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.

VOLUME: 71

HELD AT: Oakville, Ontario

DATE: December 9, 1987

OFFICIAL REPORTERS
NETHERCUT & COMPANY LTD.
185 RICHMOND ST. W.,
TORONTO, ONT. M5V 1V3
TEL: 593-4802

I N D E X

WITNESSES		PAGE NO.
HOFFMAN, Michael Kerr	(resumed)	16608
Cross-examination by Mr. Tzekas		16616
Cross-examination by Mr. Castrilli		16686
Re-examination by Mr. Leitch		16711

E X H I B I T S

NO.	DESCRIPTION	
M-387	Grain and Forage Crops Estimated Production Costs, Ontario, 1986	16616
B-388	Cards relating to three areas in report.	166671

THE 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 Sections 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 be 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.

BEFORE: H. H. Lancaster, Q.C. - Chairman

Dr. D.J. Kingham - Member

Nethercut & Co. Ltd.
Toronto, Ontario

Hearing conducted at The Oakville Granary Commercial Centre, 105 Robinson Street, Oakville, Ontario, on December 9, 1987, at 1:00 p.m.

VOLUME 71

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

APPEARANCES (Cont'd):

C. Stevenson P. Hancock	for Framgard Holdings, Fosseri Investments Limited, Seriphos Investments Limited and Topic Investments
J.H. Olah	for the Halton Region Conservation Authority

* * * * * *

Nethercut & Co. Ltd.
Official Reporters
185 Richmond St. W.
Toronto, Ontario
M5V 1V3

Per: P.D. McQueen

--- Upon commencing at 1:00 p.m.

MR. LANCASTER: Thank you, please be seated. Our cross-examiner is not here.

MR. LEDERER: I guess that means he has no questions.

MR. LANCASTER: In the meantime, Mr. Leitch, are there any new arrangements for coming back in January?

MR. LEITCH: No. As far as I am aware, the best we can do is start on that day that I referred to, the 12th.

MR. LEDERER: Why are we not sitting on the 11th, which was the original day?

MR. LANCASTER: I wasn't sure of that, that is why I broached the question.

MR. LEITCH: Mr. Estrin is in Britain and he arrives home on the 10th.

MR. LEDERER: If he is returning on the 10th, why can't we start on the 11th?

MR. LEITCH: I think it is a thing called jet-lag he has in mind.

MR. LANCASTER: I know what he is talking about.

MR. LEITCH: The witnesses he would

be calling are the panel of hydrogeologists at that time and it is not possible for me to do it. I can perhaps go through their qualifications, but that would be the end of it.

Mr. Estrin hasn't told us we are getting Dr. Richardson at that time. If the Board wants, I will check with him today and find out what his plans are.

MR. LANCASTER: If we can determine the next witness, let us put it that way, it is up to you, it is your case and you put it in the way you wish to put it in.

MR. LEITCH: We had intended to call Dr. Richardson in the portion before Christmas. Because of the length of time it took to finish our friend, Mr. Lederer's case, and the unavailability of Dr. Richardson, we couldn't do it. I think it is now intended that he be called more towards the end of the case.

MR. LANCASTER: Mr. Tidball?

MR. TIDBALL: Mr. Chairman, there is something I had wanted to raise when we had a minute. I advised the Board originally that I intended to call Mr. Roger Clarke who was the environmental assessment co-ordinator, the person

responsible for authoring Exhibits E109 and E110, that is the Government Review and the Supplementary Review. In discussions, I guess going back to October, about how to limit things at the hearing, we had discussions about various witnesses and all of my friends agreed that they had no particular need to have Mr. Clarkeon the witness stand. Everyone, I think, expressed an interest. If anyone has changed their mind, they can tell me now. Everyone expressed the feeling that there was no need to call him. I had been going along under that assumption, although a witness statement is almost prepared as it turns out.

Given Mr. Walker's evidence and given the Board's obvious interest in the area, I wanted to raise it with the Board and seek some direction if you are inclined to give it. I am certainly prepared to call Mr. Clarke. I don't think he would be that long. I am certainly prepared to call him and he is prepared to talk about the Environmental Assessment process from the branch's point of view and talk about the government review.

I thought I should seek some directions from you now, because I can have the thing ready over Christmas. We can finish it off and

distribute it.

MR. LANCASTER: I think it would be advisable, Mr. Tidball, I think it would be of assistance to the Board.

MR. TIDBALL: I will do that then and probably file it, hopefully when we come back in January.

MR. LEDERER: I have pages of the exhibit you asked me to provide you with. The pages I read from the Exhibit 385. I have those pages, sir. I think if everybody would just take this and attach it and make it part of Exhibit 385, it would make more sense than to have a separate exhibit.

MR. LANCASTER: It will be made part of 385.

While we are on the question, Mr. Leitch, Mr. Lederer, the Board has decided we will commence on the 12th rather than the 11th. I realize the problems Mr. Estrin will have and you would have if he is not here.

MR. LEITCH: Thank you, Mr. Chairman.

MR. LEDERER: Mr. Chairman, could we have it clarified? I am quite certain that Mr. Estrin has indicated that Mr. Richardson would

be first and I don't want to walk in here and be prepared to do hydrogeology and discover we are going to do birds.

MR. LANCASTER: Perhaps you could clarify that too, Mr. Leitch.

MR. LEITCH: If I can't find out today, I will let all parties know over the break. I am sure I can find out today. Mr. Estrin may not be in his office. I will do that at the break.

MR. LANCASTER: Thank you.

Well, Mr. Tzekas, we will get to you now.

MICHAEL KERR HOFFMAN, Resumed

THE WITNESS: If I can interject, Mr. Chairman, there were some questions yesterday I promised to address by looking at information overnight. If I could deal with those before cross-examination continues, I would like to do that.

MR. LANCASTER: All right.

THE WITNESS: Some of the questions related to Figures 7 and 8 in our report, which is Exhibit ...

DR. KINGHAM: M-372.

THE WITNESS: Thank you.

In Figure 7, on the second line, area of census farms, on page 14, under 1971 'a' that should read 120,971.

MR. LANCASTER: You are under 'a'?

THE WITNESS: 'a', 1971, area of census farms, number 1, should be added so that it reads 120,971.

Now, this information in Figure 7 is taken from Ontario Ministry of Agriculture and Food data. It is summarized yearly by the Ministry.

In Figure 8, there was some question about the relationship between the number of farms, owners and tenants and part owners in the 1976 data, it is Figure 8 on page 15. This information comes from Statistics Canada and, as it turns out, the 1976 census farm definition is different from that in 1981. So, what we discovered was that the OMAF data has considered this change and modified areas, whereas the StatsCan data, the original information we used for Figure 8, doesn't make this change. We found it in our original chart that the number of farms should be modified so that it fits the original census data definition.

So, under 1976 under number of farms,

instead of the value 88,801, that should read 76,983 and under Halton where it reads 1,035, it should read 796.

We modified those numbers so that there would be a correlation between Figures 7 and 8. We shouldn't have done that.

DR. KINGHAM: What was the number you gave for Halton, please?

THE WITNESS: Seven ninety-six.

DR. KINGHAM: Growing to 969 in 1981.

THE WITNESS: That is correct. Again, the census definition changed between '76 and '81.

DR. KINGHAM: The real reason I asked those questions yesterday, Mr. Hoffman, was to try to understand what had happened in Halton between '76 and '81 where your Figure 7 data seemsto indicate there had been an increase in the area in farming use by approximately 3,300 acres or so being your numbers 125,792 acres in '76 going to 129,030 acres in '81. When I looked at your Figure 8, it seems as though somehow the total farm area had grown over that period of time by 11,000 acres. I didn't understand where the 11,000 acres might have come from.

What is your best assessment of the actual increase in area under farming? Is it closer to the 3,000 acres represented on Figure 7, or the 11,000 on Figure 8?

THE WITNESS: My best estimate would be the one on Figure 7.

So, that was the first question.

The second question related to topsoil depths. That again is in our report, maybe someone is faster at finding the page than I am, Figure 23, page 47. There was some question about the mean value there. The mean value should be 17.88 centimetres. I was in error. I divided by 67 instead of 57.

MR. LANCASTER: I think you said there was no data for those 10 points.

THE WITNESS: That is correct.

MR. LANCASTER: I have 17.88 here.

THE WITNESS: I had to check that to see if I agreed with Mr. Lederer's calculation.

The other question that was asked of me related to Papercourt Farm and the kinds of soils that were on that farm in Britain, one of the examples that has been used in the literature. Originally, soils were a loamy sand texture. Many

of the original soils were not available for re-instatement on the site so in that particular area they imported soil and they imported a range of different textures. That included sand and gravel and what they called mixed soils. In other parts of the work they described a sandy clay soil. So there is obviously a broad range of textures that they have used in that particular area.

Then, there was one final question and that related to things like marginal cost as opposed to gross margins, and those kinds of things, page 58. So, I prepared a document last night that included more information. If I could have some assistance in putting this before the Board.

MR. LANCASTER: I think the revised Figure 26 has to be replaced on page 58.

Let us mark that M-372A then.

DR. KINGHAM: Just so the record is clear then, it shows on this new chart, gross income and total costs that add up to the difference which is showed as being negative in your original Figure 26. Those are the columns we didn't see before.

THE WITNESS: That is correct.

MR. LEDERER: Mr. Chairman, I am

sorry, I didn't get the numbers.

MR. LANCASTER: M372A for Figure 26. I don't know what this document is.

DR. KINGHAM: What the second document is.

THE WITNESS: Well, if everyone has it in front of them, I will explain if I may.

MR. LANCASTER: Just a moment. Do you have a question, Mr. Lederer?

MR. LEDERER: I guess I was going to say I would like to have it explained. I guess I should indicate why. This was really produced in response to a question I asked and it is conceivable at least to me, I would want to ask some questions about it.

MR. LANCASTER: This document?

MR. LEDERER: I was talking actually about this one. I don't know about this one. I don't know what it is yet, but yes, it is conceivable to me I would want to ask questions about either of them. I am not sure that it is, I can understand the filing of Figure 26. I am not sure it is appropriate to be producing a document like this one now. I certainly want an opportunity to read it and if I have questions about it, I

think it appropriate -- in effect, it is questions arising out of the questions I have asked.

MR. LANCASTER: I think that will be all right.

MR. LEDERER: If Mr. Hoffman -- if I could have the chart explained, particularly the terms explained, that would be a good starting point.

MR. LANCASTER: I think that is the reason for changing the chart.

THE WITNESS: Yes, of course, that's why I included the additional material. If we look then at the economics information report entitled "Grain and Forage Crops Estimated Production Costs Ontario 1986," that which has been handed out, contains portions of the original document. The information compiled in Figure 26, Exhibit M372A comes from these kinds of documents, 84, 85 and 86. If we look then at the information on estimated production costs, that document outlines the methods and procedures and labour hours and costs, materials, tractors, land charges and a number of other things including building costs.

Basically, this document outlines the assumptions associated with the derivation of figures that have been used.

DR. KINGHAM: This comes from an existing OMAF production of last year. It is in the literature now.

THE WITNESS: That is correct. So that if we turn then to the page labelled "8" we can see an example for grain corn. That on page 8 is called Table 3 and lists different costs. A gross margin analysis and a cash analysis. So, if we are interested in what variable costs are, there is a long list there. It ranges from hired labour, seed, fertilizer, through to storage, application of nitrogen, crop insurance, marketing fees, and other factors. There is a cost then assigned per hectare or per acre for each one of those so that variable cost for 1986 is $492.00. If we look at Figure 26, Exhibit M372A, that $492.00 then appears under the 1986 column for variable costs. There are then fixed costs if we can refer back to Table 3, including labour management allowance, tractor and machine costs, interest on land taxes and other overhead. That value as a cost per hectare is $390.00.

If we then refer to the fixed costs for 1986 in M372A, that $390.00 appears. We have a total of all costs which is $882.00. Again, that

appears in 372A.

Then, we have a gross margin analysis which takes gross income of $817.00. That figure also appears on Figure 26 and subtracts total variable costs which have already been listed and we show gross margin value.

So then gross margin doesn't include fixed costs. A cash analysis includes some fixed costs. So, in that particular instance, if we look at C on Table 3, we see that cash costs include total variable costs plus interest on debt portion of investment in tractors and machines of $14.00 per hectare plus taxes and other overhead costs.

The other option is to take gross income minus the total costs and that is where you get the negative value. So, these pieces of information here are for purposes of definition and I accept that they are a generalized version of costs throughout the province. I included them to show the kinds of gross income and relative costs that a farmer would have to consider when he or she is going to crop.

MR. LANCASTER: It is background information. Perhaps we will mark it as an

Exhibit. Do you have an objection?

MR. LEDERER: No, I have no objection to putting it in as an exhibit.

MR. LANCASTER: Exhibit 387.

--- EXHIBIT NO. M-387: Grain and Forage Crops Estimated Production Costs Ontario, 1986.

THE WITNESS: I believe that then, answers any questions that were directed to me yesterday on which I promised to find an answer.

MR. LANCASTER: Thank you.

MR. LEDERER: Sir, if I could, I frankly don't think I will have questions, but I would just like to have a break to read this document over and I understand completely that I would be restricted to only things arising from this document.

MR. LANCASTER: It is all background to his calculations.

MR. LEDERER: I frankly don't think so, but I would like to reserve that right.

MR. TZEKAS: Has this been given an exhibit number?

MR. LANCASTER: M-387.

CROSS-EXAMINATION BY MR. TZEKAS:

Q. Mr. Hoffman, you describe yourself in your C.V. as an agrologist. This is a very broad term, sir. I did notice that within this broad field you seem to specialize or take a particular interest in soil analysis both in your studies and in your work; is that fair?

A. That is correct.

Q. Would it be fair to say that this is your particular field of expertise within this nebulous field called agrology?

A. I tend to specialize more in that part, yes.

Q. You also indicated that you were doing work on a Ph.D. at the University of Waterloo. Can you tell me when your course studies on that started?

A. That started this year.

Q. Therefore, I take it that you began that particular course after the conduct of most of your research in connection with this paper, your report in this case?

A. That is correct.

Q. Now, one of the first conclusions that you come to in your report is that

agriculture in Halton Region makes a significant contribution to the local economy. That isn't an issue or a statement that we disagree with, Mr. Hoffman, but I would like to get a perspective on that point.

First of all, dealing with the context of this Region within the province itself, in Exhibit M-373, that is the appendices, there is a paper there by the Halton Federation of Agriculture. I am referring to page 121 of the document, the 121 being the handwritten number at the bottom of each page.

DR. KINGHAM: What tab is that?

MR. TZEKAS: I am sorry, Exhibit 373, the appendices. I don't have tabs in mine. I only notice Tab 2, page 121.

THE WITNESS: Excuse me, mine only goes to 111.

MR. TZEKAS: The point is fairly simple. Let me quote you a statement that I wanted to refer you to and then just ask you a question on it.

The statement is that:

"As a percentage of total land area, Halton represents less than one per cent ..."

And I read that to be less than one per cent of the farmland in the province, is that a figure you are familiar with, sir?

A. No, it is not. I am trying to find this figure.

DR. KINGHAM: In your version, it would follow Tab 2 and be about the ninth page in. Actually, it is the 11th page in.

MR. TZEKAS: Q. The statement is the one, Mr. Hoffman, that appeared at the top of the page:

> "There are before you some facts and figures about agriculture in the Region and a comparison with the provincial statistics."

Those are the preceding pages and it says:

> "Please note as a percentage of total land area, Halton represents less than one per cent, but there are many of these statistics in which we excel and produce way more than our land base would indicate."

So, just looking at the land base

itself, and you have the statistics now before you.

A. Yes.

Q. Am I right in thinking that that figure of less than one per cent is approximately right?

A. As I understand it, that refers to the land base, yes.

Q. If we look at the -- in the statistical analysis which precedes that page, the dollar value of the crops grown, it represents something in the order of 1.4 per cent of the provincial total.

A. Yes, these aren't my figures but I have no problems with them.

Q. I think similar figures appear in Halton's rural development policies review at page 3, if you are interested in another reference, but you are prepared to accept that that is the approximate percentage figure of Halton's farmland as compared to the total in the province and the approximate percentage figure of Halton's crop values compared to the provincial total?

A. Yes, I am.

Q. Considering then, going to another level of perspective, the site itself. At

page 15 of the report you indicate that in Halton in 1981 there were some 52,000 hectares of farmland, that is at page 15 of your main report, Exhibit M-372.

A. The number again was?

Q. Fifty-two thousand, two hundred and seventeen, to be specific. That is in hectares and it is based on the conversion that we had.

A. Yes.

Q. Of that 52,217 acres , then this particular site represents at the maximum 126 hectares more or less?

A. Yes, of the 52,218 hectares the site is 126 hectares.

Q. If we assume those figures to be accurate, Mr. Hoffman, my calculation is that this particular site represents approximately one-quarter of one per cent of the farmland in Halton. You have a calculator there, can you confirm that figure?

A. Yes, I will confirm that.

Q. Now, there is also an indication in your report that the amount of improved land in Halton has been increasing for the period from 1976 to 1981.

A. Yes.

Q. The amount of land farmed in total has also been increasing over that same period. Looking at the chart on page 14 of your report, I take it that is a trend that really extends back to 1971.

A. That is correct.

Q. So, for the 1971 to 1981 time period, you have this trend of more and more property coming into agriculture in the region.

Now, I take it they are not making any more land, Mr. Hoffman, I take it that what this indicates is that there was previously under-utilized land that is being brought into agricultural production.

A. That is one interpretation, yes.

Q. What other factors are there?

A. Well, these particular figures define the area of census farms. So, it may be that more individuals -- it could be hobby farmers are actually producing lower levels of agricultural produce and are selling them.

Q. But sufficient to come within the definition?

A. Exactly.

Q. I accept that. Is there anything to suggest that this particular trend in 1971 to 1981 has been exhausted?

A. I have no evidence to support that particular perspective either way.

Q. It may be, it may be that this trend has continued in 1981 to 1987. It may be that the trend is continuing?

A. That is possible, yes.

Q. May I have you look at Figure 6 on page 13 of your report? You will notice there two lines in the years 1971 to 1981 and I think this confirms in graph form what we have just been saying. You will note, first of all, the area in census farms at the top of the page.

A. Yes.

Q. Below that there is the area under crops. The difference between those two lines, Mr. Hoffman, by my very rough calculations, is about 50,000 acres. Do you know what that 50,000 acres represents?

A. Presently, no, I don't.

Q. Might it be that that 50,000 acres also represents under-utilized property that is contained within a census farm, but simply not

put into production?

A. It may be unimproved land that will not be put into agricultural production because of its capability, or for example because it would require improvements that an individual farmer was not willing to spend money on.

Q. That seems to suggest to me, I may be wrong in this, but it seems to suggest that there is at least some additional potential farmland in Halton which for whatever reason or circumstances, is not now being brought into production but might be brought into production at some later stage.

A. That is a reasonable assumption yes.

Q. This is consistent with the particular assumption I put to you. It seems to me to be consistent with the two documents that I would like to refer you to, Mr. Hoffman. The first is Exhibit B-115. If you will just bear with me one moment, Mr. Hoffman, I would like to find the version that I marked up.

A. I don't believe I have a copy of that exhibit.

Q. I will give you a copy then.

I can find one I have marked up. I am sorry, I can't find my marked version. I am going to start going through with it in this way. Are you familiar with this particular document, sir?

A. I have seen it before, but I can't recall from memory its contents or any specifics about it.

Q. I think, I stand to be corrected, but I think this is one that is referred to in the list of materials read in preparation for this particular case.

A. Yes.

Q. That particular document describes agricultural or rural development in the Region of Halton and it compares that development to various other counties in southern Ontario. They have picked 12 as a study group. The document draws certain conclusions and I would like to point you to some of those conclusions and ask you whether you agree with them and then try to relate it back to the discussion we have had.

First of all, it indicates that, if you go to page 3 of the document ...

A. Yes, I have page 3.

Q. It indicates there that the

farm size in Halton is very, very small compared to the study counties that they were looking at. That statement continues on page 5. Is that something from your experience that you are able to comment on, or confirm?

A. There are a number of holdings less than 100 acres within Halton. I haven't done a complete study to see how they are distributed or the relative proportion of them.

Q. May I refer you to page 8 of the document and here the document is discussing the ownership pattern of Halton's farms and it makes the point that in Halton there are many, many more tenant-operated farms than in the study group. I will read you the second sentence that appears on page 8. It says:

> "Halton Region, however, had less than half of its farmland in ownership of the operating farmers. There was more farmland being rented in Halton in 1981 than there was owned. This condition may be a response to the process of rural to urban land conversion currently underway in areas like

Halton which are in proximity to rapidly expanding urban areas."

Now, is that a trend that you are aware of, or is it a trend that you are able to comment on?

A. In general terms, I will call it a hypothesis that is put forward here. It is a reasonable one. The condition of additional rental land may be a response to the process of rural to urban land conversion. At the same time, it is a reflection of the costs associated with farming. As we have, or as I have talked about previously, the lower costs associated with land rental allow a farmer to make a profit more so than having to invest in capital in the land itself to purchase.

Q. Sure, and cost as well, from your discussions with Mr. Lederer, would certainly be another item that is influenced by the presence of an urban centre in proximity to the agricultural area?

A. That is correct.

Q. Now, turn to page 11, if you will, please. At this point, the document has been discussing this phenomenon of conversion to

urban uses. It says in that second paragraph on that particular page:

> "The above may partly explain the high amount of land that is being rented for farm use in the Halton Region. The rented land may be an intermediate stage of the rural to urban land conversion process. Having sold the farmland to a developer or speculator the same or another farmer may be renting the land for short-term agricultural use while the new owner is awaiting a rezoning to urban, industrial or commercial use. At that time, farmland will be taken out of agricultural and converted to an urban use. Because Halton is surrounded by rapidly expanding urban areas, it is very likely that this is in fact happening in the Region."

Now, is that again something that you can give us your comments on, sir?

A. On a broad conceptual basis,

this kind of thing may be happening. The actual conversion of the land will depend on a number of factors, one of them being, obviously, the policies of the Region and of each municipality. Land rental, or shall we say ownership of land other than farmers may be a reflection of people's desire to invest in land for pension purposes for example. They may wish to sell the land even as farmland later on when they need for the funds for their retirement.

Obviously, if the land is sold for commercial or urban uses, they will get a greater return on investment. That might be the hope, but whether they can realize that hope or not will be entirely different.

Q. What you are saying is that there are people willing to speculate?

A. That is exactly ...

Q. That is really the word that it comes down to. Is this the phenomenon that is being described here. really tie in with what we were discussing before, that there may be in the Region of Halton, a significant amount of land that is currently under-utilized but has potential for agricultural uses?

A. I don't have the data to

answer that question specifically.

Q. I will take you to the conclusions in the report. This relates to something that we will get into. It is at page 18.

I would just like to read it into the record now while we have this document before us. As I say, we will go back to it. I would like to read you the very last paragraph that appears on that page, beginning with the words:

"This large portion of small farms combined with other factors indicates the need for a closer study of the viability and sustainability of the agricultural industry in Halton Region. Can an agricultural industry continue to be viable in the midst of high proportions of rented farmland, extremely high rates of rural to urban land conversion, relatively high capital and operating costs and the omnipresence of speculators and developers?"

Now, the document doesn't answer that question. It simply poses it. As I say, I will get back to that in a moment, Mr. Hoffman.

There is another paper which I don't think has been put in as an exhibit. I am going to try to do this without putting it in as an exhibit. It is by a professor at the University of Guelph, whose name is Van Duren. I hope I am saying that correctly. Is that someone you are familiar with, Mr. Hoffman?

A. I know of him, yes.

Q. Is he someone whose expertise you are aware of?

A. His studies normally centre on agricultural economics at the University of Guelph.

Q. Within that field, would you consider him to be an expert?

A. Yes, I would.

Q. Now, he did a paper on the effects of urban influence on agricultural land use. I would like to take you through a couple of statements in that paper. Again, have you comment on them if you are able to. I don't think the entire paper needs to be put in but I will distribute copies for my friends.

One of the very first comments that Mr. Van Duren makes, and I will read these. Anything

I am interested in, I will read into the record.

He says:

"Agricultural land is highly affected by urban influence."

I take it that is something we can all agree to, his very first sentence in the paper?

A. Yes, there is some effect of urban influence on agricultural ...

Q. Then he talks about two areas, one called the fringe area which is immediately next to the urban area and the next is called the urban shadow zone. He talks about the fringe area as varying between city to city. He speaks in terms of it being a three to five-mile zone for small and intermediate cities and an eight to ten-mile zone for large cities. Is that something that in your experience you are able to comment on?

A. I have difficulty in defining what these terms really mean in terms of their area or geographic extent. I don't feel comfortable in commenting on the accuracy or validity of it.

Q. Then let me then go on to the next comment. He talks about an area called the urban shadow zone. He says:

"The urban shadow zone is the area

between the urban rural fringe in almost completely rural countryside. It can extend for 20 miles beyond the urban rural fringe. The dominant land use in this area is rural. A casual observer may not see much difference in land use between the urban shadow zone and the completly rural countryside. However, there are differences. The amount of idle land and land not used for agriculture but for other rural uses such as forestry or recreation is usually much greater than the agricultural hinterland with comparable soils and climates."

Is that something that, Mr. Hoffman, you can comment on, ignoring for a moment the particular reference to the size of the zone. Is it your experience there are these zones and this is a phenomenon that is typical of them?

MR. LEITCH: I rise because my friend, when he started his cross-examination went to the witness's qualifications and pointed out, got him to agree that his specialty was soils and now he takes

work from an agricultural economist which seems to deal in planning issues and he reads into the record, from a paper which may or may not become an exhibit in these proceedings. He wants this soil scientist to comment on these planning concepts. It seems to me that it obviously is relevant to issues in this case, but surely it isn't relevant to the area of expertise of Mr. Hoffman. It can't be very useful except as a means of using a witness to place this material before the Board. I can't understand what useful weight there can be to this.

If you have someone who will come here and express these opinions and submit himself to examination on them, that might be useful. The problem I have is that you read it into the record and of course in cross-examination, from my perspective, I am sort of left gasping. What do I do with it? Do I make arguments about its weight? Surely there must be some area where admissibility of documents like this and use of a document like this to examine a witness like Mr. Hoffman should be proscribed by the Board.

MR. TZEKAS: Mr. Chairman, given our experience with Mr. Estrin and his holus-bolus attempts to put in articles and half the literature in

the United States.

MR. LANCASTER: That was my concern at the time.

MR. TZEKAS: I am quite surprised by Mr. Leitch's objection but the propositions that I am putting to the witness and the use of this article is just a convenient way of stating it really. I would have thought it fairly simple. If Mr. Hoffman isn't able, or doesn't have the expertise to comment on them, I am perfectly prepared to accept that and I will move on.

MR. LANCASTER: I think you may ask the questions, but I don't think we will want to have the paper put in as an exhibit.

MR. TZEKAS: I don't want to, sir. The Board has already too much before it.

MR. LANCASTER: That's for sure.

MR. TZEKAS: Q. Are you able to comment on that, Mr. Hoffman, this phenomenon? I don't think the terminology is very significant, but an urban shadow zone where you have these factors, factors such as idle land and land not used for its full capacity?

A. I can only comment on it in a generally conceptual way. I can't comment on it as

a matter of specific studies.

Q. In a generally conceptual way, isn't this a phenomenon that we are used to seeing in southern Ontario?

A. Yes, it is and that's why the Foodland Preservation Branch issued its policy to try to preserve farmland.

Q. Mr. Van Duren only has one other item in his report that is of interest to me. He indicates that the total size of reserve land in the Regions of Halton, Peel and York in 1976, was almost one-fifth of the 1961 agricultural land base in these counties. Is that a figure that you can give us any comment on?

A. No, I cannot.

Q. Now, aside from the problem of under-utilized farmland that may exist in urban shadow zones or in any area actually, it is my understanding that the productivity of any particular parcel of farmland will be influenced by factors such as the fragmentation of ownership, the prolonged non-resident or tenant use of the property for agricultural purposes, its proximity to conflicting land uses such as residential land and costs. Is that an accurate statement, sir? Do those things

influence a particular parcel's productivity?

A. That has been a hypothesis. I am not aware of any specific empirical evidence which would support the view that rental land, fertility or productivity is that markedly reduced, or shall we say that there is a direct correlation between them.

Q. In the absence of a direct correlation, are you prepared to agree with me that property that is subject to these influences and it may well produce less than a property which is not, even though the soil capabilities are exactly the same?

A. At one time I think that might have been true, but under current practice, many farmers are now leasing land for a very long time period. It is essential that they lease this land to operate in the current economic climate, if you like. So that they are actually looking to maintain land and they are actually a stake-holder in the productivity of that land. Therefore, they work very hard to maintain its productivity as they would their own land.

Q. I am going to ask you to assume, Mr. Hoffman, because Exhibit B115 which is

produced by the Region of Halton says that that isn't happening in Halton. Problems in Halton are short-term leases and in those situations you have tenants who are not prepared to make the necessary capital investment in their property and so on, so in that context, assuming those facts to be correct, is it possible that the productivity of a particular parcel of land might suffer?

A. If you insist on assuming that those facts are correct, then it is possible, but I do not agree or I do not have the information that would support the view that these are short-term leases.

Q. You just don't know?

A. That is correct.

Q. Now, Mr. Lederer took you through many of these issues and I am not going to repeat them, but can you indicate to me, sir, on the property within that area where Site D is located, how many of those farms are actually worked by owner/occupiers?

A. The specific breakdown between owners and tenants, I can't recall at the moment.

Q. If I were to suggest to you that there isn't a single property within that block

of land extending all the way north to Britannia Road that is an owner-occupied farm, would you -- do you have any information on that?

A. No, I don't.

Q. Do we have, Mr. Hoffman, we have been discussing many trends about the urban influence on agricultural property and so on. From your experience as an agrologist, is it likely, sir, that these trends will continue? That is, will urban uses continue to create an impact on agricultural landholdings in this province?

A. I have some difficulties with that question because it relates again to a number of factors I have already described. Obviously, the policies, the planning policies of municipalities or regions would very much affect what is happening to that farmland. There has been, since the introduction of the Food Land Guidelines, significantly more attention paid to the preservation of farmland. So, I have some difficulty predicting what will happen.

Q. That raises a new concern. It is one that faces the Board, I suppose. In trying to understand the long-term implications of the presence of a landfill on Site D, I take it you

would agree with me that the Board must consider not only what exists there now in terms of agriculture, but what is likely to be there in 20 years.

A. That is correct. That is why we look both at capability which is a potential rating as well as existing land use.

Q. If, for example, that particular land were to be rendered unproductive or uneconomical for agricultural uses within that time-span for reasons other than a landfill site, would it be fair to say that the landfill site might not have any serious long-term implications on agriculture?

A. Could you reword your question for me, please?

Q. If that land, on Site D, within the next 20 years were to be rendered unproductive for agricultural uses for reasons that have nothing to do with the landfill site.

A. If I may interject then, let us say, for example, they are made unproductive because the current owner strips all the topsoil or decides to pave it.

Q. Or alternatively they are made unproductive because it is simply impossible to farm it in any economic way. Would you agree

with me that imposing a landfill site on that property in those circumstances might not have any long-term effects on agriculture?

A. No, I wouldn't agree with you in that instance. I wouldn't use the word "productivity." We are relating it more to the word "viability," if you like. The viability may be such that at a certain time, the land would not be used for agricultural production, but that would not prevent its use in the future should the market change. That is one of the essential components of the Food Land Guidelines. They are asking that lands be preserved in such a way that flexibility can be used by the farmer so that he can best meet his economic needs or requirements.

Q. So, you would agree with me, however, that the question of viability and how long into the future that viability or lack of viability might extend is certainly a factor to consider in this entire process?

A. It normally is a factor that is considered in planning processes, yes.

Q. All right. Now, I would like to look at your method of assessing this particular property in its pre-development and

post-development stage. Do I understand, Mr. Hoffman, that in assessing this particular property, the possible impacts of the landfill on this particular property, you began by looking at the soil types that existed on the property?

A. That is correct.

Q. And very roughly, the soil types were broken down between Class 1 and Class 3 in an approximately equal fashion?

A. Yes, there was a small amount of Class 2 on the property as well. That is outlined in the Smith-Hoffman Report.

Q. Now, is this soil classification something which is common to Halton?

A. Yes, it is a soil classification that is common to southern Ontario and the Canada Land Inventory, of course, is common to Canada.

Q. I take it that Halton has a significant amount of property, other property which is also in Class 1 and Class 2?

A. Yes, that is correct.

Q. To determine the capability of that particular soil, my understanding is you consider potential yield values for each of these

classes using research done by your father and by Mr. Anderson.

A. Well, the capability classes themselves are derived following the Canada Land Inventory system that breaks them into classes and sub-classes.

Q. Once you have that, what do you do? My understanding was you applied potential yield values to those figures.

A. Yes, by "potential" here what we were doing was taking information from sites throughout southern Ontario. In fact, 742 sites were actually measured for yields. So these are real yields that have been obtained by farmers. They were used then to rate each class for yield levels attainable.

Q. In doing that, I take it you did not consider the actual yields on this particular property?

A. No, I did not do any actual yields on this particular property.

Q. Do I take it that in conducting these various experiments that there was an assumption, if you will, that these particular farms were operating under good management conservation

practices?

A. That is correct.

Q. So, the experiments, if I understand it, have to measure the impact of the quality of the soil based on the assumption, I am sorry, the yield potential of the soil based on the assumption that there is good management and good conservation practices?

A. That is correct.

Q. I take it, Mr. Hoffman, that the experiments do not attempt to measure the impact of external factors such as the ones we have been discussing? For example, fragmentation of ownership, the operation of the property through short-term leases, that kind of thing?

A. That is correct.

Q. Now, in looking then, or assessing the pre-development potential of the property, am I right in saying that your system of analysis looked to the potential, and I think that is the key word that I would like to stress, potential yields based on your analysis of the soil classification and what those soils would typically produce in circumstances where you have good management and good conservation techniques.

A. That is correct. That is one of the assumptions of the regional capability system as well as of the research used to derive actual yield levels.

Q. I would like to look then at what is actually happening in the Region of Halton to the extent that we can. I would like to start referring you to page 9 of your own report. I am sorry, it is actually page 10. Using Mr. Lederer's numbering system, looking at the second paragraph on that page, I think it is numbered 6, you made this statement:

"Crops grown in Halton are predominantly common field crops. Specifically, grain corn production predominates."

A. Yes.

Q. Then, in the paragraph above it you indicate that:

"Grain corn yields are below average."

A. Yes.

Q. This is consistent, I think with the information that appears at pages 52 and 53 of your report. Can we look at that for a

moment, please?

At page 52 we have what I understand to be the actual yield experience within this region during that five-year period.

A. That is the average yield level and that is information that was also re-produced in the report produced by Dr. Stonehouse.

Q. Accepting that information as accurate, do I assume that grain corn, barley, winter wheat and hay would all be grown in the Region of Halton predominantly on Class 1, 2 and 3 properties?

A. Well, with the first part of your statement I have no problem. Yes, grain corn, barley, winter wheat and hay will be grown. I have no specific data to show me the geographic correlation between the class and the actual crops being grown.

Q. But I did ask you a few moments ago what the composition of the soils was in a very vague way within the Region and you agreed with me that Class 1 type soils are common; Class 2 and Class 3 type soils are common. As I understand it, that is the class of soil that you grow this kind of product on.

A. Normally, if you are interested in getting a reasonable yield you would do that. The problem in dealing with generalizations, I guess, about Halton is that the Niagara Escarpment cuts through the Region and soils in the northwest corner tend to be poorer than those found in the south.

If you wanted to divide the Region up and I had an agricultural capability map in front of me, we could see that there are some trends throughout the Region. Site D is in an area where the soils are better.

Q. We can see that on the map and if I can refer you to it, it is a map on page 7 and it seems to indicate that under the Region's own classification system, a very sizable portion of this particular area has been classified in as what you described as better agricultural land.

A. That is correct.

Q. The point I am getting to, Mr. Hoffman, is that the actual experience, let us take an example for grain corn, if you look at the five-year average at 5.02, it seems to place the actual experience of the Region of Halton within a Class 3 property. The Class 3 type yield classification, I am looking now at the chart at

page 53.

A. Yes.

Q. That seems to be consistent with the other crops that are shown on the chart at page 52 with the exception of hay where it seems to be even below a Class 3 level.

A. Yes.

Q. Is it fair for me then to draw the conclusion that in the Region of Halton, for whatever reason, the actual experience does not reflect the anticipated potential?

A. The average experience would not reach Class 1 potential, no.

Q. I wouldn't have expected it to be Class 1, but I wouldn't have thought it was Class 3 as well if there is this mix that we have been discussing. I would have thought it might be somewhere in the middle. Maybe that is too simple an analysis, Mr. Hoffman, and if it is, please let me know. What I am saying is if you have got Classes 1, 2 and 3 type soils that these products are being grown on, the yields seem to be coming in at the very low end of the range.

A. Well, again, I am not in a position to look specifically at Halton. In fact,

my terms of reference were such that I was looking at this specific site.

Q. But you didn't look at the actual yields on this specific site.

A. That's right, I didn't...

Q. What you measured ...

A. ... measure these yields specifically. I looked at the potential and that is what I did.

Q. In the pre-development stage you looked at the potential and the potential rating. You agreed with me, did you not, that that potential rating looks to soil capability, assumes good management and conservation practices.

A. That is correct.

Q. It doesn't seek to measure the influence of external factors, such as fragmentation of land and other influences, would you accept that?

A. That is correct.

Q. So, when looking at the property in the pre-development stage, you were looking at this property in the abstract. You were looking at its maximum potential and you weren't assessing in any kind of specific way, the

influences on its ability to achieve that potential; isn't that right, sir?

A. No, I would disagree with that with respect. I was looking at the actual soils that are on-site. I used an existing system that has been accepted throughout Canada and has been used by the Ontario Ministry of Agriculture and Food in its Food Land Guidelines to rate those lands for their productive potential.

Q. Mr. Hoffman, I don't disagree with that, sir. I am trying to understand what the limitations of that system are and I think you and I agree on a couple of occasions that the system does have limitations. It is a measure of potential, if you will accept this for a moment, in what I call an abstract sense. It looks at the soils and it assumes good management but it doesn't look at each property on a site-specific basis. Isn't that fair?

A. In this particular instance I did look at it on a site-specific basis.

Q. To do what?

A. To characterize the soils.

Q. Having done that on a site-

specific basis, what did you look at site specifically to determine yields on this particular property?

A. I looked at the soils,as I indicated.

Q. And that's all, sir? Isn't that the only thing you did on a site-specific basis?

A. That is correct.

Q. Having done that and having charted out your various soils, you then applied general yield indices. Isn't that what you did in the pre-development stage?

A. These general yield indices, as I mentioned, were from 742 sites and they comprise a piece of research that clearly supports the conceptual, if you like, or as you would prefer to call it, the abstract capability system. That is why I used it because it would introduce actual yield measurements obtained by farmers in southern Ontario.

Q. Mr. Hoffman, the experience to the extent that we can glean it from your own report and Halton's suggest to me that for whatever reason, the farmers of Halton aren't up to that standard. That appears in the statement that you

make on page 10 of the report. You tell us first of all that grain corn production predominates in this region and then you say:

"The grain corn yields are below average."

Now, isn't it true that for whatever reason, let us not bicker about the reasons at this point, but for whatever reason, the farms of this region aren't up to that standard or they are not meeting that anticipated potential?

A. On an average for grain corn, the data indicates that they are not meeting that potential.

Q. Right, and on average for barley, and on average for winter wheat and on average for hay. Would you not make that same statement?

A. No. On page 10 the yields for barley, winter wheat, hay oats, and fodder corn are averaged to above average for western Ontario and above average for the province.

Q. You went through with Mr. Lederer what western Ontario and what the province is, but looking at the yield charts, getting away for a moment from the experience that

you gleaned from your other research, if we look at, for example, hay, the five-year average seems to be at a level which places it below Class 3 soils.

A. You are referring to which page again?

Q. Fifty-two and fifty-three, sir. Look at the five-year average for hay at 6.63. Then you look at your chart. You can tell me if I am wrong, but as I read this, it seems to suggest that where you have property in Class 3 type soil you would anticipate yields of 6.95 and where you have property in higher soil classifications you would expect higher yields.

A. I am not quite certain what you are getting at if you could reword that for me.

Q. What type of property would you expect hay to be grown on?

A. As I mentioned previously, hay is often grown in rotation. So that it is grown on all classes.

Q. All right, but would that include Classes 4, 5, 6, and 7?

A. It would include Classes 1 through 6.

Q. Then that may not be a good example. Let us stay with -- let us go to barley. Would you anticipate that that barley would be grown on soil classifications 1, 2 and 3?

I would anticipate that it would be grown on Classes 1 through 4. And those are the classes designated for arable agriculture.

Q. Class 4 property then, in your view, Mr. Hoffman, is one that is capable of supporting any of these kinds of crops?

A. It depends on what you mean by support. If you are asking me if it is grown on these kinds of lands, the answer is yes.

Q. The question is, is it viable. The answer is no.

A. As I have discussed previously, it depends on how we choose to interpret viability. If we look at marginal, excuse me, gross margins or returns over cash costs, or gross income.

Q. We will get into that. The point that I am making, Mr. Hoffman, and it may be something that you and I can't agree on, if that is the case fine, I will move on to something else. I anticipated that crops like grain corn, barley and winter wheat would be grown primarily on Class 1, 2,

3 type soils; is that fair, sir?

A. There is a preference for it to be grown there, yes.

Q. Given that preference, and given the distribution of Class, 1, 2 and 3 type soils throughout the Region, and if it is at all a reflection of what is going on on this particular site, I would have expected the Halton actual yields to come in somewhere between Class 3 and Class 1 on the chart that appears at page 53. Is that too simple an analysis?

A. In my opinion, I would have to look at the existing land use as well as capability to be able to answer that question, so I can't agree with it.

Q. Why would you have to look at existing land use?

A. Because the land use would tell me what crops were being grown in what area and would allow me then to look specifically at the relationship between those land uses and the actual capability of the land.

Q. So, in any event, on your theory you are not prepared to accept my general proposition that these particular figures suggest

that the yields in Halton appear to be lower than what you might otherwise expect based on the anticipated potential?

A. If you would reword your question, please.

Q. You indicated, I put forward a theory, Mr. Hoffman, that you don't appear to be accepting through lack of information, as I understand it, that the actual yields in the Region of Halton as set out on page 52 appear to be lower than what you would anticipate given the potential yield values that appear on page 53.

A. I disagree.

Q. You disagree.

Except for grain corn where the yields are below average and you are prepared to accept that.

A. Yes.

Q. You accept that on the basis of a statement that appears on page 10?

A. That is correct.

Q. How is that statement derived, by the way, Mr. Hoffman?

A. That was derived by looking at information from the Ontario Ministry of Agriculture

and Food in their yearly statistics.

Q. So, with respect to that one particular crop, you are prepared to agree with respect to the others, or not?

A. That is correct.

Q. Now, Mr. Hoffman, I think we indicated that the testing that you did for the pre-development stage focused on the potential for the property.

A. I used a potential rating, yes.

Q. Do you agree with me that in accepting Dr. Mackintosh's work or what was anticipated after development that you used the system that was based on Halton's actual experience?

A. I based the pre-development work on potential rating and I based the post-development work on the information I was given about the yields that would be reached.

Q. In that information, I take it you tried to understand the information you were given, Mr. Hoffman?

A. That is correct.

Q. That is what I am exploring, sir. Did you understand that the information that

you were given seemed to be based on Halton's actual experience?

A. It was based on average values. It wasn't based on the experience in that there was no indication of yields on Class 1 lands. So, if we are dealing with actual experience then perhaps we might look at what is being obtained for grain corn, for example, on Class 1 at Halton.

Q. The actual experience I am referring to is the chart that is set out on page 52. I am not intending to make this complicated, Mr. Hoffman, but it was based on some form of actual statistics, rather than an examination of potential yields, is that how you understood Dr. Mackintosh's evidence, sir?

A. He had stated that he would get 90 per cent of average yields and that is the figure I used.

Q. Is it fair for me to say in doing your pre-development analysis, you were using a sytem that was looking at potential yields?

A. That is correct.

Q. In looking at your post-development factors, you were looking at a system used by Dr. Mackintosh which was founded, in part,

on Halton's actual experience?

A. Well, again it was stated that he was going to be able to reach 90 per cent of average. I interpreted that that would be the maximum yield reached after rehabilitation.

So, that was the potential of the land by the time rehabilitation took place.

Q. Do you agree with me, sir, that Dr. Mackintosh's figures, however he intended them to be used, would take into account the various external influences that you and I have been discussing, fragmentation and other factors?

A. I have no specific information that would suggest to me that those are taken into account.

Q. Isn't it logical, sir, that the actual experience will reflect what is actually out there?

A. The actual experience may not reflect fragmentation at all. The actual experience may not reflect a problem with access. The actual experience will not reflect changes in yield relative to methane gas production. So, I assumed that if these had been considered, they would have been outlined within that document.

Q. The actual production figures of the Region, if indeed those are influenced and accept for the moment that they are, sir, as an assumption. If indeed they are influenced by things such as fragmentation, isn't it true that that will appear in the statistical information. I mean, did somebody cull this information before producing the chart on page 52? I took that as being everything that happened in the Region.

A. That will be the actual yields obtained and an average of them, but it doesn't indicate why those yields were obtained.

Q. Exactly, sir. We don't know why those yields were obtained or why they were higher or possibly lower than the potential. Isn't that true? You can't know that based on the information in this report, you just can't know that.

A. That seems reasonable, yes.

Q. All right, so you are looking at something that you can't know and comparing it to a potential. Isn't that inconsistent?

A. I don't see it as inconsistent. I took a potential rating knowing what could be achieved and I compared it to a number that was stated as what could be achieved. So, in both

cases I was looking at what could be achieved.

Q. I would like to turn you to the economic section in your report, specifically Figure 26, which you have given us more information on today.

I recorded yesterday, Mr. Hoffman, a statement that you made that if you were to look at this part and try to draw a conclusion from it, the conclusion would be that farming is only viable when you ignore land or equipment costs.

A. As a general statement, using gross income minus total costs, I would agree.

Q. Do you think that the example you gave, a farmer who had acquired the property or had inherited it and was not worried about the cost, capital costs such as I have indicated, I think your statement was that kind of person could continue to farm the property.

A. I can't remember my exact words. What do you mean by could continue to farm the property, would be inclined to continue to farm the property because they are making a reasonable profit. If that is what you mean, that seems quite reasonable.

Q. All right, that circumstance wouldn't occur where, I think, in the example you gave

if somebody had to come in and buy the property and make that kind of land investment.

A. It would certainly be very difficult, yes.

Q. Now, dealing first of all with the farmer who has acquired the property at a very low historic cost base, wouldn't such a farmer in any event, Mr. Hoffman, consider his opportunity costs?

A. Some farmers would consider their opportunity costs, yes.

Q. If he too is losing money when you take that into account, because his investments in his efforts could be earning him a lot more elsewhere, I guess the decision he makes is, I either continue farming or I sell, I sell to a speculator, I sell to a developer and I put my investment and my efforts into something else. He may be making a lifestyle choice, but he too, in a sense, is losing money at the operation on the statistics, isn't he?

A. I am not sure I understand your question. Some of what you have given me, I think, is a statement. Perhaps you could word it as a question so as I understand it.

Q. If a farmer who has this valuable piece of property decides that he wishes to continue farming, your statement, I think, is that it is economically viable for him to do so.

A. That is correct.

Q. But if he considers his opportunity cost, surely he comes to understand that the operation is costing him money.

A. That is correct.

Q. The same money that it would cost somebody to come in and acquire the property and begin the operation?

A. That is correct.

Q. So, if he decides to stay, he decides to stay because he makes a lifestyle choice. It is not an economically rational one, necessarily.

A. That is correct. It is quite like those of us who work in agriculture in general. There are some cases we are making decisions about independence and certain lifestyle decisions.

Q. The supplemental information you gave us on Figure 26, could I have you look at Exhibit M-387? Would you look at page 8? Under the question of fixed costs, do you see there the

indication that these particular calculations are based on an acreage rate of $2,669.00 per hectare?

A. Yes.

Q. That works out roughly as I understand it, to approximately $1,080.00 per acre?

A. I will see if I can operate this calculator.

So, what was your figure again?

Q. Approximately $1,080.00 per acre.

A. That seems quite possible, yes.

Q. Would you agree with me, sir, that if the acreage rates in Halton were considerably higher than that, then that would have an even greater impact on the cost of farming?

A. It could have, yes.

Q. Well, let us not deal with coulds on that question, Mr. Hoffman. Wouldn't it, if you increased your fixed cost by increasing your acreage rate, wouldn't it have, all other things being equal, a detrimental effect on your bottom line?

A. I was not sure of your question whether you were still dealing with the notion of

opportunity cost or actual cost.

Q. Let us deal with gross income minus total costs, the bottom line, what I will call the bottom line. Would that not adversely affect the bottom line?

A. If we are assuming an individual isnot dealing with opportunity costs, yes, that would very definitely affect the bottom line.

Q. The individual who is dealing with opportunity costs would see an opportunity to sell his property for $4,000.00 or $5,000.00 an acre in Halton. You would agree with me that that is something he should take into account. He may decide to stay and farm but it is something that he, when doing an economic analysis, would take into account.

A. I am not sure that he should take it into account. He or she may choose to take it into account, yes.

Q. Now, on these particular figures that we have on page 26 and given our discussion about the detailed information as to land costs, Mr. Hoffman, it would appear to me that the economic viability of farming in general, but in

particular in this area where land costs are what they are, is suspect. Is that a fair statement?

A. I don't know whether it is a fair statement, but it is one that can be made, yes.

Q. Looking at your example of a farmer who is there based on his historic costs and so on, in the entire area in the vicinity of Site D, are there any such farmers?

A. I haven't done an analysis to look at that. I don't know.

Q. From your experience, are you able to comment on the statement? My understanding is that this kind of economic or cost pressure ultimately puts pressure on property owners and municipalities to consider other forms of land use. That is where agriculture becomes an unviable proposition, When it reaches a point in that analysis where that becomes so extreme that it puts pressure on a property owners and municipalities. Is that something you could comment on, sir?

A. If you define pressure as a desire to sell and make money, yes, that would be there. Individuals then will press members of their council to allow them to do that.

Q. If I could take you through

just a couple of isolated points in your report.

First of all, could you turn to page 24, the figure that appears on that page? I think you have done there a more specific analysis of the property. Do I read this correctly that on your analysis there are approximately 41 acres of land that are not currently in agriculture?

A. That is correct.

Q. Do I read it correctly as well that approximately 84 acres, being the area 6 on your map, is the area of land that will not be directly impacted by the placement of fill on it? There may be ...

A. Area 6 where the beans are, will not have active landfill, but it will be used for access, for the storage of soil and will require the movement of machinery to obviously move the soil around.

Q. Fair enough, but would you agree with me that a portion, at least, of that 84 acres is likely to be undisturbed in the long term with respect to agricultural uses?

A. I had difficulties in making that assumption when looking at the after-use plan because I have no specific information about the

movement of earth scrapers or any other kind of machinery around that site, so I don't know.

Q. You didn't consider it, but it is possible that a portion of that property will be unaffected by the operation?

A. It is possible, yes.

Q. Turning to page 28, your Figure 15, am I right in thinking that when you did your soils analysis and capability analysis that you were taking into account all but 4.78 hectares of land?

A. That is correct.

Q. So, in doing your capability analysis, I take it that you ignored the fact that there were 41 acres of property that didn't appear to be in agriculture and some portion of this 84 acres that might not be disturbed.

Let me phrase it another way. Having done your analysis on page 24, Mr. Hoffman, my reading of the report is that that analysis is then ignored for the rest of the report and in doing your capability studies you are dealing with 122 hectares of land.

A. That is correct.

Q. That 122 hectares includes the

land and property that may never be developed agriculturally.

A. The capability rating as we have discussed, relates to soils so that lands that may have trees on them can be used, obviously, for agricultural production.

Q. Sure, that gets us back to our argument of potential versus, perhaps, actual in a different way. You looked at the agricultural potential of this property in the pre-development stage and assumed that potential included a potential for growing grain on a woodlot.

A. That is correct.

Q. Now, could I take you to Figure 22, please? You have there a list of landfill sites with possible after-uses. Can you tell me, Mr. Hoffman, were any of these sites actually planned for agricultural after-use?

A. To my knowledge, none of them were planned.

Q. So the agriculture that does appear there, appears -- I don't want to say by accident, but it wasn't planned to go on there.

A. In our reading of the information, it didn't seem to be an indication of the

specific use of the land.

Q. Going back to your discussion with Mr. Lederer about the learning curve and what we know now as to the rehabilitation of the sites, would you agree with me that over the course of the 20 years that this site is in operation, there may be at least some features about rehabilitation science that we will be able to incorporate in the eventual after-use of this property? I am thinking of such things as crop selection, tile drainage , fertilization techniques.

A. I would agree that there could be information that would be made available that could either improve the ability to rehabilitate, or it could make it more difficult to rehabilitate.

In other words, we may find that there are certain materials within that landfill that present a problem that we didn't know about previously. These kinds of things have turned up as our education has improved. Originally, no one knew about problems associated with polychlorinated biphenyls, for example. Most people now know that they cause problems. So, there is a positive element as well as a negative element that is possible.

Q. Mr. Hoffman, when looking, I

think you placed some considerable weight on the Region's efforts to analyse its own farmland into these two classes, better and poor.

A. I considered the fact that they had rated their lands, yes.

Q. In considering that particular fact, sir, did you look at the actual datacards for each particular area within the Region which showed, amongst other things, the percentage of soils within each class?

A. I requested a look at those datacards. I haven't had the opportunity to look at them.

Q. I show you these cards, sir, and see if we can -- Mr. Hoffman, would you agree with me that one of the critical elements in applying the Region's statistical model is the composition of the soils within each particular property?

A. That is correct.

Q. Indeed, given the weighting that is used in the model, then that is a very, very important factor?

A. Yes, it is similar to the capability system and the fact that it is dealing with considerable weighting within the Food Land

Guidelines.

Q. Do you know how the soil classifications, what information was used to determine the soil classifications on any particular property under the Region's system?

A. It is my understanding they used existing information available.

Q. Is that existing information the information that is available on the 1:50,000 scale maps?

A. They either use the 1:50,000 or 1:250,000, I am not aware of which one at the moment.

Q. In any event, it was very broad brush in comparison to what you did?

A. Relative to what I did, it was a significantly different scale.

Q. Would you look at the first page of this particular collection of documents, and incidentally, Mr. Hoffman, are you familiar enough with these cards to identify these -- do you know what they are? Can you tell me what they are by looking at them?

A. Well, I haven't seen them before, so that if you are asking me if I can verify

if they came from a specific source, I can't, no.

MR. TZEKAS: Mr. Chairman, we will undertake to prove these more formally. On my undertaking, may I ask that they be marked as the next exhibit and that way we can have a short description for them?

MR. LANCASTER: Exhibit B-388.

--- EXHIBIT NO. B-388: Cards relating to three areas in report

MR. TZEKAS: Q. These cards relate to the three areas or squares that are in your report, and I will just get the page number for you. Yes, pages 7 and 8.

You will see there that the total score for the first sheet is 619.

A. Yes.

Q. That seems to correspond to some information on the sheet?

A. Yes.

Q. Do you see on the second page, the score is 620?

A. Yes.

Q. On the third page, the total

score is 643. You weren't sure, I think, in your evidence, whether it was a 4 or a 1. It appears to be a 4.

A. That is correct.

Q. Would you look at the soil classes that they put the property into?

A. Yes.

Q. On the first sheet, sir, do you agree with me on reading this, and I hope I am reading it correctly, it says "CLI Class 1, 65."

A. Yes.

Q. I take that to mean that they assessed that this property had 65 per cent of its soil in Class 1.

A. That would be a reasonable assumption, yes.

Q. Thirty-five per cent, would be in Class 3?

A. That is correct.

Q. Turning over the page, on the second square that we are dealing with, they appear to have assessed in that particular case, I am not really -- they appear to assess the soil in Class 1 as being 70 per cent.

A. That would appear to be the

breakdown there, yes.

Q. And Class 3 soils have 30 per cent.

A. That is correct.

Q. On the final page, approximately 80 per cent of this property's soil was held to be in Class 1 and 30 per cent in Class 2.

A. That is correct.

Q. Is the line above that, Mr. Hoffman, where it says " Soil % Spec," specialty crops, is that an indication of what percentage of the soil might sustain specialty crops?

A. I don't think that is a matter of whether it would sustain specialty crops. It might be whether there are specialty crops there. That means that they exist there presently.

Q. Was 54 per cent of the first property in specialty crop at the time the analysis was done? Surely not?

A. I don't know what that particular category means, if that is what they are trying to indicate.

Q. You will see that it appears under a general column called "physical"?

A. Yes.

Q. You will see that Column B is use and improvement data and Column B also has a specialty crop percentage area category?

A. That's right.

Q. If I read that correctly, it seems to indicate there are no specialty crops being grown on this property, but that it has a physical, or at least portions of it have the physical capability of sustaining specialty crops.

A. Yes, I had described that there would be certain crops like cold crops, brocolli, cauliflower, that could be grown on Site D.

Q. All right.

A. I don't know for certain about this specialty crop under the physical side of things.

Q. Let us ignore the specialty crops if we are uncertain.

With respect to your soil classifications, would you agree with me, Mr. Hoffman, that your particular study has shown that the Region's estimates as to the amount of Class 1 property that exists on this site are extremely high, ranging from 65 to 80 per cent?

A. Yes. They are in accordance with my findings in the field.

Q. I am sorry, you found that 65 per cent of the property or 70 or 80 per cent was Class 1 soils?

A. I found that overall, the rating of the site was 80 per cent of Class 1, if my memory serves me. Now, the specific breakdown ...

Q. At this stage, Mr. Hoffman, I understood that all that was being done here was a classification of the soil types according to CLI classes. I had understood that your analysis of that was on page 55. I realize that you then applied yield ratios and came up with different figures, but let us look at just what soil was there.

Do I read this chart correctly in suggesting that 47 per cent of the area was Class 1 soil, the chart at page 55 of your report?

A. Approximately 48, the actual measurement here is 47.9 per cent was Class 1. Three point six per cent was Class 2, and 44.7 per cent was Class 3.

Q. All I am saying is, the Region appears to have done a similar exercise but instead of 47.9 per cent, they have come to the conclusion that this property had Class 1 areas which ranged from 65 to 80 per cent of its area. Isn't that the

right reading of these cards, sir?

A. That is correct. The data that they had available to them would indicate that the property was between 65 and 80 per cent Class 1. I feel that the difference then between what we found in our site-specific study and what was found on the very broad scale, is relatively low.

In fact, I think the two pieces of information support each other. If you look at the number of samples that are taken in the original broad scale survey, normally the kinds of correlation, if you like, between site-specific studies and these kinds of broad scale studies can be quite different. In this case, they are relatively similar.

Q. It is your view that 47.9 per cent is relatively similar to figures ranging from 65 to 80 per cent?

A. Considering the state of the art, yes.

Q. The problem, Mr. Hoffman, as I understand it, is that once they develop those specific percentages, they apply a weighting factor to them. It is a mathematical exercise, once you make your initial findings.

A. That is correct.

Q. If you applied their weighting to the percentage of land which you have calculated as being accurate, that is 47.9 per cent Class 1, 3.6 per cent Class 2, and 44.7 per cent Class 3, do you know, can you agree with me, first of all, that applying your figures would lower the rating.

A. Yes, it would.

Q. Given that the weight that is placed on the physical characteristics and specifically the soil types, it would lower it considerably.

A. It might lower it in each specific block, but in order to make decisions about how it would affect what was occurring within the Region, we would have to map it at the same scale I mapped it at. So that using the existing information the way the municipality has it still strikes me as quite reasonable.

Q. I am not criticizing the municipality forits approach in developing a broad-brush picture, Mr. Hoffman, what I am trying to assess, is the significance that your report appears to place on that. I say to you that if you do the analysis that I have suggested, if you apply your figures now that we have them and that they are

available to the Region's weighting system, you come up with a figure that places each of these blocks some 20 points higher than the 550 threshold. Do you want to take a moment to work out the figures, or will you accept that?

A. I would accept that the figure would be different. If that is how you worked it out, that seems reasonable.

Q. Can I turn then to two other very brief areas, Mr. Hoffman? First of all, you have talked about the problems of gas migration or the effects of methane gas upon plants and drainage and so on. Am I right in thinking that if your thesis about those aspects is correct, that it will apply to other forms of vegetation as well on other landfill sites? For example, it might apply to the vegetation forms on Site F?

A. It could, yes.

Q. So, to that extent I take it that whatever problem exists on one, if you are right in your theories, it is likely to exist on another one, it may exist on the other?

A. That's right.

Q. Finally, you may not have been aware of this, Mr. Hoffman, but the Region has

now indicated that they intend to acquire more property in the area of Site D. If I can take you, I think the best way to show it is through the ownership maps that we were looking at.

Mr. Hoffman, I stated it too boldly, sir, I am told that the Region may acquire some additional land.

MR. LEDERER: Sir, if Mr. Tzekas will permit me, maybe I could just make an observation about this because I know it has come up before.

In a sense, it applies to both sites, although different parts of it. With respect to expropriation the Board will know that one of the hearings which is before you is the hearing of necessity under the Expropriations Act. The Board will also know that the text in the Expropriations Act, with respect to such an application is, is the taking of land fair, sound and reasonably necessary for the purposes which it is proposed to put the land and of course, there is law dealing with exactly what is meant by that phrase.

The Region as a public agency, one which has a responsibility for the spending and expenditure of taxpayers' money has to look at, or consider on the one hand, what is the minimum that

would be fair or might be found by this Board to be fair, sound and reasonably necessary.

On the other hand, it has to recognize there is at risk largersums of money because there is the possibility that some party before this Board will raise the fact or argue before you that some further lands will need to be taken in which case the potential for greater expense exists.

So, when you get the surveys with respect to Site D, you will see the position, the original or first position taken by the Region is that the minimum amount of land the taking of which would be fair, sound and reasonably necessary, is the land within the red boundary on Exhibit M-102, which is what has been called here, Site D.

On the other hand, we have recognized that there is the potential for parties here to argue that further lands be taken and most principally with respect to Site D that would account for the northeast quadrant of what would fill out the square when we consider the northeast quadrant of land above to the north and east of Site D.

Therefore, and as well, the lands which are owned by Wombat which proceeds from the south, the Board will recall that evidence from

Mr. Watson. When Mr. Watson gave his evidence, he took the conservative view that what if we have to take everything that may be reasonably suggested to this Board and that takes into account those lands.

Therefore, you have the more conservative view of potential expense arising from his evidence. There is one other piece of information which has come out lately, and that is the matter of the land owned by the Pampos's. You will recall that came up in questions put by Mr. Garrod. That, of course is taken up in the contingency amounts considered by Mr. Watson. There is a real issue that may arise there as to whether that's fair, sound and reasonably necessary.

The actual proposed taking is within the boundaries, understanding that because of the responsibilities to deal with the taxpayers' money in a positive fashion, these other contingencies need to be considered.

You can apply the same rationale with respect to this, you can apply the same rationale to Site F with respect to what is being called the end of the boot. That is part of Mr. Watson's work although when you get the survey you will see it is not all felt to be, strictly speaking, fair, sound

and reasonably necessary. . You look at the minimum requirement and in effect, it is the same theory being applied to that site.

MR. TZEKAS: Mr. Chairman, counsel have agreed on the order of cross-examination of Mr. Lederer. I am going to try to phrase my questions so it avoids all of these issues.

MR. LEDERER: Perhaps I had better -- I would be prepared in some other forum to be cross-examined by my friends but there will have to be a few bottles of wine. It will have to be after the Board's decision has been rendered.

All of what I have said has been supported by the evidence put to Mr. Watson. I am not doing anything more than outlining the Region's position based on that evidence and the information that has been led here.

MR. TZEKAS: Q. Mr. Hoffman, I am going to take another run at this in a more general way. I was trying to explore the possibility that there might be some benefits to agriculture as a result of this particular project. One of the things that occurred to me was that this particular property would be unified into a very large single ownership.

From an agricultural perspective, sir, is that something that is of benefit, or might be of benefit to the properties?

A. A single large ownership could be, yes.

Q. Would it also be of benefit, in your view, that the property would be owned by a municipality that would, perhaps through a specific condition of the Board's order, be committed to agriculture on this particular property?

A. I am not sure I understand what your question is.

Q. Let me see if I can put it this way. If this property were left alone over the course of the next 20 years, given the uncertainties that we have discussed, it may or may not be in agriculture. Would you accept this as a possibility?

A. Yes.

Q. On the other hand, if the Region were to be the owner of the property and the Region were committed to rehabilitating it to agricultural use, could we see that as something positive? In other words, a commitment to agriculture?

A. It would be positive.

MR. TZEKAS: Thank you, sir, those are my questions.

MR. LANCASTER: Thank you, Mr. Tzekas. Mr. Castrilli, perhaps we will have a short break.

MR. CASTRILLI: That's fine, Mr. Chairman.

MR. LANCASTER: Fifteen minutes.

--- Recess

MR. LANCASTER: Please be seated. Mr. Castrilli?

MR. CASTRILLI: Thank you, Mr. Chairman.

CROSS-EXAMINATION BY MR. CASTRILLI:

Q. Mr. Hoffman, so you have a roadmap of where we are going to be going, the various exhibits I may be referring to during the course of my cross-examination.

Your reports M-372 and 373. H-19 and 20, which are reports of Dr. Mackintosh. H-51, WB-118 and WB-119. I may not need to refer to all

of them during the course of the examination, but if you want to have them all in one spot, it will probably move things along.

A. Thank you.

Q. I would like to begin with just a quick reference to the issue of fragmentation that has been dealt with, both by Mr. Lederer and Mr. Tzekas in their examination. In this regard, could I refer you to your Exhibit M-373, Tab 1, page 34. The 34 would be the upper right-hand corner.

A. I have that, thank you.

Q. In the heading Under C1, degree of fragmentation.

A. Yes.

Q. I will try and keep my voice above the cement-mixers.

The first paragraph under that heading:

"In general, the smaller the farm parcel, the less likely it is to be a viable unit and the less flexibility it has for future changes in agricultural uses.

Also, smaller parcels are more

likely to be purchased by non-farm interests. A highly fragmented area is likely to have a greater number of non-farm uses. Consequently, an area which is highly fragmented will have a lower long-term agricultural potential than an area with low fragmentation."

Is that a general proposition you agree with?

A. Yes.

Q. Is that a proposition you agree with in relation to the Region of Halton?

A. Yes.

Q. Is that a proposition you agree with in relation to Site D?

A. If that fragmentation is there relative to the rest of Halton, yes.

Q. Do you know what degree of fragmentation exists in Site D at this time?

A. I have seen a property ownership map and I have seen the evaluation system used by the Region. I would assume that if the fragmentation was severe that the lands in question would not be included as lands of higher agricultural

potential by the Region and their land evaluation system.

Q. Would you agree with me that the evidence indicates that there is at least 23 per cent fragmentation at Site D?

A. I am not certain where the 23 per cent comes from.

Q. Let me refer you to Exhibit H-19, Table 1. You must bear with me, Table 1 does not have a page number. It is, however, located immediately after the maps which are about mid-way through the report.

A. I have Table 1 before me.

Q. That is a table that indicates level 2 subfactors and would you look under the heading which is on the left-hand side of the page, "Large Continuous Blocks of Agricultural Lands," and you will see the large headings there "Large Parcel, Local Owner" and "Large Parcel, Non-Local Owner and "Fragmented"?

A. Yes.

Q. Would you look over to the column that would indicate Site D?

A. Yes.

Q. Would you agree with me that

that indication there is that 23 per cent of Site D is fragmented?

A. Site D is fragmented according to this table, yes.

Q. Did you have occasion to do a review of Site D with respect to fragmentation that would differ from the conclusions of Dr. Mackintosh?

A. I did not complete such an analysis.

Q. Staying with Exhibit H-19, in Table 1, would you confirm for me that in terms of land capability for agriculture, the soil at Site E, based on Dr. Mackintosh's work are 100 per cent in the Class 1 and 2 category in comparison to Site D, which is approximately 51 per cent in Classes 1 and 2?

A. According to his classification. I haven't done any additional work to confirm what is on Site D.

Q. Thank you. Still referring to Exhibit H-19, Table 1, could you also confirm that in terms of land capability for agriculture, the soils at Site C are 80 per cent in the Class 1 and 2 category in comparison, again, to Site D, which again is only 51 per cent in those two classes?

A. That is what the table indicates.

Q. Do you have any basis for disagreeing?

A. I haven't done any analysis on Site C. That is, I haven't done any field work, I haven't dug any boreholes, I haven't looked at aerial photographs to confirm that information or dispute it for that matter.

Q. Would you agree with me that based on what is in Exhibit H-19, the soils at Site D are not as significant as they are at either Sites C or E in terms of land quality or land classification?

A. If I make the assumption that what is there is correct, that would seem to be a reasonable conclusion. As I mentioned, however, I didn't do this analysis.

Q. Can I refer you to your report, Exhibit M-372, page 28, Figure 15?

A. I have that before me, thank you.

Q. You indicate in that figure that 4.57 hectares of Site D are Class 2 land. I understand it is approximately 3.5 per cent of the

site; is that correct?

A. That is correct.

Q. In looking at the prior page, page 27, Figure 14, you indicate there that, that is under -- I am referring to the capability class and sub-class, that 2^{T}_{E} means limited by topography and erosion. Would you confirm that the soil of that class and sub-class is of a type where topography is a limitation for agricultural use?

A. Yes.

Q. I would now like to refer you to Figure 13, the soil map for Site D in Exhibit M-372. Would you agree with me, Mr. Hoffman, that all of the Class 2 land at Site D is of the 2^{T}_{E} capability? That is, that the soil is limited by topography and erosion?

A. That is correct.

Q. Perhaps, Mr. Hoffman, the soils blowup you have for -- that you gave in your examination-in-chief might be on the board.

A. Exhibit M-374.

Q. Would you confirm, Mr. Hoffman, that 2^{T}_{E} classification is located on the east central portion of Site D which is coloured orange?

A. That is correct.

Q. I would like to refer you back to page 27, Figure 14. Now, under the heading of "Slope Classes."

A. Yes. I have that before me.

Q. Would you agree that your use of the small "c" under slope class indicates a slope of up to five per cent?

A. That is correct.

Q. Would you agree with me that in looking at Figure 13, that all the Class 2 lands identified as having a small "c" and therefore would have up to a five per cent slope?

A. If we refer then specifically to Exhibit M-374, then these areas in orange have a small "c" slope, that is correct.

Q. Thank you.

Mr. Hoffman, is slope a limitation for agricultural use?

A. Under some circumstances, yes. Depending on the slope class.

Q. Would a five per cent slope cause soil erosion problems?

A. Under some circumstances, yes. Particularly in row crops there would be a problem.

Q. That was my next question.

Would you also agree that where row crops are grown on lands with slope limitations, yield reductions can result?

A. That is correct, yes.

Q. I refer you again to page 28, Figure 15. You indicate that 56.31 hectares of Site D is in Class 3 land approximately, I understand, 44 per cent of Site D; is that correct?

A. Yes, on page 55 I indicate 44.7 per cent.

Q. Referring to Figure 14 on page 27, the capability class legend indicates that 3^{D}_{W} means the land is limited for agriculture by wetness and low permeability; is that correct?

A. Yes, that is correct.

Q. Again, referring to Figure 13, your soils map, would you agree that all of the Class 3 land on Site D is of the 3^{D}_{W} variety, that is, it is limited by wetness and low permeability?

A. That is correct.

Q. I would refer you now, to page 10 on Exhibit M-372. You indicate under what I understand is the Lederer designation as Item 6,

...

MR. LEDERER: May I go down in history for more than that?

MR. CASTRILLI: Q. You indicate there that grain corn production predominates in Halton.

A. Yes.

Q. Under Item 9, soyabean production is increasing?

A. That is correct.

Q. Now, at page 22 of the same exhibit, M-372, you indicate that in 1986, about one-third of Site D production was in soyabeans; is that correct?

A. That is correct.

Q. And to your knowledge, corn has also been grown at Site D in the past; is that correct?

A. That is correct.

Q. May I again refer you to Figure 13, the map, and at the same time Figure 11, page 23? I guess you have a blowup of Figure 11 on the board. I am not sure what exhibit number it is.

A. M-375 is an agricultural land use map and parts of that are the same as

Figure 11, the crop map on page 23 of Exhibit M-372.

Q. Would you agree with me that where soyabeans are grown on Site D includes the location of where Class 2^{T}_{E} lands are located?

A. That is correct.

Q. Soyabeans are a wide-row crop are they not, Mr. Hoffman?

A. In some cases they are and in other cases they are not. Spacing can vary depending on the farmer's practice.

Q. Would you agree with me that erosion by runoff can be a particular problem in areas where row crop production, especially corn and soyabeans takes place?

A. If conservation tillage isn't applied, yes.

Q. Would you further agree with me that a concern with soil erosion has been the expansion of row cropping into areas where we have, for example, adverse soil topography?

A. That has been identified as a problem, yes.

Q. Would you further agree that soil erosion can adversely affect an area's longrun food production capability.

A. I would agree.

Q. Soil erosion can adversely affect soil productivity by removing, for example, the surface horizon of the soil?

A. I agree.

Q. Now, in conjunction with soil erosion, can be the problem of lack of adequate soil conservation practices, would you agree the two sort of go hand in hand?

A. Yes.

Q. I would refer you to page 59 of Exhibit M-372, do you have the page, Mr. Hoffman?

A. Yes, I do.

Q. You are referring there to the second full paragraph, the first paragraph after the quote to the need for the farmer to use appropriate conservation methods. I believe there you are referring to that in the context of rehabilitation of Site D, or the post-development phase, if we can.

Would you also agree that appropriate conservation measures apply to normal farmland as well?

A. That is correct.

Q. Would you advise the Board as to whether you investigated the soil conservation

practices at Site D and if you did, where the results of these investigations can be found in your report?

A. I didn't investigate those.

Q. I now refer you to page 61, at the top of the page. It is actually under a heading which begins at page 60, entitled "Offsite and Community Impacts." You state at the top of page 61, that:

"Other possible community impacts ..."

I suppose you mean from a landfill at Site D"

"... include contamination of wells and surface water by leachate."

Do you see that?

A. Yes, I do.

Q. Is it fair to say that your concern there includes impacts on the livelihood of downstream livestock owners whose water supply could be adversely impacted by a landfill site at Site D?

A. Yes, that would be my concern. It is a matter of possibility and I state it not as a hydrogeologist, but because I have been involved

in a number of studies. I understand it is a concern of the farming population.

Q. Indeed, if you refer to Figure 1 at page 5 of your Exhibit M-372, under the heading of "Halton Landfill Environmental Assessment," under the heading on the left-hand side of the page, "Impact Off-Site," one of the items noted is potable water for downstream livestock, among other things?

A. Yes, I see that.

Q. Do you know the current animal waste management practices of downstream farm operations from Site D?

A. I have not studied that, no.

Q. Would I be correct in concluding that you do not know whether their manure management practices are adversely affecting water quality now?

A. I do not know.

Q. Do you know whether farmers who are downstream from Site D are complying with any particular guidelines on animal waste management existing in the Province of Ontario?

A. I have not studied that.

Q. Mr. Hoffman, can you confirm

for me that there is a beef operation south of Site D?

A. As I recall, yes.

Q. Would you agree that runoff from manure spread on frozen soil, physical soil erosion and direct runoff from poorly constructed manure storage can adversely affect water quality?

A. Conceptually, yes.

Q. Would you agree that when high rates of manure are applied to soil, groundwater quality may be adversely affected by, for example, nitrogen leaching through the soil profile?

A. I am not well aware -- excuse me, I will reword that. I am not aware enough of the literature to know what levels of manure application, as opposed to other nitrogen fertilizers might cause a problem with groundwater.

Q. Are you aware of the agricultural code of practice of Ontario?

A. Yes.

Q. Does that code of practice not state that that is a possible problem?

A. I can't recall the specific quote, but if it is there, then it sounds reasonable.

Q. Can we conclude that you do not

know the manure management techniques in place at the beef operation south of Site D?

A. I did not study that, no.

Q. Mr. Hoffman, do you know whether downstream farmers from Site D are allowing their livestock to water directly from the streams now?

A. I did not study that. I do not know.

Q. Would you agree with me that if this practice is occuring south of Site D, there is a potential for water polution from streambank erosion and direct fouling of the streams by the livestock?

A. Would you define what this practice is for me, please, and then perhaps I can answer your question.

Q. The practice of allowing cattle to water directly in streams.

A. If the cattle are watering directly in the streams, there is a possibility of affecting water, yes.

Q. That can include streambank erosion and direct fouling of the stream by the livestock?

A. That is correct.

Q. Do you know whether the farm operations downstream from Site D fence their livestock from such streams?

A. I do not know.

MR. CASTRILLI: Mr. Chairman, those are my questions.

MR. LANCASTER: Thank you, Mr. Castrilli.

Mr. Lederer, do you have any questions regarding Exhibit 387?

MR. LEDERER: I haven't had a chance to review it, but I think I will have to say no, because it would be inappropriate for me to say anything else.

DR. KINGHAM: I have a few quick questions for you, Mr. Hoffman, which hopefully will not be requiring very lengthly answers.

In looking at your soil map which you put up there, I can't help but notice the absolute correspondence between soil type and limitation due to poor soil drainage and wetness.

I am wondering if there is a cause and effect there. Is that really a map that tells you something about wetness, or is it just that

wet soils fall into the other classification, the Jeddo as opposed to the Chinguacousy?

THE WITNESS: The Jeddo soils are low-lying and are poorly drained, yes.

DR. KINGHAM: So, it is a complete correspondence?

THE WITNESS: That is correct.

DR. KINGHAM: If you look at page 43 of your report, you make an observation there that leads to a question.

In the last full paragraph, you note that you reviewed the records associated with 2,500 former landfills. Only 30 areas had agricultural uses which included a liberal interpretation of agriculture. Included was field, open spaces and pasture. What is an open space in that sense?

THE WITNESS: Well, I am not certain about the way they defined it. What we did was, we read the description of what was there on the questionnaire and if it said "open space," we said "Well, it might be a field of some kind. It might be used ultimately as pasture. It might be available for cropping," and as such we said we will include that as agricultural.

DR. KINGHAM: Is this Hoffman, you or your father, or neither? It says "Smith-Hoffman reviewed the records."

THE WITNESS: It is the company and that is the work I did.

DR. KINGHAM: The question it leads me to is, that means there are 2,470 former landfills which are not field, open spaces or pasture. What are these other 2,470 former landfills, what is being done with them as an after-use?

THE WITNESS: There is a wide range of uses. For example, the City of Guelph, they are now parkland. Some of it is now used for apartment buildings. Those are the examples where I have, shall we say, an historical view if you like, because I have lived in Guelph.

With the other parts of that, we didn't try to do an analysis of the specific uses, so I can't tell you what the range of uses was.

DR. KINGHAM: You made a reference yesterday to a land evaluation produced for Halton yesterday morning. What were you referring to? Is that something we have got in evidence?

THE WITNESS: Yes, the land evaluation system which is Tab 1 in M-373.

DR. KINGHAM: Okay, I wanted to make sure I knew what it was.

We had some discussion earlier this afternoon in your response to questions from Mr. Tzekas about what, I guess, we can only describe as agricultural after-use, after-thought in the sense that those 30 areas you referred to appeared to be an after-thought that they should be used for agriculture as an after-use. Do you know, or are you familiar with any case where there has been a planned in advance attempt to prepare for agricultural after-use?

THE WITNESS: I think there may be some examples coming on-line now, but I haven't studied those to any extent at all.

DR. KINGHAM: I thought that was your evidence -- there is no experience then as of now?

THE WITNESS: That is correct.

DR. KINGHAM: Where someone set out very deliberately going through a planning process and saying we want to end up with an agricultural after-use, how do we do it best?

THE WITNESS: They have done that in Britain, but they haven't done it here.

DR. KINGHAM: There was some discussion yesterday with Mr. Lederer about subsidance problems and drainage and ways of dealing with that. That raises the question to my mind as to whether or not it is reasonable to deal with subsidence problems annually or biannually simply by filling up depressed areas before you begin cultivation and subsequent crop use. Does that make sense to you?

THE WITNESS: That is one option, yes. It depends on the total amount of differential subsidence.

DR. KINGHAM: There was also some discussion yesterday about what you had labelled as Areas 4 and you had subnumbered then 4a, b, c, d, e, and f, as I recall. Maybe you can just put that one out.

THE WITNESS: Exhibit M-378.

DR. KINGHAM: As we went through that, I believe you said it was your evidence that you had considered that the acreages which would be taken out by those Areas 4, you assigned no future agricultural value to them for the time being?

THE WITNESS: That was one option I chose to look at. I didn't have specific

information for certain that these were going to be removed and how they were going to be removed, or whether they would be planted to forages or what their use would be. I had to make some assumptions given a lack of specific information that was available to me.

DR. KINGHAM: If you had made the assumption that these topsoil piles were going to be removed and that the land, for example, that you show as 4a, I believe, were now contiguous with the lands to the east, that is the lands that go over to Highway 25 and thus constitute parts of a large parcel of land, is that kind of relatively flat land what you would consider to be Class 1 to Class 3 land in the final analysis, then?

THE WITNESS: Given the information from Dr. Mackintosh, my first example which was an exhibit without these sub-components, I included this land for arable cultivation in my analysis. So that the figure that I put together for the productivity of the whole site included this area at a Class 3 level. I made it Class 3 because the yields indicated by Dr. Mackintosh were going to be 90 per cent of average. I therefore said that is equivalent to a Class 3, so these would be

Class 3 lands.

DR. KINGHAM: And hence the problem that has been the subject of discussion, both this afternoon and yesterday afternoon, the question of how you assign values, classes to the land before and after the development as to whether the methodology is the same.

The question that raises to my mind is, if you have a relatively large area that you call Class 1 before the development began comprising Areas 4, all of the Areas 4, plus the area to the east of that site, would they also then, fall into the category of Class 1 after the site is completed?

THE WITNESS: That would depend on the methods used for the treatment of the land when a settlement pond, for example, is created, or the way in which machinery moves to pile topsoil.

Again, I didn't have any specific information to tell me what the travel routes of the machines would be and therefore what the compaction level would be and how that compaction would be treated. In the absence of that specific information, I said "Well, 90 per cent of average has been what has been stated," and that is what I used.

DR. KINGHAM: In the area you show as 5 in this Exhibit M-378 to the west side along First Line? That is 5 because of the berm by and large, the screening berm?

THE WITNESS: That is correct, yes.

DR. KINGHAM: The slopes are too great there for agricultural?

THE WITNESS: Depending on what the slopes are, there may be an opportunity for some perennial forages so it could be, for example, used as pasture, but again, I didn't have a clear statement that told me that these lands were going to be planted to perennial forage and were available.

DR. KINGHAM: A hypothetical long-range question. If this site was chosen and it was completed, many years down the road the leachate problems were dealt with andthat area between the First Line Road was created smoothly from First Line Road to the area you have described as Area 1. That is to say, a steady grade rising from First Line Road to the top of the mound.

THE WITNESS: Basically then, to the top of the mound.

DR. KINGHAM: Right across the road, you would have a slope that would be much more

gradual than the slopes you have on the sides of the berms.

THE WITNESS: That is correct.

DR. KINGHAM: In fact, reaching a height of 15 or 20 metres over a distance of 150 or 200 metres would put it close to a 1 in 10 slope, would that be good land for agriculture?

THE WITNESS: If I check my capability system, that would be 10 per cent slope. So, on that basis, if we assumed that it has been rehabilitated to a Class 1 level, I am not willing to make that assumption. If it were the same kind of slope profile, then topography alone, would put it in Class 3.

DR. KINGHAM: A 1 in 10 slope would make it Class 3?

THE WITNESS: Yes, 10 per cent that would make it Class 3^{T}. That would assume there were no problems with soil structure or permeability that would downgrade it for any reason. Quite often with the movement of the clays there are problems with soil structure and therefore, problems with permeability or wetness.

DR. KINGHAM: In that case, of course, the actual surface that would be being farmed

would be some distance from the refuse which would be in the fill area below it, you would have a thick, or thicker ...

THE WITNESS: Yes.

DR. KINGHAM: Thank you, very much, Mr. Hoffman.

MR. LANCASTER: Mr. Leitch, your re-examination.

MR. LEITCH: I won't be very long.

RE-EXAMINATION BY MR. LEITCH:

Q. I would like to start, Mr. Hoffman, with the areas that Dr. Kingham just dealt with.

Dr. Kingham asked you if you were aware of any planned agricultural after-use which existed in the province. He used the words, I think, "after-thought." Do you have any knowledge as to whether or not, and quantities of proposals which the Ministry of Agriculture and Food is presently considering, that is to say, landfill on good agricultural land?

A. Well, in some discussions with Susan Bailey of the Ontario Ministry of Agriculture and Food, as I understand it,

approximately 30 different sites could be proposed on agricultural land.

Q. Do you know whether or not any of those projects involved a choice between good agricultural land for one site and less desirable agricultural land for another site?

A. They do, yes.

There will be some sites that are good agricultural land and the Ministry is concerned about this good agricultural land.

Q. My question more specifically is, do you know whether any of them present the Halton type situation where you have one site which is good agricultural land and another site which is not?

A. I can only hypothesize, I don't know about specific examples.

Q. All of my friends put the question of fragmentation and land ownership to you and in particular, they all showed you a land ownership map. I don't know whether you have a copy of that?

A. I have it here someplace. I just have to find it.

Q. If not, you can have mine.

I think we are all familiar with what it is.

Can you compare that, Mr. Hoffman, to your Exhibit M-375, which shows the fields on Site D and give an opinion as to whether or not, assuming there is some fragmentation and absentee ownership, it has had any effect on farming on Site D?

A. Using this ownership map and looking at the fields on Exhibit M-375, there isn't a correlation between the actual field sizes or orientation relative to property ownership. So that would suggest to me that the fields are being farmed without regard to that ownership.

Q. Does that lead you to some conclusions about what is going on there in terms of farming activity?

A. It means to me that the individuals who are using the land are renting it and using it the way they have probably historically.

Q. Now, Mr. Lederer dealt with the sub-classifications, the 13 sub-classifications to be found in the Canada Land Inventory classification system; do you recall that?

A. Yes, I do.

Q. Is drainage or wetness of soil

one of those limiting sub-factors?

A. Yes, it is.

Q. Can you put your mind to the question, assuming that methane gas was a general condition which occurred naturally in soils, would you expect it to be a limiting factor?

A. Under some circumstances, it would be, yes.

Q. Under what circumstances would you refer to?

A. Obviously, if the levels were at such a level, or shall we say at such a concentration that crop yields were affected then it would be considered within the capability system.

Q. In cross-examination by Mr. Lederer, you were led to some errors in your report.

First of all, the calculation of topsoil depth on an average basis was shown to be in error. You corrected that and conceded what the error is. It would appear that there would be more topsoil in terms of average depth at Site D than you had originally predicted.

A. That is correct.

Q. Does that factor change your opinion as to the post-development capability of

Site D?

A. No, it does not.

Q. You also were led through reports on the pipeline experience by Mr. Lederer and in particular, Exhibit H-384 and Exhibit H-385.

You had said, you had stated in your report that the diminution in capability on pipeline lands after subsoiling was in the range of 20 to 40 per cent. I think you conceded to Mr. Lederer, that really that was more likely to be in the range of around 20 per cent.

A. I used the specific figures that were in the report that had a very large range of difference going from the -- I would have to go back to the report, but it was almost -50 per cent up to at least +50 per cent.

Q. Well, having moved away from the 20 to 40 per cent that you stated in your report.

A. Yes.

Q. To the figures which Mr. Lederer pointed you to, would that change your opinion as to the post-development capability of Site D?

A. No, it does not.

Q. Mr. Lederer put to you a

document which had been apparently prepared by Dr. Mackintosh, H-386, do you have that?

A. Yes, I have that before me.

Q. Do you recall the discussion which I raised relative to the assumptions in this document?

A. I don't recall the specific list of assumptions. If you could outline those for me again.

Q. I was referring to the legal discussion, being considered as assumptions put to you as an expert witness.

A. Yes, I do.

Q. I want you to look at Exhibit H-386, and express, if you can, an opinion as to the reasonableness of the assumptions that are contained in the document. In particular, the assigning of capability classes to areas of Site D.

Deal first with the top chart and then go to the second chart.

A. If we look specifically at the top part of the chart in Exhibit H-386, Area 1 of course would be the top of the dome, if you like, is stated as capability Class 1. This would appear to be a contradiction relative to the

90 per cent of average value that was given by Dr. Mackintosh in his report and in his testimony.

As well, the yield reductions normally associated with pipeline construction would suggest that the capability class of some of those lands is less than it was before it was affected. So, I cannot agree with the assumption that Area 1 should have a capability class of 1. Given that, then the other areas which are downgraded for topography, would be downgraded further than the Class 3 and 5 as stated in the first part of that table.

Part of Area 4 is indicated as Class 1. I don't have specific information, as I mentioned, which will indicate to me how that land is going to be treated. Either during design, during construction or during rehabilitation, I don't have specific information upon which to base an opinion about the Class 1 capability of Area 4.

I have a similar problem with the berm areas. I don't know how they are going to be treated specifically, so I don't know about the assumption of Class 5^T.

Q. What, if anything, can you say about the last column, the 0.65 percentage times

the index. Does that relate to any of the numbers that have been produced in Dr. Mackintosh's earlier works?

A. I looked at this one when I was given the 0.65 value. I related this 0.65 value to the potential yields. The potential yields then, using the system that was in my report, are higher than the actual 90 per cent of average yields discussed by Dr. Mackintosh. So, I see some contradictions between the 0.65 value and the 90 per cent of average yield value.

Q. I am not sure I understand that. Could you expand on it?

A. I did some calculations. The 0.65 value would be 65 per cent of what could be achieved on Class 1 soil. So, we take 65 per cent of the potential value and in order to do that, I would refer then to page 53. If I take 65 per cent then, of Class 1 grain corn yields, the mean value there, I think, is 8.53, I get a potential then of 5.55 tonnes per hectare. If we then compare that to the figures on page 52, then the grain corn five-year average is 5.02 and the 90 per cent five-year average is 4.52.

So, on that basis, the 0.65 value

indicates a higher potential than 90 per cent of average.

Q. What about the 0.62. Have you done that calculation as well?

A. No, I haven't completed the 0.62 calculation. I could do that if I can find my calculator.

So, for example then, for grain corn, if we take 0.62 of the grain corn potential yield, we have a value of 5.28 tonnes per hectare. That value, as well, is higher than the five-year average as well as higher than the 90 per cent of average value.

Q. And dealing with the bottom chart as well, the assignment of capability classes to the Mackintosh areas, do you find those to be reasonable assumptions for the purposes of the post-development capability of Site D?

A. Again, I would disagree with the assignment of capability classes relative to the 90 per cent of average value. If the 90 per cent of average value indicates the potential that can be reached, that is the one that can be reached after good rehabilitation measures and good conservation practices, then that corresponds then

with Class 3.

So, on that basis, Area 1 would become Class 3 and Area 4 would become Class 3. Areas 2 and 3 and the berms would be downgraded on that basis. So, if I look then specifically at the second part of Exhibit 386, I would not agree with the capability classes assigned to the areas in that exhibit.

Q. Finally, Mr. Hoffman, Mr. Lederer gave you a very vigorous cross-examination on what he perceived to be a methodological inconsistency in your work as between pre-development and post-development. Have you thought about that overnight?

A. Yes, I have. The systems that are used in both instances are an indication of potential ratings. So, in the pre-development instance, we are using the potential that the land can reach given its capability classes. In the post-development or the post-rehabilitation scheme we are also assuming that good rehabilitation measures have been planned and have been used and that subsequently the use by the farmer will follow good practices.

So, I am comparing a potential rating

in the one instance to a potential rating in the other. So, there is some logical consistency between the two comparisons.

MR. LEITCH: Thank you, Mr. Hoffman, those are all my questions.

MR. LANCASTER: Thank you, Mr. Leitch. Thank you, Mr. Hoffman.

That seems to conclude our hearing for this year.

MR. LEITCH: If I may have the last word, not the last word, that is for you, sir.

I did undertake to speak to Mr. Estrin's office and I have some information. The information, as my friend Mr. Lederer thought, the witness to speak to bird and aircraft hazards will be the first witness and there will be a lay witness who will be Mr. Kovacek, who is the owner of the Burlington Air Park and there is possibly a third witness.

I couldn't ascertain whether that witness was a lay witness or an expert witness. If he is an expert witness, then a witness statement will be provided to everyone.

MR. LANCASTER: Will they be available for Monday, January 11th?

MR. LEITCH: He is going to take, as I understand it, the first week.

MR. LANCASTER: You will not be taking it?

MR. LEITCH: No, Mr. Estrin will be doing that for us.

DR. KINGHAM: Is it that there may be a third witness on the issue of bird strikes?

MR. LEITCH: Yes.

DR. KINGHAM: But you don't know that.

MR. LEITCH: I don't know who it is. I don't know whether it is an expert witness or a lay witness. All I can undertake is that a witness statement will be available if it is an expert witness.

MR. LEDERER: I presume it goes without saying, we are going to want to have sufficent time to prepare if he is an expert witness.

MR. LANCASTER: Yes.

MR. LEITCH: I will speak to Mr. Estrin and I will tell him to get it out and circulate it before he goes to England.

MR. LANCASTER: Yes.

Thank you.

On behalf of the Board, might I express our best wishes to you all for Christmas and the New Year. We will be back ready and raring to go January 12th.

MR. LEDERER: May we wish you the same.

MR. LANCASTER: Thank you.

--- Upon adjourning at 4:15 p.m.

CERTIFIED CORRECT:

P. D. McQueen