

**Canadian Nuclear  
Safety Commission**

**Commission canadienne de  
sûreté nucléaire**

**Public hearing**

**Audience publique**

**August 11<sup>th</sup>, 2011**

**Le 11 août 2011**

Public Hearing Room  
14<sup>th</sup> floor  
280 Slater Street  
Ottawa, Ontario

Salle d'audiences publiques  
14<sup>e</sup> étage  
280, rue Slater  
Ottawa (Ontario)

**Commission Members present**

**Commissaires présents**

Dr. Michael Binder  
Dr. Moyra McDill  
Dr. Ronald Barriault

M. Michael Binder  
Mme Moyra McDill  
Dr Ronald Barriault

**Secretary:**

**Secrétaire :**

Mr. Marc Leblanc

M. Marc Leblanc

**Senior Counsel :**

**Conseiller principal:**

Mr. Jacques Lavoie

M. Jacques Lavoie

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Ottawa, Ontario

1  
2  
3 --- Upon commencing on Thursday, August 11, 2011  
4 at 1:37 p.m.

5  
6 **Opening Remarks**

7  
8 **MR. LEBLANC:** Good afternoon. Bonjour,  
9 mesdames et messieurs. Bienvenue à cette audience  
10 publique de la Commission canadienne de sûreté nucléaire.

11 Mon nom est Marc Leblanc, and I will talk  
12 about a few things pertaining to this hearing.

13 The Canadian Nuclear Safety Commission is  
14 about to start one public hearing on the application from  
15 Viterra Inc. for a redetermination of the Commission Order  
16 issued on November 27<sup>th</sup>, 2009.

17 During today's business we have  
18 simultaneous translation. Des appareils de traduction  
19 sont disponibles à la réception. La version française est  
20 au poste 2 and the English version is on Channel 1.

21 I would ask you to please keep the pace of  
22 speech relatively slow so that the translators can keep  
23 up.

24 L'audience est enregistrée et transcrite  
25 textuellement. So transcripts will be made in the

1 official language that is used during the hearing. The  
2 transcripts will be available on our website next week.

3 I would also like to note that this  
4 proceeding is video webcasted live and that the proceeding  
5 is also archived on our website for a three-month period,  
6 so you can go and see your performance soon after the  
7 hearing.

8 To make the transcripts as meaningful as  
9 possible, we would ask everyone to identify themselves  
10 before speaking.

11 And as a courtesy to others in the room,  
12 please silence your cell phones and other electronic  
13 devices.

14 Monsieur Binder, président et premier  
15 dirigeant de la CCSN, va présider l'audience publique  
16 d'aujourd'hui.

17 Mr. President.

18 **THE CHAIRMAN:** Merci, Marc.

19 Good afternoon and welcome to the public  
20 hearing of the Canadian Nuclear Safety Commission.

21 Mon nom est Michael Binder. Je suis le  
22 président de la Commission canadienne de sûreté nucléaire.  
23 Je souhaite la bienvenue aux gens ici présents et à ceux  
24 qui se joignent à nous par web diffusion.

25 I would like to begin by introducing the

1 Members of the Commission. On my right is Dr. Moyra  
2 McDill. To my left is Dr. Ronald Barriault.

3 You just heard from Marc Leblanc, the  
4 Secretary of the Commission, and we also have, Mr. Jacques  
5 Lavoie, Senior General Counsel of the Commission with us  
6 here today.

7 Before adopting the agenda, please note  
8 that one supplementary Commission Member Document was  
9 added to the agenda after the publication on July the 5<sup>th</sup>,  
10 and with this information, I would like to call for the  
11 adoption of the agenda by the Commission Members as  
12 outlined in CMD 11-H8.A.

13

14 **11-H8 / 11-H8.A**

15 **Adoption of Agenda**

16

17 **THE CHAIRMAN:** Do I have concurrence?

18 For the record, the agenda is adopted.

19 So after disposing with these  
20 administrative issues, let's proceed with the Viterra  
21 application.

22 Before hearing a presentation from Viterra,  
23 Marc, I guess you've got to say some things here.

24 **MR. LEBLANC:** Okay.

25 So as people know in this room, this is a

1 one-day public hearing. The Notice was published on June  
2 27, 2011.

3 We have received submissions from Viterra  
4 and CNSC staff and these were due on July 4, 2011.

5 And August 3<sup>rd</sup> was the deadline for filing  
6 of supplementary information. I note that Viterra and  
7 CNSC Staff did file additional information.

8 Monsieur le président.

9 **THE CHAIRMAN:** So let's start the hearing  
10 by calling on the presentation from Viterra as outlined by  
11 Commission Member Document H6.1, H6.1A, and I understand  
12 that Mr. Michael Edmonds will make the presentation.

13 Mr. Edmonds, the floor is yours.

14

15 **Viterra Inc.:**  
16 **Application from Viterra Inc.**  
17 **for a redetermination of the**  
18 **Commission Order issued on**  
19 **November 27, 2009**  
20  
21 **11-H6.1 / 11-H6.1A**  
22 **Oral presentation by**  
23 **Viterra Inc.**

24

25 **MR. EDMONDS:** Michael Edmonds, for the

1 record.

2 To start with the presentation, we start  
3 with the history of the facility. Viterra had leased 12  
4 acres of property to ESI to extract the uranium from the  
5 phosphoric acid.

6 A designated order was issued to ESI in  
7 2006 upon Viterra's taking legal possession of the  
8 property. That order was issued to Viterra, or WESTCO  
9 then, in 2008, and we had a redetermination of the order  
10 in 2009 which extended the deadline for compliance date to  
11 December 1<sup>st</sup>, 2011.

12 As required under the 2008 order, we were  
13 required to submit a remediation plan by July of 2008. We  
14 did comply with that requirement, and during the review  
15 process of the CNSC, we took the opportunity of that  
16 timeframe to remove some of the health and safety hazards  
17 that were associated with the property.

18 Now, these materials weren't a component of  
19 the order, but they were an issue related to occupational  
20 health and safety. In the end, from 230,000 kilograms of  
21 debris and general waste was removed, and that allowed  
22 access of our workers onto the site.

23 Additionally, during that same timeframe,  
24 we completed a DSS, a designated substance survey, of the  
25 interior of the building. The conclusions were, and based

1 on those conclusions, 8,600 kilograms of asbestos and  
2 other hazardous materials were removed, and that then  
3 allowed us to then initiate the remediation programs that  
4 we had submitted and that were authorized to proceed in  
5 July of 2009.

6 Following that authorization and later in  
7 2009, we proceeded to decontaminate, remediate the process  
8 equipment of the uranium dryer room. That was completed  
9 during the end of 2009. The report for closure of that  
10 program was submitted in 2010.

11 While these operations were ongoing, we had  
12 also developed the demolition plan for the uranium dryer  
13 room, and that was accepted in, I believe, March of 2010.

14 Prior to completing or initiating the  
15 demolition work, we had a structural inspection completed  
16 for the building. That concluded that we were unable to  
17 demolish the uranium dryer room separately from the  
18 remaining portion of the building due to poor structural  
19 integrity.

20 As a result, we then had to remove some one  
21 million litres of fats, oils and greases that were stored  
22 in tanks located within the building.

23 Again, this wasn't a requirement under the  
24 order, but clearly it was a requirement so that we could  
25 satisfy the requirements of the order. This was a three-

1 month process alone. The materials had solidified in the  
2 tanks. We did have to steam them to make it liquid.  
3 Clearly, we had to find a disposal location that would  
4 take it, and then arrange the health and safety programs  
5 around that operation.

6 Finally, on completion of that, we did  
7 start to demolish the building. We did that in a fashion  
8 where the uranium dryer room was left until last. That  
9 allowed us to ensure that the radioactive impacted  
10 materials were maintained separate from the other  
11 construction debris.

12 I might add here that there was another  
13 60,000 odd litres of waste oil stored in totes scattered  
14 around the property. It was clear to us that there was an  
15 environmental issue with that and we had that disposed of  
16 during the same time.

17 While this was occurring, we proceeded to  
18 prepare the remediation plans for the evaporation ponds.  
19 That was submitted in December of 2010.

20 Sorry, I will just go back just a little  
21 bit through the remediation of the CALCINER room.  
22 Actually, once we had pulled down the building, the  
23 weather held up for us. We had sufficient time to  
24 complete that requirement of the order in total. So we  
25 had pulled up the concrete slab of the CALCINER room,

1 excavated the radiological material and subsoils,  
2 collected confirmatory samples from the walls and base,  
3 and we are now under the UCL limits for the remaining  
4 soils.

5 That final closure report for the uranium  
6 dryer room was submitted in March. So now we're left with  
7 the evaporation ponds and certain links on radiological  
8 materials that were out of the calciner room.

9 As I stated, the remediation plan was  
10 submitted in December of 2010. Through communication  
11 supplemental information has been submitted to the CNSC  
12 staff. We updated the remediation plan in May of 2011 and  
13 incorporated a public dose evaluation assessment.

14 Our evaluation of the methodologies that  
15 we're using through that process we realized that there  
16 were some benefits completing the work in the winter  
17 months. We certainly had expected to do that in March of  
18 2011 but there are reduced exposure risks to workers and  
19 the environment; hence why we have applied for re-  
20 determination.

21 This is our schedule. Should we be granted  
22 the extension, we feel that it's achievable to start the  
23 evaporation pond remediation in late February once freeze-  
24 up is complete. It's a 30-day process and we expect to  
25 have final submissions by late June.

1           I do want to confirm with you that the  
2 project management structure here -- certainly Viterra  
3 takes ownership of the program. We have retained the  
4 services of specialists in the management of radiation,  
5 monitoring, health and safety.

6           Certainly NormCan is represented here today  
7 by Mr. Cody Cuthill, General Manger of NormCan. Hazco has  
8 been retained and is under contract to complete the work.

9           Golder is represented by Dr. Ernest Becker  
10 and he will provide technical assistance in the  
11 development of the health and safety plans, also the  
12 development of the reports and other literature that is  
13 supplied to the CNSC staff.

14           And WorleyParsons is our environmental  
15 consultant who have been retained under contract and have  
16 provided a letter of evaluation of the risks during the  
17 period of 2011 and 2013 should we be granted that  
18 extension.

19           The next three slides here are put together  
20 to indicate the safety -- the health and safety aspects of  
21 the program and that was leading to the -- our risk  
22 projections. I wanted to show you that these will be  
23 utilized whether in our winter or spring program and they  
24 do not affect our projections. These aren't the affecting  
25 factors.

1                   However, respiratory protection --  
2                   certainly we have respiratory cartridges on  
3                   representatives workers that enter the controlled areas.  
4                   We have log-in/log-outs. We have testing. Air sampling  
5                   units will be established on the boundaries of the  
6                   facility to ensure air quality.

7                   Contamination control or thirdly, set up  
8                   control station, clean clothing area, dirty clothing area,  
9                   PPE area, wash down and testing areas.

10                  The ecological exposure, it's really  
11                  pertaining to the process following the remediation of the  
12                  evaporation ponds and certainly it will be initiated as we  
13                  stop pulling back the materials above the liners and the  
14                  gamma radiation surveys will be used as a guide to give us  
15                  an indication on the extent of that excavation, whether we  
16                  need to go deeper.

17                  Clearly that would be backed up with  
18                  confirmatory samples and laboratory analysis.

19                  What we have planned is for the vehicles,  
20                  the transportation of the material. Certainly the  
21                  vehicles will be swipe tested prior to leaving the  
22                  facility. Wash stations will be on hand in the event that  
23                  that is required and the materials itself will be placed  
24                  in trucks that are lined with polyethylene liners that are  
25                  watertight product. And so it will limit any residual

1 spills.

2 So having said that, what we have here is  
3 the -- our projection from the gamma radiations. There  
4 are two projections between a winter program which we  
5 intend to initiate as opposed to a spring or summer or  
6 really any other time of the year.

7 Ten (10) microsieverts for the winter for  
8 workers, 112 for the other portions of the year and that's  
9 really a reflection of the process itself and the workers'  
10 contact with the materials.

11 In winter, we'll be using excavators.  
12 There will be limited direct exposure. During the spring  
13 and summer, that material would have to be converted to a  
14 slurry so we'll be using water jets and hydrovac which  
15 would create airborne particulates. The workers would be  
16 in direct contact with the material daily.

17 For truck operators, a similar situation; 6  
18 microsieverts in winter, 29 at the other times of the  
19 year; again, a reflection of the schedule of the program.  
20 We expect the winter program to take 30 days. Spring and  
21 summer, because of that slurring program, we expect that  
22 would take up to 120 days.

23 With regard to ecological exposure, the  
24 risks really pertain to the excavation or the removal of  
25 the sediments. Certainly as the materials are frozen,

1       there is a limited likelihood that the material will  
2       migrate should the liner be damaged.

3                 However, during other times of the year  
4       where there's a high water content, should that liner  
5       become damaged, then a high potential for that to escape  
6       into the surrounding environment.

7                 I might add that there is a -- both soils  
8       there have a high water table. So it could be an  
9       immediate effect if that was to be damaged.

10                So of course in developing the re-  
11       determination application, we wanted to evaluate what the  
12       risks were. We want to ensure that if a re-determination  
13       was granted that the risks would not increase because they  
14       were there.

15                The factors that we looked at were water  
16       quality, air quality and worker, public and ecological  
17       exposures. And certainly with the management plans that  
18       we have and that we have committed to maintaining, we  
19       continue to water sample monitoring wells that surround  
20       the pond enclosure. We do that annually.

21                We monitor the accumulated water within the  
22       ponds and we monitor the water that is in the drainage  
23       systems that surround the property.

24                Certainly over the last few years, those  
25       concentrations have remained static and below the UCL.

1                   With regard to air dispersment and air  
2                   quality, through winter there is a snow or ice cover  
3                   preventing air dispersment and through the remaining  
4                   portions of the year, we manage that issue by adding water  
5                   and maintaining a water cover. We don't expect that that  
6                   would change through the maintaining of that program.

7                   And with regard to worker and public safety  
8                   and ecological exposure, we have security processes in  
9                   place. We have PPE programs in place and we have training  
10                  programs in place. Each of those will be maintained.

11                  So clearly the rationale for our two-year  
12                  extension -- I've told you that we can do it in five  
13                  months. There are factors that are outside of our  
14                  control. These are real, real issues; certainly climatic  
15                  conditions.

16                  In a perfect world, it will be frozen for  
17                  the full winter and that work can be done. However, if we  
18                  have a warmer or a wetter season, then that prevents us  
19                  from maintaining the schedule. That impacts the time that  
20                  we're able to get out there and work.

21                  In that event, we would like to move in the  
22                  unfinished work into 2013, the winter. If that scenario  
23                  occurred again, clearly we would implement the  
24                  methodologies that were provided in the remediation plan  
25                  for the spring and summer. We would complete that work on

1 time.

2 And certainly financial implications, and  
3 that's where it comes to the soil impacts. We don't know  
4 the extent, if any, of soil impacts below the liner. It's  
5 not something that we can offer at this time. And that  
6 won't be known until we start to remove those materials.

7 We are committed to completing it, no  
8 doubt, but if those impacts go severely deep, I might add  
9 that, the cost is significant for every metre that we look  
10 at.

11 Then we would like to defer the other pond  
12 to the following year just for that financial reason, but  
13 we wouldn't leave anything in place. The one full pond  
14 would be completed.

15 First to a summary of site work; this is  
16 work that is still required, it's outside of the CNSC  
17 control, but there is ecological hazards, there are health  
18 hazards here, and Viterra is committed to completing this  
19 work this year. We've retained the contractors to do the  
20 work. This will proceed in the next three weeks. And we  
21 have the budgets for it.

22 So the remaining 700,000 litres of fat, oil  
23 and grease will be removed. All above ground  
24 infrastructure will be removed. The foundation for the  
25 building will be removed. And we'll address any soil

1 issues.

2 My last slide here is just a summary. I  
3 know you asked me to speak slowly -- sorry -- and English  
4 likely.

5 But we have made substantial and  
6 significant progress. Certainly much of the work that  
7 we've completed has been indirectly related to the order.  
8 It's work that hasn't -- wasn't outlined as required, but  
9 certainly it was a step-by-step process where -- to  
10 implement or to complete -- the requirements of the order  
11 had to be completed.

12 So to that end nearly a quarter of a  
13 million kilograms of debris, a million litres of liquids.  
14 We've demolished the building. We've excavated and  
15 remediated the soil beneath that building, calciner room.  
16 And we've submitted the reports inclusive of the  
17 remediation plan for the evaporation ponds.

18 Given the benefits -- that is the lower  
19 risk to worker and environmental exposure -- we feel that  
20 the redetermination is warranted. We feel that the  
21 support of our evaluations of those risks of the materials  
22 remaining in place show that there are limited risks, and  
23 certainly would not increase the poor quality, if you  
24 will, of the groundwater and air.

25 That's it. Thank you very much.

1                   **THE CHAIRMAN:** Thank you. Thank you very  
2 much.

3                   I'd like to move now to a presentation by  
4 CNSC. I understand that Mr. Elder or Mr. Ravishankar is  
5 going to make the presentation. It says here -- I don't  
6 know who is saying it.

7                   **MR. ELDER:** It will be a -- well, it will  
8 be a team effort.

9                   **THE CHAIRMAN:** Okay, go ahead.

10

11                   **11-H6**

12                   **Oral presentation by**

13                   **CNSC staff**

14

15                   **MR. ELDER:** Good afternoon, Mr. President  
16 and Members of the Commission.

17                   My name is Peter Elder, Director General,  
18 Directorate of Nuclear Cycle and Facilities Regulation.

19                   With me at the front table today is Mr. B.  
20 R. Ravishankar, Director of the Processing and Research  
21 Facilities Division, and Mr. John Thelen, who is the  
22 Project Officer for this file but is also an Environmental  
23 Remediation Specialist as well. And we also have other  
24 members of our compliance team.

25                   As you stated, we are here to present our

1 CMD 11-H6, which is a redetermination of an order issued  
2 by the Commission in November of 2009 to Viterra, and the  
3 redetermination again is related to the extension of the  
4 date for the clean-up by two years.

5 So during the presentation we will provide  
6 the Commission with some background information on the  
7 site and the history and scope of the CNSC order. So the  
8 following slides will also be explained, the CNSC  
9 compliance verification activities that have gone on to  
10 ensure Viterra has complied with the order.

11 In this regard, we will include a  
12 discussion of Viterra's clean-up plan, the clean-up work  
13 already completed, the staff's assessment of Viterra's  
14 extension request and the proposed schedule for clean-up,  
15 as well as our recommendations to the Commission.

16 I will now turn the presentation to Mr.  
17 Ravishankar for the next part.

18 **MR. RAVISHANKAR:** Thank you.

19 Good afternoon, Mr. President and Members  
20 of the Commission.

21 The following slides explain CNSC staff's  
22 efforts to ensure Viterra has complied with the November  
23 2009 CNSC order.

24 This CNSC order requires the site, which is  
25 located in Calgary, Alberta, to be cleaned up by December

1 1, 2011. The site contains nuclear materials that exceed  
2 the unconditional clearance levels specified by the  
3 Nuclear Substances and Radiation Devices Regulations.

4 Unconditional clearance levels are intended  
5 to be generic criteria that when exceeded indicate whether  
6 nuclear substances warrant regulatory control. These  
7 nuclear substances are associated with prior activities  
8 conducted at this site under CNSC licence.

9 Viterra has requested for the  
10 redetermination of the CNSC order to extend the site  
11 clean-up deadline to December 1, 2013 in order to complete  
12 remedial activities during the winter.

13 CNSC staff concur that Viterra's proposed  
14 clean-up plan is the best option in terms of worker safety  
15 and protection of the environment. CNSC staff recommends  
16 to the Commission that they accept Viterra's request to  
17 extend the clean-up deadline by two years to December 1,  
18 2013.

19 Viterra Incorporated is a global company  
20 that operates in four distinct businesses in Canada, grain  
21 handling and marketing, processing oats and canola,  
22 processing animal feed and agri products.

23 On November 3, 2008 Western Corporative  
24 Fertilizers Limited, also referred to as Westco, was  
25 amalgamated by Viterra's agri products segment. Westco

1 utilizes the majority of the site as a fertilizer  
2 production facility to purify fertilizer grade phosphoric  
3 acid. However, Westco leaves a portion of the property to  
4 Earth Science Inc., ESI Resources Limited.

5 The former ESI site incorporates  
6 approximately five hectares of land within the City of  
7 Calgary. The former ESI site's plant produced uranium  
8 oxide from phosphoric acid feed stock provided by the  
9 adjacent Westco fertilizer production facility. The  
10 phosphoric acid contained uranium which was concentrated  
11 and precipitated at this facility producing a uranium  
12 oxide precipitate. By-products of this activity were  
13 piped back to the adjacent Westco facility.

14 As shown in this aerial photo or the  
15 drawing the former ESI site is only a portion of a larger  
16 property owned by Viterra. This property is also adjacent  
17 to and surrounded by other properties owned by Viterra in  
18 the City of Calgary.

19 This slide provides a timeline for the  
20 former ESI site for activities between 1980 and 2006.  
21 The plant started uranium recovery activities in 1980. In  
22 1987 the plant was shut down and did not resume operations  
23 for 10 years. In 1997 the plant operated again for  
24 phosphoric acid purification. This activity did not  
25 involve nuclear substances. This activity continued until

1 2001, at which point the facility remained in a shutdown  
2 state.

3 In October 2005 CNSC staff conducted an  
4 inspection of the site which confirmed that the facility  
5 remained in a shutdown state, and in November of the same  
6 year the Commission issued a nuclear fuel facility  
7 operating licence to ESI Resource Limited for the purpose  
8 of maintaining the uranium recovery facility in a secure  
9 shutdown state.

10 In June of 2006 CNSC staff conducted an  
11 inspection at the former ESI site and took samples which  
12 reveal contamination containing nuclear substances in the  
13 dryer room and evaporation pond.

14 ESI Resource Limited licence for this site  
15 expired on August 1, 2006. On August 30<sup>th</sup> of 2006 the  
16 CNSC issued an order to ESI Resources Limited. This order  
17 required ESI Resources Limited to decontaminate and  
18 dispose of nuclear substances from the former ESI site.

19 On September 9<sup>th</sup>, 2007, approximately one  
20 year later, Westco took possession of the former ESI site.  
21 At that time no clean-up of nuclear substances had been  
22 completed.

23 On November 19<sup>th</sup>, 2007 Westco, now in  
24 possession of the former ESI site, was issued a designated  
25 officer order to take specific actions and measures to

1 protect the environment and health and safety of persons.  
2 The designated officer referred the order to the  
3 Commission for review and the Commission issued a CNSC  
4 order to Westco on April 21, 2008. The 2008 CNSC order  
5 included requirements to clean up the former ESI site by  
6 December 1 of 2009.

7 On November 27, 2009, after a public  
8 hearing, the Commission issued a CNSC order extending the  
9 date to complete the clean-up by two years to December 1,  
10 2011.

11 On June 1 of 2011, Viterra applied for a  
12 redetermination of the 2009 CNSC order pursuant to Section  
13 43 of the *Nuclear Safety and Control Act*.

14 Viterra is presently requesting an  
15 extension of the deadline for the site cleanup from  
16 December 1, 2011 to December 1, 2013.

17 The CNSC order specifies that specific  
18 actions and measures are required by Viterra; this  
19 includes the submission of monthly update reports  
20 regarding any compliance related activities under the CNSC  
21 order, maintaining site security and develop and implement  
22 a plan for the clean-up of the former ESI site, including  
23 clean-up of nuclear substances in the dryer room,  
24 equipment inside the dryer room and in the evaporation  
25 pond.

1           As per the CNSC order, Viterra will perform  
2 the clean-up and disposal of nuclear substances in  
3 accordance with a plan that is accepted by the CNSC's  
4 Director General of the Directorate of Nuclear Cycle and  
5 Facility Regulation.

6           The CNSC order specifically addresses  
7 nuclear substances associated with prior activities at  
8 this site. This is limited to uranium recovery activities  
9 between 1980 and 2007.

10          The CNSC order does not address other  
11 onsite contaminants associated with other historic  
12 activities at this site. However, CNSC staff have been in  
13 contact with Alberta Environment and confirmed that  
14 Viterra has been addressing all of their investigation and  
15 remediation needs for Viterra property via interaction  
16 with Alberta Environment.

17          Going forward, Mr. John Thelen will  
18 continue with the presentation.

19          **MR. THELEN:** Thank you and good afternoon  
20 Mr. President and Members of the Commission.

21          This slide provides an aerial view of the  
22 former ESI site. The two areas at the former ESI site  
23 addressed in the CNSC order include the dryer room within  
24 the main process building and the evaporation pond.

25          The main process building is visible in the

1 right portion of this photograph. The dryer room is  
2 located within this building. It consists of a single  
3 room approximately 13 meters by six meters and it has not  
4 been used for uranium recovery since 1987.

5 Please note that this main process building  
6 no longer exists as Viterra has since decontaminated the  
7 dryer room and demolished this building which housed the  
8 dryer room.

9 Prior to its decontamination and  
10 demolition, it housed items associated with uranium oxide  
11 production including waste drums, tanks, pumps, piping,  
12 bag house filter assembly and a calciner unit.

13 The evaporation pond is visible on the left  
14 portion of this photograph. It is a 100-meter by 90-meter  
15 two-compartment structure formerly utilized for the  
16 retention of site surface water runoff and the operations'  
17 waste stream.

18 The perimeter of the evaporation pond is  
19 fenced and locked as was observed by CNSC staff as  
20 recently as August 4<sup>th</sup>, 2011.

21 Viterra has proposed remedial objectives  
22 for areas at the former ESI site addressed in the CNSC  
23 order.

24 Regarding the dryer room, a dryer room  
25 remediation plan and demolition plan were both submitted

1 by Viterra in 2009 and 2010.

2           These plans call for clean-up of all  
3 nuclear substances in the dryer room and confirmation that  
4 no contamination migrated below the dryer room. The  
5 selected clean-up criteria for uranium surface  
6 contamination set for the dryer room was 10 becquerels per  
7 square centimetre averaged over a one square metre area.

8           The selected clean-up criteria for uranium  
9 contaminated building materials and underlying soils was  
10 the CNSC unconditional clearance level of one becquerel  
11 per gram of uranium 238.

12           An evaporation pond remediation plan was  
13 also submitted by Viterra to address both pond excavation  
14 activities and the disposal of onsite waste containing  
15 nuclear substances.

16           This plan was originally submitted in  
17 December 2010 and later updated on July 26<sup>th</sup>, 2011.

18           With an estimated 4,000 cubic metres of  
19 sediment, the evaporation pond accounts for the largest  
20 amount of waste containing nuclear substances at the site.  
21 This plan calls for clean-up of all pond sediments, pond  
22 liners and an assessment of any underlying contamination  
23 in soil or ground water.

24           The selected criteria for uranium and pond  
25 sediments in underlying soils is CNSC's unconditional

1 clearance level of one becquerel per gram of uranium 238.

2 Currently uranium in the pond ranges in  
3 concentrations from below this unconditional clearance  
4 level of one becquerel per gram upwards to 25 becquerels  
5 per gram of uranium 238 and will be cleaned up as part of  
6 the proposed plan.

7 By setting CNSC unconditional clearance  
8 levels as the remedial objectives for this clean-up, this  
9 allows for the removal of nuclear substances from  
10 regulatory control.

11 Staff have reviewed and are in agreement  
12 with Viterra's proposed remedial objectives for these two  
13 areas.

14 Since the November 2009 hearing, Viterra  
15 has conducted several activities to address the  
16 requirements of the CNSC order. They include  
17 decontamination of the dryer room; submittal of a report  
18 confirming that decontamination of the dryer room and its  
19 associated equipment and contents; demolition of the  
20 building that included the dryer room; survey of the land  
21 under and surrounding the demolished building and  
22 submittal of a report confirming the demolition of the  
23 dryer room.

24 These submittals also included the results  
25 of field radiological surveys and laboratory sample

1 analyses to verify that remedial objectives have been met.

2 Based on these actions, CNSC staff consider  
3 that Viterra has adequately addressed the clean-up of the  
4 dryer room.

5 Viterra's evaporation pond remediation plan  
6 was submitted in December 2010 and as mentioned earlier,  
7 later updated on July 26<sup>th</sup>, 2011. The proposed plan  
8 contains details of the excavation, handling and transport  
9 of excavated materials. The proposed plan also addresses  
10 environmental monitoring and reporting to the CNSC  
11 including field radiological surveys and laboratory sample  
12 analyses to verify that remedial objectives will be met.

13 CNSC staff consider that Viterra's current  
14 plans when carried out will adequately address the clean-  
15 up of the evaporation pond.

16 This slide discusses waste containing  
17 nuclear substances associated with the CNSC order and  
18 Viterra's proposed plans to dispose of these wastes.

19 Dryer room waste requiring disposal were  
20 relocated to the fenced enclosure of the evaporation pond.  
21 These wastes consist of contaminated dryer room materials  
22 stored in sealed bins and drums and currently housed in  
23 two locked containers.

24 Approximately 80 cubic metres of  
25 contaminated soil from below the dryer room, this soil was

1 placed on a lined pad and has been covered with a tarp.  
2 Brick, cinder block and concrete from the walls, floor and  
3 foundation of the dryer room were also housed in this  
4 area.

5 Evaporation pond waste requiring disposal  
6 includes an estimated 4,000 cubic metres of sediment.  
7 Additional waste requiring clean-up include the pond berm  
8 and pond liner. There is a potential that soils below the  
9 liner may also require excavation.

10 Disposal of these waste containing nuclear  
11 substances in an appropriate waste management facility is  
12 a requirement of the order. Viterra has proposed disposal  
13 of onsite waste containing nuclear substances at the  
14 Canadian Crude Separators Inc., Silverberry Waste  
15 Management Facility near Fort St. John, British Columbia.  
16 This is provincially licensed to receive waste containing  
17 naturally occurring radioactive materials, mainly uranium  
18 and radium bearing waste.

19 In order for waste containing nuclear  
20 substances to be placed in a provincially licensed  
21 hazardous waste management facility, the waste must meet  
22 the criteria for conditional clearance as defined in the  
23 Nuclear Substances and Radiation Devices Regulations.

24 If onsite waste meet the conditional  
25 clearance definition then the proposed recipient of the

1 wastes, CCS Silverberry, would not require a CNSC licence  
2 to possess these wastes. In addition, CNSC Packaging and  
3 Transport of Nuclear Substances Regulations would not  
4 apply to these wastes.

5 Waste management options are detailed in  
6 Viterra's July 26<sup>th</sup>, 2011 update to their evaporation pond  
7 remediation plan. This document is currently under review  
8 by CNSC staff.

9 Viterra has requested to extend the site  
10 clean-up deadline to December 1, 2013 in order to complete  
11 remedial activities during the winter season. Viterra's  
12 assessment of remedial options indicates that winter  
13 conditions would limit worker and environmental exposure  
14 to waste containing nuclear substances during excavation  
15 and transport and would result in no change to existing  
16 appropriate site security measures.

17 CNSC staff have assessed the implications  
18 of extending the cleanup date by two years with respect to  
19 relevant safety and control areas, including risk to  
20 persons, the environment, and security.

21 Staff's assessment of the request found  
22 that this extension will not affect site security, as the  
23 CNSC order currently requires that security arrangements  
24 be maintained at the site as was observed by CNSC staff as  
25 recently as August 4<sup>th</sup>, 2011.

1           The potential for contaminant migration  
2           into adjacent soil and groundwater is not a concern over  
3           this timeframe. Environmental monitoring of groundwater  
4           to date indicates the pond contaminants are confined and  
5           stable.

6           Additionally, Viterra's evaporation pond  
7           remediation plan calls for an assessment of any underlying  
8           contamination in soil and groundwater once the excavation  
9           of pond sediments is complete to ensure that this area is  
10          clean.

11          Viterra also proposes to complete pond  
12          excavation activities during the winter while the  
13          materials are in a frozen state. This will likely reduce  
14          worker exposure to contamination by reducing the remedial  
15          inhalation and dermal exposure with excavated materials.

16          To facilitate the removal of frozen  
17          sediment in soil, Viterra plans to transport accumulated  
18          surface water in evaporation pond to an appropriate waste  
19          management facility.

20          CNSC staff also agree that in this specific  
21          case, winter remediation is a better option in terms of  
22          worker safety and protection of the environment.

23          Viterra's clean-up efforts conducted to  
24          date include the dry room decontamination and its  
25          demolition as well, as the evaporation pond investigation

1 and remedial planning.

2 Cost estimate for this work is  
3 approximately \$10 million. This translates into \$4  
4 million spent to date and another 6 million estimated for  
5 the remaining work.

6 Viterra has also submitted a clean-up  
7 schedule for conducting the remaining work associated with  
8 the pond clean up. Work to be done includes site  
9 preparation, sediment excavation, waste disposal, sampling  
10 and analysis of soil underneath the excavation,  
11 groundwater monitoring, and the submittal of a closure  
12 report.

13 While CNSC staff believe the remaining  
14 cleanup activities can be done in one winter season,  
15 Viterra has identified that there are uncertainties,  
16 specifically the weather, subsurface soil conditions under  
17 the pond liners, and groundwater monitoring requirements.  
18 Any of these could lengthen the remediation time and  
19 influence the completion date of the cleanup.

20 Viterra has indicated that if more clean-up  
21 work than is currently anticipated needs to be done  
22 underneath the evaporation pond, sufficient funds will be  
23 made available during the winter season of 2013.

24 Staff are in agreement with the timing  
25 associated with this plan and expect Viterra to provide

1 updates as they complete each task associated with the  
2 cleanup.

3 While CNSC staff agreed as reasonable to  
4 extend the order for two years, Viterra is expected to  
5 make every effort to complete the work in the winter of  
6 2012.

7 Mr. Elder will continue with the final part  
8 of this presentation.

9 **MR. ELDER:** Thank you.

10 Based on the information that Viterra has  
11 submitted related to the extension of the clean-up date,  
12 CNSC staff recommendations are that to revoke the order  
13 issued by the Commission on November 27<sup>th</sup>, 2009, I note  
14 there was an error in the copy of the presentation given  
15 to you as it said November 9<sup>th</sup> rather than 27<sup>th</sup>.

16 Also to issue a new order requiring the  
17 remainder of the work be completed by December 1<sup>st</sup>, 2013.  
18 We also believe that the order should include that Viterra  
19 submit to the Director General of the Directorate of  
20 Nuclear Cycle and Facilities Regulations a report that  
21 provides details on the disposal of all waste contained  
22 and nuclear substances and the results of the post-cleanup  
23 environmental monitoring to confirm that there are no  
24 substances requiring regulatory control after the cleanup.

25 We also recommend that the Commission ask

1 Viterra to report back in June of 2012 if the work is not  
2 completed at that time or, if the cleanup is complete,  
3 that they file a report with the Commission stating that  
4 all actions of the order have been completed.

5 That concludes the presentation by CNSC  
6 staff and we are now available to answer any questions.

7 **THE CHAIRMAN:** Thank you very much for a  
8 very comprehensive presentation here.

9 I want to open it up for the floor. Dr.  
10 Barriault, if you would start.

11 **MEMBER BARRIAULT:** Thank you, Mr. Chairman.

12 I guess my question is for CNSC. You've  
13 been monitoring the Viterra work at the site, and when did  
14 you become aware that they would not meet their deadline  
15 for cleanup?

16 **MR. ELDER:** Peter Elder for the record.

17 They first approached us in February or  
18 March of this year, and when it became apparent that they  
19 would not be able to remove the material during this  
20 winter and that it was very -- and then they had the  
21 rationale -- presenting the rationale for winter removal  
22 being the most appropriate.

23 But that said, we were getting progress  
24 reports and were aware that they had run into some -- I  
25 won't call it difficulties, but the extra work they had to

1 do around the building demolition, and that while it  
2 wasn't related to nuclear substances, it was extra work  
3 they had to do during that period.

4 **MEMBER BARRIAULT:** So it was because of  
5 environmental concerns with the other problems around the  
6 site rather than nuclear substances?

7 **MR. ELDER:** Yes, as Viterra has mentioned,  
8 they ran into the fact that the original plan, they would  
9 just take down the dryer part, dryer room, and then it  
10 turned out structurally they couldn't do that. They had  
11 to take down the whole building.

12 **MEMBER BARRIAULT:** The whole building.

13 **MR. ELDER:** And there were also discussions  
14 around the waste management about exactly where this waste  
15 management was going to go that were going on in that  
16 period as well.

17 **MEMBER BARRIAULT:** Okay. So what I'm  
18 hearing really is that there was a problem with the  
19 Department of Environment in Alberta with regards to the  
20 disposal of the radioactive waste. Is that correct?

21 **MR. ELDER:** No. Peter Elder.

22 It wasn't a problem with that. It was for  
23 them to identify exactly where this waste was going to go  
24 and also when they had to take down the other building,  
25 the rest of the building, they had to meet the Alberta

1 environment requirements as well.

2 So it wasn't that requirements changed. It  
3 was on anticipated work, essentially.

4 **MEMBER BARRIAULT:** Okay. You mentioned the  
5 advantages to winter cleanup. To what level of frost do  
6 you have to go down in order to clean up this site and  
7 what time of the year do you have that level of frost?

8 Viterra, do you want to answer that? Okay.

9 **MR. EDMONDS:** Michael Edmonds for the  
10 record.

11 Yes, the pond sediments are only 30  
12 centimetres thick, so the pond sediments are only 30  
13 centimetres thick.

14 **MEMBER BARRIAULT:** Okay.

15 **MR. EDMONDS:** So less than a metre, and we  
16 would typically expect two and a half to three feet.

17 **MEMBER BARRIAULT:** Of frost?

18 **MR. EDMONDS:** Yes. The sediments that  
19 we'll be excavating are rather shallow.

20 **MEMBER BARRIAULT:** So would that be  
21 November-December or January-February-March?

22 **MR. EDMONDS:** It would be December-January  
23 typically, yeah. That's why we left it to the end of  
24 February to ensure that we had as much frost as possible.

25 **MEMBER BARRIAULT:** Is CNSC staff satisfied

1 with the level of progress on this cleanup?

2 **MR. ELDER:** To date, yes, we are satisfied  
3 of the progress, and we are aware -- I think this is the  
4 second time they've come back asking for an extension.  
5 This was -- I think we did explain in a fair amount of  
6 detail the first time that there was a lot of learning  
7 that went into -- the initial date was not based on any  
8 firm plans. It was essentially a guesstimate of how long  
9 it would take, and the second time, it was based on more  
10 firm plans but did not account for other material.

11 So it's not that Viterra has not done what  
12 they said they were going to do. It's that they've  
13 actually run into a number of unanticipated problems as  
14 they went through the work, which is actually not unusual  
15 in this type of remediation.

16 **MEMBER BARRIAULT:** They budgeted \$10  
17 million for this clean-up project; is that correct?

18 **MR. EDMONDS:** Michael Edmonds for the  
19 record.

20 Yes.

21 **MEMBER BARRIAULT:** Okay. Is it reasonable  
22 to ask that this money be put in trust until the cleanup  
23 is done?

24 **MR. ELDER:** I guess from the staff's view  
25 on this one is they are actually doing the decommissioning

1 and they are actively spending the money, and so it would  
2 be you put it in but then you would actually start taking  
3 it out right away because that work is actively  
4 continuing.

5 I understand your concern about how long it  
6 will take and that's why we are sort of reluctantly  
7 agreeing that two years to cover contingencies is okay,  
8 but we really believe it should be able to be done within  
9 one year, one winter season.

10 **MEMBER BARRIAULT:** The concern I have  
11 is that we are back in 2013 really and they are asking for  
12 an extension of another two years.

13 **MR. ELDER:** Which is why we said if you're  
14 not done by the summer of 2012, you come back then, not  
15 later. And again, you know -- and we understand that  
16 concern as well, as I said.

17 But in this case, we have a defined plan.  
18 It's not uncertain that they will have to -- they will not  
19 make the progress. But they are providing us with monthly  
20 progress reports.

21 But we also think, as I said -- because in  
22 our opinion you can do it in one season, we would like  
23 them to come back and explain to the Commission what  
24 difficulties they ran into if they were not able to do it  
25 in one season.

1                   **MEMBER BARRIAULT:** Okay. Thank you.

2                   That's all for now Mr. Chairman.

3                   **THE CHAIRMAN:** Dr. McDill?

4                   **MEMBER McDILL:** Thank you.

5                   My -- I'm going to start with some general  
6                   questions and then I have some more specific ones. Both  
7                   to staff and Viterra, are there any remaining legal issues  
8                   pertaining to ESI? Is there anything still going on that  
9                   has a bearing on this cleanup?

10                  **MS. WRIGHT:** It's Tracey Wright, for the  
11                  record.

12                  So everything with ESRIL has been completed  
13                  and we have no further contact or any other business with  
14                  them. So that's completed, yeah.

15                  **MEMBER McDILL:** And staff concurs? It's as  
16                  they say, a done deal?

17                  **MR. ELDER:** Sorry, Peter Elder, for the  
18                  record.

19                  We also have no outstanding issues with  
20                  them.

21                  **MEMBER McDILL:** Good.

22                  The -- my second question is transport of  
23                  anything that meets the clearance limit doesn't require a  
24                  transport licence. But two things, there's still 3,500  
25                  hours of driving work that's been indicated in Viterra's

1 presentation and that seems huge. And does that have  
2 anything -- are we concerned about that with respect to  
3 the community around?

4 And the second thing on transport is,  
5 anything that doesn't meet clearance is going to have to  
6 go to Chalk River, and that will require a transport  
7 licence, is that correct?

8 **MR. ELDER:** I'll answer. I think Viterra  
9 can address the number of hours in terms of this one.  
10 Just a reminder is that just because we don't have  
11 requirements doesn't mean it doesn't have to comply to the  
12 normal transportation -- the Transport Canada rules. And  
13 in terms of -- they would have to do assessing if they  
14 want to bring in to Chalk River what they needed to do.  
15 It would have to be done.

16 Whether they needed a licence, I can't say  
17 right away. But they would certainly need to follow our  
18 regulations. And the Commission is aware, you can  
19 transport low level material just based on the rules and  
20 the regulations without needing a specific licence. So  
21 they would certainly have to respect the regulations. And  
22 they would also, in general, have to respect the  
23 transportation of dangerous goods requirements as well.

24 **THE CHAIRMAN:** But I guess, while this  
25 project is going on, wouldn't we want one of our

1 transportation inspectors to make sure that things are  
2 going -- why are they -- not catch them after the fact,  
3 advise before the fact?

4 **MR. ELDER:** And just in -- we have -- we're  
5 using the -- that's in Calgary and we have an office in  
6 Calgary and ---

7 **THE CHAIRMAN:** Right.

8 **MR. ELDER:** --- our inspectors in Calgary  
9 are the ones doing the inspection of this one. So we have  
10 actually local inspectors who have gone and visited the  
11 sites on a routine basis, and we would continue to do that  
12 as they go through the remediation as well.

13 **MEMBER DILL:** Viterra?

14 **MR. BECKER:** Ernie Becker, for the record.

15 The plan, as submitted to the CNSC staff,  
16 does have various provisions for safety of the transport  
17 of that material to Silverberry, including an emergency  
18 plan, and checks of the trucks and the loads before they  
19 leave the site. And yes, you're right. Of course, any  
20 nuclear material that is transferred to AECL Chalk River  
21 would certainly be shipped according to the transport  
22 regulations, CNSC transport regulations.

23 **MEMBER McDILL:** With respect to the 3,500  
24 hours, there are 365 days in the year, and if you drive 10  
25 hours a day that's 3,650 hours, and you're saying 3,500

1 hours. So you're running multiple truck campaigns? How  
2 many trucks per -- roughly -- I mean, I don't have it in  
3 front of me so I'm asking you to ---

4 **MR. EDMONDS:** Michael Edmonds, for the  
5 record.

6 I can't do the calculation in my head, but  
7 we will have multiple trucks there and each truck has a  
8 capacity of, I think, 30 cubic metres of material, which  
9 equates that to about 60 tonnes.

10 And really the hours are a reflection of  
11 the distance that they're driving.

12 **MEMBER MCDILL:** It's a long way.

13 **MR. EDMONDS:** Yeah.

14 **MEMBER MCDILL:** My next question, sort of  
15 ties in with these. What other agencies are involved?  
16 Obviously Alberta Environment is one. Are there any  
17 potential conflicts with CNSC? Are there any deadlines  
18 that are going to cause problems for the nuclear cleanup  
19 versus the fats, oils, grease, and things like that?

20 **MR. THELEN:** John Thelen, for the record.

21 On July 29<sup>th</sup>, I spoke to Mr. Gower of  
22 Alberta Environment. He's a team leader of industrial  
23 approvals at Alberta Environment, and he stated that  
24 Viterra is in communication with, and meeting all  
25 regulatory obligations to Alberta Environment at this

1 time.

2 He declined an invitation to attend today's  
3 hearing as he did not see the need to participate in light  
4 of that. He also made a statement that he -- that I'd  
5 recorded mentioning that he recommends the CNSC accept  
6 Viterra's request to extend the order deadline so that  
7 they can proceed with their post-remediation work and  
8 continue with the remediation of the site components that  
9 deal with the CNSC order.

10 **MEMBER McDILL:** Does Viterra have anything  
11 to add?

12 No.

13 So a few specific questions. On the CNSC  
14 deck, page -- I think it's -- it's the one with the one  
15 becquerel per gram -- there it is. It's on page 11. And  
16 then comparing that to the normative guideline in  
17 Viterra's written presentation on their page 10, U238 has  
18 got a norm guideline of 10 becquerels per gram on page 10  
19 and I assume a clearance guideline of 1 becquerel per gram  
20 on page 11.

21 So is the norm guideline something  
22 different or is there a typo? What am I misunderstanding?

23 **MR. BECKER:** Ernie Becker, for the record.

24 The norm guidelines, the provincial norm  
25 guidelines are quite different from the CNSC standards.

1 They include, as I recall, 10 becquerels per gram of  
2 uranium 238, they also have other limits such as for  
3 uranium 226. But the relevant standard in this case for  
4 the nuclear materials as per the CNSC order is one  
5 becquerel per gram of uranium or 80 parts per million,  
6 those two are equivalent.

7 **MEMBER McDILL:** So why in your presentation  
8 is the 10 there, not the 1? It's your written document,  
9 page 10, Table 1. The written document, that's why you  
10 can't find it, yeah. Written document, page 10, Table 1.

11 If the title were provincial norm  
12 guideline, it might have been easier. I'm just curious as  
13 to which one we're aiming at.

14 **MR. EDMONDS:** Michael Edmonds, for the  
15 record.

16 Could you repeat the question?

17 **MEMBER McDILL:** In Table 1, on page 10,  
18 your norm guideline is 10 becquerels per gram. In CNSC's  
19 cleanup plan, the criteria for uranium is one becquerel  
20 per gram and I am wondering why the 10 is in Table 1 as  
21 opposed to the 1 because it appears that your cleanup will  
22 be to 10 not to 1?

23 **MR. EDMONDS:** That table was included due  
24 to previous communications with the CNSC staff who had  
25 requested a comparison of the materials that we had to the

1 norm guidelines. It is not to represent the cleanup  
2 criteria.

3 **THE CHAIRMAN:** Okay, now I am totally  
4 confused because on CNSC slide -- on Slide 11, it says,  
5 "10 Becquerel per centimetre square" -- yeah, so I -- per  
6 surface and just to really complicate life, are these the  
7 same numbers we are using for Port Hope? You will  
8 remember the cleanup criteria for Port Hope. I see a  
9 smiling Mr. Howard that I'm sure can clue us in in all of  
10 this.

11 Are there the same criteria for cleaning  
12 soil?

13 **MR. ELDER:** These are -- they are not the  
14 same criteria as Port Hope. Port Hope are site-specific  
15 criteria that were developed based on risk assessments for  
16 the Port Hope area.

17 These are -- and I think we may have caused  
18 some of the confusion in what we asked, but there are two  
19 -- going back to your question would they run into any  
20 provincial problems?

21 And the NORM guidelines are provincial  
22 numbers which they regulate the natural occurring material  
23 rather than us. And we ask the question saying if you are  
24 going to make the case for conditional clearance, would  
25 you be above any of the provincial numbers in terms of

1 would you be a problem on that one?

2 So while the cleanup of the site is going  
3 to be to the 1, we also wanted to know the waste; is it  
4 going to contain, how much is going to be, what is the  
5 concentration going to be in the waste which is  
6 appropriate to where it goes.

7 **MEMBER McDILL:** Okay, so Table 1 is  
8 basically talking about the waste and the provincial  
9 clearances to deposit that waste in the waste site as  
10 opposed to your criteria for uranium on page 11 which is  
11 going to be for what is left on the site at the end?

12 Is that true? I am getting a nod from  
13 Viterra, but I have not got a nod from staff.

14 **MR. ELDER:** Well, I am going to deal with  
15 the nod from Viterra because it is their document. I do  
16 not want to open -- but I know what questions we asked.  
17 So it was when you go into this what are you going to do?  
18 But the order has always been clear. You cleanup to the 1  
19 Becquerel per ---

20 **MEMBER McDILL:** Thank you. So the order is  
21 clear?

22 **MR. ELDER:** The order is clear. Regardless  
23 of what that table says; the order is very clear.

24 **MEMBER McDILL:** Okay.

25 My next question is again fairly specific.

1 You are going to be taking a bunch of frozen -- I will  
2 call it -- muck and you are going to be dropping it into a  
3 polyethylene lined truck in Alberta winter which means the  
4 polyethylene will be pushing the glass temperature for its  
5 behaviour which isn't going to be much of an issue if it  
6 cracks if it is frozen, but is that likely to happen;  
7 crack the bejabbers out of your polyethylene liner?

8 **MR. EDMONDS:** Yes, Michael Edmonds, for the  
9 record.

10 Our contractor has indicated that this is a  
11 typical product used by them and they have not run into  
12 any issues.

13 **MEMBER MCDILL:** So a big piece of rock  
14 coming down pointy end first into the polyethylene liner  
15 is -- your contractor is comfortable?

16 **MR. EDMONDS:** They complete this type of  
17 work regularly. Yeah.

18 **MEMBER MCDILL:** Good. Excellent.

19 And on Table 2 of the written document by  
20 Viterra, the South Pond sampling in 2007 is substantially  
21 higher, for example, than the South Pond in 2010. I am  
22 assuming that the uranium is settling into the sediment.  
23 Is that why that is the case? So you have uranium at  
24 3,000 micrograms per litre in 2007 and 960 micrograms per  
25 litre in 2010.

1                   **MR. BECKER:** Ernie Becker, for the record.

2                   Some time ago when the ponds were frozen,  
3 Viterra contracted someone to cut holes in the ice and  
4 just at random take samples. I believe there was about  
5 8-10 samples taken at random throughout the various ponds.  
6 So those are random samples. We think they are  
7 representative.

8                   But I guess it just shows that the  
9 contamination levels in these ponds is not entirely  
10 uniform and we would have to do some more analysis of the  
11 loads themselves as well as before they would go out.

12                   **MEMBER MCDILL:** Staff have any comment?

13                   **MR. THELEN:** John Thelen, for the record.

14                   Without looking at a figure to go along  
15 with this table, from what I can understand a grab sample  
16 of sediment recorded in 2007 and 2010 you will see  
17 variation. I don't think within that 3-year period we  
18 would see a large change in the uranium concentration in  
19 what is described in Table 2.

20                   It is more to do likely with sampling  
21 variation; understanding that the wastes have been -- the  
22 waste containing nuclear substances in the pond and the  
23 material in the water that they have been in this  
24 situation since 1987.

25                   **MEMBER MCDILL:** But this is pond water, not

1 pond sediment?

2 **MR. THELEN:** Yes. Without seeing the  
3 locations, I just cannot tell if they have replicated  
4 between 2007 and 2010. I do not believe that is the case.  
5 I believe they are -- it is a larger campaign in 2010, but  
6 I would have to ask Viterra to clarify.

7 **MR. BECKER:** Ernie Becker, for the record.  
8 The water levels will fluctuate somewhat  
9 from time to time and with the seasons depending on  
10 rainfall and evaporation so there were small differences  
11 in the contamination level of the water most likely due  
12 simply to more water or more rainfall previously or less  
13 rainfall. They are open to the weather.

14 **MEMBER McDILL:** Right, so it could as  
15 easily be double the other way as well.

16 Okay, thank you. That answers that  
17 question.

18 I will pass it back to you, Mr. President.

19 **THE CHAIRMAN:** Dr. Barriault?

20 **MEMBER BARRIAULT:** Thank you, Mr. Chairman.

21 I guess it begs the question really that  
22 you are increasing the volume of what you are going to be  
23 transporting by waiting for the winter. In a winter month  
24 of course you are going wind up ice and ice is going to  
25 have a bigger volume than water would have.

1                   The other concern I have really -- of  
2                   course, I lived in Alberta. There are Chinooks, there is  
3                   melting. I would hate like hell to see contamination at  
4                   the highway from Calgary all the way up to Fort St. John.

5                   And I do not know what will be done to  
6                   monitor that to make sure it does not occur. Fort St.  
7                   John is what; about 16 hours north of Calgary by road  
8                   roughly?

9                   So I guess that is a concern I have and I  
10                  do not know if that has been addressed or looked at by the  
11                  CNSC staff. I know by increasing the volume, you are  
12                  decreasing the amount of contamination per litre. But  
13                  having said that really the total amount is still there.  
14                  It is still the same amount of contamination. So I do not  
15                  know if that has been looked at.

16                  CNSC please?

17                  **MR. ELDER:** CNSC, sorry, yes, sorry. Peter  
18                  Elder, for the record.

19                  Like I said, this is one of the things we  
20                  are looking at in terms of we said the plan for their  
21                  actual disposal is -- they just submitted a few weeks ago  
22                  so we are looking at their transportation issues and how  
23                  they would be doing the transportation.

24                  What I would like to say in terms of the  
25                  frozen/non-frozen, it is really -- the difference is the

1 handling that you can do. The fact that you can scoop it  
2 up with an excavator versus having to handle the slurry  
3 and that is the difference in terms of the doses to the  
4 workers that are handling it. It is not a volume  
5 reduction thing. It is just how you can manipulate the  
6 material.

7 **MEMBER BARRIAULT:** You think there is more  
8 of a problem using vacuum trucks to vacuum this out and  
9 get it out of there than you would have by cutting it up  
10 into chunks and put it in the back of the trunk?

11 **MR. ELDER:** It is certainly looking in  
12 terms of there is more chance of you spilling some of it  
13 when you are transporting the water than dealing with a  
14 small quantity that may melt on your transportation.

15 I mean there are pros and cons on this one,  
16 but they have done and we are reviewing a quite detailed  
17 analysis of the impacts of doing it winter versus summer.

18 **MEMBER BARRIAULT:** Thank you.

19 Thank you, Mr. Chair.

20 **THE CHAIRMAN:** Dr. McDill?

21 **MR. CUTHILL:** Cody Cuthill, for the record.

22 If I could just add to there that the  
23 intent is not to be transporting frozen liquid. We will  
24 be removing the liquids and having a moist, solid there  
25 prior to freeze up. And those solids will then be

1 collected in the retainer plastic truck liners or there in  
2 the event of a warm-up and you have some settling out of  
3 the potential liquids.

4 So the intent is not to be hauling liquids  
5 at all with those materials. By also completing in the  
6 winter time you are adding water to slurryfying, you are  
7 increasing your waste volume for a different disposal  
8 option. So it is not about taking the waters at all with  
9 us.

10 **MEMBER BARRIAULT:** So if I understand, you  
11 are going to let it melt and then pick up the concentrate.

12 Are you going to evaporate the water? I  
13 don't quite understand what you're saying.

14 **MR. CUTHILL:** Cody Cuthill, for the record.

15 We are going to move the free liquids that  
16 are in the pond prior to winter and the freezing, so we're  
17 left with a solid that's there. That gets frozen. So the  
18 liquid will be contained, tested, and then we'll determine  
19 the appropriate disposal for those liquids.

20 **MEMBER BARRIAULT:** Okay. Now I understand.  
21 I think what you're going to do is pump out the liquid,  
22 leave the rest behind, wait for it to freeze and then take  
23 it out.

24 But that still becomes a frozen slurry, I  
25 would imagine?

1                   **MR. CUTHILL:** That is correct. There will  
2 be a bell hole that would pull and allow the liquids to  
3 continue to settle out, but there will be, as with all  
4 solids, some moisture content to it.

5                   **MEMBER BARRIAULT:** And the water will be  
6 treated prior to disposal; is that correct?

7                   **MR. CUTHILL:** That is correct. It will be  
8 tested and verified and verified what the disposal option  
9 will have to be.

10                  **MEMBER BARRIAULT:** So what I understand,  
11 really, is that there's two processes going on, and one of  
12 them that when it's in liquid form and water form, that  
13 you'd want to handle all this material, but one of the  
14 arguments that you were giving us was the fact that while  
15 you're waiting for it to be frozen, that you wouldn't have  
16 any problems with contamination of employees.

17                                 And now we're going to have the employees  
18 working with the water and then we're going to have the  
19 second system, which is removing it in frozen slurry form.

20                                 I guess I'm not clear of the advantages now  
21 to wait for the wintertime. Perhaps you could explain  
22 that to me?

23                   **MR. BECKER:** Ernie Becker.

24                                 To simply decant off the free water would  
25 be a matter of perhaps a day's work or something of that

1 sort, and then you would let it freeze, whereas that's  
2 fairly -- the material above the ponds is fine and fairly  
3 dense. So if this material were to be removed in summer,  
4 you would have to add water with high pressure hoses. You  
5 would have to form some sort of slurry, and then you would  
6 have to pump that into a tank, and then you would have to  
7 transport the tanks to presumably the salt caverns in  
8 Saskatchewan.

9 So it would be far more labour intensive.  
10 It would be much larger contamination issues, and there  
11 would be a concern of spills of some of this slurry into  
12 the soils below the pond liners, whereas what we're  
13 talking about here is a simple matter of decanting off the  
14 free water, leaving then a frozen -- but a wet frozen  
15 muck, which you have a whole truckload of that. Even if  
16 you did hit some relatively mild weather, there would be  
17 very limited thawing of that wet frozen muck before it got  
18 to Silverbury.

19 **MEMBER BARRIAULT:** Thank you.

20 Thank you, Mr. Chairman.

21 **THE CHAIRMAN:** Dr. McDill?

22 **MEMBER McDILL:** One last quick question.

23 One of the things I've noticed is there's  
24 nothing sort of beyond the end of the cleanup. Staff has  
25 talked about monitoring the groundwater after the fact.

1                   Then there's the issue of any trucking to  
2 Chalk River or wherever that has to be dealt with.

3                   So what's the timeframe for those? How  
4 long will the monitoring go on after cleanup? Is it a  
5 once-over or is it a couple of seasons, the groundwater  
6 monitoring?

7                   **MR. EDMONDS:** Michael Edmonds, for the  
8 record.

9                   The monitoring schedule has not been  
10 clearly defined in the order. Certainly we are required  
11 to monitor the groundwater, and we are open to any  
12 requirements at this point.

13                   The intent of the remediation plan at this  
14 point is to remediate to the AECL levels.

15                   We would then, if groundwater issues are  
16 encountered -- and by previous monitoring events, all  
17 indications are there are no groundwater issues -- so we  
18 believe at this point it would be limited, but clearly we  
19 would move forward with additional programs and create  
20 strategies where needed.

21                   **MEMBER McDILL:** Once you remove two  
22 geotextile liners, a permanent liner and a clay liner,  
23 it's possible that there will be some effect?

24                   I'm just wondering if CNSC staff has popped  
25 that onto the end?

1                   **MR. ELDER:** Peter Elder, for the record.

2                   In terms of what we looked at as removing  
3 almost all the source of this one, so we would not expect  
4 there would be a difference in the groundwater.

5                   And also, we did factor in, as we showed on  
6 the picture, it's inside a wider Viterra site that  
7 actually does have some contamination as well, but the  
8 Province is looking at it. So it would be well below --  
9 it would not be the source of any -- we're removing the  
10 source of potential -- one source of potential  
11 groundwater, recognizing that the Province is continuing  
12 to look at the whole site.

13                   **MEMBER McDILL:** But it would be a way of  
14 verifying that the cleanup ---

15                   **MR. ELDER:** You -- well ---

16                   **MEMBER McDILL:** --- isn't done ---

17                   **MR. ELDER:** --- when we looked at this one,  
18 we're not sure that -- we will verify by doing local  
19 sampling afterwards ---

20                   **MEMBER McDILL:** Sure.

21                   **MR. ELDER:** --- to make sure they've  
22 removed it.

23                   We're not as convinced in the groundwater  
24 of what you're seeing. Are you seeing just from the ESI  
25 stuff? Are you seeing the long-term operation of the

1 fertilizer operation, which obviously has that uranium by-  
2 product in it?

3 **MEMBER McDILL:** Thank you, Mr. President.

4 **THE CHAIRMAN:** Just a couple of quick  
5 questions.

6 First of all, is the St. John, B.C.  
7 facility, is that one of our licensees? Do they require a  
8 licence from us?

9 **MR. ELDER:** No, they do not. They have a  
10 provincial licence. They do not have a CNSC licence.

11 **THE CHAIRMAN:** And has AECL in Chalk River  
12 agreed to accept the material?

13 **MR. ELDER:** If the material has to go to  
14 AECL, AECL is, by government policy, required to ---

15 **THE CHAIRMAN:** Has to?

16 **MR. ELDER:** --- offer a fee for service for  
17 this type of waste.

18 **THE CHAIRMAN:** So they have to accept it?

19 **MR. ELDER:** Yes. For a price, yes.

20 **THE CHAIRMAN:** Okay. Can you tell me, what  
21 is the end use of this piece of land? It's in the middle  
22 of Calgary. What's the long-term use? Are you planning  
23 to bring it down to commercial use?

24 **MS. ROY:** It's Tracy Roy, for the record.

25 Yes, if we can achieve that, it would be

1           our intent to do that, yes.

2                       **THE CHAIRMAN:** Okay. So which brings me  
3 back to -- again, I'm not letting go -- I want to  
4 understand how, if you bring one Becquerel per gram to  
5 release, is that allowed for commercial development,  
6 residential development?

7                       **MR. ELDER:** Peter Elder.

8                       It would be a provincial requirement on  
9 that one rather than a federal on this one. I'll even say  
10 based on the norm requirements, we are requiring -- we  
11 know we are requiring this area to be cleaned up to a  
12 lower -- more than adjacent ones that the provinces are  
13 looking at.

14                      **THE CHAIRMAN:** Right.

15                      But all I'm trying to understand is, is our  
16 criteria, when we define the thing to be cleaned, just  
17 this particular property, does that automatically  
18 guarantee that it's clean enough for commercial  
19 development?

20                      **MR. ELDER:** Well ---

21                      **THE CHAIRMAN:** I'm coming back to our  
22 experience with Port Hope. We had lots of experience.

23                      **MR. ELDER:** Right.

24                      So this goes back to we are requiring them  
25 to clean up the uranium, and I think very similar to Port

1        Hope, we're not telling them to do anything -- you know,  
2        we're not concerned about any other contaminates at this  
3        point.

4                    The Province, when they would go in and  
5        say, "You've got unconditional use of the property" wants  
6        to know it's not just uranium that's cleaned up, that  
7        anything has been cleaned up as well.

8                    So we checked with Alberta, and so what  
9        we're doing is not in contradiction with Alberta  
10       requirements, but there may be more that Alberta wants you  
11       to do, but that's not related to uranium.

12                   **THE CHAIRMAN:** I'm not worried about  
13       Alberta.

14                    What I'm trying to understand is whether  
15       for uranium -- for uranium -- I'm not talking about  
16       arsenic or whatever else is in there -- but for uranium,  
17       is 1 Becquerel per gram, is that equivalent with what we  
18       are seeing in Port Hope, and why is that not site-  
19       specific?

20                    I mean, we're setting up standards, right?  
21       I want to know if the Alberta, middle of Calgary standard  
22       for clean soil is the same as in Port Hope, just for my  
23       own understanding?

24                    **MR. ELDER:** Okay. And we'll have to get  
25       back to you on the precise -- what the Alberta standard is

1 versus an Ontario one, which you know -- we're aware the  
2 Ontario one is quite new. It came into effect last month.  
3 So I don't think Alberta is quite at the same ---

4 **THE CHAIRMAN:** No, but our 35 parts per  
5 kilogram, whatever -- I don't remember what it is anymore  
6 -- is something that we set ourselves.

7 Don, do you want to step in there and  
8 enlighten us, if you can?

9 **(SHORT PAUSE/COURTE PAUSE)**

10 **MR. HOWARD:** Don Howard, for the record.

11 In Port Hope, what happened was that the  
12 low-level radioactive waste management office did an  
13 assessment, looked at the bioaccessibility of uranium in  
14 Port Hope, developed a cleanup criteria of 35 parts per  
15 million.

16 That was used for the environmental  
17 assessment that was conducted for that project in Port  
18 Hope and the results of that environmental assessment  
19 determined that at those cleanup criteria, there was no  
20 impact on human health or the environment.

21 **THE CHAIRMAN:** Okay. And at that time,  
22 everybody agreed that if you reach that level, it's clean.  
23 Please tell me if I'm right or wrong on this one?

24 **MR. HOWARD:** At that time in 2005 when  
25 those were developed and they were developed looking at

1 the Ontario regulations, keeping those in mind, but at  
2 that time Ontario regulations did not have a number for  
3 uranium.

4 So when the new regulations came into play,  
5 that is when Ontario introduced a uranium number into  
6 their regulations which was at 23 parts per million which  
7 was from the CCME guidelines.

8 So that's why right now we're discussing  
9 with Ontario as to how that is -- how are we looking at  
10 the -- at that number in comparison to what was evaluated  
11 in 2005 as the cleanup criteria and whether, you know,  
12 it's still viable to move forward on those numbers.

13 So we're currently working with Ontario for  
14 that.

15 **THE CHAIRMAN:** Okay, but -- okay. So let's  
16 stick for a second just on the 23 parts per million  
17 because I thought I heard 80 parts per million. That's  
18 why I'm getting excited about that because if it's 80  
19 parts per million, it's definitely a lot less strict than  
20 what we're doing in Port Hope.

21 **MR. ELDER:** So this comes back to end use  
22 in terms of whether it's industrial plan versus  
23 residential.

24 **THE CHAIRMAN:** Right. So that's why I'm  
25 asking. I'm coming back to my original question. If the

1 end use if you -- if you wanted to become commercial or  
2 residential, you may want to think about what is the level  
3 of cleanness you wanted to define here so you don't get  
4 stuck when the 23 parts per million run across the whole  
5 country. Because as you know, if it's good for one  
6 province, it can go to all provinces.

7 So you want to make sure that you -- if  
8 you're going to go through this expense to clean the  
9 slate, you've got to make sure to what level of cleanness  
10 you want to bring it down to.

11 And I was hoping that the one gram -- I'm  
12 now switching gear in units here, which I don't know how  
13 to do the translation, but the one gram per -- the one  
14 becquerel per gram is very, very strict and I don't know  
15 if this is the one that referred to -- the gentleman  
16 referred to that one becquerel per gram is 80 -- is the  
17 same thing as 80 parts per million.

18 **MR. ELDER:** That's -- this is Peter Elder.  
19 That is the conversion. One becquerel per  
20 gram is 80 parts per million.

21 **THE CHAIRMAN:** So Viterra, you may want to  
22 go lower than that. This is the old -- this is my  
23 conclusion from this little back of the envelope  
24 understanding of what's going on here.

25 Did I get it right or not?

1                   **MR. BECKER:** Ernie Becker.

2                   Yes, it's 80 parts per million is one  
3 becquerel per gram. We did -- I did investigate this on  
4 behalf of Viterra several years ago. There are various  
5 standards and by now I'm going by memory. I'm not quite  
6 sure what the numbers were for Calgary but there are -- is  
7 the industrial standard, there's a commercial standard and  
8 I believe there's a residential standard. They are all  
9 different.

10                  Viterra is aware of all of this and I  
11 suppose there's two parts to this question. One part is  
12 to satisfy the order of the CNSC and meet their criteria.  
13 The other part becomes a business decision whether they  
14 wish to sell the land as a residential property as opposed  
15 to an industrial property and that would be really quite  
16 separate but Viterra is aware of this and will consider  
17 all of this.

18                  **THE CHAIRMAN:** That's fine. I mean I don't  
19 want to interfere with the business decision. I just want  
20 to make sure everybody understand -- that we understand  
21 what we're doing here now.

22                  Okay. Anybody else has any question, any  
23 observation?

24                  Well, thank you very much and I think this  
25 concludes our public hearing.

1                   Marc, is there anything I have to do now?

2                   **MR. LEBLANC:** No, just close it and I'll  
3 just remind everyone that the Commission will now confer  
4 with regards to the information that it has considered  
5 today and then determine if further information is needed  
6 or if the Commission is ready to proceed with a decision  
7 on this request for a determination. And we will advise  
8 as soon as we know.

9                   Thank you.

10                  **THE CHAIRMAN:** Thank you.

11

12                  --- Upon adjourning at 3:02 p.m. /

13                  L'audience est ajournée à 15h02

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