming into the monolith.

DR. LAPIERRE: So, each valve -- each one of those drainage pipes would be -- your intention now is to have those closed and monitored?

MR. SHOSKY: Yeah, we had to do it that way because one of the early designs that we looked at

was actually a large interceptor system that would have collected all the water from all of those, and the costs associated with running a large treatment plant that was primarily treating clean water were just cost-prohibitive on that sort of system.

So, we felt it was more prudent to have these individual areas. That way if we did -- because of the fractured nature of bedrock, it's not going to be contaminated uniformly, it typically comes up in, you know, sections of fractured bedrock or something like that, it's not like as if it was flowing through a nice smooth sandstone or something where it was all uniform. So, it could be very spotty.

And as a result of that, we wanted to make sure that if we had only one line or two lines that were contaminated we could deal with that with a cost-effective treatment system rather than having the whole thing open and treated because the water volume was too unpredictable at this point.

DR. LAPIERRE: And I guess the last question I have on this -- and you've indicated to me before that it may not be a problem, but the freeze/thaw cycle.

If, you know, you've got a metre of soil on top with your cap, it's still very close to the

freeze/thaw cycle if this is fresh water that comes up the top. The salt water may be a bit different.

I know in your previous answers you indicated the water would be warmer, but still, I mean, I'm not so sure that -- that still must be a concern that would have to be addressed, because if your system froze then your escape mechanism is limited.

MR. SHOSKY: Those are good points, and I think we said earlier that we're going to do some freeze/thaw tests.

If anything, one item that's become clear through these Panel discussions is that, you know, there should probably be some consideration given to making the caps -- either putting additional soil cover on them or something to ensure that they're out of that freeze/thaw zone, and there will be some additional investigations on the freeze/thaw issue in order to accommodate the final design.

MR. CHARLES: Mr. Shosky, just a clarification. I'm fascinated by this channelization system and the pipes and so on. Now, I want to be sure that when you explained it to my colleague I got it right.

These pipes with the valves on the end, did you say that they are going to be closed or open?

MR. SHOSKY: They'll be closed and the water behind them as they back up would be monitored, and we may have -- this is an operational issue that haven't fully gone through yet as far as -- it would be more in line with the detailed design, I believe, but it's that frequency of release ---

MR. CHARLES: That's what I was wondering about, the ---

MR. SHOSKY: --- right, release and testing, that would need to be accommodated for before -- it's like the next step in the design.

MR. CHARLES: Yeah, that's what I was wondering about. If you have a closed valve and the water builds up, what happens to it? I mean, where does it go? Does it build up pressure and then just start ---

MR. SHOSKY: Well, the interesting ---

MR. CHARLES: --- going outside the channels?

MR. SHOSKY: Oh, I'm sorry. The interesting thing that happens here is that we're actually changing the ground elevations from where it exists now where we know for sure the water would discharge to a certain level at the bottom of the Tar Ponds.

We're increasing that level by about 4

metres -- 3 metres, so that it's not -- no, 4 metres, so that it's not a submerged system anymore. So that it may be possible that the water isn't going to push as high up in the monolith as one might think it would, because it just doesn't have the hydraulic head behind it to do that.

Otherwise we would see water shooting out of the ground at low tide, for example, which I don't believe is the case that we see out there. So, there's a possibility that it doesn't go up as far into the monolith as the drain pipes, but that's part of the further detailed hydrogeologic investigations that need to be completed.

MR. CHARLES: Okay. Now, can I bring you back to the testing that you did with the BC company on -- for soil washing.

MR. SHOSKY: Sure.

MR. CHARLES: I think you said that you had a BC company come in and you did a bit of a test. I take it that you used sediment from the ponds, North or South, or both?

MR. SHOSKY: No, I don't want to mislead you on that issue. It was for the neighbouring property, it was not with these particular sediments. I have not done any testing on these particular sediments using soil

washing. We looked at that technology on the adjacent property, the SYSCO property.

MR. CHARLES: Okay. Thank you. And we heard in previous discussions here that soil washing has been used in Europe extensively and it's been used in a lot of cases with coal fines, and the suggestion was made that coal washing using coal fines wouldn't be very much different than using coal washing with our own sediments.

Have you any comment on that?

MR. SHOSKY: I guess, if I would have agreed with all those statements, it would have been one of the selected alternatives.

MR. CHARLES: So, in terms of a "yes" or "no" answer, you don't agree that necessarily the experience in Europe is transferrable to the type of sediment we have here in the ponds?

MR. SHOSKY: I don't believe these sediments are conducive to a soil washing system.

MR. CHARLES: Thank you very much.

THE CHAIRPERSON: I think we'd like to ask some questions now with respect to solidification and stabilization.

My first question is a simple one but it's been bothering me a little bit, the terminology. What is a monolith, and are we really talking about a monolith?

MR. POTTER: I'll ask Mr. Shosky to identify a monolith.

MR. SHOSKY: Our idea of the monolith is a large structure that is of similar characteristics throughout, similar grain size, similar physical and geotechnical properties throughout the mass that we're creating.

THE CHAIRPERSON: So the degree of hardness or solidification is not a part of that definition of monolith. It doesn't have to have a rock-like or a stone-like characteristic?

MR. SHOSKY: Well, it can. It really depends on what final design criteria is. When we look at the monolith, as far as the design went, there's a couple of things you look at.

One is what is the ability of this material to withhold its shape over time, and what do you need to do with it in order to make sure that it withholds its shape over time.

So what we proposed was the minimal amount of unconfined compressive strength and hydraulic conductivity that would give it a shape. It would hold up on its own. There would be some areas that would need to have a bit more concrete in them, particularly the seaward edges that might have come in contact with more

storm surges from the ocean, or wave action, or things like that.

The basic choice then becomes, after that, is how attractive is this big monolith, and what do you need to do with it in order to make sure that it doesn't weather over time, which is when you start adding the other items to it, a seawall in front of the monolith in order to take care of the storm surges so that the sea doesn't erode the monolith during its normal weathering processes.

You want to put a cover on top of it to minimize the amount of water coming in contact with the monolith, even though the monolith itself should have the low enough permeability associated with it that it will not really soak up water, except for after, you know, hundreds of years of being exposed to water, but minimizing it from the standpoint that you are trying to increase its longevity over time, which means protecting it from the freeze/thaw elements, and things of that nature.

And each one of the components that we had around the monolith was designed to help enhance the monolith.

However, I would say that the monolith itself would be comparable to stand on its own for quite

a lengthy period of time, but we would typically not recommend it without having some other covers and diversions to help maintain its integrity over time.

THE CHAIRPERSON: Well, thank you, Mr. Shosky. My question was more naive than the answer. I mean, it wasn't a naive question, I just wanted to make sure that it's reasonable to call this material a monolith. That's all I meant. I wasn't really asking for more detail there.

Anyway, from now on, we'll let you carry on calling it a monolith, so that's fine, but what was interesting to me in your response is that you kind of flipped an understanding that I'd been operating under, and the understanding I had been operating under, and I thought that we'd heard some statements to this regard, is that I thought essentially the containment system for the existing sediments, the Tar Ponds sediments, was the primary defence, and the solidification was the added -- the redundant treatment.

You've now given me an argument that the solidification and stabilization is the primary defence and the containment is the secondary. Would you like to comment on that?

MR. SHOSKY: Yes, I'd just like to add one other thing, and that same would hold true for the tar

cell area, itself, as well. We rely pretty heavily on that internal monolith in order to provide the strength and the covers, and all those extra things that are there to help protect the integrity over time.

THE CHAIRPERSON: So the monolith is the primary remediation technique, and the containment is the added support. That's how you wish to have this considered.

MR. SHOSKY: Yes, ma'am.

THE CHAIRPERSON: Well, I wonder if I could talk a little bit about the -- what is being aimed at with respect to the flux of contaminants from the Tar Ponds into the harbour.

You have indicated -- now, you have not -- am I correct in saying you've not really developed a goal with respect to this?

You have indicated an estimate, a very general estimate, that at the end of the -- when the project remediation is completed that you will have reduced the contaminant flux, there'll be an increase during construction, but after that you will reduce it by 10 percent, that's what's said in the EIS. But does this mean that that is, in fact, a target, a project target that you are aiming for?

MR. POTTER: I'll ask Dr. Stephenson to

address that one.

DR. STEPHENSON: Madam Chair, I'll just make a slight correction there. You said a reduction of 10 percent. What we said was a reduction of 90 percent.

THE CHAIRPERSON: My apology, I did realize that, I'm sorry.

DR. STEPHENSON: Having said that, we did modelling of the likely effects in the harbour on water and sediment quality based on that reduction of 90 percent, which we consider to be a very modest goal. That modelling exercise showed that water and sediment quality in the harbour, post remediation, would meet guidelines.

Therefore, we feel that the factor of 10 reduction in contaminant flux, which, as I said, we feel is very easily achievable, shows that the project can achieve its objectives.

THE CHAIRPERSON: Now, with respect to the TCLP test that was being talked about -- has been talked about by a number of presenters, do you know of any other methods for testing the leachability of the solidified and stabilized sediments other than this test?

The suggestion was made that this was an inappropriate test, that passing this test might still end up with unacceptable levels of contaminants leaving

the Tar Ponds -- the monolith, that the test was developed for entirely other purposes, and is not appropriately predictive of the -- with respect to environmental effects on marine receptors.

And then Dr. Lee made the -- said that he thought that there was -- there might be more appropriate tests, or a more appropriate matrix of tests could be developed.

Do you have some comments on that?

MR. POTTER: Yes, I'll ask Mr. Kaiser to address this and maybe get additional comments from Mr. Shosky, but we do understand that the TCLP test is -- there are limitations in proper applications of it, and I'll ask Mr. Kaiser to expand on that.

MR. KAISER: Yes, thank you. The whole aspect of testing and analysis and ensuring that the work you do is effective, of course, is an issue that we're always concerned about, and we have been looking into the possible alternatives to the TCLP because we recognize that that test was developed for a different purpose.

In fact, the cooling pond project that's currently ongoing, we're taking an approach where we're going to use the SPLP test, which is the Synthetic Precipitation Leaching Procedure test, also developed by the US EPA.

It's a test that we have discussed with representatives of the US EPA, and we feel that it is more appropriate. It, as well, has some limitations, but as we have seen and discussed over the last number of days, the proven and practised procedures that are in place for this type of testing are relatively limited.

So, at this point in time, the SPLP is a different and a better approach, in our view, and Mr. Shosky will add to that.

MR. SHOSKY: Often, on a lot of these tests, I end up running a TCLP test and the one that Mr. Kaiser had mentioned.

The TCLP test, in my opinion, is a much more aggressive test, because the acid concentrations are a lot lower that you run the tests on, and there's a higher potential, in my opinion, that you would leach materials out under those -- under that testing protocol.

The other testing procedure that Mr. Kaiser discussed is one that's more suitable for areas that are covered with slight acidic waters that may come into contact with it. So you have -- maybe running a test at a PH of like 3.1/2 for the TCLP and maybe something around 6 for the other one.

So what difference would that have made in our test results? In our tech memo that we did, we would

have had more samples that would have passed than had not passed, in my opinion.

So we went with the more conservative approach in the tech memo because we wanted to make sure that when it came time to defend it, in my opinion, anyway, that it was a more rigorous test than any of the other ones that were available at the time, or available now, that would release the most amount of material without becoming ridiculous about, you know, hitting it with a PH less than 1 acid, or something like that.

THE CHAIRPERSON: So are you reasonably confident that the TCLP test is fairly predictive of long-term leachability?

MR. SHOSKY: Well, I believe it is. I mean, the controversy over the TCLP test has been going on for almost -- I started with EPA in 1980. The hazardous waste regulations came out 1981. It's been a controversial item for 25 years and the EPA hasn't changed it. The only thing that they did come out with that's a reliable additional test method is the one that Mr. Kaiser had mentioned, which is a synthetic leaching process.

MR. KAISER: And just to add to that, that the STLP test has been in use since the early to mid-90s.

THE CHAIRPERSON: If I can just get back

to this issue of which comes first, the containment or the -- which is the primary remediation approach, the monolith or the containment when you're looking at the Tar Ponds -- let me back up here.

Right now, in terms of the contaminants in the -- the current situation in the Tar Ponds, without a barrier at the mouth, is it fair to say that the main pathway for those materials to get out of the Tar Ponds and into the environment is basically through physical movement of the sediments themselves? That's the issue that you need to remediate, that those -- the contaminants are not particularly soluble and not moving into the water column.

MR. POTTER: That is correct. The current situation is that the migration into the harbour is a physical one, that it is the tidal and storm surge flushing of sediments, you know, bound with a contaminant going out into the harbour.

We're addressing that in, I guess, a step-wise fashion. The first step is the barrier, albeit the barrier has an opening in it, the 50-meter opening. We then progress to the channelization to get the water courses through there.

And then back to our monolith issue, I think it's clear, and we have to be clear to understand

that the primary purpose for the solidification and stabilization is to make that sludge material suitable for capping, that's the objective we started with was that we had to make that sludge suitable for placing a cap on it.

We knew that it was not -- we know that, you know, the sludge as it exists today passes the leachability test, it isn't -- you know, doesn't need to be solidified and stabilized for that purpose. It's -- the primary, or one of the main reasons for the S/S work on the sludge is to give it the strength to be able to place a cap on it, and to facilitate future use.

Now, in developing that cap, we, as well, built in the redundant features. We knew that the steel sheet piling for the construction of the channel will give us a barrier wall on one side, we're going to have the Battery Point Barrier on the outer perimeter with the -- as was explained, we'll have a strengthened interface between the barrier and the monolith out there. We'll have our drainage system going through the monolith to deal with any water that could be coming up through the bottom of the monolith, through the till layer. We will have the checking and sampling of the water to, you know, watch for any potential contamination moving through.

So that's -- if you kind of take it from

the existing condition we have it at today to where we're going to arrive at the final environmentally managed site, that's the rationale behind it, but the driving force behind developing the monolith was to give us the material that we could put a cap on.

THE CHAIRPERSON: Thank you.

DR. LAPIERRE: Thank you. I'd just like to follow up on that. If you look at the process you're going to go through in solidifying in order to keep your cap -- because if I listened to what you've said and what Environment Canada has indicated that the containment is -- the chemicals are fairly well contained on the under-burden and they're not moving -- so once you get that wall at the end built, so you're not going to get that opening to the sea, and you get your channelization and you're moving your water along -- this could be a stupid question, but if you took the water off the pond, couldn't you just put a shallow cement cover and then put your cap? You wouldn't go through the -- you wouldn't need to go through all the process of digging and stirring and re-sedimentation.

Do you need that solidification to go that deep to get that work done?

MR. POTTER: I think I missed a little bit of it there. You're a little bit far from the mike, but

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DR. LAPIERRE: I guess if you just took the water off the pond -- you have water out there now -- you have a bed of contaminants that you have all indicated is not migrating. Could you just put a cement cap on top of that and then put your -- why do you need to dig it just to solidify it down to 15 feet? Couldn't you just solidify on top of what you have if it's stable, not moving? You've got a very contained wall. I understand the wall is very important at the end.

MR. POTTER: Okay. I'll ask Mr. Shosky to explain the rationale for, you know, going with the full monolith, if you wish.

MR. SHOSKY: When we picked up the opportunity to do the predesign engineering on this, the original plan was indeed to go in and only stabilize the first metre or so of material out there. And based on my experience on other sites, without going the full depth to do the -- and stabilize the whole thing, you always stood the chance that the top would crack. There might be some differential settling that took place that may cause material to come up to the surface, thus creating a lot more maintenance problems for you long term. And where you've seen stabilization fail in the past is where those things were not taken into account.

And given the fact that the incremental cost to go ahead and do the entire column of sediments down to the till was not that great in comparison to the -- some of the other activities that were going on, it just made sense to us to go ahead and stabilize that for the full thickness, but the original -- some of the original work that you saw done by some of the earlier reports were only recommending that, and it's still something that, you know, people ask us about.

DR. LAPIERRE: I guess if you consider now -- if you consider full encapsulation, by going into that depth, you're going to re-suspend some of the PCB sediments that are in there, which are, from what I understand, fairly stable at the present time.

If you only went on the surface, you wouldn't be touching those.

MR. SHOSKY: It's just differential settling issues again where you're going to have a lot heavier material created that could potentially crack and cause these materials at the bottom, because of putting pressure on them, to come back up and surface at the top.

MR. POTTER: I think we'd also be putting a significant limitation on future use of the property as well, which is, you know, a consideration we are looking at.

So again, the monolith, the full depth monolith S/S does allow us to have, you know, a sense of confidence in the -- you know, the usable strength of that material afterwards for potential future uses.

DR. LAPIERRE: Yeah, but if my shallow cement was sidewalk strength, you could use it for anything right away.

MR. CHARLES: Just a follow-up question on the purpose of the monolith and the stabilization.

When I first read the EIS, it talked about doing the stabilization and solidification in order to support the equipment that was going to have to work on the top. And now today Mr. Potter has said that really they just wanted to get the sludge together in a more firm consistency so they can put a cap on it.

So my question is, leachability, is that just a happy byproduct benefit of doing the S&S. You know, my first thought was that it was one of the main things -- the reason why you were doing this, you wanted to bind the stuff more closely together so it wouldn't, you know, migrate and that sort of -- is that not a factor?

MR. SHOSKY: The -- it all works together in -- all the pieces work together in conjunction. We know right now that materials do not leach or they meet

the leaching criteria if nothing is done with them.

Once we do anything with them, we want to make sure that it still at least meets the same criteria from a leaching perspective that we started with. We don't want to create a worse problem by, you know, adding something of the wrong pH or whatever in order to cause a problem.

So we ran the leaching test. It matched up with what it was -- with what we were having before. And the strength of the materials with the selected additives that passed the test were much greater that allowed us to then, you know, further develop those properties and have these -- have this monolith that stands on its own.

Did that help?

MR. CHARLES: Well I guess, you know, in my own simplistic way, I was trying to figure out whether reducing leachability was going to be a byproduct of this S&S and whether it was one of the reasons for doing it or -- because I heard today that the main reason was to support a cap.

So is there another benefit there that you're going to take if you get it?

MR. SHOSKY: It's an added bonus.

MR. CHARLES: It's an added bonus.

MR. SHOSKY: It's an added bonus, the fact that it's less -- almost two orders of magnitude less permeable than it was before. Stabilization is a bonus because the hydraulic conductivity will change from, you know, ten to the minus four, ten to the minus five, to now ten to the minus six, or in some of our testing, up to as high as ten to the minus eight.

So it's going to become less permeable to water, less leachable, less available into the environment all the way around.

MR. CHARLES: Yeah, that's what I thought I read in the EIS, and I just wondered why it wasn't being mentioned, I suppose.

What about the impact of salt water? Is there going to be any need for any particular treatment of your cementing mixture in order to take care of that problem?

MR. SHOSKY: Currently I don't see that as being a problem. Based on the discussions that we've been having over the last couple weeks, we'll look at that in a lot more detail during the detailed design phase, but in the areas where I've used stabilization where there is salt water, it hasn't posed a problem, but then some of those sites have only been closed for, you know, ten years or so.

MR. CHARLES: Thank you, Mr. Shosky.

DR. LAPIERRE: A few questions on the monolith again. You're going to dig these football-size holes. I mean, that seems to be what I gathered from the size. They're quite big which you're going to, you know, excavate.

How will those be stitched together? I think I asked the question already, but I'm not so sure on the answer.

If you're going to make -- put sheet piling around those and dig that hole out and cement it, how will they stitch together with the remaining monolith?

MR. SHOSKY: Once the channel is installed with the sheet piling that's installed, the other sheet piling will come almost perpendicular to that channel sheet piling and will be locked in together with that sheet piling that's forming the channel, and then it would go all the way to the banks.

And we would have a couple of these cells built at a time, so that when it got time to pump off water, we would remove the water that is in that area and pump it into the next cell until we got near the bottom where the water may be a bit more murky, and then it would be treated prior to discharge.

DR. LAPIERRE: Okay. So the cells would all be linked together through the sheet piling.

MR. SHOSKY: Yes.

DR. LAPIERRE: The other question I have, with the size of these football fields -- and we heard some discussions over the last couple of days with various gasses that could be emitted when you do the work -- would it not be more prudent for these gas control odours or whatever that you have to control -- I know you could maybe put a big tent over the entire football area size -- it's doable, but wouldn't it not be more feasible to do it on a small -- with the augers system, a smaller scale? I guess if you had a problem, you could easily correct it. If you've got a big hole, it's maybe more difficult.

MR. SHOSKY: Right. The concern I had over the augers was two fold. One was going in and redrilling areas in order to get the proper overlap that you need with auguring tools.

As I stated a few days ago, the cost break point typically on these stabilization projects is about eight metres, which is about the length a track excavator can reach. Anything shallower than that is typically dealt with with traditional excavation equipment, and the deeper stuff is usually done with auger systems.

But more importantly, I guess, in my mind is this issue of odour control. And I have a bit of a story to tell.

I showed a picture the other day of a project that I did in Melbourne, Australia. It was a very large environmental project and it was right near downtown Melbourne.

I was sitting with the Mayor of Melbourne one day, and he told me, he said, "Mr. Shosky, I want to make sure that we do not smell any of this stuff in downtown Melbourne." And I said, "Okay." I pulled out my calculator and I did a calculation. And I said, "It'll be an additional twenty million dollars ($20,000,000) not to smell anything in downtown Melbourne." He came back to me and he said, "What if it smells just a little bit?"

In the way -- just to illustrate the fact that the odour issues can be controlled, but a total absolute -- total containment of odours is very expensive and is used only when it's necessary to have it done. And what we would be doing out there during that mixing process is to be able to come in and use more traditional items like foaming agents and things like that that we would use during the stabilization process.

MR. KAISER: Dr. LaPierre, if I could just

clarify. I wasn't sure on your question. Did you think that the whole Tar Ponds site would be one big open hole, or just the whole football field area would be one big open hole?

DR. LAPIERRE: Just a football field. One at a time. Many football fields, one at a time.

MR. KAISER: Okay. It would be one at a time, but there's certainly a lot of opportunity for us to employ or control measures within that boundary or within the football field area. The whole thing wouldn't be undergoing a construction activity at one time.

DR. LAPIERRE: So you would have some very specific guidelines as to when you initiate odour control, for example?

MR. SHOSKY: That's correct.

DR. LAPIERRE: And how would those be established?

MR. SHOSKY: During the early phases of the project, there's usually a plan put in place.

In this case, it's called -- I believe it's called the Environmental Management Plan -- where we would have a variety of different air monitoring equipment, some of it real time, some of it collected over, you know, a 24-hour period, depending on what the parameters are.

Then we would have very strict odour and reading controls that as soon as those values were exceeded, then we would implement odour controls, and some of those odour controls could be simply adding water, they could be chemical dispersants, they could be foaming agents, they could be physically covering the area with tarps.

A whole variety of different things going into sequence when that starts. You could stop work. There's a lot of different steps that we would go through for that, which is what I commonly follow on a lot of the urban sites I do with manufactured gas plants. It's very rigorous.

MR. POTTER: I might add if I could just a couple points, and then I'll ask Dr. Magee to add something on the odour side. We did look at that in more detail.

But back to the football or soccer field size, that would be a size we would use for de-watering purposes. We'd get control of an area that size, de-water it. The actual physical area that we'd be working in within that soccer field, football field, would be a portion of that at any given point in time. It wouldn't be actively working on a very very large football field at that point.

And we did take a look at the air emissions and odours, vapours, from working in the ponds, and I'll ask Dr. Magee to address that. And I think he might perhaps even have Dr. Walker assist him on that one as well.

DR. MAGEE: Thank you very much, Mr. Potter.

We certainly were concerned about the vapour emissions that might come off of the facility of the area when we're doing the stabilization, and we quite rigorously evaluated that. The issue of temperature has come up and we went to the literature and determined what the top temperature was that has ever been observed when stabilization has occurred. Fifty degrees centigrade is what we heard.

So, we took the emissions that we measured from our test field experiment and upped them with a US EPA temperature factor to take it all the way up to 50 degrees centigrade.

And with all of that modelling we certainly have found that health is not going to be an issue. Benzene, the TPH components of the rest of the BTEX family, naphthalene, methylnaphthalene, all of those were modelled very rigorously using EPA standards and procedures, as well as Health Canada procedures, and we

just do not predict anywhere near levels of those constituents in the neighbourhoods that could cause a health issue.

Might you smell them from time to time, well that's a different story, because the levels are much, much lower than you can detect with your nose. So, there could be the potential to smell things, but we want to just make sure everyone knows that when you smell something, that doesn't mean that it causes an adverse health issue. It does not.

DR. LAPIERRE: Smell can be associated as a nuisance and a nuisance is, you know, a social factor that people aren't always, you know, ready to accept, I guess. There should be, at least, a guarantee that the public should be well informed on the nuisance versus the health aspect of odours, should they arise.

MR. POTTER: I might just add a bit to that.

I think we've spoken about this before, but we will have a complaint response system in place, as well as, you know, advising the public of any planned activity in the area. You know, there will be a mechanism in place for the public to address any odours and complaint nuisance factors that might arise during the course of the work, and we'd expect and recognize

that's going to be important to the neighbour to make sure if there is a concern coming up that we quickly respond to it and if there are -- a need for it dealing with, you know, applying, you know, suppressants or whatever on the working area, we'll certainly look into that, and that would be the purpose of the response -- complaint response system is to respond quickly to the public.

DR. LAPIERRE: I have just one final question.

Both Environment Canada, I think, DFO and I think Natural Resource Canada all offered their submission for additional modelling as it relates to the prediction and the ocean -- harbour. Would you consider -- have you considered undertaking the revision of these models as expressed by DFO, Environment Canada and Natural Resource Canada?

MR. POTTER: We are confident that when the Environmental Management System is in place that we are going to have a good control over what's going into the harbour.

And also appreciate that, you know, we are at the bottom end, if you wish, of a receiving water discharge from a good part of the city. Our channels that will discharge into the harbour will be receiving

material coming from -- throughout the rest of the city. But in terms of the, you know, the discharge potential coming from our site, I'll ask Dr. Magee to address that. I'm sorry, Dr. Stephenson.

DR. STEPHENSON: It would certainly be possible to do more modelling, but at this point I don't particularly see the need.

I think the real focus or the need to focus is on development of an acceptable monitoring program that will lead to adapted management, so that if project activities are leading to releases in water that could be harmful to the environment that the project can be modified, work can be stopped, additional mitigation can be put in place before work starts again. I think that's -- really the key need is to start talking about mitigation and monitoring.

DR. LAPIERRE: So, rather than modelling your answer is monitoring and mitigation. Is that it?

MR. POTTER: We'd like to clean it up and -- get it cleaned and make sure that we are conforming.

Again, going back to what we refer to as the three box model of -- Mr. Gillis indicated in one of his presentations that, you know, you do your initial assessment of what you think the problem is, and put your solution in place and then -- and put in place the

monitoring, affirm that your assumptions were valid and you've got, you know, a control over the situation.

DR. LAPIERRE: Thank you.

THE CHAIRPERSON: I think we need to take a break now.

So, we're going to take a 20-minute break and we will return at 3 o'clock. Thank you.

--- RECESS: 2:39 P.M.

--- RESUME: 3:04 P.M.

THE CHAIRPERSON: I'd like to get this session under way again, please.

What we're going to do with the remaining time, we had originally said that we would break at 4 o'clock. We'll probably continue -- we will extend the session, if we have questions, till 4:30. We're definitely going to break at 4:30.

We're going to begin -- the Panel does have just a few more questions for the Tar Ponds Agency. We are then going to turn to the Sierra Club and to Dr. Ignasiak.

I don't know. I may have to toss a coin, as to which party goes first. And each put in a request earlier on for additional time to ask questions, so they will each be given 20 minutes.

Ms. MacLellan has asked for additional

time and so Ms. MacLellan I'm going to provide you with 10-minutes for additional questions, and if you have extra ones they could be placed in writing.

I will then open up the floor to other people in the room who may have questions, and will do basically rounds of single questions at that point, until we get to 4:30 and then we will all go and take a break.

SYDNEY TAR PONDS AGENCY

--- QUESTIONED BY THE JOINT REVIEW PANEL:

THE CHAIRPERSON: So, just to begin with, I'm going to start by with a -- I have a request rather than a question for the Tar Ponds Agency.

And this relates to the fact that we now have it clarified that you have identified an alternative -- an additional alternative means of carrying out the project and we've had discussion about that this morning and -- sorry this afternoon, so you gave a very brief description of how the tar cell and Coke Oven Brook sediment would be stabilized as well as capped, and we need more detail on this, since there's very little about -- this option is not identified in the EIS, so we need more detail, which we are asking you to provide in writing, on what additional effects could be created and how those would be mitigated.

And you have until midnight on Friday to

submit that in writing.

Is that clear, Mr. Potter. Any questions?

MR. POTTER: No, that's fine. Thank you.

THE CHAIRPERSON: Thank you.

MR. CHARLES: Mr. Potter, I don't know who you want the field question I'm about to ask -- but here's the question.

It's regard upset conditions on the incinerator. I know that your group talked to incinerator operators about what would be a reasonable time to model or plan for upset conditions. But I wonder have you made any contact with the regulators to determine what they might consider to be a reasonable time?

MR. POTTER: No, we mainly focused on talking to operators. We haven't made any contact with any of the regulators and the various other jurisdictions where those incinerators would have been.

MR. CHARLES: I was interested in the definition of technical feasibility from your point of view or your teams point of view, in the context of -- do you think something is technically feasible if it has been carried out in a number of instances on a number of projects, regardless of the consequences or the efficiency of the operation or do you take into account

both of these things, the number of times the procedure or process has been used, and how effective it was.

MR. POTTER: We use the definition "technically feasible" to define -- I guess it is made up of two components. One is that it is technically suitable and the other is that it meets the aim of the project.

On the technical -- I think the question you're asking would fall into the category of technically suitable, and that's where we would determine that, yes, if a technology has been used in sites, similar to our sites, or with conditions similar to our conditions, that we would deem it to be technically suitable, proven.

MR. CHARLES: Technically suitable -- what does "technically suitable" mean? Cost effective? Within the cost budget or not innovative or what?

MR. POTTER: I think the technical is -- relates to the -- you know, the application of that approach in other similar circumstance, in other similar projects, that it meets the -- you know, it's suitable for carrying out the objectives that we've determined for the work on our project, which ties back again to -- we would have looked at other locations where land farming or capping or barriers or -- you know, the various components would have been used.

So, it's ---

MR. CHARLES: So, what ---

MR. POTTER: Sorry?

MR. CHARLES: Sorry, would the two elements then be part of it? That is looking at the experience of the use of the technology in other places, how often has it been used?

If it hasn't been used much, then you must ask yourself why. If it's used a lot, you know, that sounds good. But you also want to follow that up with an assessment of how effective it's been. Stuff can be used and not be very effective.

But normally you'd think if it was, it wouldn't get used that much. So, maybe I've answered my own question have I?

MR. POTTER: I was going to agree with you.

MR. CHARLES: That's okay. Did you ever get a response in writing from DEVCO regarding the letter of intent in relation to the VJ property or the Salem site?

MR. POTTER: We sent a letter to them, April of '05 and the Board met, considered the request and the Board, essentially -- our understanding is that the Board has pretty much said, "Well, let's wait and see

what the outcome of the eventual, you know, progress of the project."

At some point in time the project gets firmed up, and we come back to them with, you know, a follow-up to that. That's essentially where it sits right now.

I think that's the response that DEVCO gave when they came here as a presenter. They've considered it, but there's been no formal response in writing back to us.

We've simply been told that the Board of DEVCO is aware of the request and will await us, essentially, coming back to them.

MR. CHARLES: So they want to see the procedure play out before they have to make any decisions.

MR. POTTER: I suppose that's reasonable on their part. You know, we simply -- there's a Letter of Intent. We indicated that we may have an interest in the land and they'll just await the outcome of, you know, the eventual project description.

MR. CHARLES: Okay. Fine. Thank you.

DR. LAPIERRE: Mr. Potter, one of the starting points of the human health risk assessment for the incinerator was the Canadawide Standard and how they

reapply to the stack conditions.

The risk assessment demonstrated no unacceptable level of risk for various contaminants, with mercury being one exception.

For mercury, I believe, you are proposing the emission criterion be reduced by a significant factor. I don't quite understand why you did that, and secondly, what makes mercury so specific to this project or this project site?

MR. POTTER: I'll ask Dr. Magee to address the first part of that question, and I think there could be -- on the technical side of achieving that reduction, I'll ask Mr. Shosky to just think about a response on that part of it.

DR. MAGEE: Yes, thank you very much, Mr. Potter.

We did start out with the Canadawide Standard. We then did the total risk assessment by the book with all the pathways and we found that the risk levels even for the most sensitive receptors, which are the toddlers at the farm who eat all of the food that we talked about a few days ago, were several orders of magnitude less than the Health Canada risk level that we have to meet. So, that's fine.

When we did mercury we went through the

same exercise starting with the Canadawide Standard, but because of the extreme levels of conservatism in the models that do the transport and fate(?) of mercury, assuming that a certain percentage of the mercury that's emitted turns into methylmercury, which is the form of mercury that then gets bioaccumulated into fish, and then using the levels that get accumulated into the fish, which are fairly close -- as you know Grand Lake is right there -- so in some other location where a lake is further away it might have a lower impact, but here the levels in the fish, when we then laid over top of that the high level of fish consumption that Health Canada wishes for us to assume for an adult and a toddler, we came out with a hazard index, slightly higher than the goal that we had assigned to ourselves, which is a total hazard index of 0.2.

So what -- then was to back off and say, "Well, mercury is what's causing the whole issue for non-cancer effects, what level do we have to get it down to, in order to pass the risk assessment?"

I then asked engineers, "Can we reduce the emissions below the Canadawide Standard by applying appropriate technologies?" And they said, "Yes."

MR. SHOSKY: Dr. LaPierre, I'll just add onto that, if you don't mind.

When the question got turned over to us, there's two things we looked at.

One was the stat technology that we could use to reduce the mercury emissions as part of the emission controls, which we feel very comfortable with, what we proposed in the IR to you.

But also of great importance to us was the concentrations of mercury that actually goes into the feed stock into the incinerator.

So, we have a set of parameters that we would look at prior to feeding the material into the -- the feed stock material into the incinerator that would also help make sure we didn't exceed the limits for mercury.

DR. LAPIERRE: So the end result is, you have a very low number to monitor at the stack, is that it? 1.1, if I'm right, nanogram per cubic meters? Is that what you're proposing for monitoring?

And I guess the question I would have is, you're sure you can achieve that monitoring?

MR. SHOSKY: Through using the engineering controls that I just talked about, which is monitoring the concentrations going into the feed stock to begin with, before you burn it, and then also ensuring that the proper emission controls are on there, so that you're

treating the mercury vapours with the best available technology, and yes, I believe we can meet those standards.

DR. LAPIERRE: Okay, thank you.

THE CHAIRPERSON: That concludes the Panel's questions this afternoon.

So, now we have additional questioning from participants who had requested that beforehand.

So, Dr. Ignasiak and Sierra Club of Canada. I have not determined who should go first. I have no particular reason to choose one over the other.

Do you wish to negotiate that between yourselves?

Please, I think it's -- since it's a fairly long period of time, take a seat at the witness table.

So, you have 20 minutes, Ms. May.

--- QUESTIONED BY THE SIERRA CLUB OF CANADA (MS. ELIZABETH MAY)

MS. MAY: Thank you, Madam Chair, and thank you for one of the last gasps of chivalry from Dr. Ignasiak. Ladies first.

I want to ask a number of questions, with your permission, of the Sydney Tar Ponds Agency proponent.

I'd like to start with clarifying their understanding of the Memorandum of Agreement.

I find some of the evidence about what can be in and out and how prescriptive the Memorandum of Agreement is to be a confusing area, and with your permission, I'd like to ask, if we understand their evidence from earlier today to be that technologies that are listed in the Memorandum of Agreement can be omitted, but nothing not mentioned can be added.

If I could just clarify that that's their understanding of Memorandum of Agreement? Mr. Potter? I don't know, Madam Chair ---

MR. POTTER: Yes, that would be correct, Madam Chair.

MS. MAY: Okay. My subsequent questions, having read through the Memorandum of Agreement and having, at the time it was negotiated, been assured by the Minister of Public Works who, at the time, was the Honourable Stephen Owen, and by the Assistant Deputy Minister of Public Works, Alphonse Cormier, that the nature of the description of technologies was merely illustrative, and was not meant to be prescriptive.

I'd like to ask the proponent if they have a subsequent legal opinion that leads them to believe differently than I was informed at the time by the

Federal Minister.

MR. POTTER: I guess our understanding of the MOA relates back to our discussions with the Justice lawyer who drafted the document.

And the indication -- the understanding we have is that the elements in Section 1.2 are the elements that are considered for, you know, the purposes of this project. And as I've mentioned, you cannot add to those elements, but you can remove an element.

But they are descriptive -- you know, fairly descriptive. When you have these -- when you're defining land farming and technology, the incineration technology, the specific reference to it being a single use dedicated facility, I thought it was fairly prescriptive.

MS. MAY: Madam Chair, with permission, my reading of the Memorandum of Agreement, and certainly what was pointed to us at the time by the Minister of Public Works, was the language, "Such as" was meant to be illustrative and not prescriptive.

We probably won't be able to resolve it, but I would like to know from the proponent if they have anything other than their recollections of the drafting, whether they have anything in the form of a legal opinion with which they now say they cannot choose technologies

other than those that we were told at the time were mentioned for purposes of description.

MR. POTTER: I don't think I can add to that question.

MS. MAY: I'd like to turn now to the coffer dam.

I just want to be -- to clarify that the coffer dam is now, Madam Chair, not fully a dam, but will remain forever with an opening at its mouth.

Is that the correct understanding of the engineering?

MR. POTTER: No.

The coffer dam will have a temporary opening during the staging of the remediation work.

The barrier -- Battery Point barrier will be constructed with a 50 meter opening.

The channelization will follow behind that, allowing for the rerouting of Coke Oven Brook and Wash Brook to progress out through, past the barrier.

At the point that those brooks and the channel is fully constructed, in essence, the barrier will be closed for the purposes of the Sydney Tar Ponds. They will only be open for the purposes of allowing passage of water from Coke Oven Brook and Wash Brook.

MS. MAY: Is this coffer dam, Madam Chair,

also the same structure that earlier today was referred to as a sea wall?

MR. POTTER: I think the undertaking -- there was reference to a sea wall.

We tend not to call it a sea wall. That was probably the request that came from the speaker at the time.

We refer to it -- it's been referred to as a Battery Point barrier or a coffer dam.

MS. MAY: So, to clarify, then, there are not two structures, one a sea wall and one a coffer dam with an opening?

MR. POTTER: Correct.

MS. MAY: Okay. In the context of the coffer dam, and what can be removed and what can be added, we note that the Memorandum of Agreement at Table 1 specified a coffer dam. It did not specify it had an opening.

And the public understanding at the time was that this would be a full wall and barrier, from one end of the opening at Battery Point to the other.

Was this subsequent change in the understanding of a coffer dam something that required renegotiating of the MOA?

MR. POTTER: No, I specifically went back

to the lawyers on the definition of the coffer dam reference in the MOA, and the explanation provided to me from the author was that the coffer dam was an engineering structure to allow passage of water from the two respective brooks to the harbour.

It was -- that was the understanding or the purpose of the term coffer dam.

The physical engineering features of that were immaterial.

It was a -- it was understood from a legal perspective to be a structure to allow water to pass from those two water courses out to the harbour, while at the same time containing and retaining the sediment in the Tar Ponds.

MS. MAY: Thank you, Madam Chair.

I guess, just to clarify, then, this is a new definition of dam that will have a 50 meter opening. Is that correct?

MR. POTTER: Not -- the interpretation I received from Justice was that that would not be inconsistent with the term in the MOA, that it conveys the same meaning that there was a structure -- an engineered structure placed across the opening of the north pond to allow conveyance of water from the two main brooks to Sydney Harbour, while retaining the sediments

in the pond.

MS. MAY: Madam Chair, turning to a slightly different topic, which was part of the EIS that Sierra Club of Canada believed was inadequately treated by the proponent, are the future impacts of climate change, particularly storm surges and sea level rise relevant to this issue of a coffer dam with a 50 meter opening.

Has the proponent modelled for increased storm surges and sea level rise, increased extreme weather events, and whether their dam with a 50 meter opening will, in fact, provide any protection for their monolithic structure?

MR. POTTER: I guess the preventative works was the process that was used to assess the coffer dam construction, which does address the question you're bringing up today, that that coffer dam, Battery Point barrier, was assessed through a separate process.

It's not currently part of this work that we're reviewing today.

It was a preventative works project which had a separate assessment which was completed six to -- several months ago.

MS. MAY: Madam Chair, I still am not clear on the answer.

If -- given that the functioning of this described coffer dam/sea wall is relevant to the functioning of the SS monolith, can the proponent tell me if they modelled for currently expected levels of sea level rise, extreme weather events, and increased storm surge impacts on the estuary?

MR. POTTER: During the preventative works review of that project -- design of that project, those factors were considered when building the barrier in terms of designing it.

As we heard in testimony from -- previously from Environment Canada at the hearings, very climatological people and another department -- the two divisions within Environment Canada did look at this -- you know, the overall project in terms of rising sea height and, you know, climate change, and deemed it to be acceptable.

MS. MAY: My recollection of your EIS document was to dismiss that it would not be a factor, not that it was modelled.

I'm specifically asking if it was modelled for, say, a one meter sea level rise, or whether it was just examined and discarded.

MR. POTTER: It was not relevant, because it had been addressed in the preventative work stage.

The barrier wall, effectively, was to address that situation.

MS. MAY: Were they aware the barrier had a 50 meter opening?

MR. POTTER: Yes.

MS. MAY: I'm wondering if I can turn to another topic and ask the proponent, certainly it was evidence from experts presented by Sierra Club of Canada that it was a significant deficiency in the EIS that there did not appear to be a continency plan for failure of solidification and stabilization.

I'm wondering if the proponent, in fact, has such a contingency plan?

MR. POTTER: As we have identified in the past, the design has a number of built in redundancies, and we have early warning, if you wish -- early detection systems in place to see if we are experiencing any shortcomings of the design.

Again, if we wish, going back to the -- you know, the very original presentation on the opening day when we described what we call the three box model, we design it, we construct it, we monitor it to make sure that we are -- you know, all the assumptions that we made were -- are being achieved.

We've got the contingency in place in the

sense of all the monitoring to detect if there's a problem, identifying it, and then implementing a solution to it. But we do not expect there to be any problems.

MS. MAY: Madam Chair, I believe the evidence from Dr. Lee was fairly straightforward, but just to mention the proponent's own evidence earlier today in answer to your questions, that the TCLP test is now understood by the proponent to have its limitations, and may be an issue that they are, I think, by my notes, concerned about.

Do you not feel it would be appropriate to have a contingency plan, given that you have your own doubts about your ability to monitor failure?

MR. POTTER: The reference to the TCLP methodology was that it was overly conservative, producing a result stronger -- or over -- well, I guess overly conservative in its design that the SPLP was a more appropriate testing method for that.

Again, we are confident of the design. We've got measures in place to confirm that the assumptions that we made are accurate and they are performing to their necessary criteria, and don't feel at this point in time that there's a need for going beyond that.

MS. MAY: So, the answer to is there a

contingency plan is no?

MR. POTTER: In -- that would be correct.

MS. MAY: Okay. Thank you.

We may just have missed this, Madam Chair, so forgive me for asking.

We've been trying to find out if we, in fact, have a response yet to the undertaking that was made by the proponent to respond to our inquiry on PCB delineation.

I just want to ask, if it's been turned in to the Secretariat or the Panel, we'll find it, but we haven't found it yet.

If it's still not available, we'd ask why not.

MR. POTTER: Would we have a reference number on that? We can start checking, but if we had an undertaking number, it would help.

MS. MAY: Okay. I'll check for the reference number, if we can find it.

Thank you.

THE CHAIRPERSON: I've been informed that we don't have a specific reference to that undertaking in the record, so we will get that sorted out.

Our Secretariat will speak with you afterwards and then we will bring that back, as required,

okay?

MS. MAY: Okay. Oh, thank you.

We were attempting to ask for that in earlier evidence when we were discussing the issues with the proponent on, I believe, May 1st. We could double check. I'm sorry, I should have had that with me, Madam Chair.

If I could turn to some questions relating to ambient air monitoring and the incinerator, Madam Chair, we're looking to inquire whether the Proponent is willing to conduct a rigorous safety plan to protect public health by performing real time ambient air monitoring in the community to measure the dust and gaseous emissions from both the Coke Ovens cleanup and the Tar Ponds cleanup. We have not yet heard a willingness to do that and we'd like to ask the Proponent if they are willing to do -- to commit to that.

MR. POTTER: We routinely do a real time air monitoring around all activities we carry out.

MS. MAY: I think evidence is to the contrary but I'll move on. Would you be willing to then, turn your ambient air monitoring system over to an independent air monitoring contractor, separate from the Agency?

MR. POTTER: We do it that way now.

MS. MAY: Will the Proponent be developing a dioxin blood monitoring protocol for incinerator workers?

MR. POTTER: We have a standard master health and safety plan which requires monitors for all the workers, even for our own staff that is not currently part of the monitoring that we undertake at this time for worker monitoring.

MS. MAY: So would you be -- would the Proponent be prepared to commit to adding to the biological monitoring of workers, a routine dioxin blood monitoring protocol, particularly for incinerator workers?

MR. POTTER: We would rely on the advice from the necessary occupational health and safety regulative to advise us on what should be appropriately included in a monitoring program?

MS. MAY: Turning back to the MOA of May 12th, 2004, there's a cap of four hundred million dollars ($400,000,000) placed on the costs of the project. And if it exceeds that to go back to both levels of government to negotiate any substantial cost overruns. I was wondering if the Proponent based on the evidence of Dr. Li has had cause to reconsider whether this project can possibly be remediated using the technology choice of

the Proponent at a cost of four hundred mill and given that they can't walk away at the end of 25 years?

MR. POTTER: We are confident the four hundred million dollars ($400,000,000) will adequately allow us to implement the project as designed. I think we've addressed in the past that there is no walk-away after 25 years. There will still be a retained ownership and liability issues for the property and if there's a need for continued monitoring that would likewise carry on beyond the 25 years.

MS. MAY: Madam Chair, has the Proponent run any cost estimates on additional costs of additional remediation either within the 25 year period or after for removal of the polyethylene plastic walls or for repair of pumping and treating systems? Has any of that been costed?

MR. POTTER: If we get clarification after the 25 years?

MS. MAY: Within or after, for failure of the system to pump and treat, for failure of the walls to function.

MR. POTTER: All the long term maintenance and monitoring costs are built in to the four hundred million dollars ($400,000,000). We have a limited synthetic liners that you're referring to that would be

used in the project. Most of our barriers are going to be natural clay barriers but ---

MS. MAY: So Madam Chair, maybe I should rephrase that. Do the costs of monitoring within the 25 year period include contingency funds for catastrophic failure of the system, failure of the pump and treat system, failure of the walls, the need to re-excavate and rebuild sections of your barriers or of your monolith?

MR. POTTER: Yes, the MOA addresses that.

MS. MAY: How much of a contingency fund exists for failure of the system within your costing?

MR. POTTER: The MOA would require the two parties to go back and re-evaluate the -- if there were to be any unforeseen or catastrophic incident that may occur the two parties would go back to determine the solution to a potential problem. And the associated costs would be negotiated between the two parties. That is, again, addressed in the MOA.

MS. MAY: Madam Chair ---

THE CHAIRPERSON: You have two more minutes.

MS. MAY: Okay. I must have misunderstood Mr. Potter's earlier answer. I understood his earlier answer to be that within the four hundred million there were contingency funds to cover an eventuality such as

failure of the system. His subsequent answer appears to me to suggest that there are not such funds and he would -- they have to go back to both levels of government to negotiate that. I just would like some clarity on the question of costs built in to the four hundred million for failure of the system to function as they are so very confident it will.

MR. POTTER: I believe the distinction in my answer relates around the word "catastrophic". Built into the four hundred million dollars ($400,000,000) is the expected maintenance of pumps failing, replacing pumps, new switches, whatever. If there was a catastrophic event, which again we are not expecting, the MOA addresses that. It would be dealt with separate from the four hundred million dollars ($400,000,000) that we've identified in the budget today.

MS. MAY: Given time, Madam Chair I'm not going to get into another line but thank you very much.

THE CHAIRPERSON: Thank you, Ms. May. Dr. Ignasiak.

--- QUESTIONED BY DR. LES IGNASIAK

DR. IGNASIAK: One technical question, clarification. Can I proceed? I understand that at certain points the Proponent mentioned that maximum temperature for the solidified sediment based on some

sort of modelling is going to be about 50 centigrade so it's not going to exceed 50 centigrade. My question is, was this modelling done for Portland Cement for lime, for a mixture of both and if yes, what mixture? And for what concentrations?

MR. POTTER: I'll ask Dr. Magee to respond to that.

DR. MAGEE: Yes, we've been told that Portland Cement is the likely recipe and when looked in the literature we found 50 degrees to be the highest. We certainly know that if you use limestone you can probably get higher temperatures but given the assumption of Portland Cement, 50 is what we found in the literature.

DR. IGNASIAK: Thank you very much. In response to Panel's information request, IR-42 the Proponent stated the soils contaminant that was byproducts of MGP plants located in Columbia, Georgia; Cambridge, Massachusetts; Appleton, Virginia, and Augusta, Georgia were remediated using solidification stabilization. Does the Proponent acknowledge that it misinformed the Panel and that the soils contaminated with by products of MGP plants were excavated and disposed of, treated off site and that solidification stabilization was supplied only to soils that were impacted by leachates and not by MGP plants byproducts?

MR. POTTER: Give us a moment, Madam Chair. I think we're pulling up a reference here. So -- we believe the reference that we cited in that example addresses in a broad sense that there was contamination -- it was being addressed by solidification and stabilization and that our response was appropriate.

DR. IGNASIAK: On October 14th, 2004 the Minister of Nova Scotia Department of Transportation and Public Works issued a written statement that, I'm quoting:

> "Solidification and stabilization has been safely and effectively employed in hundreds of remediation projects involving contaminants found on the Tar Ponds and Coke Oven site."

Does the Proponent acknowledge that it provided the Minister with incorrect information. That in fact, there is no one site that even remotely resembles the Tar Pond and that has been remediated using solidification stabilization treatment?

MR. POTTER: Madam Chair, I don't have the reference in front of me and I think I heard it correctly if it's attributed properly to the Minister, he was referring to solidification and stabilization was applied on sites that had similar contaminants. I don't think

the reference was that they were exact or I think the reference was in the broader sense that there were hundreds of sights where solidification and stabilization has been employed.

DR. IGNASIAK: On May 5th, 2004 Mr. Parker Donham, spokesperson for the Agency stated -- I'm quoting:

> "With encouragement from Environment Canada, Jack promotes a Cadillac cleanup solution with dubious feasibility and affordability. In-house risk analysis carried out in the last three weeks concluded the actual cost will approach dollars one billion."

End of the quote. Does the Agency acknowledge that the statement made by Mr. Donham is incorrect and the cost estimate Mr. Donham refers to was generated already prior to June 5th, 2003 and originates from Public Works Government Services Canada?

MR. POTTER: Could I ask for a copy of the reference that Dr. Ignasiak's referring to?

DR. IGNASIAK: Actually, can I respond?

THE CHAIRPERSON: Yes, could you indicate where ---

DR. IGNASIAK: Actually, the information -- details of this information were tabled by TDE. TDE was the Panel. Can I proceed?

THE CHAIRPERSON: Dr. Ignasiak is indicating that it's part of the presentation, the written submission that was tabled from TDE. So it's in there.

DR. IGNASIAK: Correct. It's a written submission that was provided by the end of April. I don't remember exactly the date but it was end of April.

THE CHAIRPERSON: Do you wish to respond to that now, Mr. Potter?

MR. POTTER: It's difficult without having the exact document in front of me. I'm not perfectly clear what the question is in relation to the document but I would have preferred to have the document here available to review before responding.

DR. IGNASIAK: Thank you. Over the period of August, 2003 and May, 2004, the Proponent received form TDE numerous letters informing the Proponent that the cost of RAER option 3 estimated at five hundred twenty-one million could be reduced to three hundred ninety-two million plus minus five percent and at the same time the effectiveness of this RAER option 3 could be significantly in-housed. Does the Proponent

acknowledge that early in 2004, TDE notified the Proponent that it is ready to guarantee the three hundred ninety-two million plus minus five percent cost estimate. Has the Proponent ever responded to any of the letters received form TDE?

MR. POTTER: The correspondence, I believe, if I could get clarification who was the correspondence addressed to?

DR. IGNASIAK: The ESI will provide this information right now. This correspondence was between the President of TDE, Mr. Tony Rojeck and Mr. Campbell, who was I believe at this time the executive director of the Agency.

MR. POTTER: I can't respond if Mr. Campbell did reply to the correspondence. I will indicate that at that point in time we were not in a tendering process for the project and we were not entertaining tenders from any vendors at that point.

DR. IGNASIAK: Well, could I bring to Proponents attention that at this time the most important issue was really the cost and the cost was discussed extensively between the Federal and the Provincial Government and the Federal Government encouraged all the interested parties to actually provide information to the Agency on the subject of cost estimates.

MR. POTTER: Is there a question?

THE CHAIRPERSON: Yes, are you asking a question there, Dr. Ignasiak or is that as a ---

DR. IGNASIAK: Well, I'm providing explanation that this sort of information exchange was going on.

THE CHAIRPERSON: Could I ask a question of clarification. You just said that who was encouraged to send cost estimate information to the Agency at that stage and by whom?

DR. IGNASIAK: Madam Chair, since 2002, when the technology demonstration program was completed and six different companies were taking part in this technology demonstration program, there was obviously some or there should be some exchange of information regarding how the technologies were working, how much they were being costed. As far as I know, TDE took a very active approach and contacted on a number of occasions the Agency as well as different departments of the Federal Government. The different departments of the Federal Government specifically the department of Public Works and Government Services Canada, the chief negotiator for the project encouraged TDE to go directly to the Agency as well as the Minister of Nova Scotia Transportation and Public Works. The letters were

written. I am informed that they were never answered except for two letters from the Minister. I presume that probably Frank doesn't have this information, so perhaps I could go to the next question.

THE CHAIRPERSON: Yes, please, Dr. Ignasiak.

DR. IGNASIAK: Thank you. On July 22nd, 2004 TDVTD (sp) received a letter from the federal chief negotiator for the May 12th, 2004 MOA signed in Sydney stating that, in this letter -- I am quoting:

> "The Province of Nova Scotia will be the lead for the implementation and management of this project."

In view of that, I am somehow puzzled why, according to June 5, 2003 document -- which I am having right in front of me -- and this is a document which I understand was tabled with the Secretariat a few days ago, and it's entitled "Public Works and Government Services Cost Estimates Review Sydney Tar Ponds Options, June 5, 2003."

Are we aware of the existence of this document?

MR. POTTER: Yes, we are. I believe that was the testimony that was provided by Public Works and Government Services Canada. They acted as a support

department to the federal department who was leading the project at that time and provided costing information to the respective department, in this case being Environment Canada.

DR. IGNASIAK: Yeah. I ---

MR. POTTER: And that ---

DR. IGNASIAK: Sorry.

MR. POTTER: That information was provided to us.

DR. IGNASIAK: I obtained a copy of this document only two days ago. I have never seen that before.

When I managed to review the document one thing that surprised me, among many things, is that based on this document $78 million dollars was to be paid to Public Works and Government Services Canada for managing Option 3 while the chief negotiator says clearly in the letter directed to TDVTD (sp) that the management of the project is totally the responsibility of the Government of Nova Scotia.

THE CHAIRPERSON: And your question, Dr. Ignasiak?

DR. IGNASIAK: Well, can I get some information regarding this $78 million dollars to be paid to Public Works and Government Services Canada for

managing the project?

MR. POTTER: It is a Public Works and Government Services Canada document and the question is relating to a figure that I -- I don't have the document in front of me here.

Perhaps the question is best directed to Public Works and Government Services Canada, the author of the document, and that can be done at any time outside of this process.

DR. IGNASIAK: Thank you very much. Under the circumstances, I will skip most of the questions which are related to certain cost estimates in this document. These are very, in my opinion, relevant questions regarding this hearing. I will only mention one which really caused me laughing.

Regarding the same document, can the Proponent explain why an additional two million, two hundred fifty thousand dollars ($2,250,000) was added to the cost of analyzing PCBs in the soil of Coke Ovens Site when it is well known that those soils do not contain any PCBs?

THE CHAIRPERSON: Is this again a reference to -- is it in the documents ---

DR. IGNASIAK: This is a reference ---

THE CHAIRPERSON: --- from Public Works?

DR. IGNASIAK: Yes, in the same documents.

THE CHAIRPERSON: Well, I don't know. Mr. Potter, do you have a response to that, or again is that something for Public Works and Government Services Canada?

MR. POTTER: It's best that the question is answered by Public Works, I think. They authored the document. I'm sure I could go back and find a copy and try to interpret it, but I think the best response is for the authoring department to respond to the questions.

THE CHAIRPERSON: Dr. Ignasiak, do you wish to provide your written questions to the Panel Secretariat? The ones that you have not asked, I mean.

DR. IGNASIAK: Yes, I will prepare those questions in a written form. Thank you very much. That actually concludes my questions. Thank you very much.

THE CHAIRPERSON: Thank you, Dr. Ignasiak. Ms. MacLellan?

--- QUESTIONED BY CAPE BRETON SAVE OUR HEALTH CARE COMMITTEE (MS. MARY-RUTH MACLELLAN)

MS. MACLELLAN: Don't get scared of all those videos. I'm not going to address them all here.

In the interest of time and fairness to the other people who wanted to ask questions, I think I'll perhaps try to ask three or four questions and then

pass it over, and I will submit the other questions in writing, Madam Chair, and I would ask that the Tar Ponds Agency respond to both the Panel and our Health Care Committee as well in writing within a reasonable length of time, possibly by Friday.

THE CHAIRPERSON: Well, just a point of clarification. The Panel cannot receive any additional material after the end of Friday. So, yes, Friday is the final date for anyone to make a submission.

MS. MACLELLAN: If it's not provided, would you just reflect in your records then that I have asked for the answers in writing signed by the appropriate people.

THE CHAIRPERSON: We now have that on record.

MS. MACLELLAN: Through you, Madam Chair, my first question is to Frank Potter.

Mr. Potter, you said on CBC Radio -- I think it was the day after Kipin presented their presentation -- "It is too late for new technologies," and that was your exact quote.

Does this mean that contracts for incineration and encapsulation, et cetera, et cetera, are already signed? If not, how could it possibly be too late for technologies? If they are, where does this

Panel fit in, then?

MR. POTTER: There have been no signed contracts. The reference was to a new technology other than a technology defined in the project that we have before us.

Again, I guess, going back to Section 1.3 of the MOA, we can't put a new technology into the mix at this point in time.

MS. MACLELLAN: That doesn't make sense to me. Then why are we doing a public hearing, Madam Chair?

MR. POTTER: The Impact Assessment is to -- the Impact Assessment document we produced is to review all the potential environmental impacts of the work we've proposed, and that's what we're reviewing currently in the past three weeks.

MS. MACLELLAN: You talked about the soil samples and the testing prior -- I think it was Sierra Club who had some questions about your testing.

Who did your testing, and were all the samples tested?

MR. POTTER: Over the past eight years I couldn't begin to even estimate how many samples we've taken. I guess we'd need some more specific direction or information on which samples you're referring to.

MS. MACLELLAN: Who did your testing in

2001, then?

MR. POTTER: In a specific geographical area we would be doing -- in 2001, would have been doing a fair bit of sampling in the ponds, the Coke Ovens, air monitoring samplings.

MS. MACLELLAN: These would have come from the Coke Ovens.

MR. POTTER: That would have been the firm of JDAC we referred to throughout the document. Jacques, Dillon, ADI and CBCL is the acronym, that's a company that was formed for that work. It was part of the Phase 2 and 3 site characterization or site assessment work.

MS. MACLELLAN: Are you satisfied with the testing results and satisfied that they tested all the samples?

MR. POTTER: Yes.

MS. MACLELLAN: Madam Chair, I would like to enter into the record a videotape that shows samples that were found outside the JDAC building lying on the ground very accessible to children and they were very lethal. It's only about three minutes long. I'm not going to show it to you but I'm going to leave it with you.

My next question, Madam Chair, is does Tar Ponds Agency have any intention to acquire the ownership

of the Mullins Coal Bank? If so, who will produce the Environmental Impact Statement and who will remediate it?

MR. POTTER: Currently the Province is in the process of acquiring the Mullins Bank property primarily for the purposes of redirecting Coke Ovens Brook through that -- around the Coke Ovens Site.

The Province will retain responsibility for the property. The remediation work taking place on the Coke Ovens, including Mullins Bank, is part of this current Environmental Impact Statement review.

MS. MACLELLAN: So, who's doing the Impact Statement, you or DEVCO?

MR. POTTER: The review right now for this overall project is being carried out by us, by the Sydney Tar Ponds Agency, in consultation with ---

MS. MACLELLAN: So, will you be remediating it?

MR. POTTER: That's part of the current review. The plan right now is that there is not a need for remediation on the Coke Ovens Site -- on the Mullins Bank Site specifically based on the, you know, modelling and the risk assessment work that's been carried out to date by the work that JDAC first did through the 2001/2002 sampling program.

MS. MACLELLAN: Madam Chair, I have

attached to this question a letter from Dr. Argo who had a conversation with Mr. Wilf Kaiser about the Mullins Coal Bank in which he said that it would be removed by the spring.

And I'm not going to speak -- or read the whole letter in right now, I'm going to leave it with you for you people to have a look at and perhaps they can answer it better when they see the letter as well.

MR. POTTER: I believe, Madam Chair, we understand the nature of the letter. During the course of re-routing Coke Ovens Brook on Mullins Bank it appears that we have encountered what would probably be best described as a former stream bed that would have been filled in back in the past 100 years that the site would have operated.

During the course of re-routing the brook we encountered the exposed coal which was -- at that point in time had not been identified. It's a small, narrow channel that had been backfilled.

Our intention is to very shortly address that with the resumption of work on the Coke Ovens Site. With the re-routing of the brook that coal will be removed and the embankment around the brook reinstated.

THE CHAIRPERSON: So, Mr. Potter, this is work that was not identified in the EIS, this is

something you discovered after submitting the EIS, is that what you're saying?

MR. POTTER: Yes. It was not -- that part -- that work was not dealt with in this EIS, it was -- the preventative -- the Coke Ovens Brook realignment was part of, again, the review of the -- screened -- assessed through the preventative works for the Coke Ovens Brook, and that's how that work is -- that current work is being addressed through that program.

MS. MACLELLAN: Madam Chair, Dr. Argo's letter will speak to it more directly. With your permission one more question and then I'll just turn the rest of the questions in to the Panel.

Two nights ago someone on the Tar Ponds Agency said that the $400 million dollars would eventually reach $850 million dollars. My question is, where does this additional money come from and what makes you think you will get it?

MR. POTTER: I think I missed the first part of that. Who are you attributing to saying it was going to $850 million?

MS. MACLELLAN: I'm not sure if it was yourself or Mr. Kaiser or some -- but someone on that side of the -- I have it in my notes, anyway, and I don't have them with me.

THE CHAIRPERSON: Perhaps you might like to check the transcript, if it's available, and then ---

MS. MACLELLAN: Yeah, it should be on the transcript who actually said it, but it was said.

THE CHAIRPERSON: Um-hmm.

MR. POTTER: We've referred in the past -- and I don't know the -- if it's the same situation, but we have referred in the past to the project being $850 million dollars if the project were to be changed and the reference was to going to full removal of all sediment from the Tar Ponds, full incineration of that sediment.

That gets you into the $850 million dollar range that is identified in the EIS in the alternative -- the tables there where we do review various options that -- or the RAER options, and we were looking at that table earlier today.

MS. MACLELLAN: That's a whole big chunk of change that wasn't mentioned to begin with, Madam Chair, and I think it needs investigating.

In closing -- I'm not going to ask any more questions. I have one more question that's not here that I wish to consult with the medical experts before I put it before the Panel.

But I thank you very much for your time and I appreciate the fact that you will listen to the

people.

THE CHAIRPERSON: Thank you very much, Ms. MacLellan.

MR. POTTER: Madam Chair, I hate to interrupt, but just for clarification purposes on the questions we will be receiving from Mary-Ruth, when will the questions come to us? There's very little time for responding and we have a number of things to prepare for in the next couple of days with the closing coming up.

So, I would appreciate knowing when and what we can expect.

MS. MACLELLAN: Madam Chair, I can provide him with a copy of these questions today. The other question I will bring in tomorrow.

THE CHAIRPERSON: That sounds good. Thank you very much.

So, we now have another -- we have half an hour before we're going to end this session. So, I want to provide an opportunity for other people who are present if they have questions for the Agency.

Could I first just get a show of hands from registered presenters and then I will also ask for others. We'll see how many we've got. Now, just keep your hands up, if you don't mind, because otherwise I will lose you.

I see Mr. Brophy, so he can put his hand down, Mr. Lelandais and Mr. Marman. That's all from that side. I see Ms. Ouellette, I see Mr. McMullin. Just so that I know, let's go the whole way, are there some people who are not registered presenters who also have questions? Mr. Ells. Mr. Brophy.

Since we have -- I have six names down here, we have half an hour, you could each have 5 minutes, if you need it.

--- QUESTIONED BY MR. ERIC BROPHY:

MR. BROPHY: I don't need all 5, I just want to clarify something.

Are we obligated through any regulations, agreements or conventions to recover and destroy PCB waste of 50 ppm?

MR. POTTER: That issue was dealt with when Environment Canada was presenting. The question was asked, that very question was asked in relation to their department and policy on PCBs, and the response, that I understand should be documented in the transcripts, was that it would not be -- it would be consistent with Environment Canada's policies to retain PCBs over 50 ppm in a site, as long as they were environmentally managed properly.

MR. BROPHY: I mention that, because there

is an agreement that Canada is a signatory to, and I do believe they're meeting, or they may have finished, and it was my belief that that 50 ppm definition of hazardous waste could be somewhat lower following that. That's why I raise it. Encapsulation, to me, was not the way we should be going, and I thank you very much, Madam Chair.

THE CHAIRPERSON: Thank you, Mr. Brophy. I've decided I'm going to be alphabetical this afternoon. So that means that Mr. Ells, you are next.

--- QUESTIONED BY MR. CAMERON ELLS:

MR. ELLS: Thank you, Madam Chair.

The water treatment activities that are being planned for the project, downstream of the barriers, downstream of the solidification, downstream of the cap, does the proponent -- would the proponent be surprised if water treatment was not required?

MR. POTTER: I'll ask Mr. Shosky to respond to that.

MR. SHOSKY: We would be surprised if water treatment was not required at the site, and we had submitted some pump test data that showed that the volumes of water that were looked at historically were much greater than what we actually found when we did the tests. So we expect a smaller volume of water, but we are anticipating treating water.

MR. ELLS: Thank you.

THE CHAIRPERSON: Thank you, Mr. Ells.

Mr. Lelandais.

--- QUESTIONED BY MR. HENRY LELANDAIS:

MR. LELANDAIS: Thank you, Madam Chair. Through you I'd like to direct some questions to Mr. Shosky particularly referring to the presentation he made, three days ago, was it, on the incinerator portion, and referring to page 3 of his submission.

He refers to, and I'm going to quote:

> "An important precursor to determining whether you've got dioxins or not are the various temperatures within the system itself."

And then it goes on to say:

> "There's temperature points here, here, here and here."

And so on. I'm not clear what you mean by "an important precursor to determining whether or not..." What's your definition, Mr. Shosky, of a precursor?

MR. SHOSKY: Thank you for the question, and precursor probably wasn't the right term.

It's actually temperature monitoring of the system with using thermometers and things like that,

just monitoring the temperature to make sure that it's all operating within the proper range so that the dioxins don't form. That was the point I was trying to get across.

MR. LELANDAIS: Okay. So just to make sure we're clear on a precursor, can I say what I think a precursor is. Well, my idea of a precursor is something that used to be, that existed before, and that was incorporated into something that came later. In other words, a predecessor.

So that, in chemical terms, a precursor then is a substance that, following some kind of a reaction, becomes an intrinsic part of another substance. Does that make sense?

In this case, then, I would say that in the formation of dioxins, PCBs would be a precursor to dioxin formation, because they exist and then they are changed in the incineration process and result in dioxin formation. Also chlorine would be a precursor to the formation of dioxin.

A simple way of putting it, for instance, cocoa is not a precursor -- or is a precursor to chocolate, because chocolate is made from cocoa, but the chocolate itself would not be a precursor to ice cream, it's an ingredient.

And several of the terms that are used in the incineration process are very confusing, unless we get a clear idea of that.

Now, I just have one more question regarding that.

MR. SHOSKY: Can I answer that one, first, it just might help.

MR. LELANDAIS: Yeah, sure. Okay.

MR. SHOSKY: When I started using the term "precursor" it was with the monitoring systems that are advertised that monitor for dioxins, like stack emissions for dioxins, and that was the other table that I had as part of that presentation.

So, in that case, your definition of precursor, whether it's chlorine or some of these others that are listed on here, are precursors to dioxins. The compounds that are actually monitored by this equipment, where the vendor says they monitor for dioxins, they actually monitor for the precursors for dioxin which are easier to analyze on a more timely fashion.

MR. LELANDAIS: Okay. Thank you, Mr. Shosky. One more question, then, on the dioxin prevention probably is the word I'm looking for.

Do I understand from several references in your presentation there that you would be using carbon as

an absorber to remove dioxins formed in the secondary stages, for instance, by synthesis on the particulates, that any dioxins that were formed in that temperature window -- for instance, we understand that the dioxins form particularly around the 5-600 degree point.

If you can quench very quickly from say your 1100 degree destroying temperature right down to 2-300 degrees, you can avoid that window and they will not form. That's one of the reasons, I think, for using wet scrubbers to rapidly cool the gases to prevent the formation of the dioxins.

In case, at some point, there are dioxins forming because they were in that window for even a small amount of time, then you would be using carbon as an absorber to remove these dioxins that formed in that instance, is that correct?

MR. SHOSKY: Let me just go through this flow chart one time.

Generally, what I'll say is that you're correct on how dioxins are formed, and this is one of the reasons why it concerns me about coal burning at this point.

In this case, we have, on the incinerator that's being proposed right now, this is a general flow chart. There is a number of different spots where

dioxins could form.

In this case, three different control technologies are shown on there for dioxins, and they include the lime and carbon, also the baghouse. Now, there are certain vendors that make baghouse bags that have catalytic reactions in them that occur that actually treat the dioxins.

And then, while this is a poor representation, it's to represent that rapid quench system that you were talking about. What happens is, as the gases come out the stack, another process takes place because they're not cooled quickly, as you've researched on your own, and that's when dioxins form without having the control technologies there.

MR. LELANDAIS: Okay, my point -- I understand that part, I was just concerned that you add lime or carbon, or both additions, prior to a stack emission and prior to the formation of the dioxins, where I figured they would be used after to remove any dioxins that is formed by a demotis (sp) synthesis type of reaction. So that pretty well concludes what I had to say.

Thank you very much, Madam Chair. Thank you, Mr. Shosky.

THE CHAIRPERSON: Thank you, Mr.

Lelandais.

Mr. McMullin.

--- QUESTIONED BY MR. DAN MCMULLIN:

MR. MCMULLIN: Good afternoon. My question is for Mr. Potter.

Mr. Potter, a number of times during yesterday's hearings we had references made to the cleanup at New Bedford Harbour, and I understand that a trip, a tour was made of this site, and I wondered, at one point, exactly what the purpose or comparison of the New Bedford Harbour site would be to our Tar Ponds Site.

And the reason I ask that is because a number of years back, 2003 to be exact, while on the north side dealing with the potential incineration of Tar Pond sludge at Point Aconi Power Plant, Mr. Parker Barrs Donham made reference to the inadequate performance of the gas phase chemical reduction system, Ecologic's system, if you want, in taking care of the sludge at New Bedford Harbour.

Shortly after that, I called the EPA folks, was referred to one Jim Brown, who told me that, indeed, they had performed quite nicely, but that the folks at the Bedford Harbour wanted nothing to do with any technology that would produce any incinerated materials, any dioxins, furans, any potential for that,

and that, indeed, unfortunately, they had decided to dig up the sludge and transport that sludge to a landfill.

So this morning I drafted another email and sent it off to Mr. Jim Brown, and was lucky enough to have him answer that, and I asked basically for an update since we spoke in 2003, and I'll read you what he had:

> "We started a full-scale dredging in fall 2004. To date, all the dredged sediments have been de-watered and transferred to a landfill."

Then he goes on to talk about completing that project, but again, I see no reference other than the type of contaminants, I see no real comparison to our site here, in terms of the characterization of the contaminants, or the way the actual remediation will take place.

So what exactly was the purpose of the trip to New Bedford Harbour?

MR. POTTER: The similarity with our project and Bedford would be that their PCB contamination -- as I indicated previously in testimony, there was an electrical facility manufacturing plant along the harbour -- it's a harbour and a river, and I think the plant may have been on the river portion, and they discharged, over a number of years, a significant quantity of PCBs. Their

levels were extremely higher than ours. They were in the 49,000/50,000 ppm range.

It's a marine environment. It's a busy community, probably about the size of Sydney, very active fishing port, would have in the sediment similar components that we have in terms of PAHs, metals, and, of course, the PCBs but at a higher level.

They have -- the area in question is in a very populated part of the town. The upper reaches of the river would be -- would somewhat resemble what we have here in parts of our site.

We stood in the backyards of homes where the remediation has taken place. That work was completed before we arrived. They showed us photographs of the work being undertaken with the residents living nearby where they were excavating the sediment, including the PCBs.

There was de-watering facilities there. They had a very large de-watering plant that the sediment water -- de-watering plant there, which is again a process that we have.

They were doing hydraulic dredging there, not mechanical dredging. They were using pipes to move the sediment around.

We consulted with the community. We spent

a fair bit of the day with the municipality who was an active partner in -- participant -- not a partner, but an active participant in the process, had extensive consultations with them in terms of their communication plan, how they engaged the community.

You are correct, yes, indeed, the gas phase reduction technology was rejected at that site. They did not wish to use that technology there.

MR. MCMULLIN: Or incineration, or anything else that could produce toxic materials in their environment.

MR. POTTER: That is correct. Incineration was not deemed to be appropriate for that community.

They de-watered and processed the sediment, and took it to an inland landfill site.

One of the significant features of that project was the emphasis placed by the municipality on future site use. It was a big driving force for how they did do that cleanup.

The cleanup was largely based on carrying out the work so that the future remediation areas could serve a useful purpose.

The sediment water treatment process facility was designed actually for future use, not so

much its use at the current time. They knew what they wanted to do on that waterfront. They built some rail sidings going into it. So there was a major emphasis on that.

There was -- I think I indicated yesterday after Dr. Lee's presentation, they did use solidification and stabilization in New Bedford. It is, again, a marine environment using solidification/stabilization.

MR. MCMULLIN: Let's stop there for a second, if you would. It's the fact that he mentions nothing of solidification/stabilization, and this is why I ask. He talks only of removing that sludge -- dredging, removal and transporting the sludge to a landfill site.

Was it explained to the residents on this tour -- our residents -- that indeed the remediation technologies being proposed here were not the same as the remediation technologies at New Bedford Harbour, although there are site similarities?

MR. POTTER: The solidification and stabilization component of the work there, I think I described yesterday they -- it was not a large component of the project. The bulk of the materials were indeed being dredged and removed from the harbour and river.

MR. MCMULLIN: So would our residents have

understood that indeed the material would not be transported to another site here?

MR. POTTER: Madam Chair, I'd like to finish the answer first if I can before moving on to the next question.

The solidification that was taking place there was in a marine environment, the marine sediments. The solidification took place at -- in the marine environment right at the edge of the shoreline. They constructed a steel sheet piling barrier.

The sediment was in the -- actually, the work had been done, so I can't say if it was placed in the confined area first or whether they just solidified it right in place, but the marine sediments were solidified in place. There was a cap placed on top of them, and then there was some -- the eventual shoreline, if I recall, was -- had some armourstone protection along the base of the steel sheet piling, again very similar to the work that we were proposing for here, and that was my response to Dr. Lee yesterday.

You had a second question?

MR. MCMULLIN: Yes. Would our tour residents be aware of the fact that New Bedford Harbour was not using S/S in the same way that we would be using it here, to mix concrete or cement with the materials

there in the same way, but simply to create barriers in New Bedford Harbour?

MR. POTTER: It wasn't to create a barrier. They were solidifying the material in that area to create a usable piece of land. They -- eventually they put a cover on it and eventually that land became a usable portion again.

A driving force behind this clean-up was future site use. It was a large component of making sure that the land was able to maximize its potential for use.

New Bedford is extremely busy. It's a fishing port. It's got the highest fish landings on the east coast of North America, a huge fishing fleet that goes in there, and every square foot of usable land was very valuable.

Yes, indeed, the members on the -- the community members we took on the tour were quite aware of all the projects they were going to see. We went from the west coast to the east coast and saw a variety of situations using different technologies, some of which related directly to the work we were doing, some of which did not, but we took them to a number of sites across North America to give them a full breadth of experience of the types of technologies in use. Some, as I say, directly related to our work. Some, not necessarily so.

The work -- the visit included not just the technical aspects but community consultation, future use, organizational aspects, funding, medical aspects. We had -- Dr. Andrew Lynk was with us in New Bedford. Dr. MacCormick visited in Tacoma and Seattle after we did. He couldn't come at the same time as we did, but ---

So there were a number of reasons behind the visits, not just simply to look at the technologies.

MR. MCMULLIN: My question relates to the ---

THE CHAIRPERSON: Mr. McMullin, we are certainly well over our five minutes, between the pair of you. Do you have one more quick question, and then I must move on to Mr. Marman.

MR. MCMULLIN: Okay. I'll make it very quick. My references here relate to the membership we were denied in the Community Liaison Committee. Many of these questions I could ask directly to Mr. Potter and company if indeed Sierra Club's representatives were permitted to attend these meetings and ask these questions.

Do you intend in the future to allow the Sierra Club representatives to attend these sessions so that we indeed can have open transparent communication

with the general public?

MR. POTTER: The membership currently is established for the CLC Committee. The Committee will be required to review its membership on a regular basis, and as people leave, new members could be invited to attend. The membership presumably could change.

We have extended invitation in the past. We'd be happy to meet at anytime with the Sierra Club to address any of your questions.

Again, the CLC Committee has been erroneously referred to as a decision-making body. It is not. As I've clearly indicated, it's a sounding board for the Agency to help us understand if we're heading in the right direction, get feedback from the community, and we will happily accommodate the Sierra Club to do the same thing.

MR. MCMULLIN: Are you telling me that you're going to ---

THE CHAIRPERSON: Mr. McMullin, I really will have to cut you off there.

MR. MCMULLIN: Okay. Thank you very much.

THE CHAIRPERSON: Thank you for your questions. Mr. Marman.

--- QUESTIONED BY GRAND LAKE ROAD RESIDENTS (MR. RON MARMAN)

MR. MARMAN: Thank you, Madam Chair. Dr. Magee spoke of mercury contaminants and the problem with Grand Lake situated so close to the proposed incinerator site.

In the EIS, the levels of mercury in Grand Lake fish is given, and I spoke to a Mr. Sampson from Department of Fisheries in Arichat -- as the Arichat office is actually the district office for this area -- about these levels, and they have a concern with these levels at present, and in fact, they plan on doing some testing of their own. He was supposed to get back to me. This was probably about -- maybe seven or eight weeks ago -- and I haven't heard from him yet and I haven't called him back.

But in the talks on how we will control more mercury going into that lake, Mr. Shosky spoke of monitoring the feeds -- the feedstock and the emissions, but in the sketch of the proposed incinerator, the bypass is before any pollution control, and without a working incinerator model to get some data from, how can we estimate how many upsets we can expect? And since we have a variable such as that, you know, how can we indeed say that we're going to try to control the mercury that might be given off from that incinerator?

MR. POTTER: I'll ask Dr. Magee to address

that question.

MR. MAGEE: Thank you very much, Mr. Potter. We have actually done some calculations on mercury with regard to this issue of how many upsets could you have and how high could the emissions be.

And if you'll allow me just to take a look at my screen here -- the facility could emit mercury levels a thousand times higher than we have assumed for more than 17 hours a year, either at one time or scattered all over the year and summing up to 17 hours, and we would still be within the appropriate non-cancer acceptable risk level that Health Canada requires us to meet.

MR. MARMAN: But I understand from the Department of Fisheries that if the levels that you give in the EIS are accurate, then they have some concern with people eating fish out of that lake right now.

And when we talk about the amount of time that this bypass could be allowed to be open -- I believe in the EIS, it says a minute for 30 times a month or something. So you're saying -- what did you use there as a time limit on what emissions could be exceeded?

MR. MAGEE: Yes. Well in the risk assessment, we did assume one upset per month for 30 minutes at 10 times higher emission levels than what

we're assuming. The numbers I just read from my screen are ones that we've done recently to address these issues that have been coming up in the last several days.

So when we say, "Well, okay, you're okay at one minute every month, and so forth. How much higher could you go and still be okay?" we've done the calc., and we can emit for 17 hours a year levels a thousand times higher than what we're assuming, and we will still be okay.

Now let me also describe for just a moment the okay part. For non-cancer risk assessment, Health Canada has a tolerable daily dose that the child cannot go over an average level of dose every day over the course of the year.

In following the guidance, we have to assume that the child already is getting 80 percent of that from other sources. So if they're already eating Grand Lake fish, they're already getting some mercury, that is accounted for in our calculations.

We are only allowed to let a proposed project go up to 20 percent of the tolerable daily dose. We have to always assume that people are getting whatever the constituent is from other sources in their life to the tune of 80 percent.

MR. MARMAN: But isn't one of the things

involved with this project is that we do no further harm? And wouldn't you say that if you have a lake now that Department of Fisheries have concern about because of mercury levels, then any amount that's emitted from that incinerator that could end up in the lake would be a problem and that you would be doing further harm?

MR. MAGEE: Well I guess I'll just have to state that mercury is an issue all over North America, indeed all over the world, and there are fish advisories that are set for all of Atlantic Canada because of mercury levels in fish. The amount that we're adding is so small in comparison that it really doesn't affect the status quo.

Is there a mercury issue already? Of course. But the levels we'll be emitting are very tiny.

MR. MARMAN: But once again, without the exact incinerator where you can get definite data as to how many times this bypass condition will be activated, we can't really say what we're going to give off as a level for a month, a year, or whatever.

MR. MAGEE: Well I should probably yield to Mr. Shosky to say is there any way it's possible for an incinerator to operate a bypass stack for 17 hours a year. I mean, clearly I would think that the regulators would close you down. I mean, those numbers are

astronomical.

MR. SHOSKY: We had a lot of internal and external discussions on what our assumptions would be for that bypass. Earlier in the week, we heard a lot of historical accounts from a few of the Sierra Club members.

We had also contacted, I guess, part of that 30 or 40 percent of the incinerator operators that do run their plants right and got the numbers of incidents where bypass would be used are very insignificant.

For example, Earth Tech runs the Swan Hill facility now. We've run it since about 2001, and we have not had any incidents there for bypass release that I know of or anything like that.

And I think it goes back to some of the comments that Dr. Charles was making earlier, or during that testimony or some of the questions that he was asking of the Sierra Club, and that is, you know, are the people trained, is the equipment set up for monitoring these things.

And when you're talking about, like they were, incinerator technology from the 1990s versus today -- because the Swan Hill facility is in its third generation of incinerators now -- all state of the art

removal systems for emission controls -- there is a big difference in operating history between incinerators back then and incinerators now.

When it comes time to pick the exact incinerator for that project, our intention is to make sure that that vendor has a good track record as well as a sound technology.

And this bypass calculation is a concern of ours for a number of different reasons. One is, as Dr. Magee said, why would you let somebody run a bypass unit for hours on end without somebody catching it.

We are going to have third party oversight internally outside of the incinerator vendor and a number of checks and balances.

So your concern is valid about operating bypass. It is difficult for us to do an exact calculation on how many times that occurrence would occur. We thought we found a conservative one in the assumptions that I gave Mr. Magee in order to run his calculations.

And it's true, until we've actually picked the exact incinerator and go through that tendering process, which is the detailed design phase of the project, it'll be easier to evaluate and understand at that point. Thank you.

THE CHAIRPERSON: Mr. Marman, you're ---

MR. MARMAN: One more, please.

THE CHAIRPERSON: One more, but very quickly, because you're well over.

MR. MARMAN: Just getting back to experience in the industry, if we have a problem on -- half way down that incinerator where you have to isolate the pollution control -- and I mean, that could happen very easily -- a bag house plugging up, a bag house problem, a valve problem. In order for people to get in there to work, you would have to isolate that side from the bypass, which means the bypass has to be left open.

You wouldn't even get a crew together in less than half an hour, supposing they were on site, to see what the problem was, get the required tools that they would need to fix that equipment, and if the problem is major enough, you basically have that bypass open from the time that you first open it until the material cools down inside. There's no way you could do anything with it other than leave it go to atmosphere.

So I really don't think that 17 hours a month or whatever, especially when you're in commissioning stages or when you have people that are not really fully aware of the operation of that particular incinerator, would be unreasonable.

THE CHAIRPERSON: Mr. Shosky, do you have a brief response? And then we'll move to Ms. Ouellette.

MR. SHOSKY: Yeah, a very brief response. During the process of putting together the detailed design effort, we will have to go through a very thorough hazard analysis, which I think was one of the comments that Ms. May made earlier. Of course, that's going to need to be done as part of a thorough -- thoroughness of the design.

MR. MARMAN: Okay. Thank you.

THE CHAIRPERSON: Thank you, Mr. Marman. Ms. Ouellette, you have the honour of closing this afternoon's session.

--- QUESTIONED BY MS. DEBBIE OUELLETTE

MS. OUELLETTE: I do. Besides real time air monitors and stationary air monitors, are there more stringent ones that can be used 24 hours a day, seven days a week? Can you list them?

MR. POTTER: Are there more stringent monitoring equipment is the question?

MS. OUELLETTE: Besides air monitors and stationary -- real time air monitors and stationary monitors -- are there more stringent ones that can be used for seven days a week, 24 hours a day?

MR. POTTER: We use a -- well, "complex"

might be the wrong word, but we use a number of monitoring systems. We use hand-held instruments, a variety of different hand-held instruments for different parameters. We take samples on site. We take the samples at the perimeter of the site. We have what we call our fixed stations that you've referred to, the ones that run on a six-day system.

So we do use a multitude of sampling approaches. We -- I had mentioned before we are looking at remote sensing for air monitoring. There's a newer technology that's being used -- not extensively, but we've been talking to suppliers. We're looking at that. We'll explore that if it's deemed to be appropriate for our situation. We'll consider using some remote sensing for air monitoring.

We placed a lot of importance on air monitoring. We'll continue to do so. If we find technology that is appropriate for our situation that helps us to understand the air quality around our site, we'll certainly look at using it.

MS. OUELLETTE: Also, will you consider the health and safety for the residents? Could you place canisters on their homes that live closest to the site to see what they're picking up in odours and chemicals that are coming off the site when work is disturbed besides

the stationary air monitors -- which that's only a back-up one, and I don't know how old they are -- that can detect real time? Will you also place canisters on homes that live closest to the site?

MR. POTTER: We do use canisters. That's one -- that's part of the component of the air monitoring program we have. It targets a certain type of chemical.

So we do use them. We'll continue to use them. They're placed at different locations at different times. The benefit of the real time monitoring, it's very targeted to the activity we're doing. We can move it and place it where we want it to be. Whether it's a hand held or a canister, we can place it in the exact location.

That is, you know, the -- as we've explained in the past, the fixed stations are that. They are fixed and they repeatedly sample every six days to give us a long-term background indication of air quality.

But we rely primarily for the protective purposes on the real time and some of the portable equipment we would put out, and as I say, we'll -- really are looking at infrared for purposes of our site work as well.

MS. OUELLETTE: My problem with that, Frank, is many times there's odours that leave that site.

Even with the real time air monitors, no odour is detected. Every time you ask -- you know, we can smell the symptoms. We know if something's coming off that site. When you ask what the real time air monitors are picking up, barely nothing.

My question, will there be canisters placed on the homes to protect the people closest to the site as well.

MR. POTTER: We've talked about the difficulty with odours. Odours are something that, you know, it's a perceptive thing that you'll detect, and routinely we won't pick up anything in our monitors because the odour does not contain a chemical that we identify as being -- you know, causing a concern.

We will address, as we mentioned -- in the air -- or complaint monitoring system, we'll have a process in place where if there are nuisance odours or nuisance aspects that we have to address, we'll have a program in place to address that.

If it's appropriate to place air monitoring equipment in an area where we are -- you know, suspect there could be a problem, we'll certainly do that. We've done that in the past and -- but you know, some of the odour issues probably can be more appropriately dealt with at the work site in terms of the

work face and will likely react -- deal with us having to react to that complaint of odours by changing the procedures that might be used at any given point in time.

MS. OUELLETTE: My point is -- all you keep saying is that the real time air monitors will be our protection. Odours leave that site even as of April 27th. Residents in the area did get sick by that. They were having headaches and beyond that.

And we have a doctor here that says that odours are not a hazard. They are. They do make people sick.

So when these air monitors do not pick up these chemicals or these odours and what's in them, I have a problem with just saying that the air monitors are going to be our protection, because they're not. There are no guarantee -- there's no guarantee for us.

And I -- I just want to see canisters also as a background level be placed on residents' homes in the area in the proper places that -- I mean, they smell them. They go outside, they can smell these odours. Place these canisters on their homes also as a protection and caution for these people. I think you should look into that.

THE CHAIRPERSON: Ms. Ouellette ---

MS. OUELLETTE: Thank you.

THE CHAIRPERSON: --- thank you, but I'm going to ask a question for the Panel on that. Can you clarify what we're talking about with canisters, please?

MR. POTTER: I'll ask Dr. Walker to explain what we use the canisters for.

DR. WALKER: Canisters are stainless steel polished. They look like balls that are -- they can be in various sizes, and they come from the laboratory pre-cleaned and with a vacuum inside, and there's a manifold that is open to draw in a sample over some fixed predetermined time period.

The canister then goes back to the laboratory and a laboratory will extract that sample through a purge-and-trap system or something on a gas chromatograph mass spectrometer and identify what compounds were present in the canister. It enables a collection of certain things that won't be collected on some of the other samplers that are in use.

For example, the puff samplers, the polyurethane foam samplers that are used to collect PAHs. It's the VOCs that you trap mostly in the canisters. But they're not a real time sampler. They do have to go to the laboratory. They are somewhat costly for analysis -- somewhere -- roughly five hundred dollars ($500) per sample to do that.

THE CHAIRPERSON: Thank you very much, Dr. Walker.

That now brings us to the end of our afternoon session. So thank you very much to the Agency for answering questions all afternoon. Thank you for our other participants for being here and for also participating in the questioning.

We will resume at 6:00. We will have two presentations this evening, TDE and Ms. Marlene Kane. So thank you. 6:00.

--- RECESS: 4:42 p.m.

--- RESUME: 6:03 p.m.

THE CHAIRPERSON: Ladies and gentlemen, we will begin this evening's session.

Just a couple of points to share with you before we begin with our first presentation this evening.

The first thing is that I mentioned earlier today that Environment Canada is returning tomorrow. This is for a few questions from the Panel.

So, that will take place at 11:00 a.m. tomorrow. So, we will begin at 11 tomorrow with Environment Canada, and that is questions from the Panel.

And the other matter is that there have been -- some written questions have been submitted for the proponent, and so all of that written material has --

will be forwarded to the proponent, and we've requested them to respond, as appropriate.

So, we now have -- this evening we have two presentations, TD Enviro and Marlene Kane.

So, I would invite TD Enviro forward to give their presentation.

So we welcome you. We look forward to your presentation. And you have 40 minutes for your presentation, and I will give you -- let you know when you've got 5 minutes left.

--- PRESENTATION BY TD ENVIRO INC. (MR. JIM KRAMER)

MR. KRAMER: Madam Chair, members of the Panel, representatives of the proponent, and the Sydney community.

Good evening, and thank you for allowing us this opportunity to speak before the Panel on this important subject.

Let me begin with some introductions.

Tony Rojek, seated to my left, and myself, are representatives of TD Enviro and Thermo Design Engineering.

Seated to my right, as you know, is Dr. Les Ignasiak, who is a consultant to TDV and TDE.

Tony is the President of TD Enviro, and a Vice President of Thermo Design Engineering.

He is a professional engineer with a Master's Degree in mechanical engineering from the University of Alberta.

Tony has over 35 years of experience in design, manufacturing, installation, commissioning, start up, and operation of oil and gas and petro chemical plants.

During his tenure at Thermo Design, he has overseen the production and delivery of some 300 plants in more than 50 countries around the world.

I am a professional engineer with a degree in mineral processing engineering from the University of Alberta.

I have a background in coal mining, coal preparation, research in the areas of clean cool technology and environmental technology development, and oil and gas plant and mineral processing equipment manufacturing, commissioning, start up and operation.

I am currently a senior project manager for TD Enviro and Thermo Design Engineering, and I have been with the company for 11 years.

I have worked previously for the Coal Mining Research Company, the Alberta Research Council, and the CANMET Centre for Mineral and Energy Technology.

So, I'd like to begin now with some

opening statements.

We are here today for one simple reason. We believe that there is far more effective alternative to the solidification, stabilization, containment, capping, incineration and land farming project being proposed by the proponent.

Their approach does not offer a permanent solution to the problem.

Furthermore, we submit that the STPA, in their development of the proposed project, either discounted or failed to recognize the proven capabilities of alternative cleanup methods, which can offer a superior, economical and permanent solution to the Tar Ponds and Coke Ovens cleanup.

The proponent has not provided any validation or substantiation of their reasons for rejecting superior alternatives, nor has there been any attempt by the proponent to apprise Public Works Government Services of Canada, and the residents of Sydney, of the true capabilities and costs of the alternatives.

This, in fact, is contrary to the instructions given in the Public Works Government Services Canada Cost Estimates Review Sydney Tar Ponds Options paper dated June 5th, 2003.

So, over the next 30-odd minutes, we'd like to share with you some information on the background of TDV and TDE, and share some history of the development of our technology that is behind the alternative, and its capabilities for remediating the Tar Ponds.

So, I'll pass it over to Tony now, and he'll make a few comments about background.

--- PRESENTATION BY TD ENVIRO INC. (MR. TONY ROJEK)

MR. ROJEK: Good evening, ladies and gentlemen.

I'll just give you a brief description of TDE, which is Thermo Design Engineering, and TD Enviro, which we call TDV.

Thermo Design Engineering has been incorporated in the Province of Alberta in 1979, and we have been in business now for the last 27 years.

I would describe TDE as one of Canada's leading EPMC companies. What it means, that in addition to EPC, which is engineering project management and construction services, TDE has the capabilities to manufacture and build its own equipment and products.

In other words, we are not just a consulting company, but fully integrated EPMC company providing services from A to Z based on a fixed lump sum pricing.

Our projects are always on time and below budget.

TDE participates, typically, in so-called turnkey projects, both domestically and worldwide.

Our main office and fabrication shops are located in Edmonton, with sales offices in Calgary, Russia, Turkmenistan, China, Poland and Mexico.

TDE is closely working and/or cooperating with over 20 agents all over the world. Our top agent -- top agencies are in countries like Indonesia, Iran, Kuwait, United Arab Emirates, Libya, Brazil and Bangladesh.

Currently, our workforce is approximately 350 employees. Approximately 100 people work the office in our personnel, and about 250 people working in the shops like welders, pipefitters, electricians, and so on.

As far as a project of this type, I am talking about Sydney, typically, TDE would supply only supervisory staff for site -- on site construction, and would subcontract all work to the local construction companies.

Our last year's sales exceeded a hundred and thirty million U.S. dollars ($130 million US).

Coming back to the slide, TDV and TDE, we specialize in engineering, design, manufacturing,

commissioning, and start up of modular plans for processing petroleum feed stock, natural gas and various byproducts of the energy industry.

Since 1979, TDV/TDE has built and commissioned over 300 plants, ranging in value from three million to two hundred million dollars ($3 to $200 million), and those plants are currently operating all over the world.

One has to realize that every project in gas, oil and petro chemical industry is custom designed and custom built.

The same applies to the waste remediation projects.

TDE, in 1993, has created TD Enviro Incorporated, which we call TDV, to participate in waste remediation field.

Since then, TDV designed and built several waste treatment plants in Canada and abroad.

A combination of TDE know how and experience, with TDV technology, guarantees the best design, quality and performance.

Going back again to the slide, TDV/TDE has received an achievement award from the Alberta government for outstanding performance in manufacturing and exporting.

In 1995, the company received the largest grant ever issued by the Federal Government of Canada for environmental technology commercialization under the Environmental Technologists Commercialization Program.

TDE/TDV has been active in treatment and cleanup of industrial waste for some time now.

Several examples of remediation projects that we have been involved in are: okay, first we're involved in heavy oil waste treatment in Alberta for several oil companies.

Next, a coking fines recovery in Japan for Nippon Steel.

Next one is oil lakes cleanup in Kuwait for Kuwaiti government, United Nations, Ecology and Environment, which is the consortium of international consultants, and also Mitsui & Co. This is one of the largest remediation projects ever undertaken.

Next one is coal ponds reclamation in Poland, oil pits remediation in Trinidad, Venezuela. This was done for Petrovesa.

Another one is cathodic waste cleanup for Canadian and U.S. companies. It was actually for Alcan and ALCOA.

And the last one is harbour sediment cleanup in Canada for Port of Ottawa.

These projects range in size from a few thousand tonnes to over three million tonnes.

We have some brochures here with more details, if anyone is interested to take a look at this.

Thank you.

--- PRESENTATION BY TD ENVIRO INC. (MR. JIM KRAMER)

MR. KRAMER: So now I'd like to talk a little bit about a remediation options selection.

In February, 2003, the RAER report was published, after six years of investigations and engineering/technical development work, at a cost to the taxpayers of approximately sixty-two million dollars ($62 million).

The report presented Cape Breton residents and government officials with six potential remediation options for the Tar Ponds, and four options for the Coke Ovens.

In June of 2003, JAG released the results of the community evaluation of the RAER options. 66.5 percent of Cape Breton residents who participated in the RAER evaluation rated Option 3, which was soil washing/coal burning, as the most acceptable cleanup option for both the Tar Ponds and the Coke Ovens site.

Incineration and capping containment options received the lowest rating of acceptability.

The RAER Option 3, which at the time was estimated to cost five hundred and twenty-one million dollars ($521 million), was based on application of a generic soil washing system. Such a generic system was never tested on Tar Ponds sediment.

In August, 2003, a couple of months after release of the JAG report, TDV/TDE expressed their concerns to the Sydney Tar Ponds Agency regarding what they considered to be major deficiencies and inconsistencies in the RAER Option 3 approach.

TDV informed STPA that an alternative soil washing approach could be implemented to remediate both the Tar Ponds and Coke Ovens sites at significantly lower cost, and with much greater effectiveness than what was proposed for the RAER Option 3.

Our expression of concern was based on our own analysis and economic study, in consultation with a number of other environmental companies from across Canada.

The alternative that was proposed is based on a treatment train that employs a clean soil process washing technology as the primary treatment technology, together with coal burning.

The technology was tested during the technology demonstration program with very good results.

And that was 2002, and we'll speak more about that later.

Ultimately, though, a remediation approach involving solidification, stabilization, incineration and land farming, was selected, despite community preference and obvious superiority of alternative approaches.

Now, some information on the history of the technology.

The development of the clean soil process, or CSP, dates back over 20 years, to 1984.

At that time, the National Research Council of Canada, the University of Alberta, and the Alberta Research Council were in the final phases of advanced studies into spherical oil agglomeration, which is dubbed SOA.

SOA was discovered almost 100 years ago in Europe. The first commercial plants employing the technology were established approximately 50 years ago.

Clean soil process soil washing technology shares the same basic principles as SOA, that is, in a mixture of soil, which is primarily inorganic mineral matter, carbon particles and organic liquid, such as oil, tars and PCBs. The organic liquid will be absorbed onto the carbon particles.

If this process is carried out in the aqueous phase, or in the presence of water, the mixture

can be readily separated into organic coated carbon particles and mineral matter.

The most basic form of SOA carried out in a solid phase can be likened to that practised by companies like Kipin Industries, which you have heard from already, in the United States, whereby a synthetic solid fuel is produced.

The most widely recognized application of these principles is in Canada at the Tar Sands Mining Operations in Northern Alberta.

There, close to 4 million tonnes of tar sands are mined and washed each day, resulting in the separation of tar bitumen from sand.

SOA technologies have been applied in Europe for recovering coal from tailings ponds for decades.

Between 1960 and 1985, hundreds of millions of tonnes of coal fines were recovered from abandoned ponds and waste pits in England, Germany, Poland and France.

TDV provided technical expertise to a major coal mining company in Poland for reclaiming their largest waste coal pit in the upper Silesia region of Poland.

I'd like to show you some of those slides.

These pictures you see here are from the waste pit reclamation job we worked on in Poland.

The coal sediment was submerged under water in a tailings pond, had to be dewatered, excavated and processed in a washing plant to separate valuable coal from the mineral matter.

The execution of this project, in many respects, required the same methodology that would be applied to the alternative -- by the alternative for remediating the Tar Ponds.

The depth of the tailing pond and quantity of material processed, however, was much larger than the Tar Ponds. Again, this was 3 million tonnes.

So, some more history on the technology.

Between 1987 and 1992, CSP technology was tested extensively, and refined, in projects carried out in Canada and the U.S.

These projects were financially supported by the U.S. Electric Power Research Institute, the U.S. Department of Energy, major U.S. and Canadian energy and utility companies, the Federal Department of Energy and Natural Resources Canada, and Alberta Energy.

In 1993-94, under the Federal Environmental Technologies Commercialization Program, a committee of experts from Industry Canada, Environment

Canada, and the National Research Council of Canada conducted a year long evaluation of the SOA based CSP technology, and the improvements that were introduced by TDV/TDE.

This culminated into TDV being awarded a grant from Industry Canada in the amount of two point four million dollars ($2.4 million) to demonstrate and commercialize the refined CSP technology.

In its assessment of TDV's commercial scale demonstration results, Industry Canada recommended that the CSP be applied for cleanup of the Sydney Tar Ponds.

So, that gives you just a brief history on the development of the technology, which spanned about ten years.

Now I'd like to talk a little bit about the CSP technology demonstration.

As I had mentioned earlier, TDV participated in the 2002 technology demonstration program, whose purpose was to identify technologies that could be applied to cleanup of the Tar Ponds and the Coke Ovens.

We conducted bench, pilot and commercial scale tests to determine the effectiveness of the CSP for remediating these materials.

The test results showed that low PCB sediment, which we defined as PCB content less than 35 ppm, can be successfully treated by the CSP technology.

Low PCB sediment accounts for 94 percent of all PCB contaminated sediment on the site.

About 75 percent of the product generated from CSP treatment of low PCB sediment is recovered in the form of a reusable, non-hazardous, solid carbon fuel. This translates to approximately 350,000 dry tonnes of reusable fuel.

The balance of the product, or 25 percent, is composed of two mineral matter fractions.

One is a course mineral matter with a particle size typically one millimetre and above, and the second is a fine mineral matter fraction, with a particle size below one millimetre that may require post treatment by direct thermal desorption.

High PCB sediment, or PCB content greater than 35 ppm, accounts for about 6 percent of all sediment on the site.

This material should be processed by indirect thermal desorption or pyrolysis to remove PCBs.

These technologies were recommended as part of the alternatives treatment train.

Processing high PCB material by indirect

thermal desorption or pyrolysis will generate an estimated 2,000 tonnes of PCB condensate.

This condensate can be safely transported and destroyed off site by methods such as hydrogen reduction, a sonoprocess chemical destruction process, or other PCB destruction method.

The PCB free solid residue from thermal treatment can be recycled to the CSP unit for separation of remaining solid carbon fuel from clean mineral matter after processing.

I have with me today a small sample of the carbon fuel product. If anybody is interested in having a look at it after the presentation, you would be more than welcome.

So, with very encouraging results from the demonstration tests, TDV sought out an end user for the carbon fuel.

St. Lawrence Cement Group analyzed the material, and found it to be very acceptable as an alternate fuel for co-firing their cement kilns located in Joliette, Quebec.

St. Lawrence has subsequently provided TDV confirmation of their interest in the project, and utilization of the fuel. A copy of this letter was attached in our submission of comments to the EIS.

The amount of carbon fuel that can be generated from the Tar Ponds and Coke Ovens site is sufficient to co-fire their kilns for up to six years.

It should be noted that there would be no additional cost to the publicly funded Tar Ponds project for utilizing this material in the St. Lawrence kilns.

So, now I'd like to talk about the remediation alternative, which we have called the modified RAER Option 3.

RAER Option 3, soil washing coal burning, again, received 66-1/2 percent approval rating from the Cape Breton community.

It was obvious, however, based on our analysis of the report, that the results of TDV technology demonstration were completely ignored.

In addition, the reported cost of five hundred and twenty-one million dollars ($521 million) was, in our opinion, significantly over-estimated.

These concerns were expressed by TDV and TDE to both Sydney Tar Ponds Agency and the Nova Scotia Department of Transportation and Public Works.

As previously mentioned, following a series of consultations with other environmental companies, we informed STPA that a modified version of RAER Option 3, based on clean soil process washing

methods, could significantly reduce the cost of Option 3, while at the same time, provide superior cleanup.

The cost of a modified Option 3 was estimated at three hundred and ninety-two million dollars ($392 million), plus or minus 5 percent.

Surprisingly, on May 8th of 2004, a representative of STPA publicly announced that in house risk analysis concluded that the actual cost for RAER Option 3 will approach one billion dollars ($1 billion).

TDV/TDE has requested that STPA provide a copy of their in house risk analysis to substantiate the cost of one billion dollars ($1 billion), however, a response was never received.

Now, according to the EIS, the cost estimate is eight hundred and twenty-seven million dollars ($827 million). In our opinion, this figure is still grossly exaggerated.

So, without going into a lot of technical detail, I'd just like to spend a few minutes describing some of the key features of the modified RAER Option 3.

However, I'd like to point out that there is a lot more detail about this approach in our submission to the Panel.

So, there is an estimated 700,000 tonnes of PCB contaminated sediment in the Tar Ponds, and about

460,000 tonnes of hydrocarbon contaminated soil at the Coke Ovens site.

The alternative proposes to treat these materials in parallel.

Beginning with the Tar Ponds, the first step in removing the sediment would be to dewater the ponds, to permit excavation of the sediment using conventional equipment such as backhoes. This is exactly what was done on the Poland project.

Dewatering can be readily carried out using conventional dewatering techniques and equipment employed by the mineral industry.

A surface seal would be set in place to prevent release of odour. Various types of seals may be used, for example, a spray on geomembrane or foam, a thin layer of soil or, possibly, coal, or various other materials.

After dewatering and sealing, excavation of the ponds would be carried out using conventional backhoes.

A mobile enclosure, equipped with carbon exhaust system, would be erected over the immediate excavation site to contain all odours.

Excavated sediment would be transported by truck to a processing staging area located at the Coke

Ovens site.

Trucks would be equipped, of course, with special covers, sealed end gates and such, to prevent release of odours and spillage of material, which is very common practice.

Excavation would need to be carried out only for a maximum of five to eight hours per day, to produce enough feed stock for the processing plant.

The processing equipment and material staging areas will be contained inside temporary enclosures, equipped with air handling and exhaust scrubbing system for complete containment and treatment of odour and vapour.

Each batch of sediment delivered to the process plant would be deposited into holding cells and tested for PCBs.

Sediment with PCB below 35 ppm would be transferred to a CSP plant feed stockpile.

Sediment with measured PCB levels greater than 35 ppm would be transferred to the indirect thermal desorption pyrolysis system.

In parallel to this activity, excavation of the Coke Ovens site would be taking place, and that material would be transported also to the processing plant, placed in a segregated staging area.

So, Tar Ponds sediment and contaminated Coke Ovens soil is loaded into the feed hoppers to the system, equipped, of course, with screens to remove large debris.

The daily throughput of the plant is estimated at 800 tonnes per day.

The sediment soil is mixed with a controlled amount of water to create a dense slurry. This mixture is then heated to a temperature of 75 to 80 degrees, and processed in rotary tumblers.

Under controlled conditions of slurry density, temperature, mixing intensity and retention time, the primary transfer and absorbtion of PCB to tars -- and tars, pardon me, to coal, is achieved.

Again, this is based on the SOA principles described earlier.

All vapours containing BTEXs and VOCs generated as a result of heating and conditioning the mixture are extracted and processed in an exhaust gas scrubbing system.

This system is comprised again of conventional equipment, vapour condensers, phase separators, activated carbon filters and the like.

After processing in the tumbler, the slurry is discharged to conditioning tanks equipped with

agitators, wherein the contaminant transfer absorbtion process is completed.

The resulting mixture of carbon particles with absorbed contaminant, mineral matter and water are separated into carbon and mineral fractions using conventional gravimetric separators common to the mineral industry. The carbon fraction is thermomechanically dried again using conventional drying equipment to reduce the moisture content sufficiently for bulk material transportation.

The carbon fuel of course would have a PCB content less than 35ppm, a heating value or calorific value of 9,000. Between 9,000 and 12,000 BTUs per pound and passes PCLP test.

The mineral product is separated by a conventional screening method into course and fine fractions, typically using a cut point of one millimetre. Both fractions being analyzed for residual PCB and PAH content. Based on the technology demonstration results the coarse mineral fraction meets cleanup criteria. Any mineral product that does not meet their criteria is post-treated by conventional thermal desorption.

All mineral product from the alternative treatment train will cleanup criteria. This product is suitable for reuse as fill material during site

reclamation. Again, as noted earlier, St. Lawrence Cement Group is interested in using the non-hazardous carbon fuel for coal firing their cement kilns. This material can be transported by bulk ship carrier to their St. Lawrence facility. So that's a very general description of the treatment train for low PCB sediment.

Now, about the high PCB sediment. There's an estimated 70,000 tons of high PCB, again 35ppm above. All high PCB sediment found during excavation would be segregated in the material staging area. This material would be processed using pyrolysis or indirect thermal desorption. Umatac U-M-A-T-A-C and ATP Systems are two companies that are licensed for treating hazardous PCB contaminated material and have equipment available for this work. In fact Umatac was another company that participated in the technology demonstration.

The pyrolysis indirect thermal desorption treatment of high PCB sediment removes PCB from the sediment and generates a liquid condensate containing the PCBs. The liquid will be containerized and transported offsite for destruction at approved facilities. Here there are several technology options that can be considered. Hydrogenation, chemical treatment or incineration. There are a number of companies that offer PCB destruction services.

TDBTD has provided, in our submission to the panel, a copy of a letter from Earthtec Canada operators of the Swan Hills facility in Alberta stating their interest and capability to manage this material. So that's just a very quick overview of the alternative. How we doing for time?

So our closing remarks. The remedial methods proposed by the Proponent do not provide permanent cleanup of the Tar Ponds or the Coke Oven site. Eighty percent or more of contaminants will remain in place forever. Demonstration test results show that the proposed remedial methods performed poorly. Testimony at this Panel Review from experts in this field show that the proposed methods have a high risk of failure.

The project has ignored results of the technology demonstration and the community's evaluation of a technology acceptability. The cost estimates for the favourite option 3 soil washing of five hundred and twenty-one eight hundred and twenty-seven and one billion dollars have been grossly exaggerated. The Proponent has provided no justification for not selecting better alternatives to the project. There are some doubts about the diligent and unbiased evaluation of remedial options.

As one of only six participants in the technology demonstration it was surprising that the lead

consultant for STPA was not aware of TDB's participation in the demonstration program and merely presumed that we were equipment salesmen. By implementing the alternative cleanup strategy based on a modified option 3 approach, the cleanup will be effective and it will be permanent.

A modified option 3 will not cost five hundred and twenty-one million dollars ($521,000,000) or eight hundred and twenty-seven or one billion. Again as we said before, we've estimated the cost at three hundred and ninety-two million plus or minus five percent. The STPA proposed project is an extremely complex undertaking. In contrast the design and execution of the alternative is rather simple. It is based on proven technology and equipment that have been used reliably in industry for decades.

As opposed to the project the alternative will permit the contaminated sites to be returned to near pre-industrial conditions providing more options for future land use. The alternative will provide the same if not more local job opportunities for general labour, technical, trades and professionals. The alternative could be utilized for other remedial projects, including but not limited to cleanup of contaminated soils in the residential areas, cleanup of harbour sediments and reclamation of coal preparation sites and tailing ponds.

That concludes our presentation.

Madam Chair, members of the Panel, we thank you with the opportunity to provide you with -- and the residents of Sydney -- some background and insights to an alternative that can lead successful cleanup of Tar Pond and Coke Oven site. We'll be happy to answer any questions.

TD ENVIRO INC.

--- QUESTIONED BY THE JOINT REVIEW PANEL

THE CHAIRPERSON: Mr. Kramer, Mr. Rojek, Dr. Ignasiak, thank you very much for your presentation.

I'd like to begin just to ask for some clarification. When you participated, when TD Enviro participated in the technology demonstration program, what was your -- on what grounds did you participate? What was your understanding that it was done entirely at your own expense and there were no guarantees of any commitment after this. So could you just perhaps explain what the circumstances were.

MR. KRAMER: Madam Chair, your understanding is correct, we knew full well going into the demonstration that there were no guarantees.

THE CHAIRPERSON: Could you perhaps just clarify for us, when you talk about the modified RAER option 3, what constitutes a modification?

DR. IGNASIAK: The modifications actually are extremely simple. The first modification which has a major bearing on the cost of the project is that we would be not dredging the material. We would be first dewatering the sediment and subsequently excavating it. The other modifications, as a matter of fact, my colleague already described. This is the key addition. This one that I described.

Everything else was described. We would be excavating the material, we would be taking this minor certified PPM material and processing via CSP and that would be the seed for the St. Lawrence Cement Plant. The remaining material was plus certify PPM would be going most likely to indirect thermal desorption or pyrolysis and as Jim said, pyrolysis was actually tested during the demonstration, 2002 demonstration and was shown to work very well.

THE CHAIRPERSON: When you came up with the modified cost for this option of three hundred ninety-two million plus or minus five percent, now that I presume -- obviously that comes in under four hundred. Now, did you kind of work backwards from the four hundred? That would seem to be a likely possibility and you work out a technology train or a method that would fit within that.

DR. IGNASIAK: Thank you very much for this question, Madam Chair. Long before we started talking here in Nova Scotia or before Federal Government started talking about four hundred million dollars ($400,000,000), at least one year before we submitted this cost estimate of three hundred ninety-two million plus minus five percent.

As a matter of fact, the Minister of the department, Nova Scotia Department of Transportation and Public Works was so sure that this is coming, in fact, from us that he even mentioned that this is cost estimate for the soil washing. So it was at least one year before the Nova Scotia Government and the Federal Government actually mention about four hundred million.

THE CHAIRPERSON: So now it's become apparent -- we now have learned that there is not four hundred million dollars ($400,000,000) left to carry out the remediation because some of this money has already been spent of preventative works and other aspects as you know. So you have put a cost estimates development earlier than -- on the table and now it would appear that there is not sufficient -- this is a higher number than the money left. Do you wish to comment on that?

DR. IGNASIAK: Madam Chair, we perfectly well know that there is not four hundred million left.

This four hundred million included the preparative works that are being carried out right now. Actually, a very detailed cost estimate for this optimized or modified option C we submitted, TDETD submitted with their April submission. You will find all details over there.

THE CHAIRPERSON: What does the project, as you have put it forward, and the price that you have put forward, what does it -- if you like, what does it buy in terms of the state of the two sites at the very end in relationship to both return to a functioning estuarine habitat in the Tar Ponds and also on the Coke Oven site in terms of a base for future land use? What would actually be there at the very end? I mean would there be any habitat restoration work included in the Tar Ponds, for example? Or would it just be a clean hole in the ground that you can fill back up with water?

DR. IGNASIAK: Madam Chair, we made it clear that as far as Tar Ponds are concerned they would be essentially restored to near pre-industrial conditions.

As far as the Coke Oven site is concerned, we would be following strictly remedial action and evaluation the report suggested. It means that we would remove -- I mean, we wouldn't be removing, it would be processing, but the soils would be removed to a depth of

3.5 metres whenever required and in special cases, in cases of very high contamination the excavation would go down to six metres.

THE CHAIRPERSON: And the cleanup criteria that would be achieved would be what, the SSTLs as defined by the Agency or something different. Or CCME guidelines. Would there be a topsoil cover?

DR. IGNASIAK: When we were discussing that with Vaughn Engineering during the 2002 demonstration program we understood that CCME criteria will be applied and as a matter of fact at that time Vaughn Engineering informed us that it may be quite likely that the criteria will be applied with a typical of residential CCME criteria.

THE CHAIRPERSON: So you're saying that it's possible that some or all of the Coke Oven site might be usable for residential purposes?

DR. IGNASIAK: The -- we worked with this presumption based on the information that we obtained from Vaughn Engineering that this might be the case, that actually the Proponent may in fact, require -- that was 2002 that the soil should be clean to meet residential criteria requirements.

THE CHAIRPERSON: I'd just like to now go to the fuel product, the government fuel product that you

would produce and its -- and where it would be going. Now you've indicated that it will contain PCBs in low concentrations and you've -- so this -- these would now be burned in a cement kiln according to the proposal that you have here.

Now, is it your understanding that -- I mean first of all, a cement kiln would there be any permitting issues around the fact that they'd be burning some PCBs and what -- is it your understanding that PCBs can be burned cleanly without any environmental or air quality emission concerns in a cement kiln?

MR. KRAMER: Madam Chair, the cement kiln company that's interested in the product is already licensed for PCB contaminated material. And the carbon fuel product that we would produce is within their range.

THE CHAIRPERSON: Is that where the 35 parts per million comes from? The -- your cut off range, that's -- it's associated with the end user of the carbon fuel product?

MR. KRAMER: I'm sorry, could you repeat that?

THE CHAIRPERSON: I see Dr. Ignasiak nodding. Well, we see that you have a criteria that you're using in terms of dividing the PCB sediment. You're not using the 50 parts per million, you're using

35.

DR. IGNASIAK: Yes, you are absolutely right. We actually decided to lower that to 35 because as my colleague mentioned, they -- during the processing using the CSP we will be transferring essentially all contaminants from mineral metal into coal. So if we started with 50ppm and transfer everything into coal we would be over 50. That's why we decided after number of calculations that the upper limit of PCB contamination, in our case, would have to be 35 not 50.

THE CHAIRPERSON: I'm just -- my last question on that point is, as you know, it's been a big concern of the Tar Ponds Agency. They feel from past experience that the chances of being able to successfully move any either residual or indeed any products, fuel products made from sediments and soils in -- connected in any way with the Tar Ponds that they feel that it has limited success. They're not sure that any community would be willing to accept that material.

Now, what comment do you have to make on that? Do you feel that you'd have no trouble in transporting this -- the carbon fuel to say, Joliette, Quebec? What happens if they get wind of the fact that the origin of this -- which they would -- the origin of this material? You don't -- you have reason to believe

there would not be some kind of an outcry.

DR. IGNASIAK: Well, actually, Madam Chair you want a long story or a short story? Actually --

THE CHAIRPERSON: You shouldn't ask me questions like that. You know what I ask for but anyway how about a medium-sized story.

DR. IGNASIAK: Okay. Actually our first potential client was LaFarge of Canada. But when we were very close to signing an agreement with LaFarge Canada and that was September 4th or 5th, 2004, we were informed by LaFarge that somebody phoned them from Sydney and told them that in fact, if we don't pay one hundred dollars ($100) they shouldn't -- per tonne they shouldn't have -- they should not take it. So obviously our understanding with LaFarge Canada was that they would be burning this fuel free of any charges. So we dropped this deal and we started talking to next company. This is the one that Jim presented, the St. Lawrence Cement Group.

The St. Lawrence Cement Group we started talking to them almost two years ago, very close to two years. And one of the first things that they did after we -- after they analyzed the product and tested the product, they essentially talked with the Citizens Committee. They indicated where the product would be coming from and they indicated that the product would be

non-hazardous product that passes TCLP leachability test for organics and for metals. And our understanding based on the recent discussions with St. Lawrence Cement is that they do not have really major problems with that.

THE CHAIRPERSON: Thank you.

MR. CHARLES: My colleague, Dr. LaPierre doesn't seem to have any questions so -- for a change. But I have a couple. In your estimations of the PCB concentrations in the Tar Ponds, did you rely on the information that's been generated by the Proponent?

DR. IGNASIAK: Yes, we did rely on the information generated by the Proponent, yes.

MR. CHARLES: And are you relatively happy with the accuracy of that information?

DR. IGNASIAK: Dr. Charles, even if this information is incorrect, even in this case when we excavate every day, 500 tonnes of the sediment and each batch is going as my colleague described, to a special facility, totally enclosed facility, that it's going to blend that and the samples are going to be taken and analyzed for PCB then we'll decide which way this material will go. Where if it's over 35 it would go the way as it's required to treat it with pyrolysis or indirect thermal desorption. If it's below 35 it would go to the CSP plant.

MR. CHARLES: And you're excavating down to bedrock are you, in the Ponds?

DR. IGNASIAK: No, we wouldn't be excavating that to bedrock. We would be excavating that to clay layer.

MR. CHARLES: Down to the clay layer?

DR. IGNASIAK: Yes.

MR. CHARLES: On the assumption that there's nothing underneath the clay layer of any problem?

DR. IGNASIAK: On the assumption that there is nothing underneath the clay layer. That's at least what the Proponent assured us or was trying to assured us. But anyway, if we see that there is some sort of additional contamination, well, then at least you see that.

MR. CHARLES: Okay, the Proponent has talked about excavating football field size areas. How large would your excavations be, because you're talking about keeping them enclosed so that there's not a lot VOCs escaping into the air and so on.

MR. KRAMER: Dr. Charles, the excavation area on a daily basis would be significantly smaller than a football field.

MR. CHARLES: How significantly smaller? Can you give me a sense of it. Is it as big as this

room?

MR. KRAMER: Well, you're talking about removing, you know, approximately 400 tonnes from each site. 400 tonnes is approximately 400 cubic yards.

MR. CHARLES: Your proposal says 500.

MR. KRAMER: It's a total of 800 so I'm -- 400 from each site approximately. In 500 tonne batches.

MR. CHARLES: Batches.

MR. KRAMER: Yeah.

MR. CHARLES: Okay, 500 tonne batches. That's what I was looking at.

MR. KRAMER: That's correct.

MR. CHARLES: And when you're doing that you're talking about sealing it. So you'd dewater first, excavate ---

MR. KRAMER: No, dewater, seal ---

MR. CHARLES: Seal.

MR. KRAMER: --- provide an odour seal. And then excavate a small area at a time.

MR. CHARLES: Okay. Now what about the Coke Ovens? Well, you're going down 3.5 metres generally but down to six in some cases. What happens to the material, PAHs or whatever else below that level? They just stay there?

DR. IGNASIAK: At this point, we took, at

the point of departure the requirements which were set up for option 3. Option 3 cost estimates was based that they will go down to 3.5 metres for all contaminants and in particular cases, down to six metres.

MR. CHARLES: So that's your option 3 and your modified option 3 are the same?

DR. IGNASIAK: In this respect as far as the depth of excavation is concerned, you are absolutely right.

MR. CHARLES: But you're only going to have a soil cover on top of the Coke Ovens are you not. There's not going to be any other kind of a cap?

DR. IGNASIAK: We don't think that land farming would really do the trick. We would be washing the soil whenever is possible and economically right. And we do not expect to put a cap.

MR. CHARLES: But what I'm concerned about is that I appreciate you're going to soil wash the material down to 3.5 metres or 6.6 metres wherever you need to. But below that, what happens?

DR. IGNASIAK: The cost estimate that you have three hundred ninety-two million plus minus five percent is based on the same principles that were accepted by the people who designed the RAER option 3. Down to 3.5 metres and in exceptional cases to six

metres.

MR. CHARLES: Yes, I understand that but if there are contaminants below that level, they just stay there and you feel that the clean soil that's been placed above them plus the soil cap would keep them away from harm? No.

DR. IGNASIAK: No, we don't think there certainly will be impact on groundwater as it is right now but while in case of Tar Ponds other approach I think would resolve all the problems in this case, really, the water treatment monitoring would still have to be pursued.

MR CHARLES: All right. Now, what about the coffer dam so called at the head of North Pond? In your proposal since you're going to return the Ponds to an estuarine type of environment would you remove that barrier?

DR. IGNASIAK: We wouldn't need the coffer dam ---

MR. CHARLES: You would need it?

DR. IGNASIAK: We would not need the coffer dam when we work with the South Pond. We would start working in the southern part of the South Pond and proceed north. When we would switch to North Pond, yes the coffer dam would have to be completely enclosing the

pond so no contaminants would be transferred to the Sydney Harbour.

MR. CHARLES: And you're going to have a temporary channel put through, right?

DR. IGNASIAK: Yes, temporary channel, first for the South Pond, then for the North Pond.

MR. CHARLES: And I notice that when you get through with your soil washing process for sediments that still have more than 35 parts per million PCBs, you're going to put it through a chemical process or a heating process which perhaps -- I know you haven't finalized this -- but incineration is one possibility, is that correct?

DR. IGNASIAK: I'm afraid I didn't quite get it. I understood that you said that we would have on the soil 35ppm PCBs. Is that what you said?

MR. CHARLES: No, I was thinking about the elements of your sediments that are above 35 that have to have additional treatment. That additional treatment can consist, I think in your statement, of either hydrogenation or thermal desorption or I think you included incineration. And in -- I believe you also said supersonic something or other.

DR. IGNASIAK: Supersonic, yes.

MR. CHARLES: Supersonic. I was

interested ---

DR. IGNASIAK: Well, sonic actually, not supersonic. Supersonic it would be going a little bit too fast.

MR. CHARLES: Yeah, it'd work pretty fast. But I'm interested in this technology. I've never heard it used before -- referred to.

DR. IGNASIAK: Well, actually I believe about two weeks ago in response to Mr. Potter's statement that this is the technology in -- still in the cradles, so to say. I just mention that it was officially approved for usage in the Province of Ontario.

MR. CHARLES: So it's a new evolving technology?

DR. IGNASIAK: Well, it has been evolving for a considerable period of time. But now it is fully approved for usage in Ontario.

MR. CHARLES: It's just been recognized, so to speak.

DR. IGNASIAK: Yes. Yes. It's got all approvals.

MR. CHARLES: All right. What do you intend to do with the material in the tar cell which is apparently, from the Proponents point of view, kind of nasty stuff and has to be dealt with carefully.

DR. IGNASIAK: Thank you for this question. There's a very good actually material for the clean soil process. Because the clean soil process is really based on agglomerating tremendous amount of this coal and coke which you have in the Tar Ponds. And I mention that really on dry weight it is about 50 percent of the sediment. If we add more oil will this agglomeration -- and the material from the tar cell contains a lot of oil -- I suspect because I have never seen really analysis on this material.

The only thing that was given is the TPH content for this material. When we use this material as a bridging liquid we will use this thing to agglomerate coal. So that suits perfectly well our process. Our process is really based as Jim said on spherical oil agglomeration. It means that the oil is gluing together the small particles of coal and coke.

MR. CHARLES: Thank you. Well like, Mr. Shosky, when I read your TD Environment presentation I got out my calculator and I notice that the high PCB sediment -- this is on figure 1, page 5 of enclosure 2 -- the high PCB sediments, the volume is 70,000 tonnes to start with but the residuals total volume is only 24,000 tonnes. So I guess my question is, where has the remaining 46,000 tonnes gone? Is it gone into this 2,000

to 4,000 concentrate -- tonnes of concentrate?

DR. IGNASIAK: Mr. Charles, if I do understand your question, then I think the answer is in your first question you asked here during this hearing, what is the in situ moisture content of the sediment, and you've got different, really, answers, and I was trying to correct those answers. I don't think I was very successful. But anyway, on average, there is about 45 percent of in situ moisture in the sediment.

If you take correction for that, you go down from the 70,000 very significantly, and then we are expressing everything, at least that's what my colleague was showing, on dry metal.

MR. CHARLES: Okay. And you can't use that moisture in any way, shape or form, eh? Be good if you could. I'm being half facetious, but I want to be efficient here with the process.

I notice that one of your plans is to take the clean soil and the things you're taking to -- by barge to Quebec. I must say, I'm very disappointed that you're not using a railroad, because I've made it quite clear here that I'm a railroad man!

Have you included the costs of the barge transportation in your cost estimates?

MR. KRAMER: Yes, we have, we did that in

conjunction with St. Lawrence Cement, who does barge coal, at the moment, into their plant.

MR. CHARLES: Is it cheaper than railroad?

MR. KRAMER: I believe so.

MR. CHARLES: Too bad. All right. Reference was made to a closed-loop system. Now, can you just give myself, and perhaps other members of the panel, a brief explanation of what a closed-loop system is in terms of how it works under your process.

DR. IGNASIAK: I am not so sure whether I understand really the question quite well. If my understanding is not correct, and my explanations do not really get to you, please stop me and tell me that this is not really what you wanted from me.

Our system is sort of a closed loop that we are taking advantage of the whole thing. We process everything, and we convert this material into usable carbon, solid carbon fuel, and into mineral matter that can be recyclable.

And, what is probably in the system, most important, that we are using technologies that essentially do not -- those technologies that you would be using here, that essentially have near zero air emissions. Our process operates at 75 to 85 centigrade in water, no dust. So therefore, if there are any BTEXs,

because there are, they will be absorbed in a system that we've been applying before.

The indirect thermal desorption, which would be used for high PCB content material, over 35, is known that essentially it does not have any emissions. The pyrolysis does have emissions, that's why we would rather be more inclined to use indirect thermal desorption.

MR. CHARLES: I understand that, and that does not include the handling part of the process, does it, I mean the excavation and the transferring by truck, and that sort of thing?

There's still possibilities of dust and escaping VOCs or whatever as part of that, although you do have your excavation under a closed environment.

So when you're talking about closed loop, you're talking about the paralysis -- not the paralysis, but you know the one I mean, and the hydrogenation and the desorption part of the process.

DR. IGNASIAK: Yes. However, keep in mind that when you de-water the sediment in the pond, you will not de-water the sediment to dry matter.

There is a lot of coal and coke over there, and under those conditions of de-watering you can be sure that you will not get the water content below 15

percent at the moment when you excavate, because the water content will be still reasonably high.

Therefore, this material will not be dusty at the moment of excavation, but certainly you will have problem with odours. That's why my colleague suggested using the sort of a tent over the excavating equipment.

MR. CHARLES: My last question. The concentrate that you end up with is 2000-4000 tonnes. How does that get disposed of? I know you talked about off-site facilities, but is that burned in some way, or is it landfilled, or what happens to it?

DR. IGNASIAK: No, actually, this not supersonic but sonic technology is one of the potential options. The hydrogenation technology is another potential option.

If there was absolutely no other options, you could still look at incineration, but you would have an incineration of 2000 tonnes, not 150,000 tonnes.

MR. CHARLES: And when you say if you had to resort to incineration, do you mean by that you're not sure the other systems would deal with the concentrate successfully?

DR. IGNASIAK: Or actually -- you see, you cannot incinerate material that have very, very high content of PCBs. If you burn this high content PCB

material to an incinerator, they will actually dilute that. They will not treat it this way.

However, there is absolutely no problem, as far as I know, to hydrogenate this sort of materials. As a result of this hydrogenation, you generate hydrochloric acid and methane, and that is essentially the key product that you get from this process.

MR. CHARLES: So you shouldn't have to go to incineration.

DR. IGNASIAK: No, you don't have to go to incineration.

MR. CHARLES: I just wondered, because you said "if" you had to.

DR. IGNASIAK: You've got a lot of options, but obviously the most logical option would be hydrogenation.

The other option now which is available is the sonic technology, which was -- I think it is almost two months ago when it was approved in Ontario.

MR. CHARLES: Thank you, everybody.

DR. LAPIERRE: Good evening, and thank you for the presentation.

I have a question, and it relates to the way -- once you finish your -- I've listened to your explanation as to how you would go about and clean the

product, and then you would have the pond open or the estuary open to the ocean.

Now, my question relates to, first of all, the Coke Ovens Site. As you've indicated, and as you know, you've indicated that you would clean to 2.1/2 -- to 3 meters or up to 6 meters, but the soil is contaminated deeper.

You know that the present project looks at deviating groundwater and surface water away from the site because you're going to have contamination.

You also know that the bedrock is fractured, and that the bedrock would, more than likely -- some of the contaminants, and you're going to leave no cap or a very limited cap, so water would penetrate. You would still have leaching, and that leaching would, more than likely, follow bedrock crevices down to the ponds that you're leaving open.

To me, that leaves an open access to the harbour for the leachate from the Coke Ovens Site.

Now, the other question I have is yesterday we were presented with the fact that the delineation of the present tar ponds are not quite historically what they should be. There were and there is a section of the tar ponds which had the same type of material as you have in the tar pond, and they are now

covered over by slag.

Now, if you remove the material from the tar ponds, you could have also leachate from that, because you're creating a hole, you're moving the -- and if this is a continuous concentration of tarring material, you could then have a remigration of that tarring material into the water ponds that you've cleaned and left for clean.

My question is, do you not still have a chance of pollution either from the Coke Ovens Site, which would be continuous over time, and also from the re-leaching of the material that isn't there, and if you have no dam and no protection then the ultimate pathway would be to the harbour.

DR. IGNASIAK: That's a complex question. I start with the Coke Ovens Site.

You are absolutely right, there will be still leaching of this material which is below 3.1/2 meters, and we clearly indicated in our description of this approach that it would be identical really to RAER option 3.

You still would have to take care of this water, groundwater. You still would have to do pump and treat. There is no other solution in case if you can not really get more contaminants removed, or if you do not

immobilize those contaminants.

Well, why I said that in case of tar ponds, in my opinion, the solidification and stabilization of this top 2 meters of material, which is essentially 55/56 percent organics, doesn't make any sense, because this is the material that you can remove very readily. And, in addition, this is the major problem you have with solidification and stabilization. Why don't we remove that.

In case of bedrock, for instance, for Coke Ovens Site, I think this is the area that solidification and stabilization could be really applied, this place that we are not going to excavate.

Am I clear on the subject?

DR. LAPIERRE: Yes, you're clear on it. But then that increases the cost of the project. You have a different project then.

DR. IGNASIAK: Absolutely. We just said, and we are maintaining the position, that as far as Coke Ovens Site is concerned, with this project and with this cost estimate, I don't think you would be able to go any deeper or you would be able to do anything, you know, in order really to make sure that the material which already got down to the bedrock will not be distributed and will not travel towards -- west.

DR. LAPIERRE: Yeah, but then I guess I come back to my point is, you may have as much contaminant flux moving into the harbour as you have now, maybe more, because you have -- at present time, if I understand correctly, most of the material is bounded up in a pretty solid matrix, and if you control the flow at the entrance by a dam of some sort, you would then stop the migration, which is maybe the major problem.

You also haven't answered my question of in migration from the side material, and I guess the concern I have with the project that you're proposing is, at the end, we're still going to have some significant pollution to look at, and you don't foresee a water treatment system which, to me, would somewhat be necessary to put in place.

DR. IGNASIAK: I handled the Coke Ovens Site so far, and I said the water treatment system is absolutely necessary over there. If you do not go into excavation in a better way than as it was proposed for RAER option 3, the water treatment system will have to exist over there.

Now, let me answer the second part of your question which relates to the tar ponds.

Absolutely correct, if you will not treat the water within the Coke Ovens Site, catch the water and

treat, then obviously this water -- the normal flow of the groundwater over there is towards the pond, then the water will enter the ponds, there is no doubt about that. But I said we have to leave the water treatment system in the Coke Ovens Site, and also we have to build a barrier which will separate, you know, the restored ponds, actually north pond from the SYSCO site which has all this tremendous contamination.

There is no doubt that over there you have to build a barrier to prevent the movement of water and the contaminants from SYSCO site towards the tar ponds.

DR. LAPIERRE: But that's not included in your cost, is it?

DR. IGNASIAK: That is part of -- yes, this part is included in the cost, as well as treating the water on the Coke Ovens Site.

DR. LAPIERRE: So I want to understand correctly, that would include a water treatment system on the Coke Ovens Site?

DR. IGNASIAK: Yes.

DR. LAPIERRE: And a barrier to eliminate the migration from the SYSCO land.

DR. IGNASIAK: Along the eastern shore of the north pond.

DR. LAPIERRE: Okay. Thank you.

THE CHAIRPERSON: I'll now provide an opportunity for questions from other participants. So, Mr. Potter, 10 minutes, please.

--- QUESTIONED BY THE SYDNEY TAR PONDS AGENCY (MR. JONATHAN KENYON):

MR. POTTER: Thank you, Madam Chair. I'll ask Mr. Kenyon to provide some questions to the panel.

MR. KENYON: Thank you, Madam Chair. Just following up on the comments of Dr. LaPierre, my understanding from Dr. Ignasiak's answers is that there is going to be ongoing water treatment, and, I would assume, monitoring.

I wonder if he could comment on whether or not he still agrees or he still maintains that his solution is a walk-away solution.

DR. IGNASIAK: I think this solution is a walk-away solution in case of the tar ponds. It is not a walk-away solution in case of the Coke Ovens Site. You have to maintain treatment, and you have to pump and treat the water.

However, the problems that will be faced for the tar ponds, in case if the proponent goes with the project as it's being designed now, are certainly going to get worse and worse. I would not expect that in case of tar ponds the situation will be really nothing -- will

be really not much, much better than what is being proposed right now in case of solidification and stabilization.

MR. KENYON: My understanding from Dr. Ignasiak's answer to the Chair's question with respect to CCME guidelines was that they would meet all soil CCME guidelines for, I believe it was, the Coke Ovens Site.

My question for Dr. Ignasiak would be how they would get the arsenic levels below 12 ppm when that is the background.

DR. IGNASIAK: The washing generally removes about 80 to 90 percent of the metals from the soil, and the ---

MR. KENYON: I should clarify, Madam Chair, CCME guideline is 12 ppm, background is much higher.

DR. IGNASIAK: The background for this area is more than 12 ppm, that's correct.

MR. KENYON: During the presentation ---

DR. IGNASIAK: Can I just add one sentence. We specifically said -- I specifically said that the requirements that were given to us were given by Vaughn Engineering during the 2002 technology demonstration programme. Whether this actual requirement would be maintained or not, that remains to be seen.

MR. KENYON: My understanding from the presentation was that I believe it's TDE received the largest grant ever by Federal Government of Canada for environmental technology development. I wonder if that is -- if you can confirm that that's the $2.4 million grant in July of 1994, is that correct?

DR. IGNASIAK: Yes.

MR. KENYON: And, at that time, there was a press release which was included in TDE's presentation, and I'll just read to the Chair a portion of that press release:

> "With thousands of MGP sites worldwide, many of which are now deemed to be hazardous, the cleaning up of these sites has a potential market of hundreds of millions of dollars."

My question would be how many MGP sites worldwide has TDE cleaned up using the clean soil process?

DR. IGNASIAK: That's a very good question. When the unit was built -- and I believe that a colleague, Mr. Don Shosky, can tell you, because he was actually a part of a team at that time.

When the unit was built, and the agreement

was signed with NISAC, what appeared to be the case is that the United States Environmental Protection Agency decided that they are not going to increase the requirements in terms of the criteria required for cleaning those sites.

Specifically, they allowed to do what really Kipin Industries is doing right now, take the contaminated and the hazardous material in terms of benzene leachability, and add coal to it as long as is required to pass the TCLP leachability test for benzene.

Our process is removing the benzene from the material. It is not diluting the benzene so we can reach or meet the TCLP benzene test. That's why -- that's why we did not pursue this thing in the United States. Instead, we decided to really rearrange the process and use this process for cleanup of the produced scents produced by the heavy oil industry in Canada.

MR. KENYON: So, Madam Chair, just to clarify, the answer to my question is none?

DR. IGNASIAK: We have not with this process cleaned the MGP site in the United States.

MR. KENYON: Have they cleaned up any MGP sites worldwide?

DR. IGNASIAK: Actually, my colleague presented the sites that we either cleaned or we are

involved in the cleaning or will be involved in the cleaning, like the Kuwait large 80 million tonne contaminated soils project.

MR. KENYON: The question, I guess I may not have clarified -- may not have stated it properly, is how many MGP sites worldwide have been cleaned up using the CSP technology, and by "cleaned up" that would mean completed.

DR. IGNASIAK: Once again, I repeat what I said just two minutes ago, we did not clean the MGP sites.

MR. KENYON: Has CSP technology been used to clean up any former steel plant sites?

DR. IGNASIAK: The CSP technology has been used to clean material that was contaminated with coal and with products of coke industry.

The CSP technology was used by -- in Japan by Nippon Steel for aggregating the fine coking coal using tars and recycling this material back to the coke oven sites. This is a much more difficult task than, for instance, cleaning the MGP site.

I would like also to mention, regarding the MGP site, that all the MGP sites that were cleaned so far, and that the proponent presented to the panel as being cleaned by solidification and stabilization, were

not cleaned by solidification and stabilization.

The soil is contaminated by byproducts from MGP sites were simply removed from the sites, and only the soils underneath, that were impacted by leachates from those byproducts, were solidified and stabilized.

MR. KENYON: I guess I'd just like to clarify my understanding of the clean soil process.

My understanding, it's an absorption process, I believe that's what I took from it, and from Dr. Ignasiak, that the contaminants are actually, I guess, bound up in the coal, which would then be sent to be burnt at the cement plant.

Now, I understand that the coal passes all TCLP tests, I would assume that's because it's bound up in the coal, but I would also assume that those contaminants would then be released when the coal is burned, is that correct?

DR. IGNASIAK: I would like to answer this question, with your permission, Madam Chair, in more details, and this is in connection with the comments that were made here today, earlier, regarding the combustion or co-combustion or co-burning of the products generated by processing, for instance, the MGP byproducts.

It was said that those co-burning are

taking place in the coal -- pulverized coal-fired power plants. Well, this is absolutely incorrect.

There was only one company, utility company, in the history of the United States, as far as I know, that did it. That was the Rochester Gas and Electric, and they shattered completely their grinding equipment worth about $25 million. Nobody repeated that after them.

What is being done in the United States, and still being done, is that if -- for instance, our colleague from Pittsburgh, Kipin Industries, when they produce 1.5 million tonnes of this product, they do use only two moving grades which are available in the United States for this sort of combustion. This is not being combusted in pulverized coal-fired plant.

Now, I would like to really respond in details to the question what is happening with the contaminants which are on the coal.

Well, the first thing when you burn coal in any pulverized coal-fired power plant is when the temperature of the individual particles reaches 3/400 centigrade, what you do is you generate tar and you generate PAHs.

But keep in mind that though the residents time is only of the order of 4 seconds, the temperatures

are still about up to 1000 centigrade, and the capability of the PAHs to withstand temperature more than 400 centigrade is essentially nothing. That's why, in the coal-fired power plant you don't have a problem with PAHs. They are perfectly well burned.

Now, as far as St. Lawrence Cement kiln is concerned, the temperatures over there for the solids are of the order of 450 centigrade. The temperature of the gases are about 1500 to 1550 centigrade. The residents time for the solids is 20 minutes. The residents for the gases is about 20 seconds.

So you cannot compare, even remotely, combustion of anything in a kiln as compared with a combustion in a coal-fired power plant. These are entirely different things.

And I think that Mr. Shosky really did not provide the right information to the panel regarding the combustion in a cement kiln.

THE CHAIRPERSON: Mr. Kenyon, I'm afraid that has used up quite a bit more than 10 minutes, so do you have one more question, and then -- if we can get a short answer, please, and then I would like to provide opportunities for other people to ask questions.

MR. KENYON: Yes, just one more question. It's a clarification on a comment that was provided

earlier that the -- I believe it was that the St. Lawrence Cement kiln facility was permitted to take this fuel.

Going back to the materials presented by TDE, they've attached a letter from St. Lawrence Cement from November 8, 2005. Just reading from that letter it states that:

> "We are now planning to meet with the Quebec Ministry of Environment to initiate the permitting process that will allow us to use the CSP generator fuel in the Joliette cement plant."

I guess we haven't seen the information that they are permitted to do this, and, if they are permitted, could we please be provided with a copy of it.

DR. IGNASIAK: First of all, they are permitted to use any alternative fuel that is below 50 ppm PCBs.

However, they feel that it is their duty and obligation, when they are bringing a different type of fuel, which would be characterized not only minus 50 ppm PCBs, but with some other things, they want to get additional permit, an assurance of getting permit, from the Quebec Minister of Environment.

THE CHAIRPERSON: Thank you, Mr. Kenyon.

I'd like to -- we are running late, or we are going to run late, I imagine.

Can I get an indication of how many of our registered presenters have questions for the presenters. Ms. May, Ms. MacLellan, just a minute please. That's all I see, okay.

I'll take Ms. MacLellan first, and then Ms. May. And can we make it no more than two questions, please.

--- QUESTIONED BY CAPE BRETON SAVE OUR HEALTH COMMITTEE (MS. MARY-RUTH MACLELLAN):

MS. MACLELLAN: Well, I actually had two, but maybe I can -- three, but maybe I can make two into one.

My concern is with the safety of the people, and the areas around the site that are contaminated.

Do you have a plan that would keep the people safe while you're doing the work, and also what would you -- a lot of the properties here have a lot of contaminants in them. The movie house sits in the sludge, Sobeys sits in the sludge. Is there a plan in place, in your programme is that something that will have to be dealt with afterwards? Because my concern is that

as long as you clean it up, and you don't clean it all up, it's all going to leach back in to where it was.

DR. IGNASIAK: I'm not sure I really got straight your question. You first asked me, if I understand, about how we are going to treat the people?

MS. MACLELLAN: Yeah, I'm wondering how you keep the people safe and, at the same time, like you mentioned cleaning up other areas.

There are people who have all these contaminants under their homes and in their basements, and they've been told, on occasion, that they're the problem, that the contamination in their basement is leaching into the tar ponds.

So if we don't clean it all up, how will it work?

DR. IGNASIAK: I think I got it. My colleague actually suggested that, as opposed to solidification and stabilization and incineration, the unit that we are proposing for soil washing, especially for sediment, and for soils from Coke Ovens Site, this same unit could be actually used to clean the environment in terms of the back yards, front yards, etcetera.

The unit would be left here, and you can really, I think, generate some business with this unit. And my colleague actually listed what sort of potential

businesses you could look at.

MS. MACLELLAN: Okay. My other question is water in the leaching, and the pump and treat that would be left at the Coke Ovens Site, what kind of a system is the treatment system?

DR. IGNASIAK: We, as far as -- and I think I responded to Dr. LaPierre, as far as Coke Ovens Site, we would not go beyond and above what was suggested in the original RAER option 3 which was selected by 66.5 percent of the respondents from the Cape Breton Regional Municipality. At this cost, we wouldn't go above that.

MS. MACLELLAN: Thank you.

THE CHAIRPERSON: Thank you, Ms. MacLellan.

Ms. May.

--- QUESTIONED BY THE SIERRA CLUB OF CANADA (MS. ELIZABETH MAY):

MS. MAY: Thank you. Actually, I'd appreciate an opportunity, Madam Chair, to follow up on a question that I don't think the presenters answered from Dr. LaPierre on the subject which we've been concerned about, at the Sierra Club of Canada, about the sludge material that's under the slag.

It's not in the current definition of the project at all, and it wasn't part of RAER option 3, so

it probably isn't part of your specifications, but can you address what could be done, can you suggest what might be done, because I don't think it should be left there.

DR. IGNASIAK: Thank you very much for this question. As a matter -- I apologise, I somehow really haven't responded. You clearly indicated this slag, and whatever is under the slag.

Well, we don't know, really, how much of this material is under the slag. We don't have the slightest idea whether this material is actually contaminated with PCBs or not.

At this point, I understand the proponent wants to leave everything as it is.

I believe that really you can really get some sort of an understanding of the situation if you start excavating, then you will eventually face reality.

And I really think that if you really want to remediate the tar ponds, you certainly should touch the slag, and you certainly should see what is underneath the slag.

And if this is really tar which is contaminated with PCBs, even if it's tar only, I really think it would be absolutely worthwhile to take care of that at the same time. If it's not taken care right now,

it will be never taken care in the future.

MS. MAY: My second question is related to a question asked by you, Madam Chair, in relation to what makes you think material can be moved. And in response I didn't really understand your answer.

You said in your initial discussions with another cement kiln company, LaFarge, I believe you said someone from Sydney interfered, and I just -- I don't understand, was it someone -- are you saying someone in the community tried to interfere? I don't understand what happened there.

DR. IGNASIAK: Well, I was trying to be gentle in my description, but I tell you it -- really, the interference came from the Sydney Tar Ponds Agency.

MS. MAY: I understand now, thank you.

THE CHAIRPERSON: Is there anyone who is not a registered presenter who has a question for the presenters at this time? Yes, Mr. Ells. Yes, Mr. McMullin.

--- QUESTIONED BY MR. CAMERON ELLS:

MR. ELLS: Thank you, Madam Chair. Earlier this week Ms. May gave a quick description of the technology as being able to completely transfer the PAHs and PCBs off of the sediments, and I was curious if the soil washing that's being proposed is expected to

actually transfer a hundred percent of the organics off of the sediments.

DR. IGNASIAK: I think your understanding is correct that during soil washing the organics which are deposited on the mineral metal are transferred onto the coal particles and are [--] coal particles.

Your second question was, can it transfer totally. It means can it clean totally the inorganics. The answer was provided by Jim, who said that for particles larger -- mineral metal particles larger than 1 millimetre, yes, this is quite possible. For particles smaller than 1 millimetre, generally direct thermal desorption would have to give the final [--].

MR. ELLS: Then if those fine particles had 20, 30, 40 percent organic content, the thermal desorption would remove all of that?

DR. IGNASIAK: Thank you for your answer. Perhaps I didn't express myself clearly.

Even the finest particles which in this case would be particles smaller than 1 millimetre but larger than 50 microns, particles below 50 microns will go with the coal fuel. So, those particles from about 50, 60 to 1 millimetre, they will have not more than about 0.6, 0.7 percent potential contaminants.

We presented, as a matter of fact, that in

our demonstration report, and those particles can be perfectly well cleaned using direct thermal desorption if it's required -- if it's required, yes, as a secondary process.

MR. ELLS: Could I have one last quick one?

In the cost estimate that you've put forward, the three hundred and some odd million dollars, about how many tonnes of coal were you expecting to use on site or handle on site?

DR. IGNASIAK: Sorry, could you repeat that. How many tonnes of what?

MR. ELLS: How many tonnes of coal, the carbon fuel.

DR. IGNASIAK: Coal?

MR. ELLS: The fine stuff to adhere the ---

DR. IGNASIAK: My colleague presented an answer that we would generate roughly about 350,000 tonnes of coal.

MR. ELLS: 350,000?

DR. IGNASIAK: Tonnes of coal, of aggregated coal.

MR. ELLS: Okay. Thank you.

THE CHAIRPERSON: Thank you, Mr. Ells. Mr.

McMullin?

--- QUESTIONED BY MR. DAN MCMULLIN

MR. MCMULLIN: Good evening and thank you. Two short questions. First of all, I was well aware of this company called TDETDV long before I met you, Mr. Ignasiak. I had heard and seen documents that apparently you sent to virtually every politician in the area that was or could have been involved with the Tar Ponds. So, you have been very tenacious in putting forth your project.

I wondered about how you were treated during the Technology Demonstration program. I would have expected if I had participated in that program that I would have been contacted at the end of the process and told that my process was not accepted, accepted, or whatever.

So, can you tell me, considering how much you've indicated that the SS process won't work and how much you've put forward your own process, were you ever talked to by the Tar Ponds Agency or others about why it was not acceptable?

DR. IGNASIAK: Well, we had a very good relationship with [--] Engineering and that is essentially when the whole interaction ended. We have never had any requests from the Tar Ponds Agency to

provide additional information or to react to questions, never.

And then we asked some other companies who participated in the same process like, for instance, people from Calgary who are [--]. They were never approached by Sydney Tar Ponds Agency with any questions.

MR. MCMULLIN: One more short question. You mentioned during your presentation the use of local labour, and I'd like some clarification on how you would see local labour being involved here.

DR. IGNASIAK: Well, actually the other day when I was here there was a gentleman who asked a question about what are the potentials for employment if the project goes ahead, and I mentioned to him that -- he was from the Steelworkers Union, and I mentioned to him that really a year ago we had a telephone call from the president of the union and he was inquiring whether the union would get the job if the union -- if the Clean Soil Process(?) Union was here, we said we don't see any problems because we certainly wouldn't bring anybody here from Alberta to work on this unit.

The only person that probably would be here from Alberta would be a supervisory engineer who would be taking the responsibility for, you know, running the unit.

MR. MCMULLIN: So, you would train local people to operate the unit?

DR. IGNASIAK: Absolutely from A to Z, the whole crew would be composed of local people.

MR. MCMULLIN: Thank you very much.

DR. IGNASIAK: Thank you.

THE CHAIRPERSON: Thank you, Mr. McMullin.

Well, I do recognize you say you're a little late, but if you could come and ask a question quickly. We need to take a break. Could you identify yourself, please.

--- QUESTIONED BY MR. DOUGLAS MACKINLAY

MR. MACKINLAY: Douglas MacKinlay. One quick question. Mr. Ignasiak, you said that the Sydney Tar Ponds Agency provided their financial analysis of your proposal and that it was about $827 million and you asked them for details or for a copy of their audit and they never provided it to you, which I find shameful.

I'm wondering if you asked for it more recently or again and again and what their response was and whether they ever gave an explanation as to why they shamefully ignored your request.

DR. IGNASIAK: As far as I know -- and I'm trying to keep on top of that -- TDETDV has never got any response.

THE CHAIRPERSON: Thank you. I think that does -- yes. So, I have a request from the Tar Ponds Agency. Is this for a brief point of clarification, Mr. Potter?

MR. POTTER: It's in relation to a comment made by the witness a moment ago.

THE CHAIRPERSON: Yes.

MR. KENYON: Madam Chair, Dr. Ignasiak has made a serious allegation against the Tar Ponds Agency regarding interference with business relations. I guess I'd request that he provide details of that if he's going to put an allegation like that on the record.

I do know that there had been some letters written by TDE in the past regarding some concerns of CRA but there's never been any allegations with respect to the Tar Ponds Agency.

THE CHAIRPERSON: Dr. Ignasiak, would you provide this information in writing to the Panel? Could you do that, to the Secretariat?

DR. IGNASIAK: Actually, the Panel has already received most of those letters with the submission, with TDETDV's submission.

THE CHAIRPERSON: Could you specify where they are in the submission?

DR. IGNASIAK: They are in Enclosure No.

4.

THE CHAIRPERSON: This is, I presume, Mr. Kenyon, in relationship to the comment you made -- which really is not the Panel's business I have to say, but the comment you made with respect to LaFarge? Is that right, Mr. Kenyon, that was the comment you're talking about?

MR. KENYON: That's exactly the comment I'm talking about.

THE CHAIRPERSON: Is there something in the submission relating to that comment that you made?

DR. IGNASIAK: I'm trying to get the simplest answer. The ---

THE CHAIRPERSON: Well, "yes" or "no" would be one -- would be a simple answer to that.

DR. IGNASIAK: We're saying that we submitted the letters that really clearly indicate the conflict of interest that the Sydney Tar Ponds Agency had in this case.

MR. KENYON: I'm not concerned with the conflict of interest allegations, which I would submit are not made out. My concern, Madam Chair, is that this is a serious and potentially slanderous allegation that's being made about interference, and if he's going to be making that type of allegation in public then details or evidence should be provided.

THE CHAIRPERSON: What I'm going to do now, Mr. Kenyon, Dr. Ignasiak, is we are going to take a break and the Panel will take this matter under consideration.

So, thank you very much for your presentation. It is now 10 to 8:00. We're going to take a 20-minute break -- or 15-minute break, sorry, and we will return at 5 minutes past 8:00 for the next presentation.

--- RECESS: 7:52 P.M.

--- RESUME: 8:07 P.M.

THE CHAIRPERSON: Ladies and gentlemen, I would like to resume again.

Before we begin with our second and final presentation, I would just like to respond that with respect to the issue that was raised just before the break regarding a question about communication with LaFarge Canada that, in fact, as I indicated, does not relate to the Panel's mandate. So, we don't require any additional information to be put forward.

So, our next presenter is Ms. Marlene Kane. Ms. Kane, as you well know, you have 40 minutes, and I'll let you know five minutes before the end of that time.

--- PRESENTATION BY MS. MARLENE KANE

MS. KANE: Thank you very much, Madam Chair. My name is Marlene Kane. Thank you, Madam Chair, Dr. LaPierre and Mr. Charles, for allowing me this opportunity to make a presentation.

A full Panel Review is something many of us have spoken about for the past decade and longer. To participate in these hearings has been quite an experience, and I thank you for that.

Many of my concerns and questions regarding this remediation project have already been documented in my submissions to the Panel, but after hearing Government responses to many concerns at these hearings the project seems even more questionable now.

I'd like to say by giving you a brief history -- start by giving you a brief history of my involvement with the Tar Ponds and Coke Ovens cleanup.

I participated in hundreds of meetings during the Joint Action Group's seven-year history from the very first meeting in 1996 to the very last meeting in 2003.

I became involved initially because of my concern that the Tar Ponds incinerator, constructed in the late '80s as part of the first federal/provincial cleanup -- agreement to clean up the Tar Ponds would be used to burn 700,000 tonnes of toxic sludge, including

PCBs, in the middle of Sydney.

My children were very young at the time and I was quite prepared to move away -- move them away from Sydney if the incinerator were to be used. I have been actively opposing incineration in this community for the past decade and it's been an uphill battle.

JAG was formed because the plan put forward on May 7, 1996 to bury the Tar Ponds was soundly rejected. Environment Minister Sergio Marchi stated in correspondence:

> "We must identify solutions that are technically sound, economically feasible and publicly supported, and we are committed to doing so through a community-based approach."

He also said:

> "I will be working with my federal, provincial and municipal colleagues to ensure that we find a solution that reflects the community's concerns and wishes."

The 1996 containment proposal for the Tar Ponds that was rejected 10 years ago is incredibly similar to the proposal being put forward today. Unfortunately, Minister Marchi's assurances that the

solution would reflect the community's concerns and values didn't come to pass.

It seems Government used the JAG process to further delay the cleanup because the JAG recommendation was ignored and we're basically back to where we started 10 years ago regarding a remediation method, burn and bury.

The Government presented six options for remediating the Tar Ponds and four options for remediating the Coke Ovens that were said to be proven, reliable and protective.

Walter van Veen of CRA told us during -- that's Conestoga Rovers -- told us during the presentation of these options to the JAG roundtable that his company had worked on hundreds of large sites like this. When I asked for a list of those hundreds of sties, I was advised to check the internet.

Following the JAG workbook sessions, of which I refused to participate because of the workbook's bias towards incineration, the community preferred preference delivered to Government was Option 3, removal and destruction of all contaminants.

After Government deliberations we were informed that the costing amounts for Option 3 were grossly underestimated and it would actually cost double

that amount, approximately $800 million. Therefore, it was no longer a viable option.

The JAG roundtable had been advised in 2003 that all of the costs for the options presented were what the Federal Government called a "D" class estimate, meaning plus or minus 30 percent. We were also told that all of the costs provided a 25 percent contingency.

When we saw a cost of $250 million, for example, the cost actually calculated was $200 million, then 20 percent was added because it was a conceptual stage. I could not understand then how the cost for Option 3 had doubled.

After Option 3 was set aside, Government then brought forward their current plan for the Tar Ponds which is to excavate and incinerate 120,000 tonnes of PCB-impacted sediments and SS the remaining sediments.

The solidification and stabilization plan proposed for the Tar Ponds is not a cleanup, as it's so often referred, it's a coverup which will require monitoring and maintenance forever. Unfortunately, there will be no funding in place beyond 25 years to accommodate this.

SS does not remove or destroy the compounds. Contaminants don't degrade in a cement matrix but can leach and they will always be there and will

always have to be monitored. $400 million dollars will be wasted while we leave this toxic mess for our children and grandchildren to somehow deal with in the future.

Of course, the Tar Ponds will be much more difficult to deal with then because it will be mixed with tens of thousands of tonnes of Portland Cement increasing its volume by up to 40 percent and will be under 600,000 tonnes of geo-materials.

During the Technology Demonstration in 2001/2002 several technologies showed much promise for efficient and effective remediation of the Sydney Tar Ponds sediments, but they were not chosen. Instead solidification and stabilization was chosen for the majority of the Tar Ponds sediments.

I've seen little evidence that this proposed method of solidifying and stabilizing the Tar Ponds is technically sound. The Technology Demonstration conducted in 2001 and 2002 said that while SS has been successful commercially on materials with high inorganic impacts, it has less experience on organics, which is what the Tar Ponds mostly contains.

Why was SS chosen when it had limited success on soils with high concentrations of organic contaminants? The technology track record states it has successful application on materials with high inorganic

contaminants and less experience on application to organic contaminants.

In Earth Tech's Technical Memo Report, November 1st, 2005 the unconfined compressive strength tests were not at all impressive. Of the 23 samples tested, 17 samples were of insufficient strength to test. Of the six samples which had sufficient strength to test, all but one sample got weaker after 14 days instead of increasing in strength.

According to the EPA, 2001, solidification refers to a process that binds the polluted soil or sludge and cements it into a solid block. Stabilization refers to changing the chemicals so they become less harmful or less mobile.

We have heard varying descriptions so far of what the sediments following SS treatment would be like. They seem to cover a broad range of descriptions from soil-like in nature with low bearing capacity to solid soil and, most recently, a rock.

Although during the Technology Demonstration it was stated that during SS the addition of a binding agent, such as Portland Cement powder, will not be in enough quantity necessary to create concrete, during the Technology Demonstration SS was conducted ex-situ and it was proposed that stabilization at full scale

be conducted ex-situ with the use of a pug mill system.

STPA is proposing, however, that it will be performed in-situ, although because the actual process for stabilizing the sediments has not yet been decided that is subject to change.

The Technology Demonstration also stated that there were some indirect benefits in terms of improving sediment handlability but whether it was suitable and feasible depended on further definitions of a specific remedial action objective. So, without definitely knowing the future site use, how can this proposal proceed?

There are so many questions yet to be answered in the detailed design phase of this project which won't take place until after the deliberations of this Panel.

To date I have not seen the evidence which suggests that SS is a tried and true method on organic sediments and that incineration has proven safe and effective at other locations. In fact, we've seen much evidence during these hearings that flies in the face of both those statements.

In the Hazardous Materials Management publication of April/May 1997 it states:

"This technology has been applied to

soils containing heavy metals, but treatment of tarry sediments and soils contaminated with organics has been limited."

It goes on to say:

"Stabilization is more cost effective than other alternatives for treating wastes containing a cocktail of contaminants. However, the long-term integrity of the treated material is not well understood."

This statement is very similar to that made in the Technology Demonstration report of 2002 which said:

"The technology track record indicates that while SS was successful commercially on materials with high inorganic impacts, it had less experience on organics and that long-term immobility of some organic compounds was not proven. While the SS process improved the sediment handlability, its bearing capacity was relatively low."

How will that support future site use,

whatever that may be?

On the first day of hearings Dr. LaPierre asked what -- the percentage of EPA projects similar to this one are presently being cleaned up using the two processes. Mr. Shosky said that approximately 19 percent of the USEPA projects are done using stabilization. That's not a very impressive number. I'd like to know what the other 81 percent are doing.

I can't imagine there are too many sites like this one, given the combination of size, location and the fact that it is within a watershed area. Contaminated surface water, groundwater and leachate all flow down to the Muggah Creek Watershed from the top of the hill where the incinerator, its ash cells, leachate collection pools and garbage dumps are located.

From there, these flows move through the Coke Ovens Site to the Steel Plant Site into the Tar Ponds and out into Sydney Harbour. As well, millions of litres of untreated sewage waste have flowed into the Tar Ponds on a daily basis for many years.

The fact that there isn't yet a plan for dealing with leachate and other flows from the SYSCO slag piles into the Tar Ponds is disturbing. Also, is there a plan in place for dealing with beta radiation noted at elevated levels in the Sydney landfill leachate samples?

Government's proposal to primarily incinerate 120,000 tonnes of PCB-contaminated sediments was chosen despite the fact that Tar Ponds sludge containing PCBs was not part of the Technology Demonstration, nor had there been PCB test burns of Tar Ponds sludge prior to that.

Their decision to incinerate did not come as a surprise. Government and their consultants said that the use of the Sydney Tar Ponds incinerator was an option all throughout the JAG and the workbook process and that it could be used to burn all or part of the 700,000 tonnes of contaminated sediments, including PCBs from the Tar Ponds, even though it was not designed to burn PCBs.

However, using the Tar Ponds incinerator would violate the CCME Guidelines to which JAG and the Federal Government had committed to at a minimum. Site selection parameters in the 1992 CCME National Guidelines for Hazardous Waste Incineration Facilities, Volume I, Section 5.1, states:

> "The incineration facility shall not be located within 1,500 metres of occupied public buildings, residences, schools, hospitals, nursing homes, establishments

involved in food processing, farm buildings containing livestock, feedlots and feed processing or handling establishments."

The Sydney Tar Ponds incinerators which are still standing are located only 600 metres from Harbourside Elementary School housing 800 children and are within 1,500 metres of 2,200 civic addresses.

As the elevation of the land on which the incinerator sits is lower than the community, the top of the 50-foot stack was at the same elevation as the school and the Whitney Pier community. Despite this Governments were prepared to fire up this incinerator to burn hundreds of thousands of tonnes of hazardous waste including PCBs.

In an attempt to stop the incinerators from ever being used as part of the cleanup, I attempted to pass a motion through JAG which recognized the Government's commitment to the CCME Guidelines as a minimum, thereby ruling out the use of the Tar Ponds incinerators.

In 1999 I submitted a letter dated April 27th, 1997 from Federal Environment Minister Sergio Marchi and another letter from Federal Environment Minster David Anderson to all levels of Government and

the JAG, which stated the Federal Government's commitment to CCME Guidelines as a minimum.

> "Where Federal Government contributes funds to a project or where federal wastes are involved, projects will have to comply with existing federal regulations and policies except in instances where provincial regulations, standards or policies are more stringent. Therefore, as a minimum, any CCME Guidelines will apply and JAG will bind them into -- build them into its criteria."

Soon after the JAG process ended, the Provincial Government announced a decision to scrap those incinerators.

Governments are now proposing to burn 120,000 tonnes of PCB-impacted sediments, 25,000 tonnes of Tar Cell contaminants and other materials at Victoria Junction which would also violate the 1992 guidelines because of its close proximity to homes and a dairy farm and its close proximity to Cape Breton's only university.

To circumvent the siting requirement, STPA has tried to call this proposed unit a mobile incinerator so that it could apply other guidelines to it. An

incineration facility set up for at least five years is not a mobile incinerator. This is a blatant disregard for the commitments made to this community by the Federal Government. The 1992 guidelines must apply at a minimum.

The original plan outlined in the EIS is to excavate only two of the eight known PCB hot spots in the Tar Ponds. It states the excavation would total 120,000 tonnes of PCB-impacted sediments even though the Tar Ponds only contains 50,000 tonnes of PCB-impacted sediments.

Following excavation composite sampling to determine PCB concentrations was to be conducted every 1,000 cubic metres to determine which batches were greater than 50 parts per million. Batches less than 50 parts per million would not be sent to the incinerator but would be solidified and stabilized.

Much of the PCB sediments in the North Pond, which is the largest PCB area, No. 5, containing 30,000 tonnes, is located under many feet of PAH-contaminated sediments. Excavation of that area would drastically reduce the amount of PCB-impacted sediments heading for the incinerator due to mixing and dilution.

Given that STPA has changed the plan so that excavated sediments would not be sampled to determine whether the material was greater than 50 parts

per million after excavation, all the material would now go to the incinerator regardless of PCB concentrations.

I can only conclude that the reason for the change in plan was because the project was based on incinerating 120,000 tonnes of material from the Tar Ponds, not on a drastically lesser amount.

STPA stated "that the design will be based upon thermally treating 120,000 tonnes of PCB-impacted sediments above 50 parts per million."

Incinerating a much smaller portion of that amount would definitely not justify spending over $80 million dollars, or whatever the latest cost estimates are, to construct an incinerator which would operate for much less time based on a much smaller quantity.

While the Federal Government's Toxic Substance Management Policy calls for the virtual elimination of substances that are toxic, persistent and biocumulative, I don't think it was the intent that while attempting to destroy one persistent organic pollutant you create another.

We do not want to employ a technology such as incineration that would generate even more toxic byproducts, such as dioxins and furans, to further contaminate the air we breathe in the surrounding

environment.

It's encouraging to see so many people, including the Cape Breton District Health Authority and other health professionals, speak out against incineration. It's unfortunate that the university is not in agreement with that position.

I do not want my son to attend a university which is in close proximity to a hazardous waste incinerator, although we have little choice as it is the only university in Cape Breton.

The EIS has provided very little detail regarding this proposed incinerator even though the EIS Guidelines require that all proposed remedial technologies and their design must be detailed.

While the reason given for not providing this information in the EIS was that they are to be determined through the detailed design phase of the project, details such as the type of incinerator to be used, what air pollution controls are required, which stack parameters will be measured on a continual basis, must certainly be known at this stage.

Section 8.2.1.3, page 8.5, states:

> "The failure of the treatment systems will result in a controlled shutdown and gases from the combustion chamber

will be released through the bypass stack. The expected duration for this type of event is likely to be under a minute."

It is not reasonable to suggest that bypass stack releases would be under a minute when solid materials in the primary combustion chamber remain there and continue burning for 20 to 40 minutes, according to STPA, even after the feed has been cut off.

STPA says controlled shutdowns may take several minutes to several hours depending on the nature of the shutdown. If a controlled shutdown took several hours, wouldn't that mean that the dump stack would be open for several hours?

Releases through the bypass, also known as dump stack, do just that, dump all the emissions to the atmosphere untreated by air pollution controls. "Quantities of contaminants released under these conditions are expected to be minimal and negligible," says STPA. But how is that known when dump stack emissions are not monitored, nor are they tested?

While several presenters before me have spoken about the problems at other incinerators, I would like to talk about the problems we have on an ongoing basis -- or had, sorry, on an ongoing basis at the CBRM

incineration facility located here in Sydney.

This facility is located at the top of a hill on the land bordering the east side of the Coke Ovens. This land is also part of the Muggah Creek Watershed. Not only was the CBRM incineration facility licensed to burn 54,000 tonnes of municipal solid waste annually, it began importing all the Province's biomedical waste, 1,400 tonnes of which in 1997.

The ash cell for disposal of the bottom ash and fly ash was located behind the incinerator, as was the leachate collection pool. Once tested, the water from the leachate collection was discharged to the site drainage area which then made its way down to the Coke Ovens.

There were two incineration units and they were plagued with problems. I had attended a CBRM Council meeting in 1996 at which a resident had dumped a bag full of half-burned material he had retrieved from the bottom ash of the incinerator. I couldn't believe that the Province would consider sending biomedical waste to a facility that couldn't properly burn paper and plastic products from municipal solid waste.

Before the incinerator began accepting all the Province's biomedical waste in January 1998, I took photographs and a video of the incinerator's ash cell

which contained large amounts of unburned paper and plastic products in the ash cell.

Following the release of these photos the NSDOE conducted an internal technical assessment of the CBRM facility in February 1998. The assessment report recommended several design changes which included installing an additional primary burner, among other things, to alleviate this problem of unburned materials.

The report concluded that the incinerator units met the requirements for good combustion practice during the incineration of biomedical waste.

Environment Minster Wayne Adams instructed the CBRM to rectify the problem of unburned materials through process changes, one of which was to separate unburned materials from the ash and reintroduced into the unit -- into the incinerator for combustion. This was neither a high-tech nor safe solution for the employees or for the general public.

Minister Adams indicated he was confident that once these modifications were in place the issue of unburned materials would be resolved. I returned to the ash cell on January 24th, 1999 with several friends to see if changes made to the incineration facility had made a difference.

This time not only were there large

amounts of unburned paper and plastic products, there was also a considerable amount of unburned hospital waste including syringes, IV bags, tubing, hospital clothing, et cetera. I took photographs and a video showing mounds of unburned material.

These are samples of my photographs that I took in the ash cell behind the incinerator. There's dialyser tubing, IV bags, hypodermic needles, hospital clothing. Clearly it had been through the incineration process because it was singed around the edges, but it had not been properly burned.

I have a short video to show, a 2-minute video, but maybe I'll wait till the end, if that's all right.

Following the release of these photos the Department of the Environment launched an internal investigation despite calls for an independent investigation. The conclusion of the investigation stated that:

> "Evidence does not exist to support prosecution action for any infractions of the Nova Scotia Environment Act or applicable regulations."

It was also mentioned that:

"Inspections of the facility by staff of the DOE revealed the facility is operating in compliance with its permit. Videotaping by DOE investigators of the ash landfill cell during visits has not shown any evidence similar to that obtained by citizens on January 24, 1999."

In April 2001 I returned to the facility after hearing that a DOE inspector ordered the return of partially burned bottom ash found in the ash disposal area back to the incineration facility to be reburned.

Mounds of this soggy, half-burned material sat on the floor of the facility where it was stored until it could be put back into the incinerator. This material was sitting in an area that was accessible to the public.

Prior to the acceptance of biomedical waste, the CBRM distributed an information sheet on ash which described bottom ash as "the coarse black material collected from the base of the burning chamber." This description in no way resembled what the ash really looked like, as you can see from my photographs.

Any facility which must have bottom ash ordered back into the incinerator to be reburned should

not be the destination for biomedical waste. Despite many upgrades and repairs to the facility and despite assurances by the Environment Department, these two incinerators were still not capable of safely disposing of biomedical waste.

Throughout all of this we were assured it was a state-of-the-art incinerator. In correspondence to Jamie Muir, the Nova Scotia Minister of Health, on August 23rd, 2001, I asked if he was going to renew the agreement due to expire in 2002 with the CBRM to burn all of the Province's biomedical waste. It was renewed for an additional three years. It was later extended again to December 31st, 2005.

This contract was renewed between the Health Department and the CBRM despite the fact that the CBRM incinerators had failed the 2001 stack test for dioxin and furan emissions. The units would go on to be in non-compliance with the permit for dioxin and furan emissions during stack tests in the 2002, 2004 and 2005 stack testing.

I had reviewed the facility's Continuous Emission Monitoring Reports over a four-month period from April 1st to August 1st, 2001. There were a substantial number of examples when the temperature in the incinerator fell well below the minimum required

temperature of 1,000 degrees Celsius for hours at a time. This was not during startup or shutdown, this was in mid-operating cycle.

The operating permit required that a temperature of not less than 1,000 degrees Celsius be maintained during the entire incinerator cycle and subsequent shutdown until the final ash is discharged from the primary chamber.

This was the requirement as stated in one section of the permit, but another section of the permit allowed non-compliance for a continuous eight-hour period before the waste feed was cut off and a controlled shutdown implemented.

The CBRM was in non-compliance with its operating approval for dioxin and furan emissions for the past four out of five years but not once did the Nova Scotia Department of the Environment order the shutdown of the incineration facility.

The facility failed its stack testing four out of the last five years for dioxin and furan emissions even though these tests were conducted under ideal operating conditions. The real impacts on the community will never be known.

There would undoubtedly be exceedances of dioxins and furans on a daily basis when conditions were

less than ideal but these would not be measured and no follow-up testing was conducted.

The test results were studied and recommendations were undertaken and on-site modifications were implemented to improve the emissions, but as no immediate follow-up stack testing was conducted there was no way of knowing if the modifications improved the emissions. The annual stack test proved year after year that the emissions did not improve.

Aware of the emission exceedances of this incineration facility year after year, the Nova Scotia Department of the Environment and the Nova Scotia Department of Health did not act to protect this community. They chose instead to repeatedly extend the CBRM's contract to burn biomedical waste.

This facility was shut down on December 31st, 2005. Had the Province not been continually challenged by a number of people in this community, I am confident the incinerator would still be operating today and the Province would still be shipping all of the Province's biomedical waste to Sydney. We cannot rely on the provincial regulators to protect this community.

A great deal of reliance is being placed on air monitoring to protect this community from emissions during remediation. We have been told that air

quality standards enforced throughout the Tar Ponds and Coke Ovens cleanup project are designed to detect problems early before harmful effects occur.

From past experiences with the Domtar tank on the Coke Ovens Site, we know that air monitoring doesn't always detect releases of emissions into the community and that equipment will malfunction.

Prior to the contents of the Domtar tank being removed an enclosure was constructed over the tank. This enclosure was under negative pressure with carbon filtration to contain any contaminants within the enclosure. Despite these precautions taken, naphthalene was released from the tank enclosure.

Residents from the nearby community noticed the smell and complained of headaches and nausea. Real-time hand-held monitors used on site but only intermittently throughout the workday did not detect the leak, so work on the project was not halted.

It was detected by a stationary monitor on May 27th, 2004 at the site perimeter very close to homes. Unfortunately, the stationary monitor only operates for one 24-hour period every six days and a sample must be sent to a lab to be analyzed.

When the Tar Ponds Agency received those results, one week later the project was shut down but the

residents were not informed about the naphthalene exceedance for another three days.

The community wasn't advised by Sydney Tar Ponds Agency there had been a leak until 11 days after the stationary monitor had detected it. The failure of the intermittent hand-held monitors to detect a leak and the fact that the stationary monitor which detected the leak was only operating for a 24-hour period on May 27th made it impossible to say when the leak began or when it ended.

Following this naphthalene leak, the project was shut down for a month while the Tar Ponds Agency determined the cause of the leak.

It was determined that the activated charcoal filter was ineffective and had to be replaced after it had compacted over the winter and spring. There was a malfunctioning switch on the exhaust fan that needed to be replaced, and the structure enclosing the tank was sealed.

Improvements were also made to the real time hand-held monitors. New more-precise units were added.

A second naphthalene leak was detected in September of 2004, but again it was not initially detected by the new improved real time hand-held

monitors. The Sydney Tar Ponds Agency spokesperson, Parker Donham, noticed a smell while driving by, and an air quality test and a work stoppage were ordered immediately. Those tests confirmed the leak.

In November, 2004, a third naphthalene leak was detected downwind from the site. This leak was caused by strong winds which prevented negative pressure being maintained inside the tank enclosure. While this leak was detected by monitors, it was another example of equipment malfunction.

Even though the removal of the Domtar tank contents totalling only 4,000 tonnes of material took place within an enclosure under negative pressure with activated charcoal filtration, there were still contaminant releases to the community.

In IR-56, page 5, it states that:

> "Air monitoring will be conducted during the remediation of the Tar Ponds and Coke Oven sites to ensure that workers and residents are not exposed to levels of particulates or vapour that would pose unacceptable risks."

While we were given similar assurances with the Domtar tank project that all measures

incorporated in their plan were protective of health, equipment and monitoring failures still occurred.

Knowing that equipment will malfunction and fail, I'm sure there will be many more instances such as these, given the enormity of the project about to be undertaken and the length of time it will take to complete.

As Agency spokesperson, Parker Donham, stated in a letter to the editor of June 26, 2004:

> "It's important to recognize that air monitoring technology has limits. One obvious limit is the inevitable tradeoff between time lines and precision."

He was referring to the fact that stationary monitors, which only operate once every six days and need additional time for lab analysis, measure more than 50 chemicals and are more precise in their detection, whereas real time hand-held units, which measure far fewer chemicals, are less precise.

During the demolition of the byproducts building in 2002, which Debbie spoke about yesterday, we were assured that air monitoring would be protective. While it was explained there would be continuous monitoring of the activity, it was only monitored, on

average, between two to 15 minutes per hour.

The day the massive byproducts building toppled to the ground creating a very large plume of dust, no stationary monitors were turned on at all to measure the real impacts on the surrounding community.

VOC readings from that day were non-detect, despite there being a smell of gas and tar in the air, which even clung to their clothing, according to bystanders at the fence. Bystanders later complained of dizziness, respiratory problems and nausea.

The EIS, Volume 3, Section 5.3.1, page 5-3 states that:

> "Excavation activities of Tar Pond sediments will cause VOC emissions from the evaporation of constituents from excavated material and diesel exhaust emissions from excavation equipment."

In 2003, Walter van Veen of Conestoga Rovers, Project Manager at that time, said that during Tar Pond sediment excavation for the Technology Demonstration Project, he was adjacent to excavations using backhoes. He said:

> "I didn't smell a thing and there were no problems. We did air

monitoring right around that excavation and we did real time air monitoring, plus we did lab monitoring. We excavated at two different places. Air monitoring showed nothing, real time monitors showed nothing, and certainly my nose showed nothing at that time."

Dr. Magee said during those hearings -- these hearings -- in performing the Human Health Risk Assessment, they took emissions estimates measured from their field experiment during excavation. Did those emissions estimates which form the basis of the Human Health Risk Assessment also show nothing?

The Sydney Tar Ponds Agency spokesperson said that every expert they've talked to said that the problem of damaging the air in the course of cleanup is not at the destruction end but at the digging-up end. When you start mucking about in this stuff -- and we've seen this from the Domtar tank -- it's very hard to contain the release of every single molecule when you're digging around in this stuff.

There has been no bench scale or field testing completed to date on potential volatilization of binding agents associated with the S/S process, however,

higher emissions are expected. Risk assessments show that the level of volatile components in the neighbourhood are low enough that the risks are well below project significant levels.

I am afraid risk assessment predictions will be of little comfort to those residents living around the Tar Ponds when excavation, handling and solidification and stabilization of the sediments begin.

Years ago when Donnie DeLeskie removed Tar Ponds sludge with a shovel from the west side of the Tar Ponds, a former steel worker who was there told a JAG round table meeting, after a couple of shovelfuls, a couple of people passed out on the bank. As a matter of fact, there were people on the bridge that separated the north and south pond that actually passed out on the bridge. There was no odour, you couldn't smell it. I was there myself, and also without any odour there, I got lightheaded at the same time.

So I just wonder, in excavation of those ponds large amounts of soil, what precautions are you going to take? What says that's not going to happen on a much larger scale. That was from the person who was beside Donnie DeLeskie while he was excavating. I'm sorry, while he was digging up sludge.

THE CHAIRPERSON: Ms. Kane, five minutes.

MS. KANE: Okay. While I am less concerned about worker protection because of their personal protective equipment, I am very concerned for the residents living nearby and the children playing in their back yards on the other side of the fence who aren't wearing personal protective equipment.

Debbie Ouellette, a former Frederick Street resident, has previously described how disturbing the Coke Ovens in the past impacted the health of her family and others living adjacent to the Coke Ovens site. So despite air monitoring, health risk assessments, and the assurances, people still felt the effects.

Given the amount of excavation and mixing of sediments and land farming that is to take place, properly designed and operated enclosures with activated charcoal filtration would still provide a level of protection that is not being offered now for many of the outlying projects.

More stationary monitors are required around the site perimeter and must be operated daily, not once every six days.

Knowing the fear, anxiety and ill health the Debbie Ouellette and many others experienced on Frederick Street and the surrounding area while the Coke Oven site was being disturbed and that Neila MacQueen and

many others experience now on a daily basis living near the Tar Ponds and Coke Oven sites, government must offer a voluntary relocation option to nearby residents and determine a buffer zone around these sites.

Neila MacQueen, a non-smoker, is a lung cancer survivor who lives beside the Tar Ponds with her son. Neila worries constantly about her son's health and her own and that of her pets, who have large tumours. Her basement is contaminated. Her back yard is contaminated. She is even more stressed knowing that excavation work and S/S work on the Tar Ponds will be performed while she remains living so close to the site.

STPA insists that enclosures aren't necessary when sediments are disturbed and S/S is performed on Tar Ponds sludge and when land farming takes place on the Coke Ovens site because air monitors and mitigative measures in place will protect the residents.

STPA says that it has been determined through the collection of data and the Human Health Risk Assessment that enclosures and vapour treatment facilities are not required for excavation of contaminated sediments.

Even though STPA states that odour and vapours could potentially be generated during land farming, there still is no plan to land farm within

enclosures with negative pressure infiltration. After hearing Debbie Ouellette's testimony, the word "potentially" doesn't come to mind.

Meanwhile, Neila and many others like her must cope with the stress every day knowing she will be impacted by emissions and feel the ill effects for years to come from work carried out on the site. She will worry how this will cumulatively affect her son's health and her own health, both of which have already been greatly affected by past exposures.

Offering protection to the community, in theory, through risk assessment and air emissions modelling is far from what the reality is. This particularly when risk assessments have not considered prior exposure of a community already suffering from the impacts of the steel mill, Coke Ovens operations, as well as the municipal incinerator operations.

Health risk assessments that do not consider prior lifetime exposures are useless in this community. We cannot imagine what it must be like to live with that fear and concern on a daily basis. The question we should all ask ourselves is what we would feel -- is would we feel safe living with our children adjacent to those sites throughout the cleanup. So far I have not met one person who has said yes to that.

I have heard some people say, "Just leave the Tar Ponds where they are. Don't excavate because of emissions. Just perform solidification and stabilization and cover it over."

Even if all contaminants were not removed and destroyed, all contaminants would still be disturbed and stirred up like a cake mix. The binders such as Portland cement would be stirred impossibly by an excavator mixing the sediments like a giant spoon stirring cake batter according to STPA's newsletter.

Exothermic reactions will occur when the cement is mixed with the Tar Ponds sediments, increasing volatilization of contaminants. Thousands of tonnes of sediments would also still be excavated to accommodate the manmade water channels in both Tar Ponds.

Frank Potter said in his presentation on the first day of these hearings that:

> "In the next few weeks, you will hear from some people who care passionately about the way the Tar Ponds will be cleaned up. Their sentiment is deep and heartfelt, but do not confuse it with the sentiment of the community at large. I am here to tell you that most people in

Sydney do not care that much about how we clean up the Tar Ponds and Coke Ovens as long as we pick a tried and true method that is proven safe and effective at other locations."

STPA held a different position a little over a year ago. In December, 2004, the STPA spokesperson said he felt there was a deep division within the community as to whether it's better to remove and destroy every scrap of contaminants -- although he thought that was probably the position favoured by most people -- or whether or not to disturb them at all and simply treat them and contain them in place, which he thought was the firmly held position by a minority of people in the community.

As Gary Campbell of Nova Scotia Transportation and Public Works mentioned in his presentation last week, there were more than 1,700 workbooks filled out by residents. He said each workbook took more than an hour to fill out, and he thought it was phenomenal that all those local residents took the time to participate.

Gary and I would disagree with Frank Potter when he said that most people don't care how you clean up the Tar Ponds. Obviously 1,754 people did care

and did have an opinion about how to proceed. Obviously 4,500 people who signed a petition against incineration of Tar Pond sludge also care.

What we've been presented with in these documents is thousands of assumptions how things should work in theory in an ideal world. The reality is equipment malfunctions, events occur that are not anticipated, people make mistakes, any of which could jeopardize the health of residents.

The only way to proceed with remediating the Tar Ponds and Coke Ovens site is to offer voluntary relocation to nearby residents around the perimeter of the sites, and a buffer zone must be established.

Following that, all work must be performed within enclosures under negative pressure with charcoal filtration. Stationary monitoring should be used on a daily basis, not on the NAPS, the National Air Pollution Surveillance Program, which only monitors for one 24-hour period every six days.

There should also be more stationary monitors located around the sites. Currently there are only two close to the Tar Ponds and three close to the Coke Ovens. As well, an intensive real time monitoring plan must be established.

If government would only spend as much on

protecting the health of residents through relocation and mitigative measures just mentioned as they are spending in management fees for this project, the community would be much better off. Thank you.

--- QUESTIONED BY THE JOINT REVIEW PANEL

THE CHAIRPERSON: Thank you very much for your presentation, Ms. Kane. I wonder if you could -- you've given a very clear summation of what you want to see, but if we could go back to the issue of the selection of the remediation options, you've provided a considerable critique of the option that's been selected, both solidification/stabilization and the incineration.

Now do I take it that you are firmly a supporter of the RAER Option 3 as an alternative approach or have you got other views on the actual choice of remediation technology?

MS. KANE: I would like to see removal and destruction technologies employed. Whatever the best technologies are, that's what I'd like to see employed, but removal and destruction. I don't want the Tar Ponds left there for my children to have to deal with, and my grandchildren.

THE CHAIRPERSON: But presumably the -- you obviously recognize that any -- that a removal and destruction option is going to involve probably

equivalent amounts of site disturbance and sediment disturbance, and hence your other comments would apply to whatever option is chosen.

You're not -- you're not -- you don't anticipate that there's any option that can get around that question of actually having to dig up and stir up those -- the soils and sediments, thereby running the risk of odours and emissions during the process.

MS. KANE: Well it seems that the process that has been suggested now, the solidification and stabilization process, will involve a considerable amount of mixing and releases of contaminants to the surrounding community. But the problem I have with how they're proceeding is they're not doing any of it under an enclosure. And I think that materials could be excavated from the Tar Ponds if done properly under an enclosure and negative pressure with filtration and providing there had been a buffer zone provided for the community and relocation for nearby residents. That combination, I think that could work.

THE CHAIRPERSON: Now the lesson that you're drawing from the whole experience that you've had with a municipal solid waste incinerator -- the main lesson that you draw from that is that you feel that the Provincial Department of Environment and Labour can't be

-- you don't have confidence in them to regulate incineration? Or did you also draw conclusions that that, as an example, indicates that incineration technology is flawed?

MS. KANE: Well I'd say a little bit of both, because I certainly have stacks and stacks of correspondence between myself and the provincial government and the CBRM about issues I raised with them about problem with the incinerator, and never once did they shut down the unit because of concerns that even they recognized and the fact that the Department of the Environment allowed its continued operation even though it was in violation of its own permit for five years.

No, I don't have a lot of confidence at all in the Nova Scotia Department of the Environment as a regulator.

THE CHAIRPERSON: Given that they are going to be a regulator no matter what technology goes ahead, what is it that you require to give you more confidence?

MS. KANE: Well actually, different branches of the NSDEL surprised me with their submissions to the Panel because some of the questions they asked were -- to me were very important questions. So maybe it's just the one -- the one branch of the Nova Scotia

Department of the Environment, the one that was looking after the incinerator -- maybe that's the particular branch I had problems with.

So I'm not sure what it'll take, but I know I haven't had good experiences for the last seven years with the Nova Scotia Department of the Environment as far as regulating this incinerator.

THE CHAIRPERSON: And I think my last question -- and I'll let others have a chance -- would be the previous presenters were addressing the RAER Option 3 or the modified Option 3 that's often raised by many presenters. Some are seeing it as a way they would prefer to go, so we certainly heard more information this evening.

And you're being very careful, I know, in your responses to me that you aren't necessarily supporting any particular alternative. You've stated that you would like to see complete removal and destruction, and this was an option that claims to be able to do that.

Do you have any comments on that option after hearing the presenter earlier this evening? Do you have any concerns about that proposal, especially in terms of it involving a co-burning part -- component.

MS. KANE: I'm afraid I missed most of the

presentation because I was up at Staples getting this photocopied. And actually, I think I missed the presentation yesterday -- part of it -- as well. So I'm afraid I did miss today's presentation.

THE CHAIRPERSON: Well, I obviously won't ask you more about that except to say that I know you know that that particular option does involve ultimately co-burning in terms of, you know, developing a coal product through the clean -- the soil washing process. Is that a concern for you?

You're opposed to incineration for the PCB sediments in the current proposal. Do you have any comments about co-burning as a possibility?

MS. KANE: Well, not knowing what their product -- how it would test following their process, what constituents were in their product, it's hard for me to have an opinion on that. I'd rather do research on it first before having an opinion on it.

I do have -- you know, recognizing that, right now, unfortunately most of our power does come from burning coal, I would certainly hope we're heading in a direction away from coal. But in the meantime, I know that's the process that we're using right now.

But again, it would depend on the constituents within their finished product.

THE CHAIRPERSON: Well I can tell from all of your questions and all your presentations, that you are indeed somebody who very carefully researches things before you speak, so I certainly won't press you any further on that.

MS. KANE: Thank you.

DR. LAPIERRE: Thanks a lot for your presentation, Ms. Kane. One question I have is many of the alternative technologies do include removal, whichever way you use to remove it.

Then there is the destruction phase. Often times the destruction phase requires that you send it away because you either don't have the technology in place -- I guess the question I have, do you have any problems with sending waste material away and having it destroyed or rendered harmless away from home? Do you think the solution should be fixed here?

MS. KANE: I do. I do think the solution should be here. I've always stated that over the years.

When the Domtar material was being shipped off, I thought at the time, actually because it was only 4,000 tonnes, that they should just leave it and treat it with the 700,000 tonnes that was in the Tar Ponds. And I thought that would be much more cost effective and a safer way of dealing with it than what they went through

getting rid of 4,000 tonnes.

I would like to see technologies employed here on the site or somewhere close by and have local labour of course employed in the cleanup.

DR. LAPIERRE: Thank you. Just one more question. You mentioned the possibility of a buffer zone. Do you have any idea how large that buffer zone should be?

MS. KANE: No, I'm afraid I don't. I'm certainly not an expert when it comes to that, but I imagine someone capable could determine what a safe distance would be where people could live around the site.

But again, I think what's very important is that the measures that are undertaken on the site are what's the most important starting point as far as the protection for the whole community. Because the site is in the middle of our city, it's not just those living close by, although they are impacted, I'm sure, harder than other people, but we all live within a fairly close distance to the site.

So whatever the process employed on the sites must be done under an enclosure. I don't think there's any other way to do it. That's why I'm shocked that they're actually considering doing any of this

removal and treating with S/S on the Tar Ponds and then land farming on the Coke Ovens without enclosures with people living so close by. I'm -- I'm shocked by that.

DR. LAPIERRE: Thank you very much.

MS. KANE: Thank you.

MR. CHARLES: Ms. Kane, I only have one question for you. You say you favour removal and destruction, but I take it from your comments about incineration, that incineration is not one of the methods of destruction that you'd want.

So I guess my question is do you favour any alternate form of destruction.

MS. KANE: I don't favour any. I haven't researched a lot, but I know that during the technology demonstration -- and I don't have them handy -- there were other processes that were successful during the technology demonstration which the Sydney Tar Ponds Agency conducted.

MR. CHARLES: Like coal washing or some of the others.

MS. KANE: Yeah. Soil washing and -- and it was also spoken about as a process -- an end process -- pyrolysis -- or there are other technologies. But again, I don't -- you know, I haven't determined that myself. I've ---

MR. CHARLES: Yeah. It seems difficult with whatever technique they use that you eventually end up with some kind of product that is hard to get rid of, whether it's in a liquid form or some other form, and that seems to be one of the big problems.

I'll wait for you to do some more research before we come back to you on that one.

MS. KANE: Thank you.

THE CHAIRPERSON: Before I go to the Tar Ponds Agency for their questions, just so that I can get a good sense of how much time is required, could I just see a show of hands of how many people -- both registered presenters and others in the hall -- have questions for Ms. Kane so that I've got some sense. One, two, three, four, five. Okay, thank you. Well, six with the Agency.

So I'm going to take those five who raised their hands and the Agency, and I'm going to say a maximum of five minutes. Feel free to take less, please. And then we will call it a day this evening. So Mr. Potter, do you have questions for Ms. Kane? Five minutes, please.

MR. POTTER: I'm going to save you some time. No questions tonight. Thank you for the presentation, Marlene.

MS. KANE: Thank you, Frank. We agreed

upon this earlier. He wasn't going to ask me any questions. Thanks, Frank.

THE CHAIRPERSON: So this is collusion?

MS. KANE: It works well for me.

THE CHAIRPERSON: All right. Feel free to collude, the rest of you, so we can get home. No, no.

Would you mind putting your hands up again so that I can see who -- I see Ms. MacLellan, I see Mr. DeLeskie, Ms. Ouellette, a lady in the front whose name I don't know, and Mr. Ells. Who else did I -- that's it. Nobody else. All right.

Okay. So I'm going to go in reverse alphabetical order, I think, and I will start -- that means I start with Ms. Ouellette.

--- QUESTIONED BY MS. DEBBIE OUELLETTE

MS. OUELLETTE: I just want -- I don't really have a question, but I do have to say that Marlene and I are very close friends, and we decided one day -- it was Easter Sunday -- that we would go up to the landfill. And as you see this biomedical waste, that's what we were looking for.

And I have to say she spent hours and hours and years and years to finally dismantle this incinerator, biomedical waste from Halifax and everything from coming here, and we really appreciate all the work

she's done over the years.

Thank you, Marlene.

MS. KANE: Thank you.

THE CHAIRPERSON: Thank you, Ms. Ouellette. Ms. MacLellan.

--- QUESTIONED BY CAPE BRETON SAVE OUR HEALTH COMMITTEE (MS. MARY-RUTH MACLELLAN)

MS. MACLELLAN: I've got a couple of questions for you, Marlene. Let's talk about the incinerator first.

They've mentioned that they're going to monitor the mercury because of the fish in the lake. Given that in Canada fish aren't considered part of the food chain and they're never tested by anybody before they're put in stores to be sold similar to what meat would be, how does it make you feel about the children when they can't even answer questions about dioxin monitors?

MS. KANE: When they can't answer questions ---

MS. MACLELLAN: About the dioxin monitors. They said they were unfamiliar, for example, with the ones in Europe.

MS. KANE: I'm not sure -- I'm sorry, I don't think I can answer that because I'm not quite sure

what the question is.

MS. MACLELLAN: Well, they're worried about the fish but they don't seem to be too worried about the children or the people in the area.

MS. KANE: Are you talking about the Sydney Tar Ponds Agency or the Department of the Environment?

MS. MACLELLAN: The proponent. The proponent ---

MS. KANE: Okay.

MS. MACLELLAN: I'm just wondering how you feel about protecting the children and the people when they're concerned about mercury in fish that never really has to be tested anyway.

MS. KANE: Now, from what I've heard, there are laws for fish but guidelines for people. I mean, I would hope that -- I would hope that they would certainly put the health of the children first, but I've seen that they haven't done that. The Department of Health certainly hasn't done that, nor has the Department of the Environment.

And you know, I really do have concerns about any excavation work at all being undertaken on either site, the Tar Ponds or the Coke Ovens site, without enclosures, without buffer zones, without moving

people away, because it is an awful thing to see a worker on one side of the fence in protective clothing and a child on the other side of the fence playing in the yard. It's a terrible contrast.

MS. MACLELLAN: Extremely terrible. I have concerns about the proponent -- the ones that are going to regulate, mainly our provincial government, having had experiences with lobbying them in the past over the violations in their permits, and every time we lobbied them, they altered their permits.

Would you think it would be a good idea to have an independent regulator?

MS. KANE: That's more than I've thought about, but I certainly think it's a good idea to have a third party independent monitoring of the sites during -- when work is being undertaken.

MS. MACLELLAN: Okay. And let's talk about the areas around that aren't part of the cleanup proposal. For example, the movie house where a lot of the children go. I used to pay my children to stay out of there.

How do you feel about those areas not being cleaned up and leaching back into the sites?

MS. KANE: I don't know what to say about those areas. You know, it's certainly true that there's

been an awful lot of construction on top of contaminated material.

We saw that when Sobeys started expanding their store in the mall across from the Tar Ponds, when they were drilling into the parking lot for a foundation, black goo was coming up out of the -- out of the tar -- out of the holes where they had drilled, and it was tested, and it was contaminated.

So obviously a lot of buildings sit on top of that material. I don't know what to suggest for that. I'm certainly, you know, no expert.

I know that while -- you know, while it's the only place we can take our children where they can go themselves to a movie, and there's a grocery store there and restaurants there, sometimes the smell down there is so horrific, it's hard to spend any time there.

MS. MACLELLAN: Thank you.

MS. KANE: Thank you.

THE CHAIRPERSON: Thank you, Ms. MacLellan. Mr. Ells.

--- QUESTIONED BY MR. CAMERON ELLS

MR. ELLS: Thank you, Madame Chair. If one assumes for a moment that we were through the construction phase and it was after the project was done and into monitoring ---

MS. KANE: Do you mean the current project?

MR. ELLS: Yes. With respect to the solidification and stabilization part of it, if the water leaving that part of the property was such that the water or the sediment in it was good enough for the fish or shell fish in the harbour and could be demonstrated to be so in an ongoing basis, would that be considered a success in the opinion of the presenter?

MS. KANE: The water that's flowing down from where to where?

MR. ELLS: If after the project was completed from the Tar Ponds area, be it by solidification or some other means -- independent of the method, if at the end of the day, the water leaving that area and entering the harbour was -- the quality of it was good enough for the fish, would you consider that a success for the project?

MS. KANE: Well as far as that particular water would go, but as far as other leachate that's coming out from under the sites that aren't being dealt with, I'd say not.

MR. ELLS: Okay. And the other question was, in talking with Ms. MacLellan a moment ago, you were discussing monitoring and independent monitoring. Would

an effective equivalent to what you're talking about be to -- with -- would it be okay if the proponent was doing the monitoring so long as it was independently reviewed and endorsed, and the information was consistently publicly available?

MS. KANE: I have no idea. I'd have to -- you know, I'd certainly have to look -- research that, but as far as I'm concerned, independent third party monitoring is not conducted by the proponent.

MR. ELLS: Okay. Thank you.

MS. KANE: Thank you.

THE CHAIRPERSON: Thank you, Mr. Ells. Mr. DeLeskie.

--- QUESTIONED BY MR. DONNIE DELESKIE

MR. DELESKIE: Thank you very much. Marlene, first of all, I want to thank you very much for the fine presentation you gave tonight, and I know it came from your heart and you've been out there working for the people, and I really appreciate that.

MS. KANE: Thank you very much.

MR. DELESKIE: I'd just like to say that I'm not looking to get moved myself because it's too late for me, but my question is -- and it's like a kind of a hurried question -- that's why I'm so glad that the Panel Members are here.

We have sick people, and the sicker the people are those that are around the Tar Ponds and the Coke Ovens. I mean, we could actually have trucks going back and forth, you know, those Red Cross trucks evacuating the people tonight, you know, and not waiting down the road.

I believe we gotta start concentrating on, look, who is sick, who -- like, the Neila MacQueens that have the lung cancer, the ones that have the bronchitis, the heart diseases and things like this.

And I'd like to say Frank Potter -- he grew up in the City -- and the only reason I'm saying it, he has a wife and he had two daughters. He had a father that died with cancer.

So we all pay the price. So if we could kind of keep it where this is a problem that we all have and we should all try to work together, I think, hey, that we can get the Tar Ponds cleaned up.

But I believe that Frank Potter should say to you, Marlene, "Come and sit down at the table with us," and have a sideboard for citizens and for the what ya call 'ems and say, "Let's work out something that we can get this place cleaned up." Thank you.

MS. KANE: That would be wonderful, but I'm not permitted to sit at the CLC.

THE CHAIRPERSON: Thank you, Mr. DeLeskie. Our final questioner is the lady in the front. If you'd ---

--- QUESTIONED BY MS. JOANNE CITRIGNO

MS. CITRIGNO: Thank you, Madame Chair. My name is Joanne Citrigno. Should I spell that for the written record?

THE CHAIRPERSON: That might be helpful, yes. I'm sure they'd appreciate it.

MS. CITRIGNO: Yeah. C-I-T-R-I-G-N-O. I'd like to begin by thanking the Members of the Panel for coming here and going through this process because I think we've had an opportunity to hear a lot of things that we haven't always had the opportunity to discuss through this process, through the years of the JAG process that I've lived in Cape Breton. And particularly because my background is in Arts and particularly in Community Development and Popular Education, I found the science myself very challenging, so I appreciate that you're going to take the time, first of all, to listen, but then to read through all this stuff and come up with some sort of decision.

And following that, I would like to express my admiration for Marlene Kane because I consider her, like myself, just to be an ordinary citizen, but

unlike me, she has taken the time over the 10 years I've known her to do the research and to try and understand the technical aspects so she can ask pertinent and intelligent questions, which I often feel I can't.

So what I would like to ask her is, if I -- there's two parts to this, but it's the same question. If I remember correctly, during those years that she has been fighting the municipal solid waste incinerator, that while she was trying to educate herself and ask the questions she needed to ask to find out whether the incinerator was operating safely or not, I think it was often very difficult for her to have access to certain kinds of information. And I'm going to have to ask her to say what kinds of information that would have been useful for her to make those judgements -- but things like logs and how the incinerator was performing.

So that would be my first part is what kinds of information, if I'm remembering correctly -- if you did have difficulty accessing this, what kinds of things would you have liked to have had more easy access to in order to see whether the municipal incinerator was operating the way it was supposed to.

MS. KANE: Thank you, Joanne. Yeah, there were lots of different pieces of information I requested either through the CBRM or the Nova Scotia Department of

the Environment. Some of them were operation logs from the incinerator, of which I never received.

Continuous Emission Monitoring Reports, I asked for -- I started asking for, I think, in about 1997, and the Department of the Environment would provide them for me for several years. And then when I started bringing this forward publicly, they stopped providing them, and I had to go through the Freedom of Information then to receive any documents that I wanted to review.

So that made it a little more difficult, although I have to say the CBRM, when I did request information through them, they were very -- on the most part were pretty helpful in delivering them. Sometimes it took a lot longer than I'd like -- months and months -- but I would end up getting what I asked for eventually.

What would have really been helpful, I think, instead of me having to try to track down CEMs, was that if they actually had it on the internet in real time. That would have been much easier. Because actually as part of their permit, it was required that they submit these CEMs within a certain number of days after the last day of the month and -- so that this -- the idea was that the Department of the Environment would then review the CEMs.

Well, I noticed, you know, as I was receiving this information, that the stamps on the letters of receiving -- of the Department of the Environment receiving them were months and months later than they should have been. And then eventually the Department of the Environment just said, "Well, you don't even have to bother sending them to us any more. We'll just come and get them if we ever want to look at them."

But anyway, as far as being able to watch the real time monitoring on the internet of different parameters from the incinerator would have been very helpful and much more open -- and a much more open process too.

MS. CITRIGNO: Yeah. And the reason I asked this is because I think it's really important, because of my background in community education -- and I do think that we're lucky in Canada that we have these processes where people have the right to ask questions, and you know, make decisions for themselves or try to make judgements for themselves whether things are safe or not.

So whatever technology ends up being chosen, what do you think -- as someone, you know, who does the reading so that they can ask good questions, what kinds of information should be available to the

public during the cleanup process and then afterwards where hopefully monitoring will continue so that people like yourself, you know, can keep on top of the situation and see if there is a problem?

MS. KANE: That's a big question because there's an awful lot of information, but basically everything should be available to the public to be able to walk in and -- into offices and see whatever is going on at the time, know what's going on at the time, and have all this information available in real time on internets -- on the internet.

But just the accessibility to know what's being undertaken at all times. That would be very helpful. I haven't really thought about that a lot. That's why I'm hesitating a little bit. But I'm just trying to think from past experiences, you know, what would be most helpful. I'm sure there's a lot of other things that I just can't think of right at the moment.

MS. CITRIGNO: But the real time monitoring, like, with the incinerators, whatever the equivalent, things like that.

MS. KANE: Yes. And logs. Any type of logs that the operators keep, that would be very helpful.

MS. CITRIGNO: Okay. Thanks.

MS. KANE: Thank you.

THE CHAIRPERSON: Thank you very much. That does bring us to the end of this evening's session. Thank you very much, Ms. Kane, for your presentation and for answering the questions.

We will be back here tomorrow, and as I said earlier on, we in fact will start at 11:00 in the morning. We have Environment Canada coming back -- coming back for questions from the Panel.

Then at 1:00, Cape Breton Regional Municipality. We then have a break until the evening when we have two more presentations.

So thank you very much for your participation this afternoon and this evening, and we'll see you back tomorrow at 11:00 or later.

(ADJOURNED TO WEDNESDAY, MAY 17, 2006 AT 11:00 A.M.)

CERTIFICATE OF COURT REPORTERS

We, Philomena Drake, Lorrie Boylen, Ruth Bigio, Sandy Adam, Janine Seymour and Gwen Smith-Dockrill, Court Reporters, hereby certify that we have transcribed the foregoing and that it is a true and accurate transcript of the evidence given in this Public Hearing, SYDNEY TAR PONDS AND COKE OVENS SITES REMEDIATION PROJECT, taken by way of digital recording pursuant to Section 15 of the Court Reporters Act.

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Lorrie Boylen, CCR
Sandy Adam, CCR
Ruth Bigio, CCR
Gwen Smith-Dockrill, CCR
Philomena Drake, CCR
Janine Seymour, CCR

Wednesday, May 17, 2006 at Halifax, Nova Scotia