

CONSOLIDATED HEARINGS BOARD

IN THE MATTER OF Sections 2 and 3 and 6 (3) of the Consolidated Hearings Act, 1981, S.O. 1981, c.20;

— and —

IN THE MATTER OF Section 12(2) of the Environmental Assessment Act, R.S.O. 1980, c.140;

— and —

IN THE MATTER OF Sections 30, 35 and 38 of the Environmental Protection Act, R.S.O. 1980, c.141, as amended;

— and —

IN THE MATTER OF Sections 24 and 61 (2) of the Ontario Water Resources Act, R.S.O. 1980, c.361, as amended;

— and —

IN THE MATTER OF Section 28 (3) of, and Regulation 164 under, the Conservation Authorities Act, R.S.O. 1980, c.85, as amended;

— and —

IN THE MATTER OF Section 40(12) of the Planning Act, S.O. 1983, c.1, as amended; in connection with site plan control of the sanitary landfill site;

— and —

IN THE MATTER OF Section 22(1) of the Planning Act, 1983 in connection with a referral to this Board by the Honourable Bernard Grandmaitre, Minister of Municipal Affairs, on a request by the Regional Municipality of Halton to amend the Official Plan for the Town of Milton to redesignate a parcel of land comprising Part Lots 3 and 4, Concession 2 N.S. in the Town of Milton from "Agriculture" and "Conservation and Hazard Lands" to permit the construction, operation and maintenance of a landfill site, Minister's File No. 24-OP-0208-A01;

— and —

IN THE MATTER OF Section 34(11) of the Planning Act, 1983 in connection with an appeal to this Board by the Regional Municipality of Halton for an order directing an amendment to By-law 61-85 of the Town of Milton to rezone the lands situated at Lot 3 and part of Lot 4, Concession 2 N.S., in the Town of Milton from "Agriculture" to permit a regional sanitary landfill site and ancillary uses;

— and —

IN THE MATTER OF Section 15(1) of the Planning Act, R.S.O. 1980 ch.379 in connection with a referral by the Honourable Claude F. Bennett, Minister of Housing on a request by Tremaine Britannia Citizen's Group for consideration of part of the Official Plan for the Halton Planning Area with respect to Sections 1 to 5 inclusive, 7, 9 and 10 of Part III D3 Solid Waste Management, Minister's File No. OPC-0026;

— and —

IN THE MATTER OF Section 64 of the Ontario Municipal Board Act, R.S.O. 1980, c.347 as amended in connection with an application by the Regional Municipality of Halton for an order approving:

a) the acquisition of land for the construction, operation and maintenance of a sanitary landfill site to contain 7.96 million cubic metres of waste in the Regional Municipality of Halton and to do so by one of two alternative methods as follows:

- (i) landfilling at the site referred to in Halton's Environmental Assessment as Site F in the City of Burlington;
- (ii) landfilling at the site commonly referred to in Halton's Environmental Assessment as Site D in the Town of Milton

at an estimated cost of \$12,775,000.00, and the borrowing of money by way of temporary advances not exceeding in the aggregate such estimated cost pending the sale of debentures, and

(b) the issuance of necessary debentures to a maximum of \$12,775,000.00 for a term not to exceed fifteen years;

— and —

IN THE MATTER OF Section 193(5) and Paragraph 84 of Section 210 of the Municipal Act, R.S.O. 1980, c.302, as amended;

— and —

IN THE MATTER OF Sections 6, 7 and 8 of the Expropriations Act, R.S.O. 1980, c.148;

— and —

IN THE MATTER OF an undertaking of the Regional Municipality of Halton to provide facilities for the purpose of receiving, dumping and disposing of waste as required by section 137 of the REGIONAL MUNICIPALITY OF HALTON ACT, R.S.O. 1980, c.436, as amended, by acquiring the land for, constructing, operating and maintaining a landfill to contain 7.96 million cubic metres of waste in the Regional Municipality of Halton.

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OFFICIAL REPORTERS
NETHERCUT & COMPANY LTD.

185 RICHMOND ST. W.,
TORONTO, ONT. M5V 1V3

TEL: 593-4802



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I N D E X

1		
2		<u>Page</u>
3	<u>LINDA HELLAS</u>	
4	Cross-examination by Mr.Garrood	1120
	Cross-examination by Mr.Dahme	1154
5	Cross-examination by Ms.Cronk	1164
	Re-examination by Mr.Hodgson	1219
6		
7	<u>DR.ERVEN E.MACKINTOSH</u>	
8	Cross-examination by Mr.Leitch	1237
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		



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E X H I B I T S

	<u>No.</u>	<u>Description</u>	<u>Page</u>
1			
2			
3	42 B	Addendum by Halton	1117
4		Region - Landfill -	
5		Technical Site F - Burlington	
6		Design and Operations	
7		Report.	
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			



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BEFORE:	H. H. Lancaster, Q.C.	-	Chairman
	Dr. D.J. Kingham	-	Member
	S. Tanner	-	Member



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APPEARANCES (Cont'd):

1

C. Stevenson

for Framgard Holdings,

2

P. Hancock

Fosseri Investments

3

Limited, Seriphos

Investments Limited and

Topic Investments

4

J.H. Olah

for the Halton Region

5

Conservation Authority

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Per: J.Caldicott, CVR

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Toronto, Ontario

Hearing conducted at The Oakville
Granary Commercial Centre, 105 Robinson
Street, Oakville, Ontario, on
May the 13th, 1987.

VOLUME 6

APPEARANCES:

T.R. Lederer and
H.D. Hodgson

for the Regional
Municipality of Halton
(Proponent)

J.R. Tidball

for the Ministry of the
Environment

T. Vigod
J.F. Castrilli

for the West Burlington
Citizens Group

D. Estrin,
F.E. Leitch and
H. Dahme

for the Corporation of the
Town of Milton

S.R. Garrod and
A. Nurvo

for the Milton Area Citizens
Coalition and several
affected Milton area
landowners

R.B. Tuer, Q.C.
E.A. Cronk and
F. Perrier

for National Sewer Pipe
Limited

L.F. Longo

for Azova Investments
Limited

M.J. McQuaid, Q.C.
and C.J. Tzekas

for the City of Burlington

C. Mansfield

for the Ministry of Natural
Resources

P. Renaud

for Cumis Limited



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MAY 13, 1987

OAKVILLE, Ontario

--- (UPON COMMENCING AT 9:35 A.M.)

MR.HODGSON: Mr.Chairman, before we started I wanted to file for the record an addendum to the Design Operations Report for Site F, which we propose to be marked as Exhibit 42 B -- H-42 B -- it's the Design Operations Report for Site F, Exhibit 42, and the first volume is 42A. This is a very slender text plus a number of revised maps and it isn't as daunting as it looks!

Editorial comments from the second-tier counsel here!

--- EXHIBIT NO.H-42 B: Addendum by Halton Region Landfill - Technical Site F - Burlington Design and Operations Report.

MR.HODGSON: I might just comment, Mr.Chairman, so that it's clear for my friends and for the Board, and for the Ministry of Natural Resources, who haven't come back to the hearing since the first day -- and perhaps that was a lesson for all of us -- but, at any rate, the reason for this redesign is that the original design contemplated the extraction of a certain amount of the shale



1 resource which is located at Site F, and I believe
2 that was contemplated because it was hoped that
3 that shale resource would be marketable, and there
4 clearly was a concern expressed by the Ministry
5 of Natural Resources for some period of time that
6 that shale resource should not be lost.

7 A study was undertaken, actually
8 by Mr. Watson, and you'll hear evidence on this
9 later. Mr. Watson's conclusion was that it would
10 not be economically feasible; that the cost of
11 extracting the shale would exceed the market value
12 of the shale by some factor which he will attempt
13 to prove during his evidence.

14 The result then was that
15 the Regional Council made a decision that they
16 would not extract any more shale than was needed
17 for the purposes of the design and operation of
18 the site and for a final cover for the site, and
19 accordingly the Design and Operations Report for
20 Site F had to be modified to take into account
21 this change, and those modifications are in the
22 document 42B.

23 The maps in Exhibit 42B
24 are intended to be substituted for the maps that
25 now will be found in Exhibit 42A and the text



1 to them is there to modify the text of Exhibit
2 42.

3 THE CHAIRMAN: Thank you.
4 You say the Ministry has this now?

5 MR.HODGSON: The Ministry does
6 not have that, Mr.Chairman. We will make sure that
7 we get in touch with the Ministry and that they
8 are aware. They have known since last fall of this
9 decision and they knew that a redesign was coming,
10 so that it won't take them by surprise. We will
11 make copies available to them.

12 THE CHAIRMAN: All right. Thank
13 you.

14 Mr.Garrod?

15 MR.GARROD: Thank you, Mr.Chairman.
16 The exhibits that I think I'm going to be referring
17 to this morning are H-10, H-14, H-16, H-18, and
18 I will also be referring to one of those maps that
19 Mr.Hodgson just put before you in the revision
20 to the Design and Operation Report, and that will
21 be drawing No.9-r from Exhibit H-42B. This is
22 a map that shows the landfill operation and site
23 appearance at the end of year 11 and is essentially
24 the same as the one prior to the revision but I
25 thought I might as well refer to the most up-to-date



1 one.

2 THE CHAIRMAN: Fine. Thank you.

3 --- (MISS HELLAS RETURNED TO THE WITNESS STAND)

4
5 CROSS-EXAMINATION BY MR.GARROD:

6 Q. Miss Hellas, I reviewed with
7 you yesterday parts of your report that have been
8 marked as Exhibit H-18, the Technical Study on
9 the Biophysical Resources at Site F. I reviewed
10 with you the parts relating to the four provincially
11 rare species, and I wanted to go back to page 61,
12 which picks up from that point in your text, and
13 you discuss now the eight provincially uncommon
14 species which are being listed for this site, and
15 these are the ones that you have agreed should
16 be demoted from the "provincially rare" status.

17 A. That's correct.

18 Q. And on reviewing these last
19 night it occurred to me that many of these ones
20 appear to be in line for further demotion. Would
21 you agree with that?

22 A. In terms of the Region of
23 Halton, I believe it's "Yes".

24 Q. And perhaps I could just
25 take you quickly through pages 62 to 67 and we



1 could see which of those in fact appears to have
2 somewhat more common status in the Region than
3 the provincially uncommon status it might otherwise
4 indicate.

5 There's a list on page 62
6 where you have indicated the species and its regional
7 significance.

8 A. Yes.

9 Q. And then in the text you
10 make some comments which, I suggest to you, would
11 indicate that even the level of regional significance
12 listed there would likely be reduced for many of
13 these species.

14 A. I'd have to review each one
15 individually.

16 Q. Well let's start with the
17 first one that is headed on page 62. There's the
18 black walnut in the last paragraph. First of all,
19 you say that:

20 "(This) is designated as provincially
21 rare...is recognized as being more
22 widespread than previously thought."

23
24 It is now ranked by Dr.Crins as occasional in Halton,
25 but then you go on to say, at the bottom of that



1 page and over to the top of the next one that:

2 "In addition, this species is often
3 planted."

4 This is the black walnut tree that you often see
5 growing around in various places?

6 A. Yes.

7 Q. People have planted them
8 and they tend to do quite well under those conditions,
9 I take it?

10 A. They're a difficult tree
11 to continue to re-plant because they tend to adversely
12 affect the soil conditions in which they grow and
13 they will not regenerate in the immediate area
14 of another black walnut tree, but after a stand
15 has been established it will function well.

16 Q. And the second plant there,
17 at page 63, the early sweet blueberry -- again
18 you say this was delisted because of it being
19 widespread throughout the province, and in brackets,
20 about five lines from the bottom of that paragraph
21 that's numbered 6. on page 63 you say, in brackets:

22 "... (it may in fact be common in
23 Halton, with more than 15 stations)"

24
25 rather than regionally scarce, the way you've listed



1 it.

2 A. That's correct. There are
3 indications from other workers that because we
4 had said that Crins is the authority, we have
5 classified it as he has, with the qualifiers included.

6 Q. Right. The next plant --
7 you'll have to pronounce that one for me -- is
8 it rue-anemone?

9 A. Good enough!

10 Q. Again, this has been delisted
11 for its widespread distribution, and up at the
12 next page, about four or five lines down, you say
13 that:

14 "Crins (1985) reports it from several
15 historical stations (i.e., over
16 50 years old) within Halton Region
17 mostly in its southern third. The
18 absence of any other recent collections
19 outside Site F maintains its regionally
20 rare status within Halton."

21
22 I guess my question about
23 that is: the data is 50 years old. Is it likely
24 that if there was more recent data, it would be
25 considered to be more common?



1 A. It's really hard to know.
2 Crins, in preparing his tentative list, relied
3 only on vouchered specimens or work that he had
4 done himself. He did not include reports or sightings
5 that weren't substantiated, and in his view a lot
6 of these historical stations may no longer exist
7 and he had no other record of other stations existing.
8 They may in fact exist, it's just not known.

9 Q. All right. So we don't know
10 about them.

11 The next plant, the sicklepod,
12 again delisted because of its widespread distribution.
13 You mention there that it is -- at the bottom of
14 the page -- in the Royal Botanical Gardens and
15 Sassafras Woods, and you also say, about four lines
16 down on page 65, that:

17 "These additional stations may in
18 fact allow the species to be considered
19 occasional to frequent in Halton..."
20
21 rather than the "scarce" status that you have listed
22 it at?

23 A. That's correct.

24 Q. Again, it's something that
25 with future information may well be further demoted?



1 A. Correct.

2 Q. The next species on page
3 65 is the tick-trefoil -- again delisted for its
4 widespread distribution. You say it's found in,
5 as well as Site F, Sassafras Woods ESA and in Clappison
6 Escarpment Woods ESA. It's found on Site F as a
7 small population.

8 I suppose there's no indication
9 there that that might change its status.

10 The next one, number 10.
11 on page 66, you indicate that, again, it's delisted
12 for widespread distribution, and you indicate also
13 that:

14 "It is tentatively reported as a
15 sight record...from Site F..."

16 Is that an unconfirmed sighting?

17 A. Macdonald, when he saw it,
18 recorded as a tick-trefoil. He thought it was that
19 at the time. We were not aware of its regionally
20 significant status and so no voucher specimen was
21 obtained to verify, but he believes that in fact
22 is the species.

23 Q. And then the next one, I
24 think we've already dealt with this, number 11.
25



1 This is the cutleaf avens -- or I think it was
2 referred to earlier as the "rough avens"?

3 A. Yes.

4 Q. And we've agreed that that
5 was common in Halton and we don't need to worry
6 about it.

7 A. Correct.

8 Q. And the last one again, number
9 12. over on page 67 -- is this another tentative
10 identification?

11 A. There are two points. Crins
12 indicates that the varietal name that was given
13 is regionally rare. It's not quite clear what variety
14 of species. The species that it's in can further
15 be divided into varieties.

16 Q. So it's tentatively, at least,
17 assigned the variety that is considered to be
18 regionally rare, but it may be in fact some other
19 variety.

20 A. Yes.

21 Q. Thank you. Just leaving that
22 now, generally I wondered if you would agree with
23 me, in terms of thinking about natural area
24 preservation, whether it is more important to preserve
25 and protect uncommon vegetation-type communities



1 than it is to be concerned about the preservation
2 of the individual representatives of particular
3 species, unless those species are endangered.

4 A. My personal opinion is that
5 I would rather see a habitat, and a diverse habitat,
6 saved, rather than any individual plant species.

7 Q. That's a more important factor
8 -- the habitat types is more important a factor
9 than a rare species factor, if you like?

10 A. Generally, yes, because if
11 you save the habitat types there is hope that the
12 rare species will occupy that habitat type. If
13 you only save the plant, it may not, in itself,
14 continue to be saved.

15 Q. And I suppose there would
16 be an exception to that if you had endangered plants?

17 A. Endangered plants fall into
18 the same category as endangered animals. If you
19 want to try and preserve them and there isn't available
20 habitat, then there perhaps is the potential for
21 putting them in a museum setting like a botanical
22 garden.

23 Q. Now I showed you just before
24 we started Map 9-r from Exhibit H-42 B, which
25 is the design proposal for Site F. I'd like to



1 show it to you again. I would ask you very quickly
2 to tell us -- I know you're not the designer of
3 the landfill -- but are you generally aware that
4 the concept is that the landfill will be in the
5 northerly half of the property first?

6 A. Yes.

7 Q. And as we see from this map,
8 at what point in time is it expected that this
9 point would be reached?

10 A. At the end of year eleven.

11 Q. So this is eleven years after
12 that. And then you agree that landfilling after
13 the top half is completed would commence at the
14 bottom part of the bottom half?

15 A. That's my understanding.

16 Q. So in terms of preservation
17 of the oak-hickory forest that you've indicated
18 you're concerned about, would you agree with me
19 that it will be preserved at least until the end
20 of year eleven, and further, depending upon how
21 long it takes to work up towards it?

22 A. The central portion of it,
23 away from disturbance, will exist for that period
24 of time.

25 Q. And that would take us, assuming



1 this was approved some time in the next year or
2 something, to about the year 2000?

3 A. Yes.

4 Q. Would you agree with me that
5 that may well be longer, and that community might
6 be preserved if this property remained in private
7 ownership into the future?

8 A. No. There's no indication
9 that at least the upper-storey trees are under
10 stress to the extent that they will be eliminated
11 from the current use. If there was some other specific
12 use that was planned, that may cause it to be
13 eliminated, but just generally, if the conditions
14 that prevail now continue, I would expect it to
15 continue.

16 Q. And if the private owner
17 of these lands decided to do something different
18 with it, would you agree with me that it's at least
19 possible that that community might be eliminated
20 prior to the year 2000?

21 A. It is possible.

22 Q. Now I'm not sure how familiar
23 you are, Miss Hellas, with the Region's E.S.A.
24 policies and programs, but I do want to ask you
25 a couple of brief questions.



1 Do you agree with me that
2 a kind of a natural area meeting one or more of
3 the criteria listed does not necessarily become
4 an E.S.A. but is simply eligible to be considered
5 as one?

6 A. That's correct.

7 Q. And that other factors come
8 into the decision about whether or not it will
9 in fact be designated as an E.S.A. into the Regional
10 Official Plan?

11 A. Yes.

12 Q. And that, generally speaking,
13 the idea behind this for the E.S.A. designation
14 is to identify and designate and offer some degree
15 of protection to good representative examples of
16 the various environments in Halton County?

17 A. That's right, yes.

18 Q. And among the factors that
19 would be considered is whether or not a particular
20 location is in good condition?

21 A. That's not specified in the
22 documents and I don't know that for a fact, but
23 I'm sure people would probably take that into
24 consideration.

25 Q. Would you agree with me that



1 if we looked at Criterion No.6 -- and I have that
2 marked as being found on page 59A of Exhibit H-10.
3 This talks about a habitat for rare or endangered
4 species that are endangered regionally, provincially
5 or nationally.

6 First of all, would you agree
7 with me that that language is somewhat unfortunate --

8 A. Yes.

9 Q. -- because it tends to confuse
10 "endangered" with "rare"?

11 A. Yes.

12 Q. But notwithstanding that,
13 I understand that you've interpreted it as meaning
14 that if you have provincially rare or regionally
15 rare plants, that it would meet that Criterion?

16 A. Yes.

17 Q. And you would agree with
18 me therefore that Site D would also meet Criterio
19 6 --

20 A. Yes.

21 Q. -- in terms of being a regional
22 E.S.A.?

23 A. Yes.

24 Q. And in fact many other areas
25 of the Region, if studied in sufficient detail,



1 would likely also meet that Criterion?

2 A. Yes.

3 Q. And that alone would not
4 be sufficient for all of these areas to become
5 E.S.A's?

6 A. Not in my opinion.

7 Q. You referred, when you were
8 being cross-examined by Mr.McQuaid, to a letter
9 from the City of Burlington dated March, 1984,
10 from Mr.Boggs, who I believe was the Chief
11 Administrative Officer at that time. Do you remember
12 that letter?

13 A. Yes, I do.

14 Q. It wasn't marked as an exhibit
15 and I wondered where you were reading from, if
16 you could identify it more precisely?

17 A. This was the culmination
18 of a discussion -- at least that is my understanding
19 -- between Mr.Walker and Burlington in terms of
20 what level of information is appropriate and should
21 be applied, and it says at the top:

22 Chairman and Members of the Solid
23 Waste Management Committee.

24 Subject: City of Burlington's response
25 to Region of Halton.



1 "number of biological communities
2 types, and the largest number of
3 'rare' and 'significant' plant
4 species of any of the candidate
5 landfill sites."

6
7 You have marked on Map 4
8 the areas that you considered to be significant
9 biological communities, those small dots?

10 A. Yes.

11 Q. And those are, if you like,
12 essentially the same areas that we've been talking
13 about in your evidence at this hearing?

14 A. Yes.

15 Q. And over the page on page
16 3-14 you say in the paragraph that starts with
17 the second dash -- you describe these oak-hickory
18 forests and you say that:

19 "These areas have been described
20 excellently by Proctor and Redfern
21 (in 1982)"

22 And in the second last paragraph
23 on that page you talk about the disturbance and
24 recognize the disturbance that is being created
25 in the area.



1 A. Yes.

2 Q. And if we turn to page 3-15,
3 you indicate in the third paragraph that:

4 "...three 'rare' plants were
5 identified..."

6 and you identify which those are.

7 A. Yes.

8 Q. And then you go on, at the
9 bottom of that page, to talk about other:

10 "... 'significant' plant species
11 (that) occur on the site..."

12 A. Yes.

13 Q. And you list those over to
14 the next page and up at the top of page 3-17.

15 You also indicate at the
16 top of page 3-17 that:

17 "...none of the mammals, amphibians,
18 or reptiles are unusual or
19 unexpected..."

20 Is it fair to say, Miss Hellas,
21 that your late stage of investigation that's reported
22 in H-18 really did not add anything in terms of
23 what you knew about this site; it merely served
24
25



1 to confirm what you already knew at Stage 2C?

2 A. Yes. it confirmed something
3 in that it also increased the floral species list.

4 Q. But it didn't really add
5 anything in terms of the significant habitat types
6 or the "rare" or "significant" plant species?

7 A. None of the "rare". There
8 were additional regionally significant plant species
9 that were found during the investigation.

10 Q. But you didn't find out anything
11 about the habitat types that you didn't already
12 know at Stage 2C?

13 A. All we did was map them in
14 more detail and define the units more specifically
15 and smaller. So we had, at this stage, grouped
16 the habitats into broad categories of just trees
17 and scrubs, whereas at this stage we broke up the
18 treed into four subsections and the shrubland into
19 six subsections. So we went at that in more detail.

20 Q. But that didn't add materially
21 to your view of the significance of those habitat
22 types?

23 A. No.

24 Q. Now when you turn in this
25 2C Report to page 5-7 -- and then there are some



1 charts following 5-7 --

2 A. Yes.

3 Q. -- and I want to refer you
4 to the last chart which you gave some letters --
5 5-7(f) -- conveniently it's a chart about Site F!

6 This is where you provide
7 your rating --

8 A. Yes.

9 Q. -- for Site F with respect
10 to these various factors in the first column?

11 A. Yes.

12 Q. Now as far as the Community
13 - A - Uncommon -- you indicate, in brief description,
14 the prevailing conditions. You indicate there would
15 be a complete loss, in the third column. You indicate
16 then that the significance of that impact is a
17 "moderate" one and that the final rating is a
18 "moderate" one.

19 Do you agree with that?

20 A. Yes.

21 Q. And yet when you complete
22 your next phase of study, which you've just told
23 me added nothing to your view of the significance
24 of the habitat type, you have increased that ranking
25 from a "moderate" to a "high", notwithstanding



1 the fact that a third of it is now being saved
2 when it wasn't being saved previously.

3 A. It didn't increase my
4 understanding of the conditions on the site, but
5 I became aware through that study of its relative
6 significance, as we discussed yesterday, and that
7 because of the eroding conditions and the diversity
8 of terrain it wasn't as well represented. So on
9 site I didn't learn anything new about the conditions,
10 but in viewing the conditions in context of the
11 surrounding area, that was the primary reason for
12 the increase in the level of the rating.

13 Q. Well, let's look at this
14 in more detail. I'd like you to turn to, first
15 of all, page 152 in your Exhibit H-18. The first
16 paragraph in your Summary of Conclusions following
17 your more detailed investigation, you say:

18 "Site F poses serious biological
19 constraints to the establishment
20 of a landfill Site. As discussed
21 in Section 4, the Site supports
22 a rich flora in a diversity of
23 vegetation habitats. However, the
24 mitigation measure of adopting
25 the Option 3 design for landfilling...



1 "significantly reduces the adverse
2 impact of a landfill on the biological
3 resources of the Site and environs.
4 Representative units of all important
5 habitat types will be retained,
6 and a substantial number of
7 representatives of significant
8 species also will be preserved."
9

10 I suggest to you that that
11 mitigation should, if anything, reduce the ranking
12 that you gave it at Stage 2C and not increase it,
13 even if you did find some further relative
14 significance.

15 A. I don't think it's possible
16 to reduce it, first of all, because we still are
17 taking out the better portions. There are representative
18 units and I'm very pleased with that and it is
19 a mitigation measure, but for those portions that
20 will be eliminated, they are going to be eliminated,
21 and in terms of that the only rating I can see
22 is a "high".

23 Q. But you had assumed a "moderate"
24 rating when the entire site was being eliminated.

25 A. That's correct.



1 Q. You're now saying that the
2 new design substantially mitigates the loss, and
3 yet you increase the rating from "moderate" to
4 "high".

5 A. For the two reasons I've
6 said.

7 First of all, we were able
8 to map the units in more detail, so we became aware,
9 to a greater extent, of the diversity -- that the forest
10 was divided into those minor components or four
11 sub-categories, they were shoved into the six sub-
12 categories -- and these provided the diversity
13 or reflected the diversity in that area, the area
14 that will be landfilled.

15 And, secondly, this diversity
16 turns out to be not well represented. Individual
17 units may be well represented, but the diversity
18 is not.

19 Q. Well, we're talking about
20 the forest?

21 A. Yes. We're talking about
22 the vegetation, as explained. We're talking about
23 the natural vegetation conditions; not just the
24 trees but the whole natural vegetation condition.
25 And the individual units of those vegetation conditions



1 exist elsewhere, but the frequency with which they
2 change over a short physical distance does not.

3 Q. So what you're saying is:
4 none of the individual habitat types is uncommon
5 or unusual in this County.--

6 A. That's correct.

7 Q. -- but the fact that you
8 find two or three of them in close proximity to
9 each other is what makes it unusual?

10 A. Yes. The diversity of the
11 types together.

12 Q. But none of the individual
13 communities is particularly unusual or uncommon?

14 A. No.

15 Q. I'd like to take you to the
16 Comparative Analysis Report, Exhibit H-14.
17 And your work in this report is, I think, found
18 primarily in Appendix C?

19 A. It's completely in Appendix
20 C, yes.

21 MR.GARROD: Mr.Chairman, those
22 pages are numbered C-1 through C-18. at the top
23 right corner of the report.

24 Q. And will you agree with me
25 also, Miss Hellas, that if we turn back to the



1 charts which are found earlier in the report, that
2 the chart which relates to Natural Environment
3 Category is titled: C-2(a) and is known as Chart
4 2, which, Mr.Chairman, by my reckoning, is found
5 at page 48, although these pages are unnumbered.

6 Now, first of all I want
7 to take you, Miss Hellas, to page C-11, which at
8 the bottom of the page starts with Table 1 -- Framework
9 for the Evaluation of Impact -- and this is where
10 you describe what you intend to mean by these various
11 factors, is that correct?

12 A. Yes.

13 Q. And under the first heading,
14 the first column, you see Vegetation Community
15 Types; Uncommon Communities is the evaluation measure;
16 and the primary objective being to preserve atypical/
17 rare stable natural communities.

18 A. Correct.

19 Q. Now you've provided some
20 footnotes to explain what you mean by some of those
21 terms -- over at the bottom of the next page. Will
22 you agree with me that you were referring to Stability
23 as:

24 The ability of a biological community
25 to sustain itself and relates to



1 on-site size, continuity off-site,
2 age and regeneration of capabilities.

3
4 Do you recall, when I was
5 cross-examining you yesterday, you agreed with
6 me that in the Forest community the dominant species
7 were not regenerating very well?

8 A. Not to the same degree as
9 some of the others.

10 Q. And I suggest to you that
11 this compares the stability of that community that
12 you're concerned about?

13 A. The community will be different.
14 It will continue to be a part of the community.
15 The dominant species, over time, will change.

16 Q. It will no longer be the
17 oak and hickory?

18 A. At this stage the indication
19 is that it may not be.

20 Q. The next word, the Natural
21 Communities, is the third note there.

22 Naturalness relates to the existing
23 level of man-induced disturbance
24 within the community.

25 You already agreed with me



1 Q. I wonder if I could see that?

2 A. Sure.

3 MR.HODGSON: If I can help, Mr.
4 Chairman? This document, in a slightly different
5 form, is already in evidence as Exhibit H-68A --
6 at page 19.

7 MR.GARROD: Mr.Chairman, that
8 was my only intent -- to make sure that it was
9 marked as an exhibit. If it is so, I'm content.

10 MR.HODGSON: It would appear that
11 H-68A is an excerpt from the letter, and the portion
12 that the witness read in -- at least some portion
13 of it I believe is in there, I'm not sure how much
14 of it.

15 THE CHAIRMAN: Well, if it's
16 only part of a letter, I don't know what you're
17 referring to, but...

18 MR.GARROD: Perhaps, Mr.Chairman,
19 I can reserve on this point, compare the two, and
20 if I feel that there's anything to be added we
21 can --

22 THE CHAIRMAN: If you're satisfied,
23 that's fine.

24 MR.GARROD: -- we could add the
25 other one later.



1 BY MR.GARROD:

2 Q. Now, Miss Hellas, I wanted
3 to turn now to your 2C Report, which is Exhibit
4 H-16.

5 Will you agree with me that
6 at this stage it was contemplated that if Site
7 F was chosen to be the landfill, that the entire
8 property would be landfilled and all of the biophysical
9 resources on the site would be eliminated?

10 A. Yes.

11 Q. And that was also the assumptions
12 that you were working under in conducting this
13 evaluation at this stage?

14 A. Yes.

15 Q. And would you agree with
16 me that at the conclusion of this stage, by the
17 time you wrote this report, the biophysical
18 characteristics of Site F were well-known to you?

19 A. Yes.

20 Q. And perhaps I can refer you
21 to some specific paragraphs, starting at page 3-13
22 where you begin the detailed discussion of Site
23 F, and you say, for example, in the third paragraph:

24 "This Candidate Site has the largest
25 area of wooded lands, the largest



1 yesterday that this was a very disturbed site?

2 A. That's correct.

3 Q. You also -- if I can refer
4 you back to your page C-8 of this Report -- in
5 the middle paragraph on page C-8, four lines down
6 -- I guess starting from the first line of that
7 paragraph:

8 The vegetation is composed of twenty-one
9 different vegetation habitat sites
10 which fall into the categories of
11 forest, plantation, shrub thicket,
12 meadow, wetland meadow, anthropogenic
13 and open water, none of which are
14 uncommon or unusual in Halton...

15
16 and this evaluation measure is "uncommon communities"?

17 A. But it says:

18 It also preserves a typical, stable,
19 natural community...

20 and as I have explained, the "uncommonness" relates
21 to the diversity of the habitat types that may
22 cause that.

23 Q. I'm sorry -- is also preserving
24 a stable, natural community?

25 A. Is to preserve the atypical



1 -- it has preserved atypical as well -- and this
2 is atypical in that there is a diversity of habitat
3 types making up that community.

4 Q. Well, what you're saying
5 is that there are a number of communities in close
6 proximity to each other?

7 A. I'm looking at the whole
8 area of that wooded area as the biological community,
9 the area, which interacts as a curb between the
10 different types of vegetation, the soil, the micro-
11 environmental conditions.

12 Q. But this is not regenerating
13 and it's not natural, I put it to you, because
14 of its level of disturbance, by your own definition?

15 A. The community itself is
16 regenerating. It may be regenerating differently
17 than it is currently.

18 Q. The dominant species, the
19 oak-hickory, are not regenerating?

20 A. They are not regenerating
21 to the same rate as other species.

22 Q. And yet, in spite of these
23 limitations, you believe that -- let me turn over
24 to the next page, page C-13. You describe in the
25 middle of C-13 -- the ratings that are applied



1 are as follows -- you say "nil" is where the measure
2 does not apply.

3 I suggest to you that this
4 measure of uncommon communities does not apply
5 to Site F because of the fact that you have indicated
6 that the communities are common, are not unusual;
7 that they're not stable, that they're not natural.
8 You are suggesting to me that it does apply because
9 there's a combination of communities?

10 A. I'm suggesting that the make-up
11 of this combination is the atypical component that
12 I rated as one of the factors to consider.

13 Q. And I don't think we're going
14 to get much further in agreement on that point.

15 Over on the chart, which
16 is at page 48, Chart C-2(a) -- looking at Vegetation
17 Community Type -- "uncommon" -- we just dealt with
18 that.

19 The next one -- important
20 -- you say at Site D, from the technical study
21 stage, that there will be a loss of D-2 woodlot
22 and a small portion of D-1 woodlot.

23 Perhaps I can refer you to
24 the exhibit that Dr.Mackintosh put up -- sorry,
25 I can't read the number of that.



1 A. H-105.

2 Q. Would you agree with me that
3 more than a small portion of D-1 woodlot is being
4 eliminated?

5 A. That's probably an unfortunate
6 trend, yes.

7 Q. And if you compare it to
8 the air photo you can see that the original woodlot
9 was quite substantially larger?

10 A. Using this map it appears
11 that this section and this section will probably
12 be lost, and in this section losses will probably
13 occur.

14 Q. So in fact there's only,
15 if anything, only a small portion remaining?

16 A. Yes.

17 Q. And would this influence
18 then your ratings here, when you say there is a
19 "nil" impact at Site D. You say that the vegetation
20 that will be lost provides a habitat that has only
21 local significance -- wildlife populations will
22 not be adversely affected.

23 A. That comment remains.

24 Q. You wouldn't revise that
25 to "low"?



1 A. No.

2 Q. What about at Site F then?

3 You're saying at Site D that wildlife populations
4 will not be adversely affected. At Site F you're
5 saying that wildlife populations will not be
6 significantly adversely affected. I thought you
7 had agreed with me yesterday, with regard to a
8 corridor, that there was no effect?

9 A. I'm aware of what I thoughtlessly
10 agreed to yesterday in terms of the impact on the
11 wildlife corridor and I agree that it's not a major
12 consideration, but the fact exists that there are
13 wildlife that frequently come down from this area
14 and migrate in this manner, and we will be destructing
15 -- and this is a regular movement pattern. And
16 I agree that this is not going to significantly
17 affect the populations over the long-term, but
18 it will affect their movement pattern and they
19 will have to adjust.

20 Q. By way of summary then I'd
21 like to turn you to page C-7 and C-8 in this report,
22 where you summarize for Site D -- starting at the
23 very last word on page 6 and up on the top of page
24 7. You say:

25 Landfilling will result in the loss



1 of all known representatives on
2 the site of one regionally rare
3 plant, black snake root, three
4 regionally scarce species and nine
5 occasional species

6
7 for a total of, will you agree with me -- landfilling
8 on Site D -- wiping out all known representatives
9 of thirteen significant species as you've identified
10 them?

11 A. Yes.

12 Q. And when we turn to Site
13 F, which is over the page at 9 -- sorry, page D-9,
14 about ten or twelve lines down -- there's the same
15 kind of phrase. You say:

16 Landfilling will result in the loss
17 of all known representatives of
18 at least fourteen species.

19 -- and those are the significant species?

20 A. Yes.

21 Q. So we're losing all known
22 representatives of fourteen significant species
23 at Site F and thirteen at Site D, is that correct?

24 A. That's correct, but the
25 difference is that I know from other records that



1 there have been a hundred and sixteen significant
2 species identified on F --

3 Q. Yes?

4 A. -- and I have to assume that
5 at least a portion of them -- and probably because
6 of the concentration of known locations -- a good
7 portion of them will also be eliminated.

8 Q. And a good portion of them
9 will be saved by the areas that will be saved?

10 A. There is that potential,
11 yes.

12 MR.GARROD: Those are all my
13 questions, Mr.Chairman.

14 DR.KINGHAM: I'd like to have
15 a few questions answered to clarify some of the
16 things that you've just said.

17 What wildlife is migrating
18 down through that corridor that you described,
19 Miss Hellas?

20 THE WITNESS: Mainly deer are
21 the most frequent users -- that there's indications
22 that they're coming down from the Sassafras Woods
23 and the edge of the Escarpment.

24 DR.KINGHAM: And where are they
25 going when they hit Highway 403?



1 THE WITNESS: Not down this way.
2 They cross this way -- King Road -- into this complex
3 area here.

4 DR.KINGHAM: That's a feeding
5 ground for them, or...?

6 THE WITNESS: I think they're
7 just going and browsing. There's no winter yard
8 or anything of this nature. It's not an important
9 habitat in terms of their breeding or anything
10 of this nature. And, as I say, I don't want to
11 indicate that it is more important than it is,
12 but there are indications that there are animals
13 using it in this manner.

14 DR.KINGHAM: And, from your knowledge,
15 can you tell us why they would go that way rather
16 than taking some other route down --

17 THE WITNESS: Well, I'm sure
18 they are also using this route. I don't think that
19 this is an exclusive route for them, by any means.

20 DR.KINGHAM: The other question
21 I had: a plantation, as described in your map --
22 you show a plantation in the middle of that section
23 right there. That's a man-planted growth of trees?

24 THE WITNESS: That's correct.
25 When you look at the air photos from 1954, this



1 was a cleared field, and since then it has been
2 planted with pines and spruce.

3 DR.KINGHAM: And would you say
4 that a plantation is a significant biological
5 community?

6 THE WITNESS: Not in itself,
7 because it tends to be planted mono-specifically
8 and it doesn't have the same regeneration, and
9 especially when it's allowed to mature and no
10 regeneration is occurring underneath. It doesn't
11 allow, for instance, food for different wildlife,
12 or wild flowers, or natural regeneration, especially
13 in the context of the primarily deciduous framework
14 of this area.

15 DR.KINGHAM: I asked the question
16 by way of clarification of your map 4, where you
17 show significant biological --

18 THE WITNESS: That was just sort
19 of generally through this area. In retrospect perhaps
20 there should have been a block, but it was to take
21 in this portion of the site.

22 DR.KINGHAM: Thank you very much.

23 THE CHAIRMAN: Miss Cronk or
24 Mr.Dahme -- have you decided who is going to go
25 first?



1 MS.CRONK: Sir, we've agreed that,
2 with your concurrence, Mr.Dahme will precede me.

3 THE CHAIRMAN: Very well, then.

4 MR.DAHME: If at all, I will
5 be referring only to Exhibit H-17.

6
7 CROSS-EXAMINATION BY MR.DAHME:

8 Q. I won't be asking about the
9 plants, since I think Mr.Garrood has probably covered
10 that in sufficient detail, but what I am interested
11 in is vermin, so if we can talk about vermin.

12 Now I understand that you're
13 the only person that's been retained by Halton
14 to discuss vermin?

15 A. Yes.

16 Q. And were you retained to
17 examine all aspects of vermin?

18 A. Yes, I presume so. I was
19 retained to look at the sites in terms of the potential
20 to attract vermin and to determine methods by which
21 this attraction could be minimized and how vermin
22 could be controlled.

23 Q. And you were concerned in
24 addressing all of the potential impacts that might
25 result from vermin?



1 A. Yes.

2 Q. I'm not particularly concerned
3 about rats, although that may be a problem, but
4 I'm particularly concerned about birds.

5 You examined birds from the
6 perspective of the interaction between birds and
7 airports?

8 A. Yes.

9 Q. Why are birds a problem with
10 airports?

11 A. Because there is a potential
12 for bird-airplane collisions.

13 Q. And all it takes is one bird,
14 one plane --

15 A. That is correct.

16 Q. -- and that is why you're
17 concerned about it --

18 A. Correct.

19 Q. -- because of the potential
20 impact?

21 A. That's correct.

22 Q. Now I looked through your
23 C.V. and from what I understand you actually have
24 never studied potential bird impacts before?

25 A. No, I haven't.



1 Q. What you did was, you visited
2 some landfill sites?

3 A. Yes.

4 Q. You talked to some people --

5 A. Yes.

6 Q. -- at the Department of
7 Transport, and some airport operators?

8 A. And bird experts.

9 Q. And bird experts. And from
10 all of that information you attempted to define
11 what the potential impact was and what the available
12 mitigation measures were?

13 A. That is correct.

14 Q. And what you found was that
15 there were 14,000 nesting pairs of gulls at the
16 Hamilton Harbour?

17 A. Yes.

18 Q. And that in fact that's been
19 a significant increase in the last few years?

20 A. Very significant.

21 Q. Similarly you found that
22 there were an enormous number of gulls at the Leslie
23 Street Spit in Toronto?

24 A. Yes.

25 Q. You also found that they



1 can very easily fly to a landfill site located
2 at Site D, if in fact one is located there?

3 A. Yes.

4 Q. And I think you also said
5 that they would then have a tendency to 'loaf'
6 at the Burlington air park?

7 A. That would be one of the
8 locations that would be available for their 'loafing'.

9 Q. And it's because of the fact
10 that the air park is a particularly attractive
11 vicinity, because of the construction of the air
12 park, for 'loafing'?

13 A. It's attractive in that it
14 doesn't have trees, it tends to have short grass
15 where they can stand. It's no more or less attractive
16 than active agricultural fields.

17 Q. I'll be talking about
18 agricultural fields later. But your conclusion
19 was that there was a real potential for bird problems
20 at the Burlington air park?

21 A. Yes.

22 Q. And then what you tried to
23 do was determine available mitigation measures?

24 A. Yes.

25 Q. And in determining how effective



1 those measures were you were relying upon other
2 people's experience?

3 A. Primarily the airport operators
4 and the people at Transport Canada that regulate
5 those airports.

6 Q. Do you know what the cost
7 of some of those measures are?

8 A. The only one that I looked
9 at cost was the falconry one, and it's very expensive.

10 Q. And do you know if the Region
11 has addressed who is going to pay for the mitigation
12 measures that will take place?

13 A. No, I don't.

14 Q. So we don't have any indication
15 of who is supposed to be paying for these mitigation
16 measures if in fact a landfill site is established
17 at Site D?

18 A. No.

19 Q. Let's talk about the air
20 park itself. What you did was you spoke to the
21 operator and some mechanic?

22 A. The first time I 'phoned
23 I spoke to a person who identified himself as the
24 technician responsible for the air park, and I
25 got an idea of its operating procedures and plans,



1 and then I decided I wanted to confirm that with
2 the owner and I 'phoned him and I spoke with him.

3 In addition, whenever I was
4 in the area -- I didn't make a special trip --
5 but whenever I was in the area I drove over to
6 the air park and looked at it.

7 Q. And what you did was you
8 gave us an estimate of the number of planes from
9 that information?

10 A. Yes.

11 Q. But we don't know of the
12 actual number of planes using the air park during
13 weekdays or on weekends?

14 A. No.

15 Q. And we don't know anything
16 about potential plans of the air park?

17 A. I'm aware that there is a
18 hope to expand, but it's my understanding that
19 there has been that desire for a period of time
20 and nothing as yet has happened about it.

21 Q. But do we know that in fact
22 there has been an increase in the usage of that
23 air park over a certain length of time?

24 A. No. All I know is the use
25 when I looked at this, which was in the early winter



1 of '86.

2 Q. And you say you can't tell
3 us whether or not there has been increased use
4 of the air park and whether or not that expansion
5 might take place?

6 A. No.

7 Q. And you did tell us something
8 about the types of planes, and I think you indicated
9 that they were generally small propellor-driven
10 planes that are using the air park?

11 A. When I talked with them,
12 that was what I was told.

13 Q. But you don't know anything
14 about the potential for jet aircraft, small jet
15 aircraft, to use that air park?

16 A. I know from Transport Canada
17 that there would be a requirement for a longer
18 runway and they would have to apply for approval
19 to build that longer runway. As they exist now,
20 they do not have that status.

21 Q. But if in fact the runway
22 were expanded and small jet aircraft were to use
23 that air park, then that would actually increase
24 the risk?

25 A. Yes.



1 Q. And there is a particular
2 risk associated with jet aircraft?

3 A. Yes.

4 Q. In fact it's much more dangerous
5 with jet aircraft than ordinary propellor-driven?

6 A. Yes.

7 Q. And if there is an increase
8 even in propellor planes, the risk also increases?

9 A. The potential for collision
10 increases.

11 Q. Do you know how many bird
12 strikes there were in, let's say, 1985?

13 A. For what area?

14 Q. For Canada, let's say?

15 A. No.

16 Q. Do you know how many bird
17 strikes there were in 1986?

18 A. For what area?

19 Q. In Canada.

20 A. No.

21 Q. Now in terms of the mitigation
22 measures, you've already said that you don't have
23 any direct experience in the application of those
24 mitigation measures?

25 A. No.



1 Q. Now at the beginning -- I
2 promised I would be short -- at the beginning I
3 asked you whether or not you had tried to examine
4 all aspects of vermin and I believe you said "Yes".

5 A. Yes.

6 Q. Well, I'm particularly concerned
7 about a landfill at Site D to the extent that it's
8 located in an agricultural community.

9 A. Yes.

10 Q. Did you examine the potential
11 for bird impact on agricultural crops?

12 A. All I did was read the literature
13 and it indicated that there are problems in terms
14 of the initial seeding time when the ground is
15 initially ploughed and where the land is moist,
16 there's grubs there available for them and they
17 can become an interference, but nothing indicated
18 that other than an interference they caused a real
19 -- I don't know what the word is -- a problem.

20 Q. Do you know anything about
21 birds foraging on some agricultural crops?

22 A. They do. The gulls are the
23 ones I was looking at because they are the main
24 attractions. There will, of course, as I've mentioned.
25 be other species, and in this I relied upon the



1 work of the Maple airport, Keele Valley, and what
2 they found on the Shur-Gain Farms was that the
3 problem related mainly to the 'loafing' of the
4 gulls.

5 Q. But there is also a problem
6 with foraging?

7 A. Yes, you are correct.

8 Q. And that could create a problem
9 with respect to the surrounding farms, surrounding
10 agricultural operations?

11 A. Yes.

12 Q. There's another thing that
13 apparently has come up recently. Are you aware
14 of a number of studies that relate to diseases
15 from birds to either cattle or to people
16 -- as a result of bird faeces?

17 A. I have heard of that, I haven't
18 looked into it.

19 Q. So you can't tell us what
20 the potential risk is of disease as a result of
21 increased bird populations around the site?

22 A. No.

23 Q. You can't tell us what the
24 impact might be on any cattle operations, particularly
25 dairy operations, around Site D?



1 A. No.

2 MR.DAHME: Thank you very much.

3 THE CHAIRMAN: Thank you very
4 much, Mr.Dahme.

5 Miss Cronk?

6
7 CROSS-EXAMINATION BY MS.CRONK:

8 Q. Miss Hellas, you'll be relieved
9 to know that I'm going to try to be as brief as
10 possible. I don't think I'll keep you very long.

11 A. Thank you.

12 MS.CRONK: I propose to deal,
13 Mr.Chairman, very briefly with four exhibits. It
14 might be convenient if you had the Comparative
15 Analysis, Exhibit H-14; Exhibit 97, which was the
16 written hand-out of various extracts from Miss
17 Hellas's previous report, and Exhibit H-16, which
18 is the Final Technical Report, and H-17 and H-18,
19 which I believe you have already out, they've been
20 referred to the Board.

21 BY MS.CRONK:

22 Q. Miss Hellas, it may well
23 be that you don't have to go to these reports,
24 but my questions arise from them so I thought it
25 would be best if I identified them for you.



Could I deal first with your most recent written report concerning both Sites D and F, we've had considerable discussion about it. I take it that the final written version of your expression of opinions and reporting upon your analysis of these two sites is contained in Schedule C of the Comparative Analysis?

A. Yes.

Q. And the hand-out that's been given out was really done for purposes of convenience to those here, to follow the work that you've done over the years with respect to these sites; they are simply extracts of various reports?

A. The two hand-outs -- one is the tables from the report and the other is the extracts of recommendations, yes.

Q. And do I have it correctly from your evidence, Miss Hellas, that your fundamental conclusion at the completion of all your work is that from a biological perspective, in your opinion, Site D is to be preferred to Site F for landfilling purposes?

A. Yes.

Q. And that, I believe, you've been careful to tell us, is an opinion that you



1 formed strictly in consideration of the biophysical
2 features in both sites?

3 A. Yes.

4 Q. And is it fair to suggest
5 as well that you've been very careful to indicate
6 that you didn't take into account in forming that
7 opinion any other factors that might be relevant
8 in the Environmental Assessment process?

9 A. That's correct.

10 Q. Now you didn't look at --
11 and I think it's obvious and we'll deal with this
12 quickly -- anything about public safety and public
13 health, cultural and environmental issues; those
14 were reserved for other experts?

15 A. Yes.

16 Q. And within the Natural
17 Environment category itself I think you've as well
18 been very careful to indicate that you looked at
19 that part of that category that dealt strictly
20 with biological features?

21 A. Yes.

22 Q. And I say this with respect,
23 Miss Hellas, it's certainly no criticism -- but
24 within the category of Natural Environment, then,
25 I suggest to you that you looked, and were asked



1 to look, at one half of the equation, is that fair?

2 A. Yes.

3 Q. And having looked only at
4 one half of the equation, you are not in a position
5 to express, for the benefit of this Board, any
6 opinion as to the overall merit, in the Natural
7 Environment category, of either site?

8 A. No.

9 Q. And with respect to that
10 we will hear from other witnesses?

11 A. Yes.

12 Q. Now there's been some discussion
13 throughout your evidence, Miss Hellas, of the concept
14 of endangered biological resources. You have concluded,
15 as I understand your evidence -- and please correct
16 me if I'm wrong -- that there are no biological
17 resources of any kind at Site F that are endangered,
18 is that correct?

19 A. Yes, that's correct.

20 Q. And you are familiar, I take
21 it, with the Endangered Species Act of Ontario?

22 A. Yes.

23 Q. And am I correct that that
24 Act covers both flora and fauna and affords for
25 a scheme to protect species which are threatened



1 with extinction?

2 A. Yes.

3 Q. And under that legislation
4 "endangered" means "threatened with extinction"?

5 A. Yes.

6 Q. So that in the context of
7 the opinion that you have expressed, do I have
8 it then that there is no form of wildlife or flora
9 of any kind, be it plant, flower, weed, shrub,
10 scrub, that is in any way threatened with extinction
11 by a landfilling proposal at this site?

12 A. That's right.

13 Q. Either under current conditions
14 or under conditions proposed by the Region?

15 A. That's right.

16 Q. And I suggest to you as well,
17 Miss Hellas, that you've reached and explained
18 to the Board really a third major conclusion as
19 well, and that is there are no biological conditions
20 at either Site D or F which would preclude their
21 use as a Regional landfill?

22 A. No. The biological conditions
23 are such that I, from my standpoint, want F to
24 be preserved and D to be landfilled, but I appreciate
25 that this is an Environmental Assessment where



1 there are trade-offs, and since there is nothing
2 that is endangered on those sites, that from the
3 biological perspective, if those trade-offs show
4 that it is the proposed site -- F over D, or D
5 over F -- from those other ones, there's nothing
6 on Site F that would preclude that.

7 Q. And indeed, just on the issue
8 of trade-offs, Miss Hellas, Site D in fact is not
9 your most preferred site for landfilling, is it?
10 Site A was?

11 A. At the 2C stage, yes, Site
12 A was.

13 Q. Well, it is only at the 2C
14 Stage and the earlier stages that you were looking
15 at other sites in addition to D or F, isn't that
16 fair?

17 A. That's correct.

18 Q. So in the comparative world,
19 when we're undertaking a comparative assessment
20 of more than two sites, your most preferred site
21 is in fact not Site D?

22 A. That's correct.

23 Q. So to that extent Site D,
24 even within the framework of your opinion, is a
25 compromise site, isn't that so?



1 A. Yes.

2 Q. Could I direct your attention
3 briefly, Miss Hellas, to the aerial photograph
4 of Site F -- M-103 -- and I'd like to spend just
5 a few minutes and invite you to walk around that
6 site with me, figuratively speaking, in a way that
7 I hope will not be repetitive of what the Board
8 has already heard.

9 It's my understanding, first
10 of all, that the entire site as reflected on that
11 aerial photograph is approximately 93 hectares,
12 is that right?

13 A. It's over 90, yes. I'm not
14 quite sure what the number is, but I know it's
15 in that order.

16 Q. And with the exception of
17 a small portion of the land located to the north,
18 the entirety of that site is owned by my client,
19 National Sewer Pipe Limited, isn't that so?

20 A. Yes.

21 Q. There are no buildings of
22 any kind on the site?

23 A. No.

24 Q. The nearest houses, according
25 to the evidence that the Board will hear -- well,



1 let me ask you -- are you aware of the distances
2 of the closest residence to the site?

3 A. I know where they are, but
4 I don't know what that distance is.

5 Q. All right. Could you take
6 the Comparative Report, please, and just briefly
7 put it before you, and I direct you to page 10.
8 Do you have that?

9 A. Yes, I do you.

10 Q. And I refer you to the middle
11 portion of the first paragraph, starting with the
12 third sentence:

13 The nearest residences are approximately
14 300 metres to the north of the proposed
15 site boundary. The nearest urban
16 residential areas lie approximately
17 600 metres to the south, 900 metres
18 to the east and 1,300 metres to
19 the west.

20
21 I take it you have no reason
22 to disagree with that summation of the distances?

23 A. No.

24 Q. And certainly there are no
25 residential areas immediately adjacent to the site?



1 A. No.

2 Q. And your own site visits
3 would have confirmed that?

4 A. Yes.

5 Q. You've explained what the
6 land uses are in the immediate vicinity, but you've
7 explained to us that in essence National Sewer
8 Pipe's lands are 'sandwiched' between two existing
9 landfill sites, isn't that so?

10 A. Yes. Well, one is "former".

11 Q. All right, let's just deal
12 with that. It is right in the middle of two sites,
13 one of which is an active landfill operation, one
14 of which is a former landfill operation and is
15 now closed, is that fair?

16 A. Yes.

17 Q. And if we just look at the
18 east then of the site, could you point out to the
19 Board again Bayview Park, the former landfill site?

20 All right. That in fact has
21 now been rehabilitated for recreational purposes,
22 isn't that so?

23 A. Yes.

24 Q. And the existing active landfill
25 site is found immediately to the west?



1 A. Yes.

2 Q. And could you point that
3 out, please?

4 All right. Now in the area
5 immediately between those two landfill sites, that
6 is the area where National Sewer Pipe Limited has
7 its quarry operation, isn't that so?

8 A. That's where the licence
9 is.

10 Q. And in fact there is an active
11 quarry operation on the site, isn't that so?

12 A. I'm not aware of it being
13 active. It wasn't being actively used when I did
14 my field work. I'm aware that it is being used
15 periodically, but I haven't seen it being used.

16 Q. You didn't go out and actually
17 spend some time in the quarry to see what the level
18 of activity was?

19 A. No.

20 Q. And immediately east of Bayview
21 Park, that is the closed landfill site, I suggest
22 there's another quarry owned by National Sewer
23 Pipe?

24 A. Yes.

25 Q. And that's even larger than



1 the one on Site F, isn't that so?

2 A. Yes.

3 Q. And I suggest to you further
4 that that is an active quarry operation?

5 A. Yes.

6 Q. So if we are to look at this
7 site, just moving from west to east, the current
8 situation, I suggest, is this. We have an active
9 landfill operation run by the Region; we have an
10 active quarry operation run by National Sewer Pipe;
11 we have a closed landfill site; and then we have
12 another active quarry. Isn't that so, moving from
13 west to east?

14 A. Generally, except I cannot
15 say how active the one on the site is, but everything
16 else, yes.

17 Q. And what is being proposed,
18 were this site to be selected for landfill purposes,
19 is really a substitution of that quarry use on
20 Site F to another landfill use?

21 A. For a portion of it. The
22 landfill would take up more of the lands than the
23 quarry use.

24 Q. It would take up the entirety
25 of the quarry, wouldn't it?



1 A. Yes, it would.

2 Q. So to the extent that I'm
3 talking about substitution, it would substitute
4 for that quarry another landfill site?

5 A. Yes.

6 Q. So that the dimensions of
7 what we're talking about -- if you again look from
8 west to east, you would end up with an active landfill
9 site whose operations will be completed in the
10 future -- that's the first thing you'd have on
11 the west?

12 A. Yes.

13 Q. You would have then an active
14 landfill site on Site F?

15 A. If it was used.

16 Q. If it was used. You would
17 then have a closed landfill site that has been
18 rehabilitated for recreational purposes?

19 A. Yes.

20 Q. And you would have an active
21 quarry operation?

22 A. Yes.

23 Q. That's what we're talking
24 about?

25 A. Yes.



1 Q. And with respect to Bayview
2 Park itself, the closed landfill site, there is
3 in fact in the northeast corner of that site now
4 a horse-riding, an equestrian riding facility,
5 is that so?

6 A. Yes.

7 Q. Could you point that out
8 to the Board, please?

9 And at the southeast corner
10 is the Burlington Gun and Revolver Club, is that
11 so?

12 A. Yes, right here.

13 Q. So that there are now, as
14 this hearing continues, active recreational uses,
15 including the two I've just mentioned, on that
16 site?

17 A. Yes.

18 Q. And then Mr.Garrod just reminds
19 me -- and the Board has had this before, so I won't
20 spend much time on it -- but on the north -- you've
21 testified that the northern boundary of the site
22 faces onto the base of the Niagara Escarpment?

23 A. This is the E.S.A, Sassafras
24 Woods, and the Escarpment face doesn't really start
25 until beyond that, so immediately north is the



1 E.S.A. Woods, and then there is a hydro corridor
2 and then the...

3 Q. All right. And south, obviously,
4 you've heard it faces on the North Service Road
5 and further to the south is Highway 403?

6 A. Yes.

7 Q. And, Miss Hellas, my
8 understanding is that the landfill proposal by
9 the Region contemplates that approximately 50 hectares
10 of land on Site F would actually be landfilled,
11 is that your understanding?

12 A. Something in that order,
13 I don't know the exact number.

14 Q. Well, just so there's no
15 doubt about that, perhaps the easiest place to
16 find it is in the hand-out that Mr.Hodgson marked
17 -- H-42B. Perhaps I could just show you a copy
18 of that. That's the written information.

19 At page 3 it indicates that:

20 The design changes reflected in
21 this summary and the maps that go
22 with it have reduced the total fill
23 area on the site from about 50 hectares
24 to 49.

25 Is that right?



1 A. Yes.

2 Q. And it's my understanding
3 further, and I would ask you to confirm this, that
4 the area subject to National Sewer Pipe Limited's
5 quarry licence is some 30 hectares on Site F?

6 A. Yes.

7 Q. That being the case then,
8 the amount of land covered by National Sewer Pipe's
9 quarry licence that would be taken up by the landfill
10 is about three-fifths of the landfill?

11 A. Yes.

12 Q. And it was suggested to you
13 by Mr.Garrod that because the land covered by that
14 quarry licence is in fact owned by one owner and
15 it's a private property, there's no guarantee as
16 to the protection of any items of biological
17 significance in that area, whether or not the Regional
18 landfill is approved, and you agreed with that?

19 A. That's correct.

20 Q. And I suggest to you, Miss
21 Hellas, in fact, that all of the lands covered
22 by that quarry licence could in fact be cleared
23 by the owner tomorrow, yesterday or today?

24 A. Yes.

25 Q. And one of the maps that



1 Mr.Hodgson marked today as part of Exhibit 42B
2 -- and I'm cheating, Sir, I didn't warn you about
3 this one, but I forgot that I was going to need
4 it -- maybe the best way to do it is to put it
5 up for you to look at.

6 MS.CRONK: It's described as
7 drawing number 1r.

8 BY MS.CRONK:

9 Q. That map, Miss Hellas, reflects,
10 amongst other things, the actual extent of the
11 area of the quarry licence on Site F, isn't that
12 so?

13 A. Yes. This line indicates
14 the boundary of the quarry licence.

15 Q. And as that is my copy and
16 I'm liberal with pens, would you mind just closing
17 that off for us so the Board can see where that
18 quarry licence actually is.

19 A. I think a yellow, maybe...

20 Q. I think the blue would be
21 more prominent, if you wouldn't mind.

22 There seems to be -- at least
23 speaking just for myself -- some confusion about
24 the southern boundary of the lands covered by that
25 quarry licence, and you recall that yesterday,



1 during your evidence, you were taken to the Vegetation
2 Map that appears in Exhibit H-18 with respect to
3 Site F.

4 A. Yes.

5 Q. For my purposes I would ask
6 you to go to the Significant Native Flora map in
7 the same exhibit, it's map HL-f4.

8 A. Yes.

9 Q. If you would just look at
10 that in combination with the area that you've marked
11 off on the map that's on the Board, Miss Hellas,
12 I'm going to suggest to you that the southern boundary
13 of the land covered by the quarry licence extends
14 -- and perhaps we can do this really by physical
15 land features -- extends through half of the pond
16 area marked on the map --

17 A. Yes.

18 Q. -- and you're pointing that
19 out -- and that's marked by the white blur on the
20 map.

21 And further to the west extends
22 through another white area -- and is that a water
23 area as well?

24 A. This is sort of the bottom
25 of the quarried area -- there are little 'pondings'



1 that generally just cleared.

2 Q. And if we were to draw the
3 same southern boundary line through your Significant
4 Native Flora map, I suggest to you that -- this
5 again judging by the land features -- it would
6 take us through Dot number 6, below Dot number
7 7, below Dot 15 -- do you see that?

8 A. Yes. Excuse me, I don't see
9 "15", I see "56".

10 Q. If you move further to the
11 east -- "15"?

12 A. I'm sorry, I cannot see the
13 "15".

14 Q. That's interesting, Miss
15 Hellas, because on the map HL-f4 that I have from
16 Exhibit H-18 we seem to have a different numbering
17 system.

18 A. We do.

19 Q. Yes, indeed we do.

20 A. Well, the only explanation
21 I can have is that when the drafts went out we
22 didn't have a printed, published document, and
23 after it came out some of the status changed and
24 so the numbers changed. I know that this is the
25 latest. Some of the numbers have changed.



1 Q. There may be nothing that
2 turns on it. I'm asking for your assistance, Miss
3 Hellas, and you can do it by reference to the numbers
4 you have on yours.

5 A. It would be "6", "7" and
6 "56".

7 Q. All right. And I'm simply
8 suggesting to you that more than a third of the
9 forest area of biological significance of which
10 you've been speaking to the Board is in fact in
11 the area covered by the quarry licence, based on
12 that southern boundary?

13 A. Yes.

14 MS.CRONK: Perhaps we can find
15 out what maps we have?

16 DR.KINGHAM: The Board has the
17 same map that you referred to. The quarry line
18 would run through "6", "7" and "15" on this map.

19 MS.CRONK: Thank you. And I've
20 just confirmed with my second copy that that's
21 the one that I have. Perhaps Mr.Hodgson and I
22 could discuss this and we'll sort it out with the
23 witness.

24 THE WITNESS: I think the Region
25 has both the draft and the final together. I'll



1 check which is which. It's only the numbers, not
2 the species, that change.

3 BY MS.CRONK:

4 Q. And just to finish off then
5 on that point, Miss Hellas -- you seem to have
6 a clear understanding of what the southern boundary
7 is -- you told Mr.Garrod yesterday, as I understood
8 it, that by virtue of the operation on those lands
9 there would necessarily be an ancillary disturbance
10 of the vigour of the biological communities immediately
11 to the south.

12 A. Yes.

13 Q. So that when we're looking
14 at the lands of Biological Significance and the
15 flora of Biological Significance that would be
16 subjected to the landfilling and included within
17 the quarry area, we're talking about more than
18 a third, aren't we?

19 A. Yes.

20 Q. Because you'd have to pick
21 up the added area that would naturally be disturbed --

22 A. Yes.

23 Q. If we could just spend a
24 few moments then looking very briefly at the
25 biophysical features that were not discussed in



1 some detail with you by Mr. Garrod, and I'm thinking
2 particularly of wildlife in the aquatic system,
3 and apropos of the discussion concerning the movement
4 of deer and other wildlife species on Site F, am
5 I correct that in terms of the general categories
6 of biophysical features that are significant on
7 any of these sites, Site F and Site D, you looked
8 at the wildlife, aquatic systems, and the vegetation
9 community types and plant types on each site --
10 those are the four categories that we're talking
11 about?

12 A. Yes.

13 Q. And dealing just with wildlife,
14 can you confirm for me that your opinion, as reflected
15 in your written reports with respect to Site F,
16 is that there's nothing unusual or uncommon about
17 any wildlife species on Site F?

18 A. That's right.

19 Q. And can you confirm for me
20 as well -- based again on what you said in your
21 written report -- that it is also your opinion
22 that landfilling at this site, notwithstanding
23 what you said about corridor movement or corridor
24 effect, would present no danger to the survival
25 or continuance of any wildlife species on that



1 site?

2 A. That's correct.

3 Q. And let's just talk about
4 the corridor movement for a moment. You suggested,
5 as I heard you, to Mr. Kingham in response to a
6 question from him, that the deer on the property
7 -- which I take it are associated with the woods
8 in the quarry?

9 A. Well, they like 'edge' --
10 they browse on buds, and so if the forest is too
11 mature there's no food. They like 'edge' communities.
12 They like to move through the forest for shelter
13 and protection and naps and such, but they like
14 the 'edge', where there's younger growth, for browsing.

15 Q. My only point was -- they
16 wouldn't hold the quarry pit in great affection?

17 A. No.

18 Q. We would more typically find
19 them in the forest areas on site?

20 A. Yes.

21 Q. And similarly in terms of
22 their current pattern of movement, you have indicated
23 they're blocked at the south, as all wildlife is
24 on the site, clearly, by Highway 403?

25 A. Yes.



1 Q. And I thought you had suggested
2 that they would likely move to the east -- and
3 just to finish the question on that, were that
4 the case, after they left Bayview Park they'd be
5 running right into another quarry operation that's
6 actively being used, isn't that so?

7 A. Deer are unusual. If there
8 are no people there they will often walk across
9 quarries and landfills. I have seen deer on landfills.
10 It's when it's actively being used that it disturbs
11 them, when the human element is actually active.
12 But what you often find in a quarry location is
13 around the edge there is browse, so they would
14 be moving in here. Probably, if they did come into
15 this area they wouldn't sort of go right through
16 the middle of it, by any means, but there's nothing
17 to say that they may not be skirting the edge.
18 I did not go onto here and look.

19 Q. It is that that forms an
20 impediment for them to their freedom of movement
21 in that area?

22 A. Yes.

23 Q. And with respect to the quarry
24 area generally could I ask you to go again to your
25 Comparative Report and look at page C-15, Schedule



1 of similar habitats in the area
2 that is not proposed for landfilling,
3 and the nearby Sassafras Woods,
4 the landfill would not be detrimental
5 to the survival of a particular
6 species and would have only minimal
7 effect on the numbers of the species.

8
9 And then, dealing with
10 specifically the issue of movement, you said:

11 In addition, because of the Highway
12 403 complex to the south of the
13 site which acts as a barrier, movement
14 of animals would not be significantly
15 adversely affected by the proposed
16 landfill. Most animals would utilize
17 the Sassafras Woods to the west
18 and immediately to the north of
19 the site.

20 A. Yes.

21 Q. I take then that it is your
22 opinion that were landfilling to occur at Site
23 F, it would result simply in a directional change
24 to the movement of the deer and the other wildlife
25 and they would head to the Sassafras Woods to the



1 north?

2 A. They probably just wouldn't
3 head south.

4 Q. And they wouldn't head far
5 east either -- is that correct?

6 A. Yes.

7 Q. And then on the second category
8 of biophysical features that you specifically addressed
9 with respect to Site F -- and that's the Aquatic
10 Systems -- could I ask you to confirm with respect
11 to your opinions in that area -- well, first to
12 the factual matter. There are no areas of permanent
13 flowing water in Site F, isn't that so?

14 A. Not within the area to be
15 landfilled.

16 Q. And you have concluded, as
17 I read your reports, that any run-off from the
18 site could be managed without any difficulty in
19 the course of normal management procedures for
20 run-off?

21 A. Yes.

22 Q. And you referred in your
23 evidence specifically to the flowing water on the
24 site, which is located at the most easterly ravine
25 on the site, is that correct -- that's the physical



1 C?

2 A. Yes.

3 Q. And under the Corridor section,
4 if you look under the column dealing with Site
5 F, Miss Hellas, your opinion, as expressed in this
6 report, was that some animals might be disrupted
7 in movement and:

8 ...wildlife movement to the south
9 of the site does not occur, and
10 east-west movement, because of the
11 presence of the Sassafras Woods,
12 and the area that is excluded from
13 landfilling should not be significantly
14 affected.

15 A. Yes.

16 Q. That was your opinion at
17 the time you wrote this report?

18 A. Yes.

19 Q. And that's your opinion today?

20 A. Yes.

21 Q. And if we look at your comments
22 with respect to Site D, you've suggested that as
23 well there will be disruption of animal movement
24 at that site?
25



1 A. Yes. But just looking at
2 the two sites, there are fewer animals that use
3 D. There are animals on site but there's no indication
4 now that they are moving through the site to some
5 other place. They are on the site but there's no
6 real indication that they are actively using the
7 site to get from one location to another.

8 Q. Well, at the risk of being
9 over-simplistic, Miss Hellas, if you put a landfill
10 operation in either of these sites you're quite
11 naturally going to decrease the freedom of the
12 animals that previously used the land?

13 A. You're right.

14 Q. And could I ask you to look
15 at page C-9 as well, please?

16 And the last paragraph on
17 page C-9, I take it, sets out and amplifies somewhat
18 your opinion with respect to the wildlife situation
19 on Site F?

20 A. Yes.

21 Q. And you've indicated again
22 that:

23 Due to the mobility ranges, seasonal
24 movements and activities of the
25 wildlife species and the availability



1 location of it?

2 A. Yes.

3 Q. And that is close to the
4 former Bayview landfill park which has now been
5 closed?

6 A. Yes.

7 Q. And that channel is fed,
8 I suggest, by springs that occur in the southern
9 slope of Bayview Park?

10 A. Yes.

11 Q. And it is true, is it not,
12 Miss Hellas, that today that area of water on the
13 site is both discoloured and has a distinct odour,
14 no doubt as the result of escape from Bayview
15 Park?

16 A. When I did my field work
17 that was the case.

18 Q. So far from being of any
19 biological significance, there's a pollution problem
20 with it today?

21 A. When I did my field work.

22 Q. And in consequence is it
23 then your overall opinion with respect to the water
24 conditions on the site that there is a "nil" impact
25 rating and there's no difficulty at all, that is



1 on that issue, with this item?

2 A. That's correct.

3 Q. Now there has been some
4 discussion as well from all sources, or a number
5 of sources, in the last day or two, with respect
6 to what has been called "the use of recreational
7 vehicles" on the site, and I think earlier in your
8 evidence, in your evidence in chief, you pointed
9 out that in fact, even from the air, as reflected
10 by the aerial photographs, you can see the trail
11 bikes' paths that have developed on the site. Could
12 you point those out?

13 A. They're the white lines.

14 Q. As part of your assessment
15 and review of this property, Miss Hellas, did you
16 examine historical aerial photographs of the site?

17 A. I looked at 1972, perhaps
18 '64 and I think it was '68.

19 Q. Is it fair to say that with
20 the progression of time reflected by those aerial
21 photographs, the trail bikes, in fact, have become
22 much more prominent -- the paths -- and there has
23 indeed been a proliferation of those paths on the
24 site?

25 A. Over that period of time



1 that has been the case.

2 Q. And continuing today with
3 the aerial photograph now before us?

4 A. Yes.

5 Q. And would it be fair to suggest
6 as well, Miss Hellas, that whether or not the owner
7 was open to having trail-bike riders on the property
8 and using the property, the fact is that the land
9 has been significantly disturbed by their usage
10 of it?

11 A. Yes.

12 Q. And that disturbance, I suggest,
13 has two impacts in objective terms in a biological
14 or biophysical perspective. The first is that naturally
15 it disturbs the wildlife when it's operating --
16 is that so?

17 A. To a certain extent, it does.

18 Q. And, secondly, it disturbs
19 the natural vegetation communities and the natural
20 flora?

21 A. Yes.

22 Q. With respect to the topography
23 and the terrain of Site F, which you've described
24 for the Board, Miss Hellas, in general terms the
25 topography is quite variable, I take it from your



1 evidence?

2 A. Yes.

3 Q. Did you, as part of your
4 assessment of Site F, in fact do a similar analysis
5 or study of the lands located to the east of the
6 old Bayview Park landfill site?

7 A. The quarried area?

8 Q. And to the north of that
9 -- did you look at their plants?

10 A. No, I didn't.

11 Q. And similarly, was any of
12 that work done by you for the lands to the north?

13 A. I walked through the northern
14 portion of Sassafras Woods.

15 Q. And beyond that?

16 A. I didn't walk through it.
17 I did drive up through there but I didn't walk
18 through it.

19 Q. And what about to the west
20 of Sassafras Woods and the quarry area to the west
21 of the site -- there was no investigation done
22 there either?

23 A. No.

24 Q. Would it be fair then to
25 suggest that to the extent that the topography



1 or the terrain evident on Site F may continue to
2 the east, we're not in a position today to identify
3 which floral species exist both on Site F and,
4 as well, to the east?

5 A. That's correct.

6 Q. And similarly, because
7 investigations were not done to the north of the
8 Sassafras Woods to the extent there is a commonality
9 between floral species on Site F and the lands
10 to the north, we're not in a position to identify
11 those?

12 A. That's correct.

13 Q. And, again, to the west that
14 would be so?

15 A. That's correct.

16 Q. So that when you have spoken
17 in your evidence about the concept of various floral
18 species, for example, being lost -- I'd like to
19 be very clear about it -- I take it you're saying,
20 first, that they are "lost" in the sense of lost
21 to the lands that will be landfilled?

22 A. Yes.

23 Q. You did not mean to suggest
24 that they would be lost to the balance of Site
25 F necessarily?



1 A. That is correct.

2 Q. Nor, based on what you've
3 just told us, did you mean to suggest that they
4 would be lost to the immediate environs of the
5 site, because you haven't examined those?

6 A. Since I haven't examined
7 them, I don't know.

8 Q. Indeed. And you recall that
9 Miss Vigod, during her questioning of you, took
10 you specifically to your Vegetation map, Exhibit
11 H-18 -- you may or may not wish to have this in
12 front of you -- and spoke with you about the oak-
13 hickory concentrations on Site F. I'm not sure
14 that you need, as I say, that map in front of you,
15 but I would like you to have the Options map in
16 front of you from Exhibit H-18 -- that's at page
17 105.

18 You recall that Miss Vigod
19 put to you -- and I believe you agreed with her
20 -- that under Option No.3 as now proposed by the
21 Region, 50 percent of the oak-hickory concentration
22 on Site F would be lost. Do you recall that discussion?

23 A. Yes, I do.

24 Q. I suppose that depends on
25 your perspective, Miss Hellas. If you have a glass



1 of wine that is 50 percent reduced, some may say
2 it's half empty, some would say it's half full?

3 A. That is correct.

4 Q. But I would ask you to look
5 at Option 1 -- and can we agree, as is perhaps
6 self-evident just from the depiction of Option
7 1, that that Option, the landfilling at Site F,
8 clearly would be the most dramatically adverse
9 from a biological perspective on this site?

10 A. Yes.

11 Q. And that flows simply from
12 the fact that most of the site would be taken up
13 by landfilling per se?

14 A. Yes.

15 Q. And then if you look at Option
16 No.2, Option 2 has two discrete blocks of land
17 that were proposed for landfilling, and I suggest
18 to you, and I'd ask if you agree, that Option No.2
19 as well had much more significantly adverse impact
20 from a biological perspective than does Option
21 3?

22 And let me suggest to you,
23 for example, that Option 3 has the advantage of
24 preserving that part of the oak-hickory concentration
25 that is located to the southeast of the site, through



1 which, under Option 2, the second block of land
2 would run?

3 Are you following me?

4 A. No, I'm sorry, I'm not.

5 Q. All right, I'll be back.

6 Let's take a look at Option
7 No.2. And what I'm suggesting to you is that from
8 a biophysical point of view Option No.2 had more
9 severe impact for Site F than does Option 3. It
10 contemplates, first, that the top block, etched
11 in black, would be subject to landfilling.

12 A. Yes.

13 Q. First, that would not take
14 in all of the quarried areas on the site, is that
15 not so?

16 A. That's correct.

17 Q. Secondly, it would clearly
18 take in any areas of biological significance located
19 in that quarry?

20 A. That's right.

21 Q. Thirdly, it would create,
22 would it not, as a natural result of landfilling
23 there, drainage problems and concomitant problems
24 that would slow down the balance of the site simply
25 because you had landfilling at the north, it would



1 affect the southern part of the site?

2 A. I don't know about the drainage.
3 I would hope that if that has any option, that
4 the drainage would have been managed.

5 Q. It would also take up, under
6 Option No.2 -- it would leave free part of the
7 oak-hickory concentration that's located at the
8 south --

9 A. Yes.

10 Q. -- until you move into the
11 second landfill block, isn't that so?

12 A. Yes.

13 Q. And part of that oak-hickory
14 concentration would then be picked up in the second
15 landfill block?

16 A. Yes.

17 Q. And, as well, you would lose
18 the plantation?

19 A. Yes.

20 Q. And what you would end up
21 with, in effect, I suggest, Miss Hellas, under
22 Option No.2, is a triangle of landfill areas at
23 or near Site F, with only the bottom flank of which
24 would not be consumed by landfilling?

25 A. That is correct.



1 Q. And I suggest to you then
2 that Option No.3 was specifically designed to take
3 into account and to respond to the biologically
4 sensitive areas on Site F?

5 A. It took into consideration --
6 both Option 2 and Option 3 were put forward for
7 the biological considerations, but that a final
8 decision in terms of Option 3 -- my understanding
9 was based on the engineering of the site.

10 Q. I understand. But I'm suggesting
11 to you that the effect as well of Option No.3 has
12 been to minimize, as compared to Options 1 and
13 2, the negative impact on the biological and
14 biophysical features of the site?

15 A. As compared to 1. In Option
16 2 the portion that remains is the portion that
17 does have -- if I can use the word -- the best
18 representative unit of the vegetation in terms
19 of the diversity and the concentration of rare
20 plants. It may not be a larger area, but it has
21 a better representative unit.

22 Q. Indeed it's a smaller area,
23 is it not?

24 A. In terms of the wooded area
25 in general; not necessarily in terms of the oak-hickory



1 area.

2 Q. My only point simply to you
3 is that Option No.3 will have the effect, whether
4 it was its primary intention or not, of minimizing
5 the forest lots on Site F?

6 A. Over Option 1, yes.

7 Q. And over Option 2, isn't
8 that correct -- or can we not agree?

9 A. I just don't know, because
10 I haven't really determined the areas of that,
11 I'm sorry.

12 Q. All right. You can't help
13 us one way or the other?

14 A. No.

15 Q. And then with respect to
16 Site D and its vegetation configuration, there
17 is a forest located on Site D -- I'm not sure that
18 you need it, but I have the overlay on it -- there's
19 a forest on Site D comprised of part of white oak
20 and shagbark hickory as well, isn't that so?

21 A. Yes.

22 Q. Could you just point out
23 to the Board, Miss Hellas, where those concentrations
24 are on Site D?

25 A. If you look in the Site D



1 Report you can see that oaks and hickories were
2 recorded from both of the areas.

3 Q. In both of the woodlot areas?

4 A. Yes, in both of the woodlot
5 areas.

6 Q. And am I correct that the
7 area for landfilling, as proposed by the Region
8 for Site D, would take up part of that oak-hickory
9 concentration on that site?

10 A. Yes, it would.

11 Q. There has been some discussion
12 in your evidence, Miss Hellas, with respect to
13 the what I might call "the fluid nature of classifying
14 plants", and I think in your evidence in chief
15 you told Mr.Hodgson that the process was in fact
16 what you called a "dynamic" one, do you recall
17 that?

18 A. Yes.

19 Q. And I take it that that simply
20 means that at any point in time the list of rare
21 or significant plants could include plants A, B
22 and C, but a year later or two years later it might
23 include A, B, C, D and E, or just A and B -- it's
24 in a state of flux?

25 A. Yes.



1 Q. In other words, what was
2 a rare plant in 1982, as we have seen, might not
3 be a rare plant in 1984 or 1986?

4 A. Yes.

5 Q. Or 1999 or 1990?

6 A. There is that possibility.

7 Q. And I suggest that in the
8 evidence we've heard we've in fact had a number
9 of direct examples of that and specifically, now
10 that it has been marked, you will recall that the
11 Proctor & Redfern report regarding Site F has been
12 marked as Exhibit WB-107, and as I understand it,
13 that report was prepared in March of 1982?

14 A. Yes.

15 Q. And can you confirm for me
16 that its preparation was part of the Environmental
17 Study work that was undertaken in support of National
18 Sewer Pipe Limited's application for a private
19 landfill site on Site F?

20 A. Yes.

21 Q. And can you confirm for me, as
22 well, that although the report is dated March,
23 1982, in fact the field study work that was
24 done, the data that was collected and the field
25 observations, was done in the spring and summer



1 of 1981?

2 A. Yes.

3 Q. And further, to the extent
4 that the report also relied on work done by Mr. Crins,
5 as you have in your report, that part of his work
6 that was relied on in the Proctor & Redfern report
7 was done in 1978 and 1979?

8 A. A portion of it. He did an
9 update of a portion in '81. He includes an update
10 for '81 but most of it was at that time.

11 Q. So that the data provided
12 in the Proctor & Redfern report, based on their
13 field observations and information supplied by
14 Mr. Crins, in fact ranges from six to nine years
15 -- it is data that is six to nine years' old?

16 A. Yes.

17 Q. And it's a fact, is it not,
18 that in the March, 1982 Proctor & Redfern report
19 eight rare plants were identified and sited on
20 Site F?

21 A. Yes.

22 Q. And that by the time you
23 came to do your Stage 2C Report those eight had
24 dropped to two?

25 A. Yes.



1 Q. And by the time you did your
2 Summary Report in the Comparative Analysis they'd
3 gone up to three, plus or minus one depending on
4 how you look at...

5 A. Yes.

6 Q. So we have a situation then
7 that depending on the 'time window' that you take,
8 there may be a larger or lesser or even amount
9 of rare plants compared to the prior period that
10 you examined?

11 A. Yes.

12 Q. And that's a process, I take
13 it, that continues throughout the matter of scientific
14 classification?

15 A. Yes.

16 Q. One final matter, just as
17 a follow-up to some of the questions asked of you
18 by Mr.Dahme.

19 Could I ask you to turn to
20 Exhibit H-17, which is the report on Site D?

21 A. Yes.

22 MS.CRONK: I expect to be no
23 more than ten minutes. Do you prefer that I continue?
24 I'm conscious of the time.

25 THE CHAIRMAN: Yes, you may continue.



1 BY MS.CRONK:

2 Q. Could I ask you to turn to
3 page 91 in your report?

4 A. Yes.

5 Q. If I'm reading the report
6 correctly, Miss Hellas, you have discussed at some
7 length and in some detail the bird control measures
8 that may be needed and the circumstances that apply
9 at Site D with respect to the potential bird problem,
10 at pages 91 through 117 of this report?

11 A. Yes.

12 Q. And you've indicated to Mr.Dahme,
13 and indeed in this report, that the presence of
14 birds at a landfill site, wherever it might be
15 situate, is a vermin problem --

16 A. Yes.

17 Q. -- that's how you have classified
18 it, correct?

19 A. Yes.

20 Q. And you have also indicated
21 in this report, as I understand it, that you can
22 never eliminate, from a biophysical point of view,
23 the problem caused by birds at a landfill site,
24 but what you can try to do is to minimize the adverse
25 effects?



1 A. Yes.

2 Q. The fact is that the problem
3 of the attraction of and the proliferation of
4 birds at a landfill site is one that, as history
5 relates at other landfill sites, is common, and
6 you can't eradicate it completely despite the best
7 efforts in the world?

8 A. Yes.

9 Q. I'd like to take you, for
10 the benefit of the Board, briefly through some
11 of the conclusions that you've expressed concerning
12 this problem, particular to Site D.

13 And may I suggest to you
14 first, Miss Hellas, that the issue of an airfield
15 near a landfill site, wherever it be, raises issues
16 not only of biophysical importance but, as well,
17 of safety, public safety?

18 A. Yes.

19 Q. And clearly then, in terms
20 of its Environmental Assessment features, you have
21 looked at it purely from the biophysical point
22 of view, but there's another dimension to it as
23 well?

24 A. In terms of the classification
25 of the categories of our study, yes. I've looked



1 at it from how they get there and how we may keep
2 them from being there.

3 Q. Simply put -- the greater
4 the number of birds, the greater the risk of collision,
5 and therefore the greater potential danger to the
6 public?

7 A. Yes.

8 Q. Both to the people who live
9 in the community and the people who utilize the
10 area?

11 A. I'm not aware of any sort
12 of documented increase in danger to the general
13 public as a result of the operation of the landfill,
14 but --

15 Q. I'm sorry, I think perhaps
16 you misunderstood. I meant by risk of collision
17 which naturally follows.

18 A. Oh, collision of a small
19 plane, yes.

20 Q. If we could then go through
21 some of the issues you have set out in your analysis
22 of this issue, and you have indicated at page 91
23 that Transport Canada, for example, considers the
24 problem of sufficient dimension that it has issued
25 guidelines recommending against having a food garbage



1 disposal landfill within eight kilometres of any
2 airport, isn't that correct?

3 A. Yes.

4 Q. And Burlington Air Park,
5 in fact, in this case, is three point five kilometres
6 away from Site D, isn't that so?

7 A. Yes.

8 Q. Well within the eight kilometre
9 range suggested as a guideline by Transport Canada?

10 A. Yes.

11 Q. And you have also indicated,
12 over at page 92 -- and I think you confirmed this
13 for Mr.Dahme this morning -- that in the past five
14 years there has been an increase in the population
15 of gulls in the Lake Ontario Basin area by almost
16 three-fold?

17 A. Yes.

18 Q. And more specifically, the
19 population of gulls in the Hamilton Harbour area
20 has been increasing significantly over the last
21 several years?

22 A. Yes.

23 Q. How far is Site D from Hamilton
24 Harbour?

25 A. It's twenty kilometres. It's



1 on page 94. The second from the bottom paragraph.

2 Q. And I see that you have indicated
3 as well that it's approximately sixteen kilometres
4 from Lake Ontario?

5 A. Yes.

6 Q. So do I understand it correctly
7 then, Miss Hellas, that not only has there been
8 a general population surge in the gull population
9 group, but in addition, specific to Hamilton Harbour,
10 there has been documented growth of 300 percent
11 in the last several years -- three-fold?

12 A. I don't know specifically
13 in terms of "three-fold". I do know that in '76
14 there were 50 breeding pairs and in '85 there were
15 14,000. But in terms of whether or not...

16 Q. But in any event, there's
17 been a general increase, and in Hamilton Harbour
18 specifically there has been an increase?

19 A. Yes.

20 Q. And that has been documented?

21 A. Yes.

22 Q. There is also evidence, I
23 suggest to you, that would indicate that the presence
24 of a landfill site can extend the season for bird
25 congregation beyond that which would normally apply,



1 isn't that so?

2 A. Yes.

3 Q. And that extends to the foragers
4 -- to the gulls and the hawks and birds in those
5 categories as well as other types of birds?

6 A. Generally to the bird population.

7 Q. And is there not evidence
8 as well that agricultural lands of the type existent
9 in Site D and in the environs of Site D, of and
10 in themselves hold a particular attraction for
11 bird congregations?

12 A. Any agricultural land that's
13 ploughed on a regular basis has that attraction.

14 Q. Well and indeed, with respect
15 to Site D, have you not reported that there is
16 already a proliferation of bird types in the area?

17 A. Yes.

18 Q. And in fact there are gulls,
19 hawks and a number of other forager-type birds
20 in the area?

21 A. Yes.

22 Q. Some of which, you have indicated
23 in your report, breed in the vicinity of Site D?

24 A. There are indications --
25 not on Site D -- but there are indications that



1 there are species in the vicinity, but not of gulls.

2 Q. But certainly a number of
3 the other species that you have reported upon in
4 your report?

5 A. I would have to go back and
6 check which ones. I don't remember.

7 Q. All right. Well, perhaps
8 you could do that over the break, I won't take
9 the time now, but your chart is at page 57 and
10 I would ask you just to go through that and confirm
11 that one way or the other after the break.

12 I suggest to you then, Miss
13 Hellas, that in examining the issue of the air
14 park and the bird vermin problem at Site D, Site
15 F has two advantages. First, clearly, it is not
16 agricultural land, as in Site D?

17 A. That's correct.

18 Q. And, secondly, it's not anywhere
19 near an air park, as is Site D?

20 A. That's correct.

21 Q. And it is a larger distance
22 from the Leslie Street Spit and Hamilton Harbour
23 than is Site D?

24 A. It's a larger distance to
25 the Leslie Street Spit but closer to the Hamilton



1 Harbour.

2 Q. Than Site D is?

3 A. Yes.

4 Q. All right. Now what's the
5 distance between Hamilton Harbour and Site F?

6 A. I haven't measured it, but
7 I can show you on that overhead -- or if you look
8 on page 93 in the Site D Report -- and that map
9 with Site F is someplace in the Site F Report.

10 Q. All right. Thank you. So
11 looking then just at Site D, you've located on
12 this map for us the location of Burlington Air
13 Park, Hamilton Harbour, Lake Ontario and the Leslie
14 Street Spit?

15 A. Yes.

16 Q. And I think you testified
17 in chief that the Leslie Street Spit area is within
18 daily flying distance for the types of bird species
19 about which you would be concerned?

20 A. Yes.

21 Q. And clearly Hamilton Harbour
22 and Lake Ontario are?

23 A. Yes.

24 Q. And then with respect to
25 the mitigation measures that you've proposed, that



1 might be reviewed for implementation at Site D,
2 that discussion begins over at page 102 of your
3 Report?

4 A. Yes.

5 Q. And as I read it you have
6 essentially indicated, Miss Hellas, and I'd ask
7 for your confirmation in this regard, that there
8 are three methods that might potentially be used
9 to prevent birds from congregating, or to disperse
10 birds once they have congregated, and the three
11 methods are: scaring, removal and habitat manipulation?

12 A. Yes.

13 Q. And you then describe, in
14 the next twenty or so odd pages of your report,
15 the circumstances involving each method and whether
16 or not they would be practicable for Site D?

17 A. Yes.

18 Q. And with respect to them
19 -- and we can go through this if you wish, but
20 perhaps we can now agree that with respect to
21 the first method, scaring, you have reported upon
22 various visual techniques that might be available,
23 as well as acoustical techniques, but in essence
24 you have concluded that they are unlikely to be
25 successful with respect to Site D and are impracticable



1 for this site for various reasons?

2 A. They are unsuccessful in
3 terms of eliminating birds at Site D. I do recommend
4 that at the air park they may be implemented for
5 short-term dispersal.

6 Q. As history shows and as reported
7 upon in your report, they are usually of only short-
8 term benefit, are they not?

9 A. Yes.

10 Q. And they are not reliable
11 as an ongoing solution for bird congregations?

12 A. The Toronto Island Airport
13 makes use of them on an ongoing periodic basis.
14 They don't use them daily or every hour, but when
15 there are congregations they do make use of them.

16 Q. They have not been instituted
17 at landfill sites in the past?

18 A. No.

19 Q. And then moving to the second
20 category of removal techniques, again we can go
21 through it, but can we agree that that technique
22 essentially contemplates population reduction?

23 A. Yes.

24 Q. And that there are serious
25 environmental issues associated with that approach?



1 A. Yes.

2 Q. And therefore disadvantages?

3 A. Yes.

4 Q. And quite apart from the
5 risk of contamination that may flow to the environs
6 where the population reduction measures are taken.
7 It involves, quite simply, killing the birds?

8 A. Yes.

9 Q. And it also involves killing
10 other wildlife perhaps as a result of the poison
11 techniques developed for controlling the bird
12 population?

13 A. There is that potential.

14 Q. And as I understand your
15 report, you are not recommending these methods
16 as practicable or desirable for Site D?

17 A. That's correct.

18 Q. And coming then to the last
19 technique that is discussed in your report -- that's
20 habitat manipulation, is that correct?

21 A. Yes.

22 Q. And you've outlined a number
23 of methods that have been used at various locations
24 and you have suggested that there are a number
25 of efforts that might be undertaken here to try



1 to control the problem?

2 A. Yes.

3 Q. And are we not then in a
4 situation, based on the various type of control
5 measures that are scientifically known and available,
6 that this method has to work, because the other
7 two are unlikely to effectively control the population?

8 A. None of the methods will
9 control the population. The population size is
10 based in Lake Ontario. It's the 'loafing' numbers,
11 it's not really the size of the population. The
12 habitat manipulation and the landfill housekeeping
13 activities are the main mechanisms for minimizing
14 or trying to control the 'loafing' populations,
15 whereas scaring is suggested as a short-term mechanism
16 for dispersal.

17 Q. Well, I suggest merely that,
18 for various reasons, the hope of containing the
19 problem at Site D rests on this third technique
20 in large part?

21 A. The effort is not just to
22 contain the problem at Site D, it's to reduce the
23 problem at Site D, and hopefully, by introducing
24 some of these measures at the air park, to reduce
25 any potential problems there.



1 Q. And one of the measures that
2 you've suggested as part of that, the habitat
3 manipulation category for reducing the problem,
4 is introduction of what you describe as a portable
5 net-cage over the landfill?

6 A. I have said that this has
7 been used very successfully in England, and I don't
8 suggest it specifically but I do say that it has
9 had some effect in those locations.

10 Q. Has it ever been used in
11 Canada insofar as you're aware?

12 A. No.

13 Q. And has any effort been made
14 by you to cost the implications of that kind of
15 a technique?

16 A. No.

17 Q. And finally, Miss Hellas,
18 as I read your report, from time to time I thought
19 you were suggesting that it was possible that a
20 landfill would increase the population of birds
21 in the area in which the landfill was situated.
22 I suggest to you that it is probable that a bird
23 population will inevitably increase as a result
24 of the landfill?

25 A. On a daily basis, not in



1 terms of inhabiting, but in terms of foraging and
2 'loafing', yes.

3 Q. And given the pre-existing
4 conditions at Site D, namely agricultural land,
5 number one, and, two, the nature of the terrain
6 in the vicinity of Site D, that result, I suggest,
7 would be inevitable, there can be no doubt?

8 A. Yes.

9 MS.CRONK: Thank you. I have
10 no further questions.

11 THE CHAIRMAN: Thank you, Miss
12 Cronk.

13 Mr.Hodgson, will you have
14 re-examination?

15 MR.HODGSON: Yes, I will, Mr.Chairman.

16 THE CHAIRMAN: We'll adjourn
17 for fifteen minutes.

18
19 --- (THE HEARING RECESSED FROM 11:25 TO 11:40 A.M.)

20 --- (UPON RESUMING:)

21 RE-EXAMINATION BY MR.HODGSON:

22 Q. Just to go back to this map,
23 just so the record can be clear -- do you now have
24 a copy of the map HL-f4?

25 A. I did have.



1 Q. Would you refer to that map
2 and refer to Miss Cronk's large exhibit -- I'm
3 reminded it's my map!

4 Would you just please tell
5 the Board what numbers on Exhibit HL-f4 correspond,
6 in your opinion, with this bottom line on Exhibit
7 42B, drawing 1-r?

8 A. It's 6, 7 and 15.

9 Q. So the "6" you're referring
10 to is the "6" to the west and not the "6" in the
11 middle north, is that correct? There's a "6" in
12 the middle north.

13 A. It's the "6" immediately
14 below the "12" "20" "17" grouping.

15 MR.HODGSON: Is that clear, Mr.
16 Chairman, or would you like to have the witness
17 take one of your maps and mark it?

18 DR.KINGHAM: We have it marked
19 on our map, thank you.

20 MR.HODGSON: All right. Then
21 it's just me that was confused!

22 THE CHAIRMAN: I was going to
23 say, as well, I don't think there is a "56" on
24 this particular one.

25 BY MR.HODGSON:



1 Q. Then, Miss Hellas, two of
2 my friends have shown some interest in the potential
3 bird problem should Site D be constructed, as it's
4 somewhat in the vicinity of an existing operating
5 airport.

6 Have you had an opportunity
7 to inquire as to whether birds have been successfully
8 mitigated at other airports?

9 A. Birds have been mitigated
10 at the Toronto Island Airport. At the Maple Airport
11 as yet they haven't introduced any mitigation.

12 Q. But is the Keele Valley Landfill
13 currently in operation near the Maple Airport?

14 A. Yes, it is.

15 Q. And the Maple Airport, to
16 your knowledge, has continued its operation?

17 A. Yes, it has.

18 Q. And I think that with respect
19 to the birds that nest and congregate upon the
20 Leslie Street Spit, I think it can be taken that
21 the Leslie Street Spit is somewhat closer to the
22 Toronto Island Airport than to the Burlington Air
23 Park?

24 A. Yes, it is.

25 Q. And do you know approximately



1 the distance from the Spit to the Toronto Island
2 Airport?

3 A. I could scale it off the
4 map. I don't know it...

5 Depending on where you measure
6 it from, it's less than four kilometres, something
7 in that order, four or five kilometres.

8 Q. And how does that relate
9 to the distance between the Burlington Air Park
10 and any site that might be built at Site D?

11 A. Three and a half kilometres.

12 Q. So it's a slightly greater
13 distance, is that correct?

14 A. Yes.

15 Q. And I think you gave in your
16 evidence in chief the knowledge that you had about
17 traffic levels at the Toronto Island Airport.
18 Do you have any information about the kinds of
19 aircraft that fly in and out of Toronto Island
20 Airport?

21 A. There's light aircraft and
22 turbo-prop aircraft.

23 Q. And are gulls a potential
24 problem for turbo-prop aircraft?

25 A. Yes, they are.



1 Q. Is it the same kind of problem
2 as for jet aircraft?

3 A. Yes.

4 MR.HODGSON: Then, Mr.Chairman,
5 I wanted to put to the witness two documents, Exhibit
6 H-65 and Exhibit H-68A. If my friends want to dig
7 it out of the reports, there are three of them
8 behind you.

9 BY MR.HODGSON:

10 Q. Now before referring you
11 to these, Miss Hellas, do you have a copy of Exhibit
12 B-106, which is a letter on the letterhead of the
13 Halton Region Conservation Authority, which was
14 put into evidence yesterday by my friend, Mr.McQuaid?

15 A. I have it someplace.

16 Q. Well, perhaps you can just
17 take mine. All I want to ask you is -- that's a
18 letter addressed to Proctor and Redfern to the
19 attention of a Mr.Tate. Do you know Mr.Tate?

20 A. Yes, I do know who he is.

21 Q. And do you know who he acts
22 for in this proceeding?

23 A. He works for Proctor & Redfern,
24 who work for National Sewer Pipe.

25 Q. And could you just indicate



1 -- when did you become aware of the existence of
2 this letter to Mr.Tate from the Halton Region
3 Conservation Authority?

4 A. When Mr.McQuaid mentioned
5 it.

6 Q. Now, Miss Hellas, could I
7 ask you to refer to Exhibit H-65?

8 Miss Hellas, turning to page
9 little (i), the second page in the document --
10 the document begins:

11 The purpose of this report is to
12 record the concerns expressed by
13 public and private agencies, interest
14 groups and individuals who responded...

15
16 - I think that's a misspelling of "responded" --

17 ...to the draft Phase 2 Stage 2A
18 General Analysis Report of Halton's
19 Environmental Assessment. On September
20 20, 1983, a Public Information Centre
21 was held at the Regional Administration
22 building.

23 Now this document is entitled:
24 Submissions, Phase 2 Stage 2A, General Overview
25 Analysis, and you've given evidence about the work



1 that you did in Stage 2 in Stage 2A.

2 First, can you tell the Board,
3 were you at the Public Information Centre on September
4 the 20th, 1983?

5 A. Yes.

6 Q. In the paragraph above there's
7 a reference to "the draft Phase 2 Stage 2A General
8 Analysis Report". Can you tell me -- and can you
9 tell the Board, please -- was a draft of the Stage
10 2A Report which we have in evidence as Exhibit
11 H-10 -- was a draft publicly circulated in these
12 proceedings?

13 A. Yes, it was.

14 Q. Could you then indicate to
15 the Board, if you would, what is the origin of
16 Exhibit H-65? And place it, if you would, in the
17 context of how this Environmental Assessment Study
18 was conducted by the Walker Wright Young Associates
19 Limited group of consultants?

20 A. There were Public Information
21 Centres that were held prior to the writing of
22 the draft report, to make sure that any interests
23 or concerns of people or agencies were addressed.
24 The draft report was prepared and circulated
25 to anyone in the public who requested it, plus



1 all of the agencies, and they submitted written
2 comments, which were then reviewed and -- written
3 comments upon the report, in this case the 2A Report.
4 Each of these comments were reviewed and responses
5 were addressed to these comments, and, if appropriate,
6 modifications were made to the report to reflect
7 these comments.

8 Q. Were you personally part
9 of the group of persons who responded to comments
10 made by individuals and public agencies during
11 the course of this Environmental Assessment?

12 A. Yes, I was.

13 Q. And did that mean that you
14 received copies of the comments that were submitted
15 by various persons?

16 A. Yes, I did.

17 Q. Now on this same page that
18 I referred you to there are listed:

19 Submissions were received from the
20 following agencies and groups:

21 and I believe the sixth in the list is the Halton
22 Region Conservation Authority. And could I ask
23 you now to turn to page 10 -- and I'm going to
24 refer to the Halton Region Conservation Authority,
25



1 but I also wanted to refer you simply to the Ministry
2 of Natural Resources.

3 If you could tell the Board
4 -- on page 10 we have comments from the Ministry
5 of Natural Resources. Comment number 7 reads:

6 On Table 3 it should be noted in
7 column 2 that many E.S.A's have
8 been identified by MNR as areas
9 of natural and scientific interest
10 (ANSI)

11 And across the page, on page
12 11, three-quarters of the way down the page there's
13 a paragraph that reads:

14 Paragraph 3 - comment noted.
15 The MNR Areas of Natural and Scientific
16 Interest (ANSI) will be added to
17 Table 3 in the final report.

18
19 Could you advise the Board
20 as to whether or not you had any involvement in
21 the preparation of that comment?

22 A. I did. I prepared it.

23 Q. You prepared it? Thank you.

24 Did you also review the other
25 submissions that were put before the study team



1 after the Stage 2A draft report was publicly
2 circulated?

3 A. Yes.

4 Q. Could I ask you then to turn
5 to page 14 of Exhibit H-65? These are the comments
6 of the Halton Region Conservation Authority, and
7 I wonder if you could simply review these comments
8 to discern whether or not the Halton Region
9 Conservation Authority, at this stage of the
10 Environmental Assessment, brought to the attention
11 of the study team, and therefore to your attention,
12 their concern about designating portions of Site
13 F as an Environmentally Sensitive Area.

14 A. No, there's no comment regarding
15 that.

16 Q. Then could I ask you now
17 to refer to Exhibit H-68A? This is an Analysis
18 of Submissions, Phase 2 Stage 2B, Selection of
19 Candidate Sites.

20 Could you please advise the
21 Board how this document came into existence?

22 A. This document came into existence
23 in exactly the same manner as the 2A. There were
24 public meetings held to determine whether there
25 were any pieces of information or concerns that



1 we should be made aware of.

2 The document was written
3 in draft. It was circulated to the agencies and
4 to members of the public who requested it. These
5 comments were reviewed, responses made, and
6 modifications, if appropriate, incorporated in
7 the report.

8 Q. And if the Halton Region
9 Conservation Authority had commented on the draft
10 Stage 2B Report, their comments would be responded
11 to in this document, Exhibit H-68A?

12 A. Yes.

13 Q. Now, first of all, perhaps
14 you could look at page (ii) and discover for yourself
15 whether or not a submission was made by the Halton
16 Region Conservation at Stage 2B?

17 A. There's not one listed here.

18 Q. Thank you. Now could I ask
19 you to turn to page 19 of this document? Page
20 19 consists of comments from the City of Burlington,
21 and could you review the last paragraph on page
22 19 and compare it with whatever it is you read
23 into evidence yesterday?

24 A. It's identical.

25 Q. The City of Burlington, then,



1 at Stage 2B, expressed its concern about the amount
2 of information on P&Q1 -- that's Site F -- which
3 was collected primarily for the NSP application,
4 and whether or not that may in some way prejudice
5 the decision process in favour of its selection
6 for a landfill.

7 Now at page 20, the very
8 middle of the page, there's a response, study team
9 response:

10 "It was recognized that the large
11 amount of information available
12 for selected pits and quarries
13 could potentially prejudice the
14 selection process in Stage 2A and
15 (Stage) 2B. For this reason, the
16 same type and level of information
17 was collected from each pit and
18 quarry owner during the Stage 2B
19 evaluation."

20
21 Did you prepare that comment?

22 A. No, I didn't.

23 Q. Do you know who did prepare
24 that comment?

25 A. Mr.Walker's office -- Mr.Walker.



1 Q. Whose decision was it that:

2 "...the same type and level of
3 information was collected from
4 each pit and quarry owner during
5 the Stage 2B evaluation"?

6 A. I don't know for certain
7 whose decision it was. It was conveyed to me by
8 Mr.Walker.
9

10 Q. It was not your decision?

11 A. No, it was not.

12 MR.HODGSON: Thank you, Mr.Chairman,
13 those are all my questions.

14 THE CHAIRMAN: Thank you, Mr.Hodgson.

15 DR.KINGHAM: Are we going to be
16 returning at some stage to better understand this
17 page 19 in Exhibit H-68A? It seems that there is
18 in that comment a reference to the selection process,
19 which was touched on by Mr.Lederer in his earlier
20 comments, and I just wonder whether the significance
21 of the events described in this letter are going
22 to be dealt with further?

23 MR.HODGSON: Yes, they'll be
24 dealt with thoroughly, I am sure, when we have Mr.Walker
25 give evidence. We'll have Mr.Walker discuss completely



1 the process that he took this study team through.

2 DR.KINGHAM: But he is scheduled
3 to do that at the end of the process?

4 MR.HODGSON: That's right. At
5 the end of the Proponent's evidence in chief.

6 DR.KINGHAM: Thank you.

7 MRS.TANNER: Mr.Hodgson, one
8 thing that we have been discussing is, I believe,
9 to have a better contact -- the individual bits
10 of information that we're getting, and we were
11 wondering if there was any way that you could give
12 us a brief explanation again of the process? I
13 know Mr.Lederer has gone through this to some extent,
14 but specifically focusing for us on the weights
15 that were given to the different factors and how
16 they were chosen.

17 MR.HODGSON: Yes, we could do
18 that, but could we not do it today? Or at this
19 moment, at least? Can I have the lunch hour to
20 prepare?

21 THE CHAIRMAN: No, we don't need
22 it right away but...

23 MR.HODGSON: We would be happy
24 to do that. Could you expand a bit? Have I got
25 your entire concern or is it broader than that,



1 so we can focus exactly on what you...

2 MRS.TANNER: My colleagues may
3 want to add -- but we were interested in how the
4 different factors such as public safety was weighted
5 vis-a-vis biophysical or natural environment. And
6 we're interested also in the staging. And somehow
7 we seem to be not completely clear on how the
8 narrowing-down to the two sites was done.

9 DR.KINGHAM: This emerges partly
10 because in the cross-examination yesterday it became
11 obvious that the witness had not been involved
12 in some of the decisions as to the relative importance
13 of the biophysical factors and other factors, and
14 that suggested to the Board that these decisions
15 were important in how you went through the process
16 of narrowing the site selection. We felt it would
17 be useful to the Board if we knew what that process
18 was, so that we could place all of the evidence
19 that we receive in context.

20 MR.HODGSON: All right. I understand
21 two of the concerns: how the factors were weighted
22 and how the narrowing process was done.

23 What did you mean by the
24 concern about staging? Do you want to understand
25 just why the decisions were made to stage the study



1 in the way that it was done?

2 THE CHAIRMAN: Yes, if you would
3 review that again. It escapes us sometimes.

4 MR.HODGSON: I'd be happy to,
5 then.

6 THE CHAIRMAN: Many of these
7 reports are specific to a stage, and we just want
8 to make sure we've got it clear.

9 I think now would be a good
10 opportunity to break for lunch?

11 MR.HODGSON: Very well.

12 THE CHAIRMAN: I would say until
13 1:30.

14 If you want to make some
15 arrangement for the cross-examination of Dr.Mackintosh,
16 a little different than last week. He favours the
17 site...

18 MR.HODGSON: Perhaps, Mr.Chairman,
19 we should have that discussion before we go to
20 lunch and make sure that everybody is hungry!

21 MR.McQUAID: The Board had ruled --

22 THE CHAIRMAN: That's what I
23 did rule, yes, and I think that would work out.
24 That would be that what we might call "the Milton
25



1 group" go before "the Burlington group" -- shortly
2 stated. I think everybody understands that.

3 MR.HODGSON: It's not a problem
4 for us, of course. The order of cross-examination
5 is in your hands and in the hands of my friends.

6 MS.CRONK: Excuse me, Mr.Chairman,
7 just before you rise. I find this afternoon in
8 particular, but on other occasions, I will not
9 be able to be physically present at the hearing,
10 but I would take the opportunity now to tell the
11 Board that there's certainly no discourtesy intended
12 by that, and that when I cannot be here, Mr.Perrier
13 will be here on behalf of National Sewer Pipe,
14 I would ask that my absence not be taken as a
15 reflection of disinterest in any way or discourtesy
16 in any way.

17 MR.TIDBALL: Mr.Chairman, I also
18 make an apology like Miss Cronk. I also will not
19 be attendance this afternoon. I should advise the
20 Board that the Ministry has no questions of Dr.
21 Mackintosh.

22 THE CHAIRMAN: Thank you. Any
23 other comments before we adjourn?

24 1:30. Thank you.

25 --- (THE HEARING RECESSED FROM 11:55 A.M. TO 1:30 P.M.)



1 --- (UPON RESUMING AT 1:30 P.M.)

2 MR.LEITCH: Mr.Chairman, the
3 exhibits that I'll be referring to are H-7 -- that's
4 the Curricula Vitae; H-14, which is the green book,
5 Comparative Analysis; H-20, which is the After-Use
6 Report, Site D; H-100A, which is the document which
7 Dr.Mackintosh brought to the witness stand with
8 him, called: Agricultural Impact Assessments.

9 DR.KINGHAM: Sorry, is that
10 H-100 or H-100A?

11 MR.LEITCH: H-100A.

12 MR.HODGSON: I think I should
13 'come clean' and 'fess up on that, Dr.Kingham.
14 I started out referring to this in chief as "Exhibit
15 100" and then we numbered the pages 100A, 100B.
16 The witness told me at the end of the day that
17 since he'd numbered the pages, why was I wasting
18 everybody's time with my A's, B's and C's. So we
19 continued on Monday morning referring to it as
20 Exhibit 100, page 13, page 14. I think we should
21 revert to the witness's method throughout, but
22 we've now got a hybrid, because I think we got
23 as far as 100K on Thursday afternoon. But I don't
24 think it's going to matter.

25 MR.GARROD: Mr.Chairman, it would



1 matter, since there are 38 pages and only 26 letters!

2 DR.KINGHAM: So you're suggesting
3 we just call it H-100?

4 MR.HODGSON: H-100, and refer
5 to the page that we happen to be on.

6 MR.LEITCH: The final one would
7 be H-41, Mr.Chairman, which is the Technical Report
8 -- Design and Operations Report, Site D, Milton.

9
10 --- (DR.E.E.MACKINTOSH RETURNED TO THE STAND)

11 CROSS-EXAMINATION BY MR.LEITCH:

12 Q. I'd like to ask you some
13 questions arising from your Curriculum Vitae firstly,
14 and in particular your formal training and degrees
15 appear to be in Soil Science. I've had some difficulty
16 understanding the difference between agrology
17 and pedology and I would ask you to tell me what
18 Soil Science is essentially.

19 A. Well, the Soil Science training
20 that I have had is by and large related to soils
21 primarily for agricultural purposes.

22 Q. And does that mean you have
23 taken courses in the General Science -- Chemistry,
24 for instance?

25 A. Yes. Quite a number of courses
in Chemistry, Geology, Agriculture, etcetera.



1 Q. And Plant Biology, I take
2 it?

3 A. Yes.

4 Q. So that your area of expertise,
5 in a general way, spreads to General Science as
6 well as Agriculture?

7 A. Well, I would be getting
8 kind of rusty on some of my Physical Chemistry
9 at this point in time.

10 Q. I ask that specifically with
11 respect to some of the dynamics of the production
12 of methane gas in landfills. Do you have some
13 understanding of that?

14 A. Well, simply from the standpoint
15 of decomposition of organic matter in an anaerobic
16 condition, generating in that setting, or hydrogen-
17 sulphide gas, these sorts of things.

18 Q. So you can speak to that
19 in a general way, but you'll tell me what the limits
20 of your comfort are in that area?

21 A. Yes, certainly.

22 Q. And you belong to something
23 called the Canadian Land Reclamation Association,
24 and I take it that that's an association of persons
25 who are interested in reclaiming various kinds



1 of land through agriculture?

2 A. Well, it's much broader than
3 that. It's basically reclamation of lands for
4 agriculture, for re-establishing vegetation --
5 quite a large number of different interests.

6 Q. In particular I looked through
7 your Curriculum Vitae to see when your work on
8 agricultural rehabilitation had started. I think
9 the first thing I found, in order of time, was
10 in the technical reports which are listed -- Technical
11 Report No.12 at page 3, 1972, where you co-authored
12 a report with Mr.Chisholm on the Suitability of
13 Soils for Waste Disposal.

14 A. Yes.

15 Q. Did that have anything to
16 do with reclamation work or was that simply an
17 assessment of the suitability of the site to put
18 waste in?

19 A. As I recall that one, we
20 were looking more at the suitability of land as
21 a disposal medium.

22 Q. Well, then, the next thing
23 in terms of time that I found appeared at page
24 12, Technical Report No.57, and that's a report
25 prepared by your company, Ecological Service Planning



1 Limited in 1978, and I believe that I am correct
2 that that was a report studying the feasibility
3 of agriculture rehabilitation of the landfill site
4 that was previously proposed for Milton?

5 A. Yes, that's correct.

6 Q. So then am I correct that
7 your work in respect of rehabilitating landfill
8 sites really starts with that work?

9 A. Yes, that's true. And that's
10 1978.

11 Q. And as I again looked at
12 your Curriculum Vitae I concluded that generally
13 you dealt with two kinds of reclamations. One was
14 waste disposal sites and the other was a combination
15 of pits and pipelines?

16 A. Yes.

17 Q. And so far as I can tell
18 from looking at the list of reports, your work
19 has all been in the area of, as far as landfills
20 are concerned, reclaiming sites on a study basis,
21 you haven't actually done a 'hands on' reclamation
22 of a landfill site?

23 A. Do you mean 'hands on' --
24 developing the plan, carrying it through to the
25 actual inspection of construction and seeing what



1 2 of H-100, that you then moved to the Food Land
2 Guidelines, a policy statement of the Government
3 of Ontario on Planning for Agriculture, as your
4 basic guideline for proceeding with the work?

5 A. That is a part of it, certainly.

6 Q. I'd like to put the Guidelines
7 before you, if I may?

8 Do you have that before you?

9 A. Yes, I do.

10 Q. You make some reference in
11 the document to Section 3 -- in your Exhibit H-100.
12 And Section 3 is the section of the Guideline which
13 deals with Sorting Land Needs and in general the
14 process of deciding between alternatives?

15 A. Yes.

16 Q. And I take from the way your
17 evidence developed that when you had to sort this
18 project from the perspective of agriculture, you
19 went to that as a guide, as a reasonable way of
20 doing things?

21 A. Yes. I believe I indicated
22 that we had been doing agriculture assessments
23 for some time; that the process has been evolving;
24 and that, in fact, the points brought out in the
25 Food Land Guidelines here provide us with a good



1 basis; also a basis that reflects government policy
2 in terms of some of the critical areas.

3 --- EXHIBIT NO.M-114: Food Land Guidelines.

4 BY MR.LEITCH:

5 Q. Now this policy was issued by
6 the Government of Ontario in 1978?

7 A. Yes.

8 Q. And I understand that there is a
9 proposed draft which has been circulated with a view to
10 refining and further stating this policy, but it's not policy yet?

11 A. Yes, there is a draft in circulation.

12 MR.LEITCH: I must say, Mr.Chairman,
13 that in putting this together there has been a
14 transposition of pages 11 and 12 in Section 3.
15 I would ask you to have that in mind as I work
16 with it.

17 BY MR.LEITCH:

18 Q. The policy really starts,
19 as I understand it, with the classification of
20 the better agricultural lands and the principle
21 that they should be preserved where possible, is
22 that a fair statement?

23 A. Yes.

24 Q. And it then becomes more
25 specific as to its applications, and in Section



1 follows out the other end?

2 Q. Yes.

3 A. Yes, that's true.

4 Q. And if this plan that you've
5 put before us for the rehabilitation of Site D
6 went forward and it was monitored by your firm,
7 it would be the first of its kind that you had
8 done?

9 A. Well, there is another one,
10 that Owen Sound landfill, that we did several years
11 ago. I believe -- I'm not positive -- but I believe
12 that that in fact is in the rehabilitation stage,
13 although I'm not sure.

14 Q. That would be the report
15 that you did listed as No. 64 at page 12?

16 A. Yes.

17 Q. Development of Management
18 Guidelines for Agricultural Restoration of the
19 Owen Sound Sanitary Landfill Site?

20 A. Yes.

21 Q. And I take it from your answer
22 that you haven't been back to actually see what
23 has been done?

24 A. No, I haven't.

25 Q. It appears that there are



1 two kinds of reclamation works that you have
2 documented. One is the reclamation of land where
3 there has been no fill -- reclaiming, for instance,
4 quarry sites, but without there being any fill
5 in the way of garbage?

6 A. Yes, all of the pit and quarry
7 rehabilitation that we've done so far has been
8 essentially reclaiming the mined-out surface.

9 Q. And along those lines you've
10 done some work on some fruitland in Niagara at
11 Fonthill, and I understand that one of your reports
12 speaks to having established a cherry orchard in
13 that location?

14 A. Yes.

15 Q. Then in your evidence you
16 organized yourself around Exhibit H-100, which
17 was a distillation of your work in the process
18 of providing your opinions?

19 A. Yes.

20 Q. And this was a distillation
21 of some other reports in the earlier stages of
22 the Environmental Assessment?

23 A. Yes.

24 Q. As I look at it, it seems
25 to me that after defining the objectives on page



1 3 deals with the evaluation of alternative uses?

2 A. Yes.

3 Q. In your evidence you placed
4 before us your opinion of the classification of
5 the lands at Site D and it was your conclusion,
6 I believe, that it was 50 percent Class 1 and 50
7 percent Class 3?

8 A. Approximately, yes.

9 Q. And that would -- if I'm
10 correct in my thinking -- make it good farm land
11 for Halton Region -- not the best farm land in
12 the block, that particular piece of land?

13 A. No, but it's still good.

14 Q. It's good. And I am correct,
15 am I not, that it is located in what is considered
16 the best agricultural area in Halton?

17 A. Well, it's certainly within
18 one of the better agriculture areas. The area to
19 the, I guess, true north, above 401, there's another
20 good area in there as well.

21 Q. But this rather large
22 agricultural plain which is in Milton is a good
23 area, comparable to the one north of the 401?

24 A. Yes.

25 Q. Now dealing specifically



1 with Section 3.14, which you reference in your
2 Exhibit H-100 -- where it's proposed as a matter
3 of the land use to use what is considered to be
4 good farm land, as I understand that section it's
5 necessary to document the need for land use; it's
6 got to cover the four enumerated areas following
7 3.14 and in 3.14?

8 A. Yes, they require a documentation
9 of need.

10 Q. And in your work relative
11 to determining the site of preference as far as
12 your discipline is concerned, did you follow that
13 process?

14 A. Well, at the "need" level
15 in agriculture assessments one is often relying
16 basically on other parties to establish that need.
17 The "need" in this case -- there would be a need
18 to establish that there was a requirement for
19 landfilling in Halton Region.

20 Q. And do you accept that as
21 a 'given' in your work?

22 A. Yes, we did.

23 Q. Then you really come down
24 to documenting the choice of location, which is
25 3.14 sub.3?



1 A. Yes.

2 Q. And there you are dealing
3 with alternatives and the policy is basically that
4 the site among the alternatives which comprises
5 the lowest capability for farm land is the site
6 that should be chosen -- that's the agricultural
7 assessment?

8 A. That is one of the criteria
9 that are looked for, yes.

10 Q. And if there's poor agricultural
11 land which can be used, it should be used?

12 A. Well, that would be the obvious
13 preference.

14 Q. And further down in that
15 category it seems to be preferred to infill between
16 existing non-agricultural developments, and would
17 you agree with that?

18 A. Yes, the infilling in that
19 context relates very much to sort of the urban
20 fringe where you have infilling of housing, commercial
21 and industrial developments, that sort of thing.

22 Q. If you go on to 4. in the
23 documentation, as expressed in 4 -- you're supposed
24 to:

25 "...indicate whether alternative



1 "locations on poorer agricultural
2 lands are available, and, if they
3 exist, the reasons why these locations
4 were considered unsuitable."

5
6 A. Yes.

7 Q. And so far as your choice
8 between the two sites is concerned, it would be
9 consistent with that policy?

10 A. Yes, in terms of the
11 recommendations we have made, yes.

12 Q. Site F, the Burlington site,
13 is clearly on poor agricultural land, and so far
14 as you understand the other study, there's no reason,
15 in your mind, why it shouldn't be used?

16 A. Well, certainly not from
17 an agriculture point of view, it's the obvious
18 choice.

19 Q. Look over to the revision
20 of Section 3.12 -- do you have that in your copy?

21 A. Yes.

22 Q. As I read that revision,
23 it deals specifically with mineral aggregate
24 extraction. And faced with the question of the
25 value of the mineral aggregate in the soil and



1 in the need to use it you therefore displace good
2 agricultural land.

3 A. Yes.

4 Q. I guess my question to you
5 with regard to that is: do you see, as I do, a
6 parallel between the use of land for mineral aggregate
7 extraction and the use of land for landfill --
8 and in both cases premising good agricultural
9 land?

10 A. Could you please ask that
11 again? I'm not sure whether...

12 Q. I guess what I'm asking you
13 to agree to is that there isn't much difference
14 really between displacing good agricultural land
15 by digging a gravel pit and by starting a landfill,
16 in terms of removing good agricultural land from
17 production?

18 A. Well, the background to this
19 release is specifically because they felt that
20 the Guidelines did not cover specialty crop areas
21 that in fact occurred on a lot of aggregate land,
22 particularly in the Niagara Peninsular Region,
23 down in the Leamington Region and in the Thornbury
24 Region of the Georgian Bay. And essentially what
25 they were trying to deal with when they put this



1 out was a way of reconciling the fact that there
2 was a need for mineral aggregate land and a need
3 to have ongoing viable specialty crop land, so
4 as a result of that then they had some studies
5 done, which we were part of, on rehabilitation
6 of aggregate land to tree fruit production, and
7 really that 1983 release was to try to deal with
8 the specific problems that were arising at that
9 time in terms of conflict of applying the Food
10 Land Guidelines. And, you know, I don't know that
11 extending it to landfilling -- that was certainly
12 not the intent of these Guidelines in that release.

13 Q. But my question to you is:
14 if we look at the practical aspects of digging
15 a pit to extract minerals and digging a pit as
16 is proposed at Site D to landfill domestic waste,
17 there isn't any difference in the end result to
18 the agricultural capability of the land?

19 A. Well, in the one case you're
20 dealing with a hole in the ground and in the other
21 case you're dealing with a mound on top of the
22 ground, and if they were reclaimed properly then
23 essentially they'd be the same.

24 Q. And a policy with respect
25 to the mineral aggregate extraction is contained



1 in 3.16, point 3, where:

2 Mineral aggregate extractions shall
3 not be permitted on specialty crop
4 lands in areas noted in 3.16.1 unless
5 documentation is provided to reasonably
6 show that:

7 (a) the site can be rehabilitated
8 for agriculture and allow production
9 of the same acreage and of the
10 same specialty crop at the same
11 level of productivity, and there
12 will be no effect on the micro-
13 climate.

14
15 That's the policy with respect
16 to those lands which you described, the ones in
17 the Niagara Region?

18 A. Yes. And the mineral aggregate
19 lands here.

20 Q. But if you go on to 3.16.4
21 it seems to me that the policy is extended to other
22 good general agricultural land in the Province,
23 and the policy is that agricultural rehabilitation
24 is carried out with substantially the same acreage
25 and average soil capability for agriculture. Do



1 you agree with that?

2 A. Yes, that's what that section
3 indicates.

4 Q. And would you say that that
5 makes as much sense for landfill as it does for
6 mineral aggregate extraction?

7 A. I believe so, yes.

8 Q. So you concluded, I think,
9 in your answers, that you used the Guidelines in
10 accordance with the policy that they represent,
11 and you believe that your choice as between these
12 two sites follows the policy set out in this exhibit?

13 A. Yes, I do, and certainly
14 the Ontario Ministry of Agriculture and Food have
15 basically concurred with that.

16 Q. In respect of this particular
17 project?

18 A. Yes.

19 Q. And is that concurrence contained
20 in your documentation? Is there a letter from the
21 Ministry which...?

22 A. Oh, there are letters from
23 the Ministry, that I believe are contained in some
24 of the submissions and reports, which support the
25 overall process that we undertook; and in fact



1 that if Site D was chosen as a site, that in fact
2 it would be rehabilitated to an agricultural after-use.

3 Q. Now if you turn to Exhibit
4 H-20, which is the After-Use Report, I first want
5 to canvass with you just how the various disciplines
6 which are contained in this report came together.

7 I understand that the report
8 was authored by the LandPlan Collaborative Limited,
9 which is not your firm?

10 A. That's right.

11 Q. And in part the LandPlan
12 Collaborative organization relied on your work,
13 and that's contained in one of the appendices to
14 their report?

15 A. Yes. Our input to them was
16 on the agricultural issues.

17 Q. And those were your instructions
18 -- to input agriculture to their work on the after-use
19 for both sites?

20 A. Yes.

21 Q. And your work follows at page
22 49 and is entitled: Agricultural Impact and
23 Rehabilitations for It.

24 A. Yes.

25 Q. And if I understand the document



1 you in turn relied on the work of another organization,
2 is that correct?

3 A. We had Dr.Peter Stonehouse
4 from the University of Guelph do a small section
5 on the net returns, and we often employ Dr.Stonehouse
6 in this capacity.

7 Q. And his work follows page
8 27 of your report, which is the first appendix,
9 and is entitled: Economic Analysis of Rehabilitating
10 a Landfill Site for Agricultural Production?

11 A. Yes.

12 Q. And I understand that you
13 gave some information to Dr.Stonehouse, which he
14 would use in his work, and he then did his calculations
15 based on certain information you gave him and certain
16 assumptions that he made and certain information
17 he got independently, and he came back to you with
18 the economic analysis which is repeated in your
19 report -- or the results of which are repeated
20 in your report?

21 A. We provided Mr.Stonehouse
22 -- if you're in the appendix on Economic Analysis
23 of Rehabilitating a Landfill Site by Dr.Stonehouse,
24 if you turn to page 3, Table A-1, we basically
25 provided that information to Dr.Stonehouse. So



1 that would be Table A-1. And that is also repeated
2 back in our text as Table 4, I believe it is;
3 we provided Dr.Stonehouse with that information.

4 Secondly -- and those,
5 incidentally, were figures that we arrived at ourselves
6 in terms of the cost of topsoil, the approximate
7 costs of haulage, and the subsoiling costs were
8 done by ourselves.

9 Q. Now you're talking about
10 Table A-1 in Dr.Stonehouse's report?

11 A. Yes, that's right.

12 Q. Just stopping there -- you
13 got the prices of same, but it appears that there
14 are some volumes which the prices are applied to.
15 Now where did they come from?

16 A. The volumes that we used
17 for that, we determined ourselves as well, in terms
18 of the amount of soil we felt was good agricultural
19 soil on Site F.

20 Q. So the calculation of how
21 much good agricultural soil there was on Site F
22 -- all of the information was accumulated by
23 yourselves?

24 A. Yes.

25 Q. And then Site D is blank?



1 A. Yes. Site D is blank because
2 there was sufficient soil available on that site
3 to actually go back and reclaim it, so we weren't
4 having to go off site to import any.

5 Q. I understand that. And where
6 did you get that information from, that there was
7 sufficient soil available on Site D?

8 A. We used, to start with, our
9 own information base in terms of understanding
10 the soils that were there: the topsoil and the
11 B and C horizons, and then we also relied on Mr.
12 Hiraishi, who is a waste management specialist,
13 who was then supplying information on the overall
14 availability of material for Site D and Site F.

15 Q. So let's deal with Site D
16 for the moment, because that's the one that concerns
17 me as to whether or not there's enough topsoil
18 to conclude the program in the way that you've
19 described it.

20 You start, I suppose, with
21 the size of the area to be excavated for the landfill?

22 A. Yes.

23 Q. And that is not a figure
24 which you developed, but rather came from the Design
25 and Operations Report, from the engineer?



1 A. That's correct, yes.

2 Q. And the next quantity that
3 you need is the depth of topsoil in that area to
4 be excavated?

5 A. Perhaps I can get a definition
6 straight here. When you talk of "topsoil" are you
7 talking about the surface topsoil, the mineral
8 material that's sort of enriched in organic matter
9 that you normally think of when you're digging
10 in your garden and you have nice black soil?

11 Q. I'm not talking about that,
12 I don't think. What I'm talking about is what you
13 and Mr.Hoffman (phonetic spelling) would talk about
14 when you talked about topsoil.

15 A. Okay, I'm clear now.

16 Q. If you'd look with me at
17 the third last page in your report, or the fifth
18 last page. You have a table there called: Summary
19 of Physical and Chemical Characteristics.

20 A. Yes.

21 Q. That appears as the first
22 page of Appendix C, which is similarly entitled.

23 Now I take it that that is
24 a table that your firm plotted?

25 A. Yes, it is.



1 Q. And I take it that -- on
2 the left-hand side you've got designation D1, D2,
3 D3 and F1, F2, F3, and those are at Site D and
4 Site F?

5 A. Yes.

6 Q. And the 1, 2 and 3 would
7 be three locations where something happened?

8 A. Yes.

9 Q. And I take it that at those
10 locations what happened was that somebody put an
11 auger in the ground and brought out a core in order
12 to determine what was there?

13 A. Yes.

14 Q. Now there are some maps which
15 accompany that table and which appear just before
16 Appendix C, and do they bear any relation to the
17 table?

18 A. The maps in Appendix B, they
19 do two things. First of all they show the soil
20 capability ratings for the respective Sites D and
21 F. They also contain our sample sites. And you'll
22 note, if we look at Map 2A as an example that on
23 there you can find two types of sites. There's
24 ones designated with a D -- D1, D2, D3, D4, D5.
25 Those were samples that were sampled during the



1 E.P.A. stage of the project or the technical phase
2 of the project.

3 The other sites: 37, 38 and
4 39, were site locations that were completed during
5 Stage 2C, so we're really using a combination of
6 two different sampling dates.

7 Q. I take it from the table
8 that I've looked at, which is Appendix C, that
9 the way it worked was if you gave the engineer
10 data with respect to topsoil availability, as you
11 know topsoil and talk about it, on Site D, and
12 then he did the calculation?

13 A. No. When we start trying
14 to match up the engineer's and our terminology
15 with respect to topsoil and that, there may be
16 a difference, simply because when the engineers
17 go out and put a core down in the field, using
18 a drilling rig, they may in fact call "topsoil"
19 the same thing as we do, or they may not, there
20 may be a difference there. So in terms of looking
21 at availability of material on Site F we simply
22 were looking at, number one, from our own perspective,
23 that is agriculture, how much topsoil did we feel
24 was available, and, number two, how much B horizon,
25 or what we call "B horizon" as you're moving downward



1 in the soil -- B and C Horizon, were available
2 for a growth of agricultural crops. So that, you
3 know, you won't necessarily be able to compare
4 our calculations here with the engineer's.

5 Q. If I wanted to reach the
6 conclusion, Doctor, that there was enough topsoil
7 on that site to cover off the landform and convert
8 that form to agriculture, I would have to do certain
9 things, and just help me to see if I'm clear in
10 my thinking on what I'd have to do.

11 The first thing I would have
12 to do is I would have to determine what depth of
13 topsoil I'm going to put over the landfill?

14 A. Yes.

15 Q. And did you do that?

16 A. Well, we didn't put an actual
17 depth over the landform. When you're looking at
18 this -- this is basically an area of the cut, and
19 what we can do then -- or you can go over this
20 site and you can put a few holes down -- you can
21 get an average depth of topsoil, and depending
22 on the area then, you just take the area times
23 the depth and you have your volume of topsoil that
24 is available.

25 Now this is going to be



1 approximately 15 metres high, so we have a landform
2 that's going to be sticking out of the level surface
3 of the surrounding area. So in fact we've increased
4 slightly the surface area of this whole thing,
5 and the important part of it is that, number one,
6 we attempt to return to the arable agricultural
7 area -- this is 1 and 2 -- the same depth of topsoil
8 that was there -- you obviously can't ask people
9 to put back more than currently is there. On
10 your side slopes here there will be slightly less
11 than there was originally, simply because now we're
12 dealing with a slightly larger area.

13 Q. So that having slightly less
14 on the side slopes is a way of being able to make
15 sure that the topsoil that was there in the first
16 place is adequate to completely cover the landform?

17 A. Yes. To completely cover --
18 number one, provide adequate depth on the arable
19 agriculture area and, at the same time, put some
20 topsoil over the remainder of the back slopes.

21 Q. So that Area 1 is going to
22 be the best reclaimed area, and Areas 2 and 3 will
23 be somewhat less productive?

24 A. Well, Area 2 will have a
25 slope limitation but is still arable agriculture.



1 Area 3 we would say is non-arable agriculture.
2 It has a 4 to 1 slope or a 25 percent slope, which
3 is getting a bit too steep.

4 Q. And before any of that work
5 is done, in the present state of the land that
6 we have, it would all be arable?

7 A. Yes. In the current state
8 that it's sitting in here -- with the exception
9 of this area here -- and what you usually find
10 is that in this particular area -- a lot of these
11 tend to be rather closed drainage depressions,
12 so that they're wet. In modern day they may drain
13 them, but often it's difficult to get an outlet
14 for tile drainage in areas like that, and usually
15 that's what you find some of these old woodlots
16 are on the farms.

17 Q. Now I want to come back to
18 the calculations again, because I'm still struggling
19 with how anyone can know that there's enough topsoil
20 to completely refurbish the land in the way that
21 you have described.
22 You would have to know, in the first instance,
23 what the depth of topsoil is on the site?

24 A. Yes.

25 Q. And you have to know the



1 area of the site?

2 A. Yes.

3 Q. And, knowing that, you can
4 calculate the number of cubic metres, say, of topsoil
5 that there is?

6 A. Yes.

7 Q. And once you know how much
8 you have in the way of cubic metres of topsoil,
9 you can work out a calculation on the proposed
10 landform and determine whether or not you have
11 enough to do the job -- is my logic wrong?

12 A. Oh, you can do that, yes.
13 And if you do that for this total site, it's going
14 to show you that you have slightly less depth than
15 currently is there if you were to spread it evenly
16 over the whole thing. But as I pointed out to you,
17 what we're saying is we want the same amount back
18 on the arable portion that we're going to rehabilitate,
19 and we'll take even less along this side to accommodate
20 that.

21 Q. Well what depth do you want
22 on Area 1?

23 A. Area 1 -- the average depth
24 that's currently sitting out there, which is
25 approximately around the 20 centimetre range. It



1 varies. Like, if we look at this area in here --
2 if you look at these darker areas in here, these
3 are poorly drained areas, and your depth there
4 is less than when you're out here on your well-drained
5 sites. So that the depth of topsoil is not a constant
6 over this whole area, it's a variable, and what
7 we do then is put down -- in this case I think
8 we have something like eight auger holes in this
9 whole area --

10 Q. Yes, that's what I'm coming
11 to. Have you got the results of those eight auger
12 holes in your work?

13 A. They're not summarized in
14 our report, Mr. Leitch, but I can certainly get
15 them for you. There is, I believe it is 3 and 2C,
16 and I would have to pull out the depths for the
17 four or five sites in Exhibit 20 that we're looking
18 at the moment. I could do that if you wish.

19 Q. I'm really only interested
20 in at how many points you measured the depth at
21 Site D?

22 A. Within Site D? I can give
23 you that.

24 Q. Is that in this...?

25 A. Well, I can get it for you.



1 If you look at Map 2A in Appendix B, then there
2 are five sites we looked at in Stage B and there
3 are three sites in Stage 2C. So we would have a
4 total of eight sites.

5 Q. And they are spread around
6 as we see them depicted on the chart, Map 2A?

7 A. Yes.

8 Q. And would you, in arriving
9 at your conclusion as to the average depth of topsoil
10 over the site, do a calculation from what you found
11 at those eight locations?

12 A. Not really, because essentially
13 what we're saying in our Rehabilitation Plan is
14 that, number one, we want the topsoil stripped.
15 And at some stages in the past people have wanted
16 a precise depth, but the fact is, that's not the
17 way nature creates it, it's a variable depth. So
18 what we ask normally is that topsoil be stripped
19 and that we have someone who is qualified who is
20 inspecting it, and that way we're sure of getting
21 all the topsoil.

22 And similarly with re-applying
23 it again back on the rehabilitated area, to ensure
24 that in fact the topsoil is what's being put back.

25 Q. So if I understand what you're



1 saying then, the depth of topsoil is not of very
2 much importance, as long as it's equally as deep
3 as it was in the places where you took it from?

4 A. What we want to do is try
5 and strip the topsoil that is there. And, for example,
6 I'm not sure but I suspect that we could find some
7 areas around here -- in fact I know we could --
8 where it goes up to 30 centimetres in depth. The
9 problem is, that might be just a very small little
10 area which, operationally, you can't really
11 go in there and separate that out from something
12 that maybe is 20 or 30 feet away, that's now, say,
13 20 centimetres depth, something of that nature.

14 So, you know, we have to
15 talk about averages and look at it in that sense.

16 Q. The number that seems to
17 appear in the report is 20 centimetres. Is that
18 what you think is there?

19 A. The 20 centimetres is what
20 we used in calculation of the topsoil volume on
21 Site F. I believe, as well, we indicate in page
22 18 of our report, at the bottom of the page, we
23 also indicate 20 centimetres. But on the following
24 pages -- there's an example on Figure 1 following
25 page 18 -- you'll notice we have a "plus or minus"



1 there. There's nothing magical about this 20
2 centimetres. In the case of Site F we had to use
3 some sort of figure to give us a general idea of
4 how much topsoil we would have to import, and that's
5 basically what we have used it for.

6 Q. That's what I'm trying to
7 determine, because my friend, Mr. Hodgson, went
8 through this evidence with you on the basis of
9 the viability of this site for agricultural
10 rehabilitation, and at the end of his questioning
11 he said to you something to the effect of "will
12 it fly?" -- do you recall that?

13 A. Yes.

14 Q. And you said that it was
15 your view that it would.

16 A. Yes.

17 Q. And I guess the point I'm
18 trying to make with you is that it's not really
19 a question of "will it fly?", but "how much does
20 it cost to make it fly?"

21 You wouldn't suppose to us
22 that it wouldn't matter what the cost was, would
23 you?

24 A. No.

25 Q. And so there has to be some



1 practicality in costs of these projects?

2 A. Yes, that's true, but I'm
3 not quite sure I follow you. In terms of dealing
4 with these sites, I mean, they're going to have
5 to strip the topsoil. Why should a government agency
6 be able to just go in and do what nobody else in
7 the Province can? And so you're going to have to
8 strip topsoil, and whether it's 15 centimetres
9 or 30 centimetres in some areas, that will average
10 out. And, you know, if you have it returned, then
11 you want it returned to what approximately the
12 average depth is. And that's all you can deal with
13 on these sites, whether it's dealing with a
14 rehabilitation of a pit and quarry site, a
15 rehabilitation following pipelines; you basically
16 ask them to strip and stockpile the topsoil separately,
17 move that material back over after it's been
18 rehabilitated, and you end up with approximately
19 the same sort of thing.

20 And I've indicated that on
21 these side slopes there will be slightly less topsoil,
22 but we're not looking at arable agriculture on
23 those anyway, so that the fact that you maybe only
24 have 2 or 3 inches -- you know, you're going to
25 establish some kind of a permanent forage cover



1 or something of this nature.

2 Q. So if I take your point then,
3 it is that you use whatever is there and you don't
4 go abroad to bring any in, so there is no additional
5 cost?

6 A. Yes -- on Site D, yes.

7 Q. And if there is an additional
8 cost, then it's a cost which reflects itself in
9 a decrease in productivity because of a thinner
10 topsoil?

11 A. On the side slopes here,
12 yes, it is, yes.

13 Q. And there would be an additional
14 decrease in productivity in the white areas, because,
15 as I understand the proposal, it is to leave those
16 in service?

17 A. Well, you will recall towards
18 the end of my evidence, I believe dealing with
19 Exhibit 14, the Comparative Analysis Report --
20 or it may have been Exhibit 100 -- I indicated
21 that in terms of given the area, we were excluding
22 agriculture from these screen berm areas and we
23 were excluding arable agriculture from Area 3,
24 which was our back slope areas -- and I'd have
25 to look up the exact figures but...



1 Q. You want the figures you
2 gave in your evidence?

3 A. Well, I have them right here.
4 Basically we're talking about approximately 22
5 hectares in the back slope areas and approximately
6 22 in the screening berms, so there's approximately
7 33 hectares of this total area here that certainly
8 would not be available for what we would call "arable
9 agricultural production".

10 Q. And you converted those to
11 percentages, and as I understand those percentages,
12 it was 23.8 percent for those two?

13 A. Yes.

14 Q. So 23.8 percent of that is
15 lost as far as arable --

16 A. Yes. Essentially we're saying
17 almost 24 percent of this area would be lost to
18 arable agricultural production.

19 Q. And just while you're on
20 that point, you had for Area 4, which is the lighter
21 green, a figure of 76.5 hectares, and that was
22 54.8 percent of the total.

23 A. Yes.

24 Q. Does that include the services
25 which are shown in that area?



1 A. It should exclude the areas
2 in white. I believe it will include this -- that's
3 basically your bulk bin locations and where your
4 trucks will be coming through and so on -- and
5 that presumably then would be available for
6 rehabilitation.

7 Q. But it won't be in agriculture
8 for a period of some 25 years?

9 A. Yes, that's right.

10 Q. And then there is a box down
11 below that which appears to be -- no, not that
12 one --

13 A. Oh, this here?

14 Q. It says "material area".

15 A. Yes.

16 Q. And during the time the landfill
17 is operating will that be out of agriculture as
18 well?

19 A. I would assume so.

20 Q. So those two areas would
21 be removed from agriculture and reduce the 76.5
22 hectares 54 percent further?

23 A. During the interim while
24 landfilling is going on, yes. Those figures that
25 I gave you really refer to the site once it's closed



1 down, essentially. They do not give you an indication
2 of what's going to go on while the site is in
3 operation.

4 Q. Mr. Hoffman, in his work for
5 the Town of Milton, took 57 soil samples over Site
6 D --

7 MR. HODGSON: I wonder, Mr. Chairman,
8 if Mr. Hoffman's work -- if the other parties could
9 have copies of it?

10 MR. LEITCH: Mr. Hoffman is going
11 to be giving his evidence when Milton's case goes
12 in, and in accordance with the Rules that the Board
13 has imposed on us, the witness statements -- I
14 don't have anything other than calculations I'd
15 be glad to give to my friend and my other friends,
16 but I don't have a report at this time. I am
17 undertaking to call Mr. Hoffman to give this evidence --

18 THE CHAIRMAN: It will be
19 forthcoming?

20 MR. LEITCH: Yes.

21 MR. HODGSON: I'd just like to
22 make the point, Mr. Chairman, that the 30-day rule
23 that was set on February the 11th, my understanding
24 is that while that was considered a minimum notion,
25 it didn't mean that if a party had a report, or



1 could have a report ready, that that report shouldn't
2 be available ahead of those 30 days. I mean, in
3 the revised Rules of the Supreme Court we now have
4 a situation where no one can go into a trial and
5 hold back a report of an expert until it's his
6 turn to give evidence, and then everybody comes
7 into the trial knowing what everybody's expert
8 is going to say when that expert gets in. And we
9 have a situation in this hearing where it would
10 appear that other parties are going to take advantage
11 of the 30-day rule, to cross-examine the witnesses
12 -- the experts -- for the Proponent, and then,
13 after they've heard the cross-examination and done
14 whatever damage they could do or thought they could
15 do, they're then going to 'pull out of their pockets'
16 their own expert report and we're now going to
17 have their expert's evidence.

18 Surely the fairer way to
19 do this is that if my friend is going to call an
20 expert in this area, and if he now knows what his
21 expert is going to say, that we should all know
22 what that is before Mr. Mackintosh gives his evidence.
23 It would appear here that my friend does have portions
24 of the report and could make this available prior
25 to cross-examining this witness.



1 THE CHAIRMAN: As I understood
2 it, Mr.Leitch, the report is not ready as yet?

3 MR.LEITCH: It is not ready.

4 THE CHAIRMAN: Do you have copies
5 of what you're referring to?

6 MR.LEITCH: I can either distribute
7 these copies, which are essentially, Mr.Chairman,
8 the topsoil depths over 57 locations. I don't have
9 anything other than a sort of handwritten map at
10 the present time as to where those locations are.
11 I have a general understanding. My question of
12 Dr.Mackintosh is simply going to relate to his
13 opinion, if any, as to the reliability of even
14 a calculation of topsoil if one has 57 observations.

15 MR.HODGSON: Mr.Chairman, I'd
16 like to make two observations here. I was not able
17 to attend the preliminary, but my colleague, Mr.
18 Lederer, tells me that the Chairman on that day,
19 Mr.Eisen, made the point that if a party was proposing
20 to put a document to a witness in cross-examination,
21 that document was to be made available prior to
22 the cross-examination and not whipped out of a
23 back-pocket during the cross-examination. And that,
24 surely, is the fairer way to conduct the cross-
25 examination. That's one point.



1 And the second point is that
2 if the document in question is in fact an expert
3 report from another party, the proper way to deal
4 with this is for my friend to wait for his opportunity
5 to call evidence, call his witness, and we'll have
6 Mr.Mackintosh come back and respond to what will
7 be, I take it, Mr.Hoffman's evidence, but it's
8 not proper to pull out of his back-pocket a bunch
9 of calculations that he's got, and clearly had
10 in advance of today, and put them to this witness
11 in surprise during cross-examination.

12 Now I'm not sure that with respect to this particular
13 calculations that this is all that important an
14 issue, but it will become an important issue throughout
15 this hearing, and I'd like to establish the principle
16 now that this is not the way anyone's experts are
17 to be cross-examined during this hearing.

18 THE CHAIRMAN: I would have to
19 agree with that, Mr. Leitch. That will be the policy.
20 If you're willing to call him back.

21 MR.LEITCH: My question to the
22 witness, Mr.Chairman, is putting the hypothetical
23 to him. I surely am entitled to put a hypothetical
24 to an expert witness and ask him what his opinion
25 is. Now I may subsequently choose to call the evidence



1 to prove that the hypothetical is true, but do
2 I take your ruling to mean that I'm precluded from
3 putting the hypothetical to the expert witness?

4 THE CHAIRMAN: No, that question
5 you might, but you were referring to a definite
6 study there.

7 MR.LEITCH: Well, I can't put
8 it in a policy, I can put it in the hypothetical,
9 and I have told my friend that he can have this
10 information. And I have undertaken to call the
11 witness in due course when our case goes in, but
12 I take exception to be limited in cross-examining
13 an expert by not being to put hypotheticals to
14 him.

15 THE CHAIRMAN: No, you may put
16 a hypothetical, Mr.Leitch.

17 MR.HODGSON: I mean, it's one thing
18 to put an "if then" question to a witness, and
19 another to address it as "It will be Mr.Hoffman's
20 evidence that..."

21 THE CHAIRMAN: Yes, that's the
22 point.

23 MR.HODGSON: Then somebody else
24 is going to say: "X is the case. Are you going
25 to be dumb enough not to agree with him now?" I



1 mean, that's really the kind of situation we have
2 here.

3 THE CHAIRMAN: I'd be more concerned
4 if he was dumb enough to answer without considering!
5 He'd have to consider it.

6 You may ask a hypothetical
7 question.

8 BY MR. LEITCH:

9 Q. Dr. Mackintosh, you have given
10 evidence that the calculations which you have made
11 as to the depth of topsoil at Site D follow on
12 your data from 8 auger hole locations, is that
13 correct?

14 A. Yes.

15 Q. If a person had made 57 such
16 sample takings over the site, would there be a
17 better data base for calculating the average depth
18 of topsoil than at 8 locations?

19 A. Well, I think it follows,
20 providing you have an individual who understood
21 what he was looking for and he's looked at 57 sites
22 as opposed to 8, just pure statistics would tell
23 you he would have a better population to work off
24 of. However, irrespective of that, I don't really
25 see that it makes much difference. As I have already.



1 indicated, there is only so much topsoil on Site
2 D, where you're asking them to basically remove
3 and stockpile that separately, then put it back.
4 I've explained what happens when we put it back.
5 So whether or not we have 20, 22 or 18 centimetres,
6 really is not the issue.

7 Q. Well, I suppose the issue
8 that I'm coming to is: is there a depth of topsoil
9 below which you can't go in terms of being able
10 to refurbish this to agriculture -- assuming that
11 the sizes are as you say they are?

12 A. Well, if we're putting the
13 same amount on 1 and 2 that is there on the average,
14 whatever that average may be, then there is no
15 reason to believe, from a topsoil standpoint at
16 least, that in fact you couldn't have similar
17 productivity off of that. I've already indicated
18 that in order to get that depth of topsoil on here,
19 the same as we had, the same average, then we will
20 have to accept less on Area 3. But Area 3 has a
21 25 percent slope anyway and is not going to be
22 productive in terms of arable agriculture -- and
23 by "arable agriculture" I mean growing crops like
24 corn, wheat, oats, barley, that sort of thing --
25 and so a 25 percent slope, under the C.L.I.



1 classification, automatically, I believe, as I
2 recall, puts it down to a Class 5, and the fact
3 that you have a little less topsoil there is not
4 going to change that productivity at all.

5 Q. What reduction of class is
6 there in Area 2?

7 A. Area 2 -- that's an 8 to
8 1 slope -- it's been some time since I've looked
9 up those Guidelines, but I think that makes it
10 a Class 2.

11 Q. Just by reason of the slope?

12 A. By reason of slope.

13 Q. So what you've got is: you've
14 got some Class 5 -- and what would you say you
15 had on top at the end of all of this -- Class 1
16 and 3?

17 A. Well, I would say that
18 essentially with 1 to 5 slopes that you're going
19 to have something around the order of 1 and 2,
20 and I really don't differentiate when we get to
21 that level.

22 Q. All right. The design of
23 the cover for the landform, when this is returned
24 to agriculture -- your proposal is that there be
25 a clay cap, one half metre in thickness, applied



1 over the whole of the landfill?

2 A. Yes, over the top area. And
3 that figure essentially, in terms of the depth
4 of clay cap, is the one that Jim Hiraishi basically
5 has come up with.

6 Q. He's the engineer?

7 A. Yes.

8 Q. And as I understand it, that
9 serves two purposes. One is to reduce the amount
10 of infiltration of moisture into the landfill?

11 A. Yes..

12 Q. And the second is to provide
13 some barrier for methane gas arising out of the
14 landfill?

15 A. Yes, that's another...

16 Q. And methane gas is the next
17 subject I want to turn to. My understanding of
18 methane gas is that it is lighter than air?

19 A. Yes.

20 Q. And therefore will want to
21 go up as opposed to down?

22 A. Yes.

23 Q. And it's my understanding
24 that it is formed by the decomposition of a variety
25 of things, and most particularly vegetable or plant



1 spoils --

2 A. Organic.

3 Q. -- and requires a certain
4 amount of moisture for decomposition --

5 A. Yes.

6 Q. -- and I understand it to
7 be explosive in a mixture of about 5 percent of
8 methane to air?

9 A. Yes, approximately that.

10 Q. Now methane gas is a usual
11 bi-product of a domestic landfill?

12 A. Yes.

13 Q. And methane gas will be produced
14 in this landfill, whichever site it's located at?

15 A. I would assume so.

16 Q. And without some protection
17 it will rise up out of the landfill along the easiest
18 courses and disperse itself in the soil covering
19 the landfill?

20 A. Yes. Normally what would
21 happen with the clay cover that we have in this
22 particular case is that because it's relatively
23 impermeable, having been compacted, that the movement
24 of your gases usually follows along failure planes
25 where in fact you have differential settlement,



1 you have almost like a sheer plane created -- your
2 gas will escape along those. So you'll have local
3 areas where this would happen.

4 Q. Unless, of course, there's
5 no fault in the cap, in which case it will find
6 its way laterally to the sides?

7 A. Yes.

8 Q. Now do you have any understanding
9 as to what kind of clay is going to be used in
10 making this cap?

11 A. Well, the cut material that's
12 coming from the base of the landfill -- I haven't
13 had a look at the information, and that's going
14 down several metres -- but from the data that I've
15 looked at there is approximately somewhere in the
16 order of 30 to 50 percent clay in that material
17 and most of the rest of it is silthe size material
18 with very little sand incorporated in it.

19 Q. That being so, it will be
20 relatively impermeable material?

21 A. Yes.

22 Q. And will be spread on the
23 landform after tilling with fairly heavy equipment --?

24 A. Yes.

25 Q. -- and will be compacted



1 so it's going to be even less permeable?

2 A. Yes.

3 Q. Isn't that what's intended
4 in the design?

5 A. Yes, with the moisture content
6 the clays are at and the equipment that they'll
7 be using to spread it, you'll have a very high
8 degree of compaction of that material.

9 Q. And that material in that
10 form would not be suitable rooting material?

11 A. No.

12 Q. Too highly compacted?

13 A. Yes.

14 Q. And then over top of the
15 clay cap will be spread the soil that you are talking
16 about in your report?

17 A. Yes.

18 Q. The A and B horizons will
19 be mixed with single horizon?

20 A. Well, the B and C. The A
21 is separate.

22 Q. The B and C. And then the
23 topsoil, the A horizon, will be placed over the
24 top of that?

25 A. Yes.



1 Q. To a depth of the two of
2 them of approximately one metre?

3 A. No, the two of them would
4 be a metre and a half. We've asked for a metre
5 of rooting medium basically over top of the half-metre.

6 Q. And these are native soils
7 of this site --

8 A. Yes.

9 Q. -- which will be used for
10 the rooting medium. And I think in your report
11 you talk about them as being relatively impermeable
12 and not very well drained?

13 A. Well, currently on site,
14 if we look at Site D, as I recall -- I'd have to
15 look at the data -- but approximately half of it
16 is what we would call "poorly drained" and the
17 other half is what we would call "well drained".

18 Q. The Jeddo is poorly drained --

19 A. Yes.

20 Q. -- and the Chingacousy is
21 reasonably well drained?

22 A. It's the well-drained member,
23 yes.

24 Q. Of that particular family?

25 A. Yes.



1 Q. But you wouldn't call it
2 "well drained" in relation to more granular soils,
3 the specialty farmlands and the lighter sandy loams
4 and things like that?

5 A. That's correct, yes.

6 Q. It's still a soil which does
7 not drain as well as other classes?

8 A. Well, the internal drainage,
9 that is the rate at which the water would move
10 through, say, these clays here, would be much slower
11 than, for example, if we had a sand or a gravel.

12 DR.KINGHAM: Excuse me, I didn't
13 quite understand. Were the terms you were using
14 referring to areas or soil types? Jeddo and...?

15 THE WITNESS: Those, Sir, they're
16 terms of the profession. Each different soil type
17 is given a name, something like in geology where
18 you give a formation a name near the area, and
19 similarly soils, when they're mapped, use a common
20 notation as well. So that the Chingacousy is a
21 particular class of soil. They'll have a certain
22 sequence of horizons, they'll have certain drainage,
23 it'll be on certain parent material. Generally
24 there will be an area close by, a town, that will
25 have its namesake or something of that nature.



1 BY MR.LEITCH:

2 Q. I take it that the Jeddo
3 and Chingacousy which is there now, as it is taken
4 off and stored for subsequent use, gets mixed up?

5 A. Oh yes.

6 Q. So that by the time you apply
7 those soils back over the landfill you have a
8 combination of the two of them?

9 A. Yes.

10 Q. If you would look with me
11 then at Exhibit H-20, page 23 --

12 A. Are you referring to the
13 appendix now or to the main text?

14 Q. I'm referring to the main
15 text.

16 A. Yes?

17 Q. You have guidelines there
18 for mitigation -- these are guidelines for mitigation
19 of a number of problems?

20 A. Yes.

21 Q. The seal is dealt with in
22 page 21-1 and we've just dealt with that, and it's
23 got the two purposes that you and I have discussed?

24 A. Yes.

25 Q. Together with a third one:



1 migration of metal contaminants upwards. And 2
2 is the depth of topsoil, subsoil that we've talked
3 about?

4 A. Yes.

5 Q. 4 deals with the venting
6 system. The venting system is in relation to the
7 production of methane gas, and my question to you
8 about that is: is that your recommendation to LandPlan
9 or is that something they've developed independently?

10 A. That basically is a
11 recommendation that I would agree with.

12 Q. What do you mean by a "passive
13 gas venting system"?

14 A. Well, bearing in mind now
15 I'm not an expert on design of venting systems
16 -- if you had a very active venting system is one,
17 or you'd be designing to 'bleed off' the methane
18 gas as it was produced -- for example, they have
19 an experimental unit at the Ottawa landfill site
20 in Kitchener, where they're actually 'bleeding'
21 off methane, reprocessing it, and then using that
22 methane.

23 A passive gas venting system
24 -- they could take a number of different forms,
25 but basically what you are allowing is some sort



1 of way the gas can escape and that might, you know
2 -- in some cases in Britain they have tried using
3 gravel trenches immediately below the capping material.
4 The gas then moves into those gravels, they have
5 a high permeability, and then you just have a stack
6 that goes out and allows the gas to escape to the
7 environment above. That would be kind of a passive
8 system. And there are a number of these and I don't
9 profess to be any expert in it, but there are both
10 active and passive ways of trying to 'bleed' that
11 off.

12 Q. You're familiar with the
13 experiments conducted at Bush Farm in the Greater.
14 London area in London, England?

15 A. Yes.

16 Q. And you had read the reports
17 which have flowed from that experimental work?

18 A. Yes.

19 Q. I understand the state of
20 the reporting there to be that they have now reported
21 twice and are about to report a third time?

22 A. I know of two reports.

23 Q. Methane gas in the landfill
24 was a problem for agriculture there?

25 A. Yes.



1 Q. And do you understand the
2 reports as I do, that there was an approximate
3 20 percent failure in the first one quarter of
4 the experiment -- that is, the geographical one
5 quarter of the experiment -- because of methane
6 gas?

7 A. I really couldn't say on
8 that, no. I would accept it if you say that that's
9 what's been reported, but I can't really recall.

10 Q. You've read the report?

11 A. Quite some time ago, yes.

12 Q. Have you visited the site?

13 A. I can't recall, I would have
14 to go back and check. I can't recall whether it's
15 the Bush Farm or the other one. They have two
16 experimental sites in Britain. One of them I did
17 not visit, and without going back and checking
18 -- that would be in 1978 that I was there -- and
19 without going back and checking it I couldn't say
20 for sure. However, the one thing that you have
21 to remember in dealing with those particular areas
22 is that they are basically gravel pits, and in
23 Britain they not only till the aggregate out of
24 their pits, they then refill it up as a landfill
25 site, and like a lot of the sites that have been



1 reviewed in the States, where you don't have adequate
2 capping material such as a clay, then you do get
3 massive killing-off with the methane, due to methane
4 gas, and also you get very active migration laterally
5 because you're dealing with a very permeable material.
6 So I think it's important -- and as I recall, the
7 soils in those general areas, they are not
8 exceptionally high in clay, although I maybe stand
9 to be corrected, so you have to watch comparing those
10 sites with the ones we're dealing with here.

11 Q. The cap which will be placed
12 over this landfill, which is the preliminary protection
13 against methane gas problems --

14 A. Yes.

15 Q. -- will have a tendency to
16 fail as time goes by?

17 A. Yes, and that's what I have
18 indicated; that you will get your gas moving out,
19 because you're going to have cracks within that
20 cap.

21 Q. And indeed what happens is,
22 as in all landfill sites, there is a certain amount
23 of subsidence --

24 A. Yes.

25 Q. and subsidence, if I am correct,



1 occurs because of the natural weight of what's
2 inside the landfill, and the fact that there is
3 a decomposition or rotting going on which changes
4 the matter from one form to another?

5 A. Yes.

6 Q. And so what you put on in
7 the first instance is not going to stay where it
8 was, because what's inside shrinks?

9 A. Yes.

10 Q. And ultimately that clay
11 cap that is called for as protection, both for
12 things coming out and things going in, will fail?

13 A. Yes, there will be some failure.

14 Q. And ultimately methane gas
15 will find its way into the "farming area", if I
16 can call it that?

17 A. Well, it will be vented out
18 along your failure planes, yes, but you're not
19 going to get massive movement up and have great
20 huge areas killed off. That's the difference between
21 the clay scenario, where you have a clay cover,
22 and where you have coarse or aggregate material
23 used as cover. One is very permeable and allows
24 generally gas to migrate right up and you get massive
25 areas killed as a result of that; and where you



1 use clay as a cover, then you have your failure
2 planes -- that creates a point or a line where
3 gas can escape. And, in fact, if you look at the
4 information on a couple of sites where they have
5 used clay cover, then you gas 'kill' is localized
6 to those failure planes.

7 Q. Let me understand what you
8 mean by "cover". Are we talking about the shield
9 or are we talking about the rooting medium?

10 A. No. The half metre of clay
11 seal is what I thought we were talking about.

12 Q. But once the gas comes up
13 through that breach in that half-metre of clay
14 material, it finds its way into the rooting medium?

15 A. Well, basically what will
16 happen when you get a breach of that clay seal,
17 then there's a differential movement of the whole
18 thing, and so that also provides you the outlet
19 to go up through the rooting medium as well.

20 Q. So you're saying that then
21 the area where there will be 'kill' of the vegetation
22 on top will be somewhat localized?

23 A. Yes.

24 Q. But where that occurs will
25 depend on the number of breaches in the clay seal?



1 A. Well, it depends on many,
2 many things, because it's going to depend a great
3 deal on, in fact, the rate of methane production
4 to begin with in the landfill, and certainly Mr.
5 Hiraishi has addressed this issue and has felt
6 that at the most, you know, there may be need for
7 a passive venting system, but, you know, he's basically
8 the expert that will deal with the rate of production.
9 It depends on the moisture available and all sorts
10 of things.

11 Q. But we do know that there
12 will be gas 'kill' in this agricultural land to
13 some degree?

14 A. A very low amount, yes.

15 Q. But doesn't that depend on
16 how many places it fails?

17 A. Well, you know, your failure
18 sites -- and obviously I can't tell you where these
19 are going to occur -- but just because you have
20 one failure doesn't necessarily means gas comes
21 out of there, it may or may not. In fact it's going
22 to take 'the path of least resistance'. It's under
23 a slight positive pressure, so, you know, if there's
24 a place where it can vent along the side easier
25 than coming up through that surface, that's where



1 it's going to go.

2 Q. My point being: we don't
3 know where 'the path of least resistance' will
4 be or how many 'paths of least resistance' there
5 will be?

6 A. That's right.

7 Q. And so it's impossible, as
8 we stand here today, to be able to determine how
9 much gas 'kill' there will be in this agricultural
10 area?

11 A. We can only infer from other
12 examples, you know, approximately how much gas
13 'kill' will occur on this site.

14 Q. And we don't have another
15 example in Canada?

16 A. I'm not aware of one in Canada,
17 although there may be, you know, some data on that.

18 Q. Nevertheless, it is absolutely
19 imperative, in your opinion, that there be, in
20 the first instance, a clay cover to reduce the
21 amount of 'kill' that will take place?

22 A. Yes.

23 Q. And it should be tightly
24 compacted?

25 A. Yes.



1 Q. Help me with what effect
2 that may have on another aspect of the dynamic
3 of this agricultural experiment. If you have a
4 really tight clay cover underneath a metre and
5 a half of rooting material, doesn't that mean that
6 the soils above would become waterlogged because
7 you would have affected the structure of the thing?

8 A. Well, two things. Number
9 one, on this particular area here we have a number
10 1 slope to about a 5 percent slope, and the reason
11 for that is to provide opportunity for some surface
12 run-off, because, after all, the idea of the clay
13 seal is to reduce the amount of moisture that's
14 going to get into that landfill site. So that 5
15 percent slope is there, in part, to ensure that
16 we have surface drainage off of this site. There
17 will be a certain amount of water that moves back
18 down into those soils. What will happen eventually
19 is that your clay seal, that half-metre clay seal
20 right above the waste, will eventually become saturated
21 and water will move across there into the underlying
22 garbage and that's where some of the water will
23 come from for the decomposition process.

24 Now in doing that, some of
25 this area, or the soils at that depth, may in fact



1 become wet, but they won't become poorly drained.
2 We're talking about a net of about 10 to 13 inches,
3 someplace in there, over evapotranspiration, and
4 a reasonable proportion of that is going to go
5 off as surface run-off, and I don't anticipate
6 we're going to have a drainage problem on these
7 -- these are relatively impermeable soils.

8 Q. And the clay cap is even
9 less permeable?

10 A. Yes. But take note that,
11 you know, in order to get a poorly drained site
12 out in this area here, say where it's existing
13 today -- in order to get a poorly drained site
14 here we have to have a depressional area --

15 Q. And that was the point I
16 was coming to.

17 A. -- and we're contouring this
18 thing so we have about a 5 percent slope, so that
19 if we were looking at the soil conditions in terms
20 of moisture, the sort of analogy I would think
21 that would be occurring is up on our well-to-imperfectly
22 drained soils up here, because, in fact, these
23 areas up in here won't have any more than about
24 5 percent slope, so that I would think, under those
25 conditions then, one would expect to get a drainage



1 member similar to what you're going to get in the
2 well and perfectly drained area here.

3 Q. As subsidence occurs there's
4 going to be local changes to the 5 percent slope?

5 A. Well, there's two aspects
6 of subsidence. There's the overall aspect of general
7 subsidence as it goes down, which the whole landfill
8 does, and then there's also the opportunity for
9 differential subsidence that is because of a certain
10 type of material that's put in one area versus
11 adjacent, there may be some differential subsidence.
12 But that is sort of an ongoing problem that they're
13 dealing with at various landfill sites.

14 For example, we visited the
15 London landfill site that's currently under way,
16 and basically, if you look at the literature, the
17 variation isn't very large. In terms of what that
18 will be, it depends on the waste, it depends on
19 the conditions it was compacted to, and so on.

20 Q. But there will be differential
21 subsidence?

22 A. There will be some. Whether
23 it's major or not, I don't know.

24 Q. No one can know because we
25 haven't done it yet?



1 Q. And if there is a differential
2 subsidence, then there's going to be wetness occurring
3 when you don't have the slopes you got...

4 A. There may be some wetness
5 occur, and, of course, that is one other reason
6 why we wanted a 5 percent slope on here, or upwards
7 of that nature, some slope in here. So in fact,
8 then, there is a micro-drainage channel that sort
9 of evolves on the surface, so that in fact there
10 is a run-off being taken and that you're not going
11 to create 'ponded' areas.

12 Q. Wouldn't the simplest thing
13 be simply to make a contingent plan to under-drain
14 the site?

15 A. No.

16 Q. Why not?

17 A. Well, simply for the reasons
18 that you've already referred to. You're going to
19 have some settlement here -- some overall settlement,
20 some differential, we don't know how. You don't
21 want to stick a tile drainage system into that.
22 The only thing it would do is it would plug up
23 on you. It just wouldn't work.

24 Q. And then what we're left with has
25 to be dealt with by the usual methods, using PVC



1 pipe or soil drainage techniques?

2 A. It's going to be dealt with
3 in one of two ways, one of which is used by farmers
4 currently, and that is surface drainage, and you
5 find that all over the clay soils in Southwestern
6 Ontario where they will provide a surface outlet
7 and drain it off.

8 And then number two, if in
9 fact your depression is too large -- and for example
10 I picked on the London landfill site -- they'll
11 come back in and fill that up to some sort of grade
12 so they get some drainage of that.

13 Q. Those represent some level
14 of cost?

15 A. Yes, there would be some
16 cost, obviously, involved.

17 Q. And Dr. Stonehouse has not
18 taken into account those kinds of costs?

19 A. Dr. Stonehouse -- the calculations
20 that he undertook were to do a relative costing
21 on sort of the net return, using a various number
22 of costing systems -- the net returns that you
23 would get as a result of those. He was not told
24 to include in any other costs that may be associated
25 with landfilling. His work strictly deals with



1 comparison of Site D and Site F.

2 THE CHAIRMAN: Mr.Leitch, I wonder
3 if we might just take a short break?

4 MR.LEITCH: Certainly.

5 THE CHAIRMAN: thank you.

6 --- (THE HEARING RECESSED FROM 3:10 TO 3:25 P.M.)
7

8 --- (UPON RESUMING:)

9 BY MR.LEITCH:

10 Q. I want to talk now about
11 the procession of farming on the site as you understand
12 it. My understanding is that the farming will proceed
13 in five separate cells. In other words, they will
14 complete the first cell and they will finish it
15 off for agriculture and start agriculture at that
16 point in time, on the first cell?

17 A. No, that's not quite true.
18 In fact there's sort of succession.

19 As I understand, from talking
20 to Mr.Hiraishi, they'll finish Cell 1 and be starting
21 on Cell 2. They'll then put a cover over that cell,
22 but it won't be put to finish grade for a number
23 of years. So that, for example, you're not going
24 to have Cell 1 totally completed and rehabilitated
25 to agriculture, and that can go in a procession



1 while they're doing Cell 2 and so on. That 1, 2
2 and 3, over time, will all be in varying degrees,
3 but Cell 1, while they're in 2 and 3, would then
4 have a cover of material over it and probably there
5 would be a cover crop of some sort put on there.

6 Q. So the restoration --
7 approximately where will Cell 1 be under the present
8 plan?

9 A. Well, as I understand it,
10 Cell 1 starts up at the top here and then we
11 progressively go down an equal amount to the bottom
12 here.

13 Q. Approximately in fifths?

14 A. Yes.

15 Q. And what you're saying then
16 is that as they finish off Cell No. 1 they will
17 be in the process of filling Cell No. 2?

18 A. Yes.

19 Q. And as they are working away
20 at finishing off Cell No. 2 they won't be restoring
21 No. 1 to agriculture?

22 A. No. They will be putting
23 a cover on. You see, there is a way more than adequate
24 material for one and a half metres on this site
25 -- and Mr. Hiraishi will be giving evidence later



1 on -- but my conversations with him has indicated
2 that because of the cut that has to go on for
3 hydrologic reasons, because of the height of the
4 landfill which is limited for visual reasons, you
5 end up with enough material to put something like
6 3 metres on top of this landfill site. How much
7 is going to go there, I don't know at this time,
8 because it will depend on how much is left in berms,
9 how much as they go along they have to get rid
10 of, but I've asked for one metre plus the half-metre.
11 What is going to end up on there could in fact
12 be 2 and a half metres. At this point I'm not sure.

13 Q. And that would not make you
14 unhappy if it was?

15 A. No, no.

16 Q. Now, if I understand then,
17 this is supposed to be a 20-year site?

18 A. Yes.

19 Q. So that the first cell would
20 be approximately 4 years to conclusion?

21 A. Something like that, yes.

22 Q. Or more?

23 A. 2 or 3 or 4, in there somewhere,
24 yes.

25 Q. But it wouldn't be less than



1 4 if it's a 20-year cycle, would it?

2 A. Yes, that's true.

3 Q. So if they are going to be
4 working on Cell 1 and Cell 2 in overlapping, then
5 it's probably more than 4 years?

6 A. Yes.

7 Q. And while they're working
8 on it it's going to be out of agriculture?

9 A. Yes.

10 Q. And for the period that they
11 simply leave it fallow, with some sort of cover
12 over it but not restored for agriculture, it will
13 be lying fallow again?

14 A. Yes.

15 Q. So there's going to be a
16 substantial loss of farmland in terms of years
17 if this thing progresses?

18 A. Well, I think, you know,
19 you have to look at it as a interim sort of a thing.
20 I think the important thing to address, if we're
21 going to take it to an agriculture after-use, is
22 that "X" number of years down the road we're assured
23 of not losing those lands, and during the interim,
24 you know, yes, you're going to lose the production
25 off of those lands.



1 Q. Well, that's what I was getting
2 at. I mean, how many years is "X" years?

3 A. Well, you know the history
4 of the site is 20 years, so certainly in terms
5 of some of it you're going to lose at least 20
6 years' production.

7 Q. Or more?

8 A. Or more. Or less.

9 Q. Well, how could you have
10 less than 20 years?

11 A. If, for example -- and I'm
12 not sure if the Region is going to do this so it's
13 just a hypothetical thing -- but, for example,
14 while they're filling this area there's still no
15 reason that the bottom part down here couldn't
16 be in agriculture, somebody leasing it and taking
17 a crop off of it, that sort of thing. So that one
18 could visualize a scenario where in fact the area
19 is merely taken out of production for the length
20 of time that it's filled plus some time afterwards
21 when it eventually gets put back to an agriculture
22 after-use.

23 So, you know, you could
24 visualize, I suppose, if Site 1 was not rehabilitated
25 to an agriculture after-use until the whole thing



1 was done, then you would have 20 years for this
2 area.

3 On the other hand, you could
4 visualize it as something like 10, you know. And
5 at this point in time I can't provide you with
6 the specifics on that.

7 Q. Then really Mr.Hiraishi is
8 the person who is going to stage this return to
9 agriculture?

10 A. Yes. And you have to remember,
11 I think, too, that we're talking about an after-use
12 plan here in terms of what happens following closure,
13 but obviously the operations of that site are going
14 to be the important thing to address while the
15 thing is open, and that's going to take precedence
16 over what happens.

17 Q. Let's address the question
18 of field sizes a bit. Let me start with this --
19 that field size is important to economic agriculture.
20 If it's too small a field you have certain loss
21 of economies of scale in terms of operation?

22 A. Yes. Obviously, with the
23 current size of equipment nowadays, that can be
24 a problem, although I must admit I'm always amazed
25 at the small parcels of land you do see farmed.



1 Q. What is the smallest field
2 size which, in your view, is economically feasible?

3 A. Oh, in terms of the...?

4 Q. In terms of this kind of
5 farming, the kind of farming that --

6 A. Well, you know, I can find
7 you areas around here where, for example, they
8 may have -- I've got to convert now from acres
9 to hectares because my mind still works in acres
10 -- we're probably dealing with an area over here
11 that's just, you know, 5 or 10 hectares or less,
12 and somebody is farming that and having no difficulty.
13 On the other hand we can look at another field
14 here. This crop is being dealt with in one field
15 and, you know, it's going to be maybe 15 hectares
16 or something like that. So a lot of times what
17 you find, particularly in this area, is that the
18 size of the fields often conforms to what some of
19 the original ones were.

20 If you go down into the southwest
21 of Ontario, the Kent-Essex area, then they had
22 grants from the government to clear out the hedgerows
23 and their fields have all been enlarged, but you
24 really don't see much response to that in Halton
25 County and up in this general area.



1 Q. Generally speaking, the larger
2 the field, the easier it is to work?

3 A. Certainly with the equipment
4 nowadays.

5 Q. And similarly with the question
6 of slopes. The less slope, the easier and more
7 economical it is to work?

8 A. Yes. We're not going to have
9 them working these slopes here, at 4 to 1. I mean,
10 if you do anything, it's going to be up and down
11 the slope because it's seeded, but you're not going
12 to be going along the contours.

13 Q. Now your proposal for those
14 green areas, No.3 and 4, is red clover as a forage?

15 A. Well, you could go into timothy,
16 red clover. You could go into trefoil. I don't
17 see that it's really critical along here what you
18 have, other than the fact that you establish some
19 kind of a good permanent cover. And a legume contained
20 in it would be a good idea -- for the shallow rooting.

21 Q. When you say "good permanent
22 cover", you don't mean that you're going to seed
23 it once and never go back in and seed it again
24 -- or do you mean that?

25 A. Oh, at some point in time



1 you may have to go back in and seed it again, but
2 certainly it's a long-term sort of thing.

3 Q. So your proposal would be
4 to really only go back in and manage it when you
5 had to --

6 A. Yes.

7 Q. -- to prevent it from becoming
8 completely deteriorated --

9 A. Yes.

10 Q. -- because other species
11 will start to grow up in it?

12 A. Oh, you know, certain types
13 of species will eventually take over, and those
14 are the ones that are best adapted to the site.
15 And the main thing that we want on these areas
16 is a cover to prevent erosion. You'll notice in
17 here there's a hedge along this, and the idea of
18 that being simply to cut down the amount of overslope
19 and water movement that goes down there in terms
20 of water erosion.

21 Q. Is it proposed to take a
22 crop over Area 3?

23 A. No. Not an arable crop.

24 Q. Well, would you cut hay from
25 Area 3?



1 A. Oh, you could if you wanted
2 to, but whether somebody will or not, who knows?

3 Q. Pretty hard with those hedges
4 in there?

5 A. Well, there's no reason why
6 you couldn't go up and down the slopes, you know.
7 In the West they will do things on 25 percent slopes
8 that we won't do in Ontario, simply because that's
9 what they're used to.

10 Q. You're not going to grow
11 alfalfa because it's too deep-rooting and it leads
12 to a gas problem?

13 A. Well, I'm not saying it will
14 lead to a gas problem, but we do not want a deep-
15 rooted legume that will go down, eventually push
16 its roots down to the interface of the clay and
17 the garbage.

18 Q. And you're not willing to
19 grow soybeans because you have found that they
20 won't really cope with what you're proposing?

21 A. Well, what we have found
22 with soybeans -- and this is our work with the
23 pipeline industry in Southwestern Ontario on clay
24 soil somewhat similar -- for some reason or other,
25 which we don't understand, some of the bean crops



1 just do not do well on reclaimed clay soils. We're
2 not quite sure why, but we know that from experience.

3 Q. Now my belief is that that
4 site, in the last cropping year, was about one-third
5 soybean. Did you find there to be soybeans on Site
6 D?

7 A. I'm not sure whether they
8 had soybeans there last year or not, because I
9 didn't check it. I do know that soybeans are starting
10 to move up into this general area and are being
11 grown now as a cash crop. As they gradually breed
12 shorter corn heat unit varieties, then we're finding
13 soybeans are moving right across the Province from
14 the southwest.

15 Q. Now your proposal is that
16 the Region, for some period of time, be the farmer
17 as far as this project is concerned, because there
18 are certain problems concerning monitoring as we
19 go on?

20 A. Yes.

21 Q. And I think your proposal
22 further is that, as farmers, the Region would be
23 better to go out and hire a farmer somewhere to
24 look after this project, under someone's supervision?

25 A. Yes, we have found that to



1 be the best way, actually, yes.

2 Q. And obviously there are farmers
3 in this area who farm rented land and someone would
4 undoubtedly be interested in available land?

5 A. Yes.

6 Q. But do you hold the opinion
7 that you can get a farmer to take this land without
8 subsidizing the farmer in some way?

9 A. Well, it's going to depend
10 on what you do. If you just hire a man to do the
11 work, then he's obviously going to charge a fee.
12 If he has the opportunity to take the crop, then
13 in fact you may find that he's willing to lease
14 the land for whatever nominal fee they decide on,
15 and, you know, undertake generally the sort of
16 tillage operations and fertilization and so on
17 that you'd have on site, and for that he gets a
18 crop.

19 Q. I thought that in relation
20 to the work of Dr.Stonehouse that there was a negative
21 net return over the first 25 years?

22 A. If you look at that data
23 that Mr.Stonehouse used, basically that could apply
24 to any farm operation that's currently ongoing
25 at the moment.



1 Q. Every farmer is losing money,
2 is that what you're saying?

3 A. Well, there are not very
4 many of them. If you were receiving for your produce
5 what you did back in the 1930's and you were paying
6 1986 prices, there are not too many guys who are
7 going to be making very much money, and indeed
8 there aren't.

9 Q. Is that what you're saying
10 is the market today? That you get paid in 1930
11 prices and you have to put out 1980's dollars in
12 order to farm?

13 A. In Canada right at the moment
14 that's pretty well the picture.

15 Q. Well, I find it difficult,
16 then, to understand the economics of returning
17 this particular landform to agriculture. The first
18 problem I have is: what farmer are you going to
19 get to go on what in essence is a poorer class
20 of land and a more difficult piece of land to farm
21 if there isn't some reward if there isn't some
22 reward in it for him?

23 A. Well, I suppose what will
24 make him go on that site is the same thing that
25 makes him continue his ongoing farming operation.



1 We're not saying that this is going to end up a
2 poorer class of land, we're saying that it's going
3 to end up approximately equivalent, given time.
4 And this area will still be a productive area.
5 It would be approximately Class 2. So, you know,
6 the same motivation that makes farmers basically
7 farm any land at the moment.

8 Q. I still don't find myself
9 understanding that, because it seems to me that
10 if the farmer has available to him other land for
11 lease in the area -- which appears well documented
12 in your work -- why would he go to that land with
13 its peculiar set of problems?

14 A. If he were to get a good
15 price for it -- that is, a good price in terms
16 of his rental fee -- we haven't found in the past,
17 from dealing with the aggregate industry, that
18 it has deterred farmers at all. In fact they're
19 quite happy to pick up the extra land at a much
20 lower cost.

21 Q. And so in terms of a resource,
22 as owned by the Region, it's a resource which isn't
23 as good as the resource that's there now, if they
24 owned it now? They could get more rent for it,
25 in other words, in the way that it presently stands,



1 than after this project?

2 A. Well, 'down the road' I don't
3 think that will be true, but certainly for an interim
4 period I would think that would be true.

5 Q. And during that period as
6 well it's going to take some firm with expertise
7 to monitor the way this operation is conducted
8 -- you've provided that as one recommendation?

9 A. Yes, there will be monitoring
10 required -- or there should be monitoring.

11 Q. Is that the kind of work
12 that your firm does?

13 A. We can get into that.

14 Q. Do you have any idea what
15 sort of annual cost would be involved in the Region
16 having someone do the monitoring over, say, the
17 25-year period?

18 A. Well, if you were just going
19 to go out and check, you know, compaction areas,
20 local drainage areas, in terms of differential
21 settlement, that type of thing, I would think it
22 would be just a matter of a few days' time, which
23 I suppose, depending on the level of individual
24 you put on it, may run upwards of \$1,000 or something
25 in that order.



1 Q. I suppose there will be a
2 more intense need for those services when it's
3 being stripped and the soil is being re-applied?

4 A. Yes.

5 Q. And if special problems develop
6 with respect to drainage or methane gas 'kill',
7 that will require more time?

8 A. Yes.

9 Q. You expressed the opinion,
10 I think, that ultimately this agricultural land
11 can be returned to 90 percent of its present productive
12 capacity?

13 A. That's the figure that we
14 gave Mr. Stonehouse in terms of doing his calculations,
15 yes.

16 Q. But that's your opinion as
17 to soil productivity at the end of the process
18 and allowing enough time for the land to recover?

19 A. Yes.

20 Q. And I guess my question of
21 you is: how do you calculate the 90 percent? What
22 is it 90 percent of?

23 A. Well, in this case, what
24 it's 90 percent of is the average yield taken for
25 the last 5 years for Halton County.



1 Q. Now is this land higher-yielding
2 now than the average yield in Halton?

3 A. I can't answer that, I'm
4 not sure. Like, we have not taken yield values
5 off of this site, so I have no way of knowing whether
6 it's better or worse than or equal to.

7 Q. I think we agreed, you and
8 I, earlier, that there are some lands in Halton
9 that are better and that there are some that are
10 worse, and that this one might fit in the middle?

11 A. Oh, yes, in terms of a block
12 of land throughout this whole area in here, these
13 are some of the better lands.

14 Q. Yes.

15 A. But the average yield value
16 that's reported, that we've used, in the Ontario
17 Ministry of Ag. and Food statistics, takes into
18 account that this farmer may be much better than
19 this farmer, who is poorer than this one, and so
20 on. So management, which is a major factor here
21 in determining yields -- what you're getting from
22 the Ontario Ministry of Ag. and Food stats is merely
23 an average of management conditions. If you wanted
24 to know whether, in fact, this site here had better
25 or higher yields than the average for Halton County,



1 you would have to go in and take yield measurements.

2 Q. Well, we know that we're
3 not going to be able to grow our soybeans, and
4 they're one of the highest yielding field crops
5 in Halton?

6 A. Well, I would say corn is
7 much more the preferred one, unless there has been
8 a drastic change since...

9 Q. No, I mean in terms of dollar
10 value.

11 A. Oh, in terms of dollar value,
12 soybean, right at this moment, yes, it's probably
13 giving a better return than corn.

14 Q. So we're losing our soybean,
15 and that will detract from what we can produce
16 -- am I right about that?

17 A. Well, as I indicated when
18 I was giving evidence on the Comparative Analysis,
19 I said there would be a loss in diversity of crops
20 that you could grow.

21 Q. And we're going to lose our
22 ability to grow alfalfa on the landform -- am I
23 right about that?

24 A. Yes, you wouldn't want to
25 grow alfalfa.



1 Q. And we're not going to take
2 a crop from the red clover, so we have no dollar
3 return there. My problem is: conceptually, what's
4 the 90 percent 90 percent of? Is it 90 percent
5 of what we can grow on Area 1?

6 A. No, no. In the analysis that
7 Dr.Stonehouse did, he did yield levels to go through
8 and get returns for various cropping systems or
9 rotation systems that were used. He asked us what
10 yield levels should he use? He argued, number one,
11 that he should use an average of 5-year, which
12 is in his report, which we agreed to, because it
13 gives an idea of what the average over the past
14 years is. And then he wanted to know the yield
15 levels. And we said: "All right, based on our
16 experience..." -- and this is primarily based on
17 rehabilitation work we have done with clay soils
18 in the southwest of the Province -- we felt that
19 probably after a period of about 5 years we could
20 be up to around 90 percent of what that production
21 level would be.

22 Now he then moved to his
23 calculations -- and if you'll note at the end --
24 and then he came up with a figure. For example,
25 if we go to page 10 of Dr.Stonehouse's Report,



1 which is Estimated Crop Production Costs -- Gross
2 Revenues and Returns -- that's in the appendix
3 to our report. Then what he has done is simply come
4 up with a net return per acre.

5 We then, after he had discounted
6 this into 1985 dollars -- which is on Table A-6,
7 page 12 -- if you go down, for example, to the
8 bottom, under Trefoil, and this is the expected
9 net return profile by crop production -- if you
10 go down to the bottom, for example, of Trefoil
11 A, he has a net return of \$1,471 per hectare,
12 irrespective of whether it's Site D or Site F,
13 and we just used that figure in terms of multiplying
14 by the area involved, and that figure incorporates
15 into it the 90 percent yield figure that we gave
16 you.

17 Q. That's 1,471 negative dollars?

18 A. That's right.

19 Q. Because during the 25-year
20 period the land is trying to recover itself --
21 am I right about that?

22 A. Well, not for a full 25 years
23 it isn't.

24 Q. For some part of it?

25 A. We're saying we can be to



1 about 90 percent production within about 5 years.

2 Q. But you can see that from
3 the figures on Trefoil, because you've started
4 a per hectare loss in Year 1 of \$169, and moved
5 during the 5-year period to a per hectare loss
6 of \$60.

7 A. That's correct. But that's
8 reflected in two things: the change in the yield
9 -- in the first year we're saying you can have
10 60 percent of the yield, and on upwards.

11 Q. I just want to be sure that
12 the impression I get from reading this isn't the
13 correct one. I get the impression, from looking
14 at the economic factors set out in Dr.Stonehouse's
15 report -- that one can read that report and conclude
16 that we're going to have an agricultural unit at
17 the end of this which has 90 percent of the productive
18 capacity we started out with, and I guess what
19 we're seeing is that that just isn't so.

20 A. No.

21 DR.KINGHAM: Excuse me, can I
22 just get a clarification? This number "90 percent"
23 keeps coming out. Can you tell the Board -- are
24 you talking about 90 percent per unit area, not
25 90 percent of the site --



1 THE WITNESS: No. Not 90 percent
2 of the site, no. It's 90 percent of a unit area.

3 MR.LEITCH: That's my point,
4 I didn't want there to be any misconception with
5 that.

6 BY MR.LEITCH:

7 Q. Because what I perceive you're
8 saying is that you'll get 90 percent per unit area
9 of Area No.1, and you really get no percent of
10 Area No.3?

11 A. Yes. I certainly don't want
12 to create the idea that we're going to have 90
13 percent of current on-site total production here,
14 that's not the intent at all.

15 Q. No.

16 A. We're saying that we can
17 get 90 percent of the yields on 1 and 2 here after
18 about 5 years.

19 Q. Just going back to your evidence
20 on sizes, that means that we're going to get 90
21 percent on 21.3 percent total area of the site?

22 A. Well, you have to be careful
23 here. We're going to get -- let's see -- if we
24 look at Area 1 and 2 -- yes, 21.3 percent of this
25 total area, but essentially, you know, you're going



1 to get the same equivalent production, 4 on 4.
2 So when you say "23 percent of the total area",
3 you know, we have to...

4 Q. Let's go through it on the
5 basis of the designations on the plan. Area 1 is
6 18.1 percent of the total of the site?

7 A. Yes.

8 Q. And you're going to get 90
9 percent on a 'best case' basis of Area 1?

10 A. Yes.

11 Q. And to detract from that
12 you're going to have to find some methane gas problems
13 or some wetness problems or some unforeseen problems,
14 am I right about that?

15 A. You could do. In fact you
16 could be above the 90 percent, too...

17 Q. But not more than 10 percent
18 above 90 percent?

19 A. On the average.

20 Q. And Area 2, which is 3.2
21 percent of the total site area -- what percent
22 return would you get on that?

23 A. We would say "90 percent"
24 on that figure.

25 Q. Then we've got 90 percent



1 of Areas 1 and 2, for 90 percent of 23.3 percent
2 of the total?

3 A. That's correct.

4 Q. Well what percent return
5 will we get on Area 3?

6 A. Well, you can take it from
7 zero on up to some other factor. You can say: "We're
8 just going to leave it in a passive use and basically
9 have a cover" -- then potentially you're not getting
10 anything off it.

11 Q. Zero percent?

12 A. Yes.

13 Q. Because that's what the proposal
14 is.

15 A. Yes.

16 Q. Because really it needs to
17 be protected from rain plus erosion?

18 A. Yes.

19 Q. And in the white area, which
20 is 11.1 hectares, zero percent?

21 A. Well, that would be non-
22 agriculture, zero percent, yes.

23 Q. So that's zero percent of
24 80 percent. That leaves us with Area 4.

25 A. Yes.



1 Q. And given your planimentering
2 of that at 76.5 hectares --

3 A. Yes.

4 Q. -- but on that 76.5 hectares
5 there's obvious hectarages that have to come out.
6 You have to take out the fill area for a period
7 of time, where you're going to store the excess
8 material?

9 A. Well, certainly these areas
10 here, your bulk bin, pick-up area, etcetera, your
11 excess cover material here -- that would be taken
12 out of production while, in fact, you had an
13 operational landfill on site.

14 Q. And the roadways and the
15 berms?

16 A. Yes.

17 Q. Are they taken out for ever
18 or are they taken out for the time being -- or
19 is that something for Mr.Hiraishi?

20 A. I would say Mr.Hiraishi.

21 Q. Then what percentage do you
22 propose in Area No.4?

23 A. Well, because there's really
24 nothing happening here except this road going through,
25 for example, in this area here, I don't see why



1 you couldn't use current production levels and
2 you could say: "Well, we're going to get the average"
3 if you want to use a figure.

4 Q. And would you farm 4 up where
5 it becomes strip at the southern-most portion?

6 A. You could do, once it's returned.
7 It's obviously a fairly narrow sort of a field.

8 Q. It's more likely that it
9 won't be farmed in any significant way?

10 A. That's quite possible.

11 MR.LEITCH: Thank you, Doctor,
12 those are all my questions.

13 THE CHAIRMAN: Thank you, Mr.Leitch.

14 Well, as the Board mentioned yesterday,
15 we have some time constraint this afternoon and
16 so we would just like to adjourn.

17 Yes?

18 MR.HODGSON: Before we break
19 could we get an indication of how long we might
20 be with this witness on Tuesday?

21 THE CHAIRMAN: Yes, that would
22 be a good idea. I was just going to ask.

23 Mr.Garrod?

24 MR.GARROD: I wouldn't want to volunteer
25 to guess first, I want to organize my notes, but



1 at this time I doubt if I will be much more than
2 half to three-quarters of an hour.

3 MR.PERRIER: I don't foresee
4 that we'll be asking any questions.

5 MR.McQUAID: About half to an
6 hour, I'd say.

7 MR.TIDBALL: The Ministry of
8 the Environment has no questions.

9 MR.CASTRILLI: Half an hour.

10 THE CHAIRMAN: It will take the
11 better part of the hearing day -- hopefully.

12 MR.HODGSON: Mr.Lederer has also
13 indicated to me that he would like to respond to
14 the request that you made just before lunch, and
15 it would seem to be that the appropriate time to
16 do that would be after this witness was completed.

17 THE CHAIRMAN: Yes.

18 MR.HODGSON: So perhaps you could
19 anticipate using that chunk on Tuesday.

20 THE CHAIRMAN: You needn't be
21 at great lengths with that, Mr.Lederer. It's just
22 a guide for the Board.

23 MR.LEDERER: I understand, Mr.
24 Chairman, thanks.

25 THE CHAIRMAN: Fine, then, I



1 think we'll adjourn until 10:00 a.m. on Tuesday
2 morning.

3 --- (THE HEARING ADJOURNED AT 4:00 P.M.)
4

5 CERTIFIED CORRECT:
6

7 Jean Caldicott

8 Jean Caldicott
9 Certified Verbatim
Reporter

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