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NEW YORK STATE  
ASSEMBLY  
COMMITTEE ON ENVIRONMENTAL  
CONSERVATION  
on  
FUTURE USES OF THE LOVE CANAL  
HAZARDOUS WASTE SITE AND  
ADJACENT PROPERTY

William Donovan State  
Office Building  
Buffalo, New York

February 17, 1983  
11 a.m.

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COMMITTEE MEMBERS:

ASSEMBLYMAN MAURICE E. HINCHEY,  
Chairman

ASSEMBLYMAN JOSEPH PILLITTERE

ASSEMBLYMAN JOHN PERONE

ALSO PRESENT:

WALLACE JOHN

GAIL McFARLAND-BENEDICT

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LIST OF SPEAKERS:

ATTORNEY GENERAL ROBERT ABRAMS

12

and

MARCIA CLEVELAND,  
Assistant Attorney General  
Environmental Protection Bureau

and

MARY ELLEN BURNS  
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and

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Chairman of Department of Chemistry  
Kalamazoo College  
Kalamazoo, Michigan

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New York State Department of Environmental Conservation

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Roswell Park  
Acting Head of Epidemiology  
but appearing only in individual capacity

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1  
2 CHAIRMAN HINCHEY: Good morning,  
3 Ladies and Gentlemen.

4 Please, let me welcome you here  
5 today. I am Maurice D. Hinchey, the Chairman  
6 of the Assembly Committee on Environmental  
7 Conservation.

8 First, let me apologize for  
9 any inconvenience suffered by those who  
10 were not aware that we were to begin an hour  
11 late this morning. The delay was a result  
12 of scheduling difficulties.

13 We are here today to conduct  
14 the public hearing on the future uses of the  
15 Love Canal Hazardous Waste Site and adjacent  
16 property.

17 With me today are members of  
18 the Environmental Conservation Committee, as  
19 well as some staff people, and please, let  
20 me introduce them to you.

21 On my far right is Assemblyman  
22 Joseph Pillittere, from Niagara Falls, who is  
23 Chairman of the Environmental Conservation  
24 Committee Subcommittee on Toxic and Hazardous  
25 Waste.

1  
2 Next to me is Gail McFarland-  
3 Benedict, a member of our staff;

4 On my left is Wallace John,  
5 a member of staff;

6 On my far left is Assemblyman  
7 John Perone, from Westchester County, who is  
8 the ranking minority member of the Environ-  
9 mental Conservation Committee.

10 The purposes of the hearing are:

11 To take testimony to determine,  
12 with regard to proposed future uses, whether  
13 environmental impact studies are required  
14 under State law;

15 To review the findings presented  
16 by the United States Environmental Protection  
17 Agency Report, "Environmental Monitoring at  
18 Love Canal;"

19 To evaluate the recommendations  
20 made by the United States Department of Health  
21 and Human Services' "Environmental Monitoring  
22 at Love Canal Inter-Agency Review," concerning  
23 their conclusions about the habitability  
24 of the Love Canal area;

25 And to determine the liability

1  
2 to which the State and other parties are  
3 subject if the Love Canal area is re-inhabited  
4 and toxic waste-related environmental or  
5 health problems occur.

6 A tall order!

7 But not one that came without  
8 warning.

9 In 1979, an Assembly report  
10 began with words written twenty-one years  
11 before, by Marya Mannes:

12 "What manner of men choke off  
13 the life in rivers, streams and lakes with  
14 the waste of their produce, making poison of  
15 water? Who is as rich as that?

16 "Slowly the wasters and despoilers  
17 are impoverishing our lands, our nature, our  
18 beauty, so that there will not be one beach,  
19 one hill, one lane, one meadow, one forest  
20 free from the debris of man and the stigma  
21 of his improvidence."

22 It is the question of improvidence,  
23 which is the subject of the hearing today.

24 Last July, when the EPA report  
25 was issued, I urged the State not move in a



1  
2 precipitous fashion to relocate families near  
3 Love Canal, and I continue to surge. The EPA  
4 study concluded that a review of all the  
5 monitoring data revealed that there was no  
6 compelling evidence that the environmental  
7 quality of the area in question was significantly  
8 different from control sites for which monitoring  
9 data are available.

10 Basing their decision on this  
11 study, the United States Department of Health  
12 and Human Services stated that the Love Canal  
13 adjacent property is as habitable as the  
14 control areas with which it was compared.  
15 However, the following caveat was given:

16 This judgment regarding  
17 habitability includes the requirements that  
18 the Canal site itself and the land occupied  
19 by the two rings of homes surrounding it be  
20 constantly safeguarded against future leakage  
21 from the Canal and that cleanup is required  
22 for existing contamination of local storm  
23 sewers and their drainage tracts.

24 To my knowledge there is no  
25 mechanism in place to provide that the Canal

1  
2 site itself and the land occupied by the two  
3 rings of homes surrounding it be constantly  
4 safeguarded against future leakage.

5 I'm also deeply concerned over  
6 the comments of the eleven-member scientific  
7 panel which was chosen by the Centers for  
8 Disease Control to critique the EPA report.  
9 Nine of the eleven members had doubts of  
10 varying degrees concerning the report that  
11 raised significant legitimate questions  
12 regarding the appropriateness of rehabilitating  
13 Love Canal at this time.

14 Comments from the scientists  
15 range from criticism of the format in which  
16 data tables were presented to questions of  
17 whether samplings and analyses were sufficient  
18 to describe adequately the human threat from  
19 key Love Canal pollutants.

20 Back in June of 1980, the EPA  
21 and the DHHS, as well as the Federal Emergency  
22 Management Agency, assured the citizens of  
23 Love Canal that they will be provided  
24 "...the best information that could be  
25 developed on the status of your health and on

1  
2 any environmental risk associated with living  
3 in the Love Canal neighborhood."

4 The health studies were to  
5 include medical histories, physical examinations,  
6 clinical laboratory tests, as well as "...a  
7 series of special in depth clinical and  
8 epidemiologic studies comparing findings in  
9 carefully-matched residents outside of the  
10 Love Canal area. Particular studies are  
11 being considered with respect to possible  
12 chromosome abnormalities, neurologic damage,  
13 reproductive effects, and immunologic impair-  
14 ment."

15 Were these health studies ever  
16 completed?

17 If so, what were the results?

18 Why did not DHHS refer to the  
19 conclusions reached as a result of the health  
20 studies in their comments regarding the  
21 habitability of the Love Canal area?

22 Was the health study commitment  
23 simply abandoned?

24 Why were the health studies  
25 considered to be an integral part of the

1  
2 decision-making process regarding habitability  
3 at the onset and then never mentioned at  
4 the conclusion?

5 This situation continues to  
6 warrant a complete and public investigation,  
7 and that is the major purpose for our presence  
8 here today.

9 Our first witness this morning  
10 is the Hon. Robert Abrams, the Attorney  
11 General of the State of New York.

12 ATTORNEY GENERAL ABRAMS: Chair-  
13 man Hinchey and Assemblyman Pillittere and  
14 Assemblyman Perone, and staff members of the  
15 Committee, I appreciate enormously the  
16 opportunity to comment, and testify before  
17 you this morning.

18 Let me initially introduce two  
19 key members of my staff who work on a day-in  
20 and day-out basis on toxic waste issues and  
21 problems that affect western New Yorkers.

22 To my immediate left is  
23 Assistant Attorney General in charge of  
24 the Environmental Protection Bureau of the  
25 New York State Attorney General's Office,

1  
2 Marcia Cleveland;

3 To her left, the Assistant  
4 Attorney General in charge of Criminal  
5 Litigation, Maryellen Burns.

6 Let me say initially how mindful  
7 I am of the emotions that are involved in  
8 this entire issue. There are people who still  
9 live in this area.

10 There are others from the general  
11 community, I think those who come to testify  
12 before you today, who might have different  
13 points of view or conclusions, and will  
14 express them in good faith in trying to address  
15 the very serious issues as they see them,  
16 and the kinds of alternatives and judgements  
17 that are to be made by key officials who are  
18 involved in these decisions.

19 I thank you for the opportunity  
20 to address some of these serious questions  
21 that are raised by the possible re-occupancy  
22 of vacant houses in the Love Canal area, and  
23 commend your Committee for having this hearing  
24 and giving both points of view and perspectives  
25 the opportunity for public airing, and for the

1  
2 possibility and potential of creating a complete  
3 record with respect to the issues that are  
4 involved here.

5           The environmental catastrophe  
6 that is Love Canal has disrupted the lives of  
7 hundreds of people and has destroyed what once  
8 was a close-knit, flourishing community.

9           Love Canal will serve forever  
10 as a symbol of the perilous side of the  
11 modern industrial age.

12           The future of the Love Canal  
13 neighborhood is a matter of grave public  
14 concern. Few decisions carry consequences  
15 as significant as those which will flow from  
16 any decision regarding the future of the Love  
17 Canal area -- for the area itself and for  
18 the toxic waste sites throughout the State and  
19 country.

20           The Federal government, contrary  
21 to popular belief, has not declared the area  
22 to be "habitable." In fact, the U.S. Depart-  
23 ment of Health and Human Services has stated  
24 that the Love Canal neighborhood will not  
25 be habitable unless two important conditions

1  
2 are met.

3           There must be extensive further  
4 remedial work to address the contamination  
5 in the area, and there must be permanent  
6 safeguards against future leakage of deadly  
7 chemicals.

8           The Love Canal Area Revitalization  
9 Agency must be assured that re-occupancy is  
10 consistent with public health and safety  
11 before it authorizes such a course of action.  
12 These houses have been evacuated once; they  
13 should never have to be evacuated again.

14           This morning, I will touch on  
15 three issues concerning re-occupancy. First,  
16 I will explain why the statements issued by  
17 the Federal government in July, 1982 -- the  
18 Environmental Protection Agency Report and  
19 the Department of Health and Human Services  
20 Evaluation of that report -- provide no  
21 basis whatsoever for rehabilitation. Rather  
22 than providing a green light, these reports  
23 raise serious questions which must be  
24 definitively answered before government can  
25 allow re-occupancy of the Love Canal area homes.

1  
2 I will next explain why, according  
3 to State law, LCARA must comply with the  
4 strict decision-making procedures of SEQRA  
5 to help answer many of these serious questions,  
6 before it can make any lawful decision  
7 regarding the future of the Love Canal neigh-  
8 borhood.

9 Finally, I will discuss the  
10 issue of liability for future harm should the  
11 houses be resold, and the importance of  
12 completely warning future Love Canal residents  
13 of the serious risks involved in moving into  
14 the Love Canal area.

15 Now, the human health implications  
16 of the EPA report were evaluated by HHS,  
17 which stated, "Any judgment regarding the  
18 future habitability of the Love Canal area  
19 rests on two important requirements. The first  
20 reservation is that appropriate measures must  
21 be taken to clean up the obvious contamination  
22 of local storm sewers and their drainage  
23 tracts.

24 "Second, the security of Area 11  
25 (that is, the area which includes the Canal



1  
2 site itself and the land once occupied by the  
3 first two rings of houses) must be reevaluated  
4 to guarantee permanent containment in the  
5 dump.

6 "To assure habitability into  
7 the indefinite future, it is essential that  
8 optimum containment methods are installed  
9 and maintained and that continuous safeguards  
10 are observed to prevent further leakage from  
11 the site, either through erosion of the clay  
12 cover or through its displacement by movement  
13 of dump contents.

14 "Such safeguards will require  
15 (1) surveillance of the site through regular  
16 environmental testing of the site drainage  
17 system and (2) full maintenance of both the  
18 drainage system and of the clay cover."

19 These, the words of the Federal  
20 government, the HHS, in regard to habitation!

21 Thus, HHS was unmistakably clear  
22 in establishing two requirements that must be  
23 satisfied before people can be allowed to  
24 move back in.

25 The first condition requires

1  
2 extensive remedial measures to clean up areas  
3 of known contamination. The second condition,  
4 that the area be constantly safeguarded against  
5 future leakage from the Canal, include several  
6 requirements -- permanent containment of  
7 chemicals in the dump, constant surveillance  
8 and testing of the site drainage, and full  
9 maintenance of both the drainage system and  
10 the clay cover.

11 Neither the work done to date at  
12 Love Canal nor the proposed Superfund work  
13 will achieve or is intended to achieve these  
14 objectives, namely total containment and  
15 cleanup.

16 It is important to understand  
17 that the actual cleanup of the sewers, creeks  
18 and outfall will not be achieved under the  
19 current seven million dollar Superfund grant.  
20 Nor will the extensive monitoring program  
21 which is required at Love Canal be implemented  
22 by the existing grant;

23 It will only be formulated.

24 In other words, the cleanup and  
25 monitoring requirement which qualified the

1  
2 HHS conclusion of habitability is not met by  
3 the current Superfund commitment.

4 In public meetings in Niagara  
5 Falls on August 16th, EPA provided seeming  
6 assurances that additional monies under  
7 Superfund will be forthcoming to clean up the  
8 sewers and creeks and to monitor the site.  
9 However, common sense tells us that any such  
10 assurances by the Federal government must,  
11 by their nature, be viewed with caution.

12 Moreover, the State cannot  
13 reasonably have confidence at this time that  
14 no additional containment work will be required  
15 to prevent permanently all chemical migration  
16 from the Canal. Indeed, the construction work  
17 to be implemented under the current Superfund  
18 grant is not designed to address chemical  
19 migration from Love Canal other than at the  
20 top twelve to fifteen feet of overburden  
21 which the existing tile system already addresses.

22 The ultimate plan for thorough  
23 containment of chemicals at the site must  
24 encompass all potential and actual paths of  
25 chemical migration. No one can say at present

1  
2 what such a thorough remedy will cost;

3 And neither the Federal  
4 government nor any other party -- and certainly  
5 not Occidental Petroleum -- has committed  
6 itself to bear that cost.

7 The EPA report itself, like  
8 the HHS statement, is widely referred to as  
9 a basis for concluding that the houses in the  
10 declaration area are habitable. However, the  
11 EPA report makes no statement whatsoever  
12 about habitability.

13 It addresses, instead, the  
14 nature and extent of chemical contamination  
15 in the declaration area, which is the area  
16 proposed for rehabilitation, in the area on and  
17 immediately adjacent to Love Canal, and in  
18 certain areas designated as control areas.

19 A look at the report reveals  
20 that significant chemical contamination does  
21 indeed exist in the Love Canal declaration  
22 area.

23 What do we know for sure?

24 We know that forty-three million  
25 pounds of chemicals were dumped by Hooker

1  
2 in Love Canal.

3 We know that many of these  
4 chemicals are deadly and capable of causing  
5 atrocious injury.

6 We know what some chemicals  
7 have migrated through soil and other media  
8 to Rings 1 and 2.

9 Indeed, the Federal government  
10 tells us that Rings 1 and 2, just inside the  
11 fence, are uninhabitable.

12 We know that chemicals identical  
13 to those dumped in Love Canal have been found  
14 in soils, basements, and other locations  
15 outside the fenced area.

16 How does EPA rebut the seemingly  
17 compelling conclusion that the chemicals  
18 outside the fence are likely to have come  
19 from inside the fence?

20 It does not even try to do so. ✓

21 Clearly, then, the HHS statement  
22 and the EPA report on which it is based fall  
23 far short of a finding of habitability of  
24 the area and fail to provide any basis  
25 whatsoever for a decision to allow reoccupancy

1  
2 at this time. Until the serious questions  
3 concerning the safety of the Love Canal  
4 neighborhood are definitively answered, such  
5 a decision is intolerable.

6 Now, let me turn to the second  
7 issue, LCARA's obligation to consider all  
8 of these issues in an environmental impact  
9 study under State law.

10 The Legislature, in enacting  
11 SEQRA, declared that government is "to promote  
12 efforts which will eliminate damage to the  
13 environment and enhance human and community  
14 resources."

15 ECL 8-0101.

16 Agencies are called upon to act  
17 with an awareness that they are stewards of  
18 the air, water, land and living resources,  
19 and that they have an obligation to protect  
20 the environment for the use and enjoyment of  
21 this and all future generations. ECL Sections  
22 8-0103(8), 8-0109(1).

23 The statute defines the  
24 environment to include the physical conditions  
25 which will be affected by a proposed action,

1  
2 including land, air,... and existing community  
3 or neighborhood character." ECL Section 8-0105  
4 (6).

5 Thus, SEQRA "make(s) environmental  
6 protection a part of the mandate of every  
7 State agency and department."

8 The applicability of SEQRA to  
9 any plan for reoccupancy of houses in the  
10 Love Canal "declaration area" (Ring 3) is  
11 clear.

12 I am pleased that the Love  
13 Canal Area Revitalization Agency, the lead  
14 agency, has decided to comply with the first  
15 step -- an environmental assessment which  
16 determines whether an EIS is required.

17 Under SEQRA, an Environmental  
18 Impact Statement is required for any action  
19 which may have a significant effect on the  
20 environment. I have advised LCARA that,  
21 because of the unique and compelling circum-  
22 stances which are involved, the decision as  
23 to reoccupancy clearly may have, and in my  
24 view will have, a significant effect on the  
25 environment and that an EIS is required.

1  
2 Let's examine a bit more closely  
3 the reasons why an EIS is required.

4 Remember, an EIS is required for  
5 any action which may have a significant impact  
6 on the environment."

7 The human health and safety  
8 implications of the reoccupancy decision  
9 represent the major environmental effect  
10 which could result. The regulations promul-  
11 gated under the statute require an EIS for  
12 actions which could result in the creation  
13 of a hazard to human health and safety.  
14 Clearly, a decision which allows individuals  
15 to move into an area, the habitability of  
16 which is in serious dispute, potentially  
17 represents the creation of a hazard to human  
18 health.

19 Also, on a very basic level, the  
20 decision on reoccupancy will obviously have  
21 a significant effect on the future of this  
22 neighborhood. If the houses are resold, the  
23 area could become once again a typical residential  
24 neighborhood.

25 If the houses are not resold,



1  
2 many of the remaining residents might move  
3 out, diminishing the residential character  
4 of the neighborhood.

5 In short, the eventual decision  
6 on reoccupancy will clearly affect "existing  
7 patterns of population concentration,  
8 distribution or growth."

9 If so, that is a significant  
10 effect on the environment which requires  
11 preparation of an EIS.

12 Similarly, a decision to allow  
13 reoccupancy would constitute a substantial  
14 change in land use. That is another indicator  
15 of significant environmental effect which,  
16 under the regulations, mandates preparation  
17 of an EIS.

18 In the declaration area, the  
19 families who lived in more than four hundred  
20 homes have been moved out, the homes have  
21 been purchased by the government and are now  
22 boarded up.

23 No one is allowed to move into  
24 those homes.

25 Clearly, a decision to resell

1  
2 those homes and allow people to move into those  
3 homes represents a substantial quantitative  
4 change in the land use of both the neighborhood  
5 as a whole and with respect to each of the  
6 more than four hundred properties involved.

7           The EIS process can go a long  
8 way toward providing some of the answers  
9 which must be given before the future of the  
10 Love Canal area can be decided. The impact  
11 statement should utilize all available  
12 information. This would include the results  
13 of the investigation of your Committee and  
14 the study which is being conducted by the  
15 Office of Technological Assessment in  
16 Washington.

17           Moreover, the impact statement  
18 will have the advantage of focusing on the  
19 implications of the rehabilitation and its  
20 alternatives. No study has been conducted  
21 with that specific objective.

22           It is important to keep in mind  
23 the legal framework in which LCARA operates.  
24 The legislation establishing the agency granted  
25 it broad powers to enable it to carry out a

1  
2 program of revitalization of the Love Canal  
3 area.

4           Nowhere does the legislative  
5 history suggest the inevitability of resale  
6 of houses. The Governor's approval memorandum  
7 does not even mention the option of resale.

8           Revitalization, as used in the  
9 LCARA Legislation, is, thus, a very general  
10 concept, one which I fully endorse. It is  
11 not legally synonymous with reoccupancy of  
12 existing houses.

13           Under SEQRA, however, LCARA  
14 must give due consideration to alternatives  
15 to reoccupancy and compare them in terms of  
16 potential environmental consequences.

17           I underscore this point because  
18 of the apparently prevalent misconception  
19 that the Agency's revitalization mission  
20 necessarily entails resale of houses. As  
21 a legal matter, it does not; the paramount  
22 legislative objective is for the Agency to  
23 do whatever will best provide for the future  
24 for the area, acting consistently with  
25 SEQRA and all other applicable laws.

1  
2 And the Agency must "act and  
3 choose alternatives which, consistent with  
4 social, economic and other essential con-  
5 siderations, to the maximum extent practicable,  
6 minimize or avoid adverse environmental effects,  
7 including effects revealed in the EIS process."  
8 ECL Section 8-0109(1).

9 In addition to discussing the  
10 public health consequences of reoccupancy,  
11 this Committee has asked that we address the  
12 sobering issue of possible liability for  
13 future harm to the health and property of  
14 individuals who may move into the Love Canal  
15 area should LCARA decide to resell the houses.

16 The mere fact that this question  
17 has arisen should lead all of us to step back  
18 and take a long, hard look at the ultimate  
19 look at the wisdom of rehabilitation. For in  
20 discussing this issue, we are assuming the  
21 possibility that residents will become ill  
22 or die in a macabre repetition of the original  
23 Love Canal crisis.

24 If the chemicals at Love Canal  
25 caused harm to the health and property of

1  
2 new Love Canal residents, the injured persons  
3 would likely consider bringing legal action  
4 against LCARA, the seller of the property.

5 It has been suggested by some  
6 that in order to protect LCARA, any deeds  
7 transferring title to Love Canal homes should  
8 include waiver-of-liability clauses. In my  
9 view, the inclusion of such clauses would be  
10 unconscienable and bad public policy.

11 The future residents of Love  
12 Canal would deserve, at a minimum, a full and  
13 adequate disclosure of the conditions and  
14 prior uses of both the property which might  
15 be deeded and the adjacent area, including  
16 the dumpsite.

17 It is essential that any deed  
18 contain a full description of the deadly  
19 nature of the chemicals dumped in Love Canal,  
20 the threat of further chemical migration and  
21 the health dangers which might result from  
22 human exposure to Love Canal chemicals.

23 Anything less would be irrespon-  
24 sible and unethical and, in my view, probably  
25 not sustainable legally.

1  
2 As public officials, we are  
3 all aware of the burden placed upon government  
4 to make conscientious decisions which will  
5 best serve the interest of society. Nowhere  
6 is this burden greater than in the environmental  
7 area, where the public has little choice but  
8 to look to government for guidance and to  
9 rely upon its decisions.

10 Therefore, any responsible plan  
11 for the future of the Love Canal area, with  
12 serious health issues at stake, must be the  
13 result of a cautious, deliberate approach  
14 that looks beyond the immediate circumstances  
15 and takes into account all of the far-reaching  
16 consequences involved.

17 I urge this Committee to adopt  
18 a long view, and from that vantage the results  
19 of your analysis should not be in doubt.

20 I thank you again for the  
21 opportunity in this forum to express my views  
22 on some of these crucial issues.

23 CHAIRMAN HINCHEY: Attorney  
24 General Abrams, I want to express my appre-  
25 ciation to you, not only for coming here today

1  
2 and testifying before the Committee at this  
3 hearing, but for your continued leadership  
4 in this area.

5 Your office, although it has,  
6 of course, purview over all the laws of the  
7 entire State of New York, the entire broadcast  
8 of our legislation, have devoted a great  
9 deal of time and energy to this particular  
10 area, the environment. I think as a  
11 result of your recognition of the importance  
12 of it, also the health and safety of the people  
13 of this State, and I am very grateful to  
14 you and to your staff and your leadership  
15 of the staff under your direction for the  
16 work they have done in this regard.

17 ATTORNEY GENERAL ABRAMS: Thank  
18 you, Mr. Chairman.

19 CHAIRMAN HINCHEY: Would you be  
20 kind enough to remain briefly for a few  
21 questions?

22 ATTORNEY GENERAL ABRAMS: Sure,  
23 and the members of my staff, too, might be  
24 able to be of assistance in responding  
25 to your inquiries.

1  
2 CHAIRMAN HINCHEY: Thank you  
3 very much.

4 Mr. Pillittere.

5 ASSEMBLYMAN PILLITTERE: I have  
6 a couple of questions.

7 One, in going through your  
8 statement, you seem to be very strong in your  
9 concern about the health of the residents,  
10 both present and future. Yet, the residents  
11 have asked the question of me, although you  
12 are very strong in your position, why has  
13 the Department of Health, who is responsible  
14 for the health and welfare of the citizens  
15 of New York State, been so reluctant to make  
16 any statement, whether for or against the  
17 health of the people in the area?

18 There has been this reluctance  
19 since 1978 in the Department of Health to  
20 make a statement for fear that the State  
21 would be sued as the result of their statement.

22 What is your response to that?

23 ATTORNEY GENERAL ABRAMS: We  
24 certainly have not constrained the Department  
25 of Health from speaking to this issue, and your



1  
2 question is best addressed to the Commissioner  
3 of the New York State Department of Health.

4 ASSEMBLYMAN PILLITTERE: I have  
5 asked the question and have not received an  
6 answer.

7 ATTORNEY GENERAL ABRAMS: There  
8 is a Commissioner of Health, and he is the  
9 one empowered to respond to those questions,  
10 and he must be the one who responds.

11 I am desirous of the State  
12 government and all of its components to be  
13 as forthcoming as is possible. I have  
14 control only over the Department of Law.

15 You are now speaking of an  
16 agency over which I have no control, and that  
17 question should be addressed to the Commissioner  
18 who is responsible for the New York State  
19 Department of Health.

20 ASSEMBLYMAN PILLITTERE: The  
21 other question I have is, I had submitted  
22 legislation which was called a health impact  
23 statement.

24 The present environmental impact  
25 statement, I feel, is concerned with the

1  
2 impact of land, air and water, and doesn't  
3 really address the effects of health as  
4 regards individuals.

5           Yet, it appears that both your  
6 department and the Department of Health are  
7 reluctant to evaluate a health impact statement.

8           I would believe that reading  
9 your statement, a health impact statement  
10 would fit perfectly in a situation like the  
11 Love Canal, where you would assess the health  
12 impact, rather than the --

13           ATTORNEY GENERAL ABRAMS: Abso-  
14 lutely, and we feel that the present law,  
15 the environmental impact statement under  
16 existing law, requires precisely that kind  
17 of consideration by the agency involved,  
18 and that is one of the motivating forces  
19 that compels me to write, in a very direct  
20 way to the LCARA to say that you should,  
21 under existing law, file an environmental  
22 impact statement because one of the impacts  
23 here is the health of the people who are  
24 involved.

25           So our view is that the existing

1  
2 law does compel and require scrutiny with  
3 respect to the health potential of the  
4 individuals who are involved.

5 ASSEMBLYMAN PILLITTERE: One  
6 more question, it is sort of remote from the  
7 issue:

8 The DEC has arbitrarily decided  
9 to destroy the 99th Street School and bury  
10 it, and the School Board feels that the  
11 cost of the 99th Street School, that is,  
12 1.6 million dollars, should be paid for by  
13 the State, because the State is paying for  
14 the homes in the inner ring, it paid for the  
15 homes in the second and third rings for those  
16 who wished to move, and as the Attorney General,  
17 since I have you here, I can ask you the  
18 question, do you feel that the State has an  
19 obligation to reimburse the school system  
20 for the 1.6 million dollar loss?

21 ATTORNEY GENERAL ABRAMS: I am  
22 told that that issue is in litigation right  
23 now, and Maurice Hinchey, in his gracious  
24 comments, indicated that the Attorney General  
25 has wide and disparate roles.

1  
2 On the one hand, there is the  
3 constitutional mandate and obligation to  
4 defend the State when the State is sued, and  
5 then there is the additional opportunity or  
6 obligation to represent the public interest  
7 and the people in a whole variety of areas.

8 In regard to the formal  
9 responsibility of defending the State when it  
10 is sued, there is now litigation, so I would  
11 have to be very circumspect in protecting the  
12 interest of the State of New York in terms  
13 of that litigation, and could not comment in  
14 any direct way.

15 ASSEMBLYMAN PILLITTERE: I was  
16 afraid that you would say that.

17 I was hoping Marcia would not  
18 be here, and you would answer the question.

19 One more question, since I just  
20 got the information I requested:

21 Legislation was passed, I  
22 believe, in 1979, allowing the residents in  
23 the area, if they chose to leave, they had  
24 until December of 1982 if they wished to leave,  
25 and that time has expired.

1  
2 Is that legislation, which gave  
3 until 1982, legal and binding, or can they  
4 now, after January of 1983 --

5 A VOICE: 1983.

6 ASSEMBLYMAN PILLITTERE: 1982,  
7 wasn't it?

8 We just called the Albany office,  
9 and they told us December of 1982.

10 A VOICE: 1983, October of 1983.

11 ASSEMBLYMAN PERONE: Ask the  
12 question anyway.

13 ASSEMBLYMAN PILLITTERE: The  
14 question still remains, whether the date  
15 be December of 1972 or if the date be October  
16 of 1983.

17 ATTORNEY GENERAL ABRAMS: If it  
18 is 1983, obviously, there is still some time  
19 left.

20 If it happened to have been 1982,  
21 I would think it is still within the  
22 Legislature's purview to extend that date,  
23 if the Legislature so wishes they, in their  
24 wisdom, in the first instance created this  
25 kind of opportunity, so the Legislature certainly

1  
2 has the power to extend it.

3 ASSEMBLYMAN PERONE: You made  
4 a statement concerning the lawsuits already.

5 What can you tell us about the  
6 present status of those lawsuits?

7 Where are they?

8 What developments can you tell  
9 us have unfolded in those lawsuits?

10 ATTORNEY GENERAL ABRAMS: Well,  
11 people here, they are in the Environmental  
12 Protection Bureau.

13 Is Hugh Scott in the room?

14 If so, maybe he would come up and help. I  
15 know that a number of notices of claims have  
16 been filed in relation to Love Canal litigation.

17 I believe some litigation has  
18 been instituted, and if you would like more  
19 details, we can fill you in.

20 ASSEMBLYMAN PERONE: Specifically,  
21 is there any direction that has developed in  
22 any of the lawsuits that you feel are landmark,  
23 as far as your treatment of future cases, or  
24 something that we should know about as a  
25 committee of how the Courts have handled it to

1

2

date?

3

If not, then I am trying to

4

see, is there a landmark decision, is there

5

some direction --

6

ATTORNEY GENERAL ABRAMS: No,

7

these matters are still in the most preliminary

8

stages. In fact, many of the notices have

9

not even ripened into litigation.

10

ASSEMBLYMAN PERONE: The Second

11

question I have is, what is the purview of

12

responsibility you feel your office has,

13

besides these very important suits that you

14

have undertaken, and I compliment you and

15

the Department in doing that?

16

What do you think is your most

17

important purview besides the comments,

18

obviously, being one of the top officials

19

of the State of New York commenting, but

20

what areas do you think you can directly get

21

into besides the actual prosecution of these?

22

ATTORNEY GENERAL ABRAMS: Well,

23

obviously, the Attorney General, as the chief

24

legal officer of the State, has the basic

25

responsibility for litigation in which the

1  
2 State is involved, and which the interest of  
3 the people of the State of New York might  
4 be involved in, so my primary clout comes  
5 with my opportunity to go to Court and litigate  
6 matters.

7 I must tell you that at no time  
8 before my first term as Attorney General, that  
9 the State of New York, in its entire history,  
10 never brought a lawsuit involving toxic  
11 pollution. Until I became Attorney General,  
12 the State never filed a single lawsuit.

13 We have now, unfortunately,  
14 discovered serious enough problems, not  
15 only here in western New York, but elsewhere  
16 throughout the State, and we have begun a  
17 significant litigation enforcement program  
18 to compel wrongdoers to clean up the site  
19 at the expense of those individuals or  
20 corporations.

21 What we have also tried to do  
22 is work with the distinguished members of  
23 the New York State Legislature in fashioning  
24 legislation that might help to deal with  
25 a variety of the problems that we are discovering



1  
2 as they relate to toxic and chemical dumping.

3 Some of those measures have  
4 ripened into new statutes.

5 Assemblyman Hinchey deserves  
6 great credit for staying a stalwart and  
7 strong position, together with others on the  
8 panel here today, and in the Senate and in the  
9 Assembly for creating a State Superfund to  
10 deal with some of the sites that we have in  
11 New York that have to be cleaned up.

12 But there is still so much more  
13 that we want to have.

14 The people's right of action is  
15 barred under existing law by virtue of what I  
16 deem to be a very unfair statute of limitations.

17 We should deal with that, I hope,  
18 during this session of the Legislature, because  
19 if, unfortunately, there is going to be a loss  
20 of life or damage to people's health, they  
21 should have the opportunity to go and pursue  
22 what they deem to be their rightful remedies  
23 in a court of law.

24 They cannot do that today, because  
25 of a Catch-22 situation that exists.

1  
2 We are seeking the Legislature's  
3 cooperation to toughen the laws this year with  
4 respect to toxic dumpers, to increase the  
5 penalties, the criminal penalties, and to  
6 have forfeiture of any materials, trucks,  
7 or any other physical properties that are  
8 used in the illegal dumping of these kinds  
9 of chemical wastes.

10 So in the role of somebody  
11 assisting the Legislature in the formulation  
12 of legislation, and in passing that legisla-  
13 tion, we hope to be productive and creative  
14 and continue to be collaborative.

15 We have worked very closely with  
16 the members of the Assembly and the Senate  
17 in working out important pieces of legislation  
18 to deal with these problems.

19 ASSEMBLYMAN PERONE: Thank you.

20 CHAIRMAN HINCHEY: Attorney  
21 General Abrams, I very much agree  
22 with you and your recognition of the appli-  
23 cability of the State Environmental Quality  
24 Review Act, and the necessity for a very  
25 detailed and comprehensive environmental

1  
2 impact statement.

3 Do you have any thoughts on  
4 who might best be the lead agency for the  
5 EIS in that regard, or does any of your  
6 staff --

7 ATTORNEY GENERAL ABRAMS: We have  
8 asked the LCARA to be the relevant and  
9 responsible agency to oversee all of that, and  
10 they have begun the initial process, and  
11 we hope that they will complete that process.

12 CHAIRMAN HINCHEY: We were  
13 -- we are concerned about the possibility of  
14 the Department of Environmental Conservation  
15 assuming that role.

16 Might it also not be appropriate  
17 for your own State agency to assume that  
18 lead State agency status?

19 MS. CLEVELAND: LCARA is really  
20 the agency that is going to make the decision  
21 for which an impact statement is required.

22 They will make a decision about  
23 how to make use of the lands now owned by  
24 the State in the area around the Canal.

25 Under SEQRA, that makes them the

1  
2 appropriate lead agency. The whole point of  
3 the impact statement process is to make sure  
4 that the agency that has to decide goes  
5 through the process of thinking about the  
6 alternatives, so I think that would be the  
7 best agency to do it.

8 ATTORNEY GENERAL ABRAMS: I guess  
9 they could seek assistance from En Con.

10 MS. CLEVELAND: Other agencies  
11 review impact statements anyway when they  
12 are in draft form.

13 CHAIRMAN HINCHEY: Do you see the  
14 Department of Environmental Conservation in  
15 this regard as limited to an advisory capacity,  
16 or would you see them involving themselves  
17 more deeply?

18 MS. CLEVELAND: Submitting  
19 testimony, for example?

20 ATTORNEY GENERAL ABRAMS: If  
21 LCARA felt it needed that assistance, needed  
22 those resources, needed the technical advice  
23 and assistance, certainly En Con has had  
24 experience in this area.

25 I would assume that it would just

1  
2 reach out and call for that kind of aid and  
3 assistance in the development of the statement.

4 CHAIRMAN HINCHEY: In your  
5 statement you very appropriately point to the  
6 whole question of liability, both present and  
7 future liability, and that has been a deep  
8 concern of ours.

9 We are concerned about the future  
10 liability, and we are concerned particularly  
11 with the Revitalization Agency, which is a  
12 creature of the State, having been created  
13 by the State, does that mean that ultimate  
14 liability with regard to their actions would  
15 fall inevitably upon the State?

16 ATTORNEY GENERAL ABRAMS: No,  
17 we think clearly that LCARA stands on its  
18 own by virtue of the legislation.

19 We have examined the legislation  
20 very carefully, and by virtue of the statute  
21 that created it, and the way it operates,  
22 it is an entity unto itself.

23 We see no possible way in which  
24 the State could responsibly be brought into  
25 any kind of lawsuit of that kind.

1  
2                   CHAIRMAN HINCHEY: I am reminded  
3 by Mr. John that we have a situation here  
4 where an agency probably has no assets, or no  
5 substantive assets.

6                   Where is the efficacy, if they  
7 are the target of a suit with regard to  
8 liability?

9                   ATTORNEY GENERAL ABRAMS: It  
10 remains to be seen what its assets will be  
11 in the future.

12                   It has received assets. It has  
13 assets under its control.

14                   We don't know whether or not  
15 the Legislature will see fit to give it other  
16 assets.

17                   We don't know whether or not it  
18 can accumulate other assets.

19                   But people will be able to  
20 proceed to the courts, pursue whatever remedies  
21 they see fit. As we have analyzed the situation  
22 now, we don't see where the State itself will  
23 sustain any liability, but in any event, we  
24 feel that it is very important, given the  
25 historical context here, that there be this

1  
2 full disclosure and there should be, as a  
3 matter of public policy.

4 On the position of unconscien-  
5 ability, there should be no waiver of that  
6 liability and responsibility.

7 CHAIRMAN HINCHEY: Mr. Abrams,  
8 again we are very grateful to you for your  
9 testimony and for your continued leadership  
10 on this issue.

11 Thank you very much.

12 \* \* \*

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2 CHAIRMAN HINCHEY: Our next  
3 speaker will be Dr. Richard T. Dewling,  
4 Deputy Regional Administrator, U.S. Environ-  
5 mental Protection Agency, Region II.

6 DR. DEWLING: Good morning,  
7 Chairman Hinchey.

8 CHAIRMAN HINCHEY: Welcome.

9 DR. DEWLING: Assemblyman  
10 Pillittere, Ladies and Gentlement, it is a  
11 pleasure to be here this morning to discuss  
12 with you, and bring you up to date on EPA's  
13 involvement with Love Canal.

14 I'm accompanied this morning  
15 by Dr. Donald A. Deieso, Chief of the Hazard  
16 Remediation Section, and Norman Nosenchuck,  
17 from the New York State Department of  
18 Environmental Conservation, who will be  
19 testifying later this morning, both will be  
20 available for responding to specific questions  
21 you might have on this aspect of the overall  
22 program.

23 With your permission, to avoid  
24 a degree of repetition, I would like to bring  
25 to the record and add to the record the



1  
2 testimony that we presented on August 9th  
3 before the Subcommittee on Commerce, Trans-  
4 portation and Tourism of the U.S. House of  
5 Representatives, which includes the  
6 testimony of Dr. John Hernandez, Dr. Courtney  
7 Riordan, and Dr. John Deegan, and myself, and  
8 most importantly, some of the comments in  
9 response to EDF's questions regarding some  
10 of the technical aspects of our studies.

11 I would like to have that  
12 included in the record, if I may.

13 I feel confident that most of  
14 the statements will answer many of your  
15 technical questions, and if you have specific  
16 technical questions today, I'd be most happy  
17 to try to answer them, and if I cannot, I  
18 would be most happy to get answers for you,  
19 and to insert them in the record.

20 Mr. Chairman, I would like to  
21 reaffirm the major findings of EPA's study  
22 which we conducted at Love Canal.

23 We believe these findings, the  
24 conclusions and recommendations of our report  
25 are valid, our presentation of scientific

1  
2 studies and opinions is accurate, and the  
3 methodology we used sound.

4 The hydrogeologic program results  
5 demonstrated that there is little potential  
6 for migration of contaminants from Love Canal  
7 into the Declaraton Area. These findings  
8 conformed fully with the results of the multi-  
9 media environmental monitoring program.

10 Furthermore, the close correspond-  
11 ence of the multimedia monitoring data to  
12 the implications of the geological and hydro-  
13 logical characteristics of the site minimized  
14 the likelihood that potential limitations  
15 inherent in the state-of-the-art analytical  
16 methods used during the study resulted in  
17 artifactual or fallacious conclusions regarding  
18 the extent and degree of environmental con-  
19 tamination at Love Canal.

20 The results from the hydro-  
21 geologic program suggested that the barrier  
22 drain system, which was installed around the  
23 perimeter of Love Canal in 1978 and 1979, is  
24 working as designed.

25 In particular, the outward

1  
2 migration of contaminants through more  
3 permeable overburden soil has been contained,  
4 and the movement of nearby shallow system  
5 groundwater is towards the drain.

6                   Consequently, contaminated  
7 shallow system groundwater beyond the barrier  
8 drain will be drawn towards Love Canal, inter-  
9 cepted by the barrier drain system, and  
10 decontaminated in the Leachate Treatment  
11 Facility.

12                   Previously-reported EPA testing  
13 of the effectiveness of the Leachate Treatment  
14 Facility demonstrated an operating efficiency  
15 of greater than ninety-nine percent removal  
16 of all monitored organic compounds in the  
17 influent leachate.

18                   Except for some apparently  
19 isolated pockets of shallow system ground-  
20 water contamination located immediately  
21 adjacent to the former Canal, no general hazard  
22 of contamination was found in the shallow  
23 system.

24                   Furthermore, no significant  
25 shallow system groundwater contamination

1  
2 attributable directly to migration from Love  
3 Canal was found outside of Ring 1 in the  
4 Canal area.

5 Low level, widespread contam-  
6 ination was observed throughout the bedrock  
7 aquifer. However, groundwater samples from  
8 the bedrock aquifer located in the Lockport  
9 Dolomite did not reveal a pattern of contam-  
10 ination that had migrated directly from Love  
11 Canal.

12 No Love Canal-related patterns  
13 of contamination were found in soil samples  
14 collected in the Declaration Area. Patterns  
15 of soil contamination attributable to con-  
16 taminants having migrated from Love Canal were  
17 found in Ring 1 of the Canal Area, and was  
18 associated with known or suspected preferential  
19 transport pathways in the soil, and with  
20 the occurrence of shallow system groundwater  
21 contamination.

22 No evidence of Love Canal-related  
23 contamination that had migrated preferentially  
24 through former swales into the Declaration  
25 Area was found, nor were "wet" area residences

1  
2 found to have higher concentrations of  
3 contamination than "dry" residences.

4 Evidence of residual contamination  
5 that had most likely migrated from Love  
6 Canal was present in sump samples collected  
7 in a few residences located immediately  
8 adjacent to the former Canal, that is, within  
9 Ring 1.

10 Evidence of residual contamination  
11 that had most likely migrated from Love Canal  
12 was found in those storm sewer lines which  
13 originated near Love Canal in the Canal area.

14 Evidence of residual contami-  
15 nation that had most likely migrated from  
16 Love Canal was present in the sediments of  
17 certain creeks and rivers sampled near to those  
18 storm sewer outfalls of sewer lines originating  
19 near the former Canal.

20 Results from monitoring activities  
21 in the residential portions of the Declaration  
22 Area revealed that the contamination present  
23 was comparable to that at the control sites,  
24 to concentrations typically found in the  
25 ambient environment, and to concentrations

1  
2 found in other urban locations.

3 In general, no environmental  
4 contamination that was directly attributable  
5 to the migration of contaminants from Love  
6 Canal was found in the Declaration Area,  
7 outside of the previously-mentioned Storm  
8 Sewer lines and creeks.

9 Mr. Chairman, a review of the  
10 results from the entire Love Canal environmental  
11 monitoring study indicate that:

12 (1) Except for contamination  
13 present in sediments of certain storm sewers  
14 and of certain local surface waters, the  
15 extent and degree of environmental contamination  
16 in the area encompassed by the Emergency  
17 Declaration Order of May 21, 1980 were not  
18 attributable to Love Canal;

19 (2) The short-term implications  
20 of groundwater contamination are that a  
21 continued effective operation of the barrier  
22 drain system surrounding Love Canal will  
23 contain the lateral migration of contaminants  
24 through the overburden, and the long-term  
25 implications are that little likelihood exists

1  
2 for distant groundwater transport of contam-  
3 inants present in the Canal area; and

4 (3) A review of all of the  
5 monitoring data revealed that there was no  
6 compelling evidence that the environmental  
7 quality of the Declaration Area was significantly  
8 different from control sites or other areas  
9 throughout the United States for which  
10 monitoring data are available.

11 On July 15th, 1982, one day  
12 following the presentation of our findings  
13 on Love Canal, EPA announced a 7.0 million  
14 dollar Superfund initiative at the site.  
15 Since then, the amount has been raised to  
16 8.0 million dollars.

17 Table I summarizes the completed  
18 as well as planned activities at the Canal.  
19 I am confident that Mr. Nosenchuck's testimony  
20 will go into specific details of each phase  
21 of the remedial program, as our cooperative  
22 agreement with DEC gives it the lead respon-  
23 sibility for carrying out this activity.

24 Table I is basically broken down  
25 into nine segments, which includes the sites

1  
2 containment in which we had indicated that  
3 work would start before the end of last  
4 fiscal year, and certain portions of it have  
5 already been completed, namely, the sewers  
6 themselves have been cleaned, and the cutoff  
7 wall at the street crossings have been put in  
8 place.

9 We expect to start construction  
10 of the cap, the contract has already been  
11 let, and we hope to have completion by  
12 October or November of this year of the cap.

13 Mr. Chairman, I would like  
14 to clarify once more what EPA did say  
15 regarding the habitability of the Love Canal  
16 neighborhood when we released our study last  
17 July. We agree with the finding of the  
18 Department of Health and Human Services that  
19 Ring 1 is not habitable, that Ring 2 should  
20 be kept as a buffer zone and that the rest  
21 of the Declaration Area could be resettled,  
22 provided the former Canal itself were to be  
23 securely contained and monitored and the  
24 storm sewers and creeks cleaned up.

25 I think it is important to



1  
2 recognize that the Federal responsibility and  
3 our activities will be maintained as long  
4 as there is Superfund alternatives relative of the  
5 availability of funds. The taxation program  
6 runs out in 1985.

7 The perpetuity of monitoring,  
8 maintaining the cap, and all the other  
9 activities relate to a responsibility dealing  
10 with the local community, the State, and  
11 other responsible parties.

12 What I am indicating to you is  
13 that EPA's role in this is guaranteed as  
14 long as we have the funding available in the  
15 Superfund up to the programs that we have  
16 identified.

17 So the long-term consideration  
18 beyond 1986 is something that EPA cannot  
19 address.

20 CHAIRMAN HINCHEY: So if the  
21 funding runs out for the Superfund in 1985,  
22 if the legislation is not renewed, and the  
23 fund is ultimately exhausted, then you are  
24 saying that the responsibility of EPA would ✓  
25 no longer exist; is that correct?

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Am I hearing you correctly?

DR. DEWLING: The O&M responsibility totally is not EPA's, the Agency has taken a very strong position that the Agency will not pay for O&M.

CHAIRMAN HINCHEY: You will not pay for operation and maintenance?

DR. DEWLING: That is correct.

CHAIRMAN HINCHEY: Does that include the safeguards that you recognize as being essential, and you highlight in your testimony?

DR. DEWLING: I think when we say here that the area must be securely contained, and our decision on habitability rests with the perpetuity of monitoring and assurance that that site is contained --

CHAIRMAN HINCHEY: Who is going to ensure the perpetuity of monitoring?

DR. DEWLING: That responsibility, we have all assurances from the State that that role will be accompanied by their activities.

CHAIRMAN HINCHEY: You are

1  
2 telling us that the State of New York has the  
3 responsibility for monitoring this site in  
4 perpetuity to ensure the safety of the citizens  
5 that may be relocated there pursuant to  
6 a report published by the EPA?

7 DR. DEWLING: That is correct. ✓

8 CHAIRMAN HINCHEY: So the  
9 Department of Environmental Conservation  
10 better have a great level of confidence in  
11 the report published by your agency.

12 DR. DEWLING: That is correct.

13 CHAIRMAN HINCHEY: Thank you.

14 DR. DEWLING: We did not say  
15 that the neighborhood was "completely clean,"  
16 and that people should be moved back in  
17 immediately.

18 In EPA's opinion, there is ✓  
19 no question that remedial work must be  
20 completed before we can be sure that the whole  
21 area is acceptable, and that there is no  
22 incremental increase in public health risk  
23 associated with living in that area.

24 However, we do believe that some  
25 limited resettlement can take place now under

1  
2 certain conditions.

#3 3 These are as follows: ✓

4 (1) The street in question is  
5 remote from any construction or decontamination  
6 work planned during the cleanup/remedial  
7 projects.

8 (2) Testing of storm sewers in  
9 the vicinity shows no significant contam-  
10 ination. This sewer testing has been carried  
11 out over the past several weeks; the results  
12 should be available shortly.

13 (3) Any resettlement plan  
14 should be closely coordinated with, and  
15 improved by, the Department of Environmental  
16 Conservation and appropriate health officials.

17 I want to reemphasize that  
18 we are paying with the State now for O&M  
19 at the site for the life of Superfund. And  
20 at the end of the life of Superfund, the  
21 taxation runs out in 1985, there might be  
22 still monies beyond that point in time, however,  
23 perpetuity, long-term commitment to assuring  
24 the integrity of the cap and assuring the  
25 integrity of the environment, and for monitoring,

1  
2 those responsibilities will be local/State,  
3 State or other community, and not the Federal  
4 government's.

5 CHAIRMAN HINCHEY: Before I  
6 turn -- you will stay for questions?

7 DR. DEWLING: Yes.

8 CHAIRMAN HINCHEY: Before I  
9 turn the questioning over to Mr. Pillittere,  
10 I would like to call your attention to the  
11 article in the July 16th, 1982 Buffalo Courier  
12 Express which quotes Jacqueline Schafer, the  
13 Regional EPA Administrator as saying:

14 " People could be moved back to  
15 parts of the Love Canal Revitalization Area,  
16 93rd to 103rd Streets, from Bergholtz Creek  
17 to Buffalo Avenue, except the first two rings  
18 of homes immediately..." and it goes on to  
19 quote her as saying -- this is Mr. Nosenchuck  
20 actually, and he said, "Most of the homes  
21 would be habitable while this construction  
22 is going on. Ms. Schafer agreed, she said  
23 "there are parts of the area where we have  
24 no hesitation in having people come back  
25 immediately."

1  
2 DR. DEWLING: I think I just  
3 said that.

4 What I said to you is that  
5 the basis for making that conclusion, that  
6 there could be limited resettlement now,  
7 away from the area, is on the basis that  
8 there will be a continuation and fulfillment  
9 of all the activities that are planned at  
10 that site.

11 I don't think in anyone's mind  
12 there is any intent to say that this thing  
13 is solved in three years.

14 There is a continuity and  
15 responsibility way beyond three years, and  
16 the only thing I am indicating to you is  
17 that the dollar commitment from the Federal  
18 government has a certain time frame to it,  
19 that there is another area here that you  
20 have to identify.

21 CHAIRMAN HINCHEY: Well, I  
22 have to say that there is more than a dollar  
23 commitment involved here; from my perspective  
24 at least, there is a moral commitment also.

25 Because we are not talking

1  
2 about dollars and cents, we are talking about  
3 people's lives, and their health, and future  
4 safety, I don't think that that health  
5 and safety can be measured in terms of  
6 dollars, or in dollar commitments.

7 I do not -- I will tell you, L  
8 I do not comfortably contemplate the date  
9 when the Federal government washes its hands  
10 of the whole Love Canal affair, and says  
11 it is up to the State of New York, we have  
12 done our job, there is no more Superfund,  
13 there is no more money, we are going away;

14 We know those people moved  
15 back in there as a result of a report which  
16 we published, but nevertheless, we don't  
17 recognize any future responsibility.

18 Do you find comfort in that?

19 DR. DEWLING: I find comfort  
20 in the fact that our studies indicated  
21 that the environmental conditions up there  
22 do not impose incremental increase in public  
23 health risk. I feel comfortable in those  
24 conclusions, yes.

25 The decision on habitability

1  
2 is your decision, relative to when and if.

3 We have given you our opinion, ✓  
4 we have provided, through Superfund, the  
5 monies to the State for the full responsibility  
6 for carrying out remedial actions at the  
7 site. They will have the availability of  
8 Federal funds as long as Superfund is avail-  
9 able.

10 That is all we can commit to.

11 The State would like to  
12 obviously, and we would like, if we had the  
13 money to commit to that, but we cannot continue  
14 a commitment that hasn't been authorized or  
15 appropriated.

16 CHAIRMAN HINCHEY: Your agency 7  
17 has not taken any position with regard to  
18 habitability? ✓

19 DR. DEWLING: HHS has given you ✓  
20 an opinion on habitability, and we share  
21 that opinion.

22 As my statement states, there  
23 could be limited resettlement on the basis  
24 that we are assuming that the construction  
25 goes ahead on time, that the area is sealed,



1  
2 and that there is a guaranteed, long-term  
3 perpetuity in monitoring and maintenance  
4 of the cap and the surrounding areas.

5 That is the basis of our  
6 decision, initially, and we still maintain  
7 that position.

8 We are going on the assumption  
9 of making the statement of limited habitability  
10 now, based on the information we have, which  
11 indicates to us the State is willing to take  
12 that responsibility, or local responsibility  
13 for assuring the monitoring.

14 CHAIRMAN HINCHEY: Well, we can  
15 talk about that later.

16 Mr. Pillittere.

17 ASSEMBLYMAN PILLITTERE: First,  
18 before I attack you, I want to thank you for  
19 coming, but I --

20 DR. DEWLING: This is the week  
21 for EPA.

22 ASSEMBLYMAN PILLITTERE: I can't  
23 believe your whole statement here.

24 You start off on Page 2 with,  
25 "Mr. Chairman, the following points

1  
2 reaffirm the major findings," and you go on  
3 to say that, "We believe the findings, con-  
4 clusions and recommendations in our report  
5 are valid, our presentation of scientific  
6 studies and opinions are accurate, and the  
7 methodology used is sound."

8 After Page 2, I say great, you  
9 really have the bull by the horns, and you  
10 know exactly where you are going.

11 Then on Page 5, you say, "In  
12 general, no environmental contamination is  
13 directly attributed to the migration of  
14 contaminants from the Love Canal," and I  
15 am really still with you, you say, "We know  
16 there is no contamination, our data is all  
17 sound."

18 Then on Page 6, you say, "I  
19 would like to clarify once more what EPA  
20 did say regarding the habitability of the  
21 Love Canal neighborhood when we released our  
22 study last July. We agreed with the finding  
23 of the Department of Health and Human Services  
24 that Ring 1 was not habitable, that Ring 2  
25 should be kept as a buffer zone, and that

1  
2 the rest of the Declaration Area could be  
3 resettled, provided the former Canal itself  
4 were to be securely contained and monitored,  
5 and the storm sewers and creeks cleaned up."

6 I am still with you.

7 Then all of a sudden you come  
8 in with a little Catch-22, and you say, and  
9 I quote from your report, "We did not say  
10 that the neighborhood was completely clean,  
11 and that people should be moved back in  
12 immediately, and EPA's opinion is that there  
13 is no question, work must be completed before  
14 we can be sure the whole area is acceptable,  
15 and there is no incremental increase in  
16 public health risk associated with living  
17 in the area."

18 DR. DEWLING: Right.

19 ASSEMBLYMAN PILLITTERE: I  
20 don't understand that.

21 You go from, you are perfectly  
22 sure, our data is accurate, we know what  
23 we are doing, we have Ring 1, you can't live  
24 there, Ring 2 is a buffer, and Ring 3 you  
25 can settle, but, fellows, we can't do a thing

1  
2 until we are sure what the data looks like.

3 How can you be so positive  
4 all the way to Page 7, and then on Page 7  
5 you are not sure what you are doing, unless  
6 I am misinterpreting what you are saying in  
7 that paragraph on Page 7?

8 To me it looks like you -- you  
9 don't believe your own report.

10 DR. DEWLING: Now, I think what  
11 we have said, we have said this previously  
12 during the hearings, the word was, is it  
13 safe?

14 ASSEMBLYMAN PILLITTERE: That  
15 is a good question, is it safe?

16 DR. DEWLING: Safe in relation ✓  
17 to what?

18 ASSEMBLYMAN PILLITTERE: Human  
19 health, what else?

20 DR. DEWLING: What we are  
21 indicating to you is that the Declaration  
22 Area, based on the environmental measurements,  
23 we are not finding levels of pollutants in  
24 that area any different than in many other  
25 areas of this country in an urbanized area.

1  
2 ASSEMBLYMAN PILLITTERE: That  
3 proves nothing.

4 DR. DEWLING: We are saying the  
5 area is as habitable as any of these other  
6 areas.

7 ASSEMBLYMAN PILLITTERE: That  
8 doesn't prove nothing or anything. Everything  
9 could be contaminated.

10 DR. DEWLING: We are saying  
11 that in relationship to other areas, there  
12 is no such thing as zero.

13 ASSEMBLYMAN PILLITTERE: The  
14 question is, in EPA's report, are you or are  
15 you not saying Area 3 is habitable?

16 DR. DEWLING: We are saying there  
17 is no reason to believe that limited habitation  
18 cannot take place in that area, while the  
19 construction is going on, and that if the  
20 remedial actions take place, and there is a  
21 long-term guarantee of no migration of  
22 those pollutants from Ring 1 and Ring 2,  
23 we are saying that the area is not uninhabit-  
24 able. ✓

25 ASSEMBLYMAN PILLITTERE: That was  
not the question.

1  
2 My question is:

3 Does EPA feel, on the basis of  
4 their extensive report, that took two years  
5 to prepare, the area is habitable, and your  
6 answer, if this, if that, and if that, is  
7 not an answer to the question, that is --

8 DR. DEWLING: The same caveat  
9 that was applied by HHS deals with the  
10 integrity of maintaining the chemicals within  
11 the site, and also completing the remedial  
12 action in removing the dioxin.

13 We are saying, as we have said  
14 here before, we do not perceive that there  
15 is any incremental increase in public health  
16 risk by habitation in the Declaration Area,  
17 if these things take place.

18 ASSEMBLYMAN PILLITTERE: What  
19 you are saying then is that if someone would  
20 guarantee that the cleanup is such that all  
21 evidence of any contamination is gone, then  
22 someone can guarantee to EPA that the  
23 remedial work is maintained, that the area will  
24 be clean and removed of all contaminants,  
25 that someone would guarantee that there will

1  
2 be no migration of any contaminants, that  
3 EPA says it is habitable.

4 DR. DEWLING: No, what we are  
5 saying is that --

6 ASSEMBLYMAN PILLITTERE: That  
7 is what you just said.

8 DR. DEWLING: I beg to differ  
9 with you, sir.

10 I am saying here, if you carry  
11 out the remedial program, the contaminants  
12 that are presently in Ring 1 and in the buffer  
13 zone are not going to migrate or cause any  
14 further degradation in the Declaration Area.

15 The level of pollution in  
16 the Declaration Area is typical of what  
17 we are finding throughout this country, and  
18 we are indicating to you that that area is at  
19 no higher level of risk than living in many  
20 other areas of the country, where we have  
21 an urbanized area.

22 ASSEMBLYMAN PILLITTERE: Then  
23 you are saying that Ring 3 is habitable.

24 DR. DEWLING: I am making the  
25 same statement I made before, it does not

1  
2 pose any incremental increase in public health  
3 risk.

4 ASSEMBLYMAN PILLITTERE: You  
5 are making the same statement that our  
6 State Department of Health has been saying,  
7 that it is no different than what it was  
8 yesterday, and what it could be tomorrow,  
9 which says absolutely nothing.

10 DR. DEWLING: I am saying the  
11 decision of the condition of the environ-  
12 mental measurements in the Declaration Area,  
13 I could pick twenty-eight or thirty other communities  
14 around the country, including New York City's  
15 general area, where we have certain levels  
16 of pollutants that we measure all the time,  
17 and all I'm saying to you is that that is  
18 a part of our life.

19 There are certain low levels  
20 of certain types of contaminants, they are  
21 in this room, they are all over the place.

22 There is no such thing as  
23 zero in these things.

24 What I am indicating to you  
25 is that in the Declaration Area, we have



1  
2 found from our perspective, no indication of  
3 movement of what was previously in the Love  
4 Canal in the Declaration Area.

5 Yes, we are finding contamination  
6 of the Declaration Area, but there are two  
7 considerations:

8 Did it come from Love Canal?

9 In our opinion, no.

10 Did it come from some other source?

11 Possibly, yes. (?)

12 Three, is that level at such a  
13 level that would warrant making a decision  
14 that it is not habitable?

15 We are saying no.

16 We are saying that the levels  
17 we are finding in there are no different than  
18 many other areas and, therefore, there is  
19 no incremental increase in public health  
20 risk, from considering that area as habitable.

21 ASSEMBLYMAN PILLITTERE: It  
22 must be me.

23 Why are you so reluctant to  
24 use the word habitable?

25 If you are saying it is not not

1  
2 inhabitable, and you are saying it is no  
3 different than New York City, and no different  
4 than any other areas, are you saying -- are  
5 you saying New York City is habitable?

6 DR. DEWLING: I am saying  
7 that --

8 ASSEMBLYMAN PILLITTERE: Is  
9 New York City habitable?

10 DR. DEWLING: To me, yes. To you,  
11 it may not be.

12 That is the issue.

13 Would you live in New York City?

14 ASSEMBLYMAN PILLITTERE: What  
15 you are saying is, and I read it loud and  
16 clear, that EPA is reluctant to make a  
17 decision on anything in the United States  
18 for fear that you would be caught with having  
19 to clean up other areas of the country.

20 DR. DEWLING: Incorrect.

21 ASSEMBLYMAN PILLITTERE: Well,  
22 that is the impression you give, because you  
23 say it is no different than New York City,  
24 and I am asking for EPA's opinion, whether  
25 New York City is habitable, and you say you

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can't tell me.

DR. DEWLING: I said, as far as I'm concerned, I live in New York City, and I determine habitability based on my personal judgment.

ASSEMBLYMAN PILLITTERE: I'm not asking you about your personal judgment.

I am asking you as the representative of EPA. Personally, I have a lot of opinions, but as a member of the Assembly, I keep them to myself -- sometimes.

As a representative of EPA, I'm trying to go through a logical progression, if you are saying Ring 3 is no different than New York City, I'm asking you, as a representative of EPA, would you give me EPA's position, is New York City habitable?

DR. DEWLING: New York City does not present any incremental risk to public health by living there.

ASSEMBLYMAN PILLITTERE: That is not what I asked you.

DR. DEWLING: I am sorry, that is my answer.

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ASSEMBLYMAN PILLITTERE: I am asking you, is it habitable.

DR. DEWLING: That is your decision.

ASSEMBLYMAN PILLITTERE: If I, as a member of the Assembly, cannot get an answer from EPA, and the Environmental Protection Agency for the United States cannot tell me whether New York City is habitable or not, then how can you expect the people I represent to have any faith in EPA whatsoever?

DR. DEWLING: By my standards, all right --

ASSEMBLYMAN PILLITTERE: EPA's?

DR. DEWLING: -- New York City is habitable.

ASSEMBLYMAN PILLITTERE: New York City is habitable?

DR. DEWLING: By my decision, yes.

What determines habitability?

Convenience, the presence of -- habitability is a judgment decision.

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ASSEMBLYMAN PILLITTERE: All right.

I think you are trying to lead me around.

As a member of the EPA, the Environmental Protection Agency, who is responsible for the environment in the United States, is New York City habitable, based on the Environmental Protection Agency's criteria?

DR. DEWLING: It is meeting most of the standards, it is not meeting all of the air pollution standards. It is still, by most definitions of most people, habitable.

There are some people who say I will not live in an area where it violates a certain standard, and that is personal choice.

We are still not meeting certain air pollution requirements in New York City.

ASSEMBLYMAN PILLITTERE: I can only conclude that EPA, by your statement, would never state whether anyplace in the country is habitable.

DR. DEWLING: The decision on

1  
2 habitability rests with the local agency and  
3 rests with the State Health Department. ] \*

4 ASSEMBLYMAN PILLITTERE: I will  
5 ask you the question again:

6 Has EPA, in the history of the  
7 United States, going back to whenever in the  
8 hell it was started, has EPA ever made a  
9 statement as to the habitability of anyplace  
10 in the country, because if you have not, then  
11 you are really wasting our time when you put  
12 out a report as to the question of habitability.

13 Really, I'm trying to get --

14 DR. DEWLING: EPA's role and  
15 responsibility is to develop the monitoring data  
16 to aid in making the assessment of the health  
17 officials who make the determination of  
18 habitability or safe or unsafe. ✓

19 We provide the numbers, we  
20 provide the information and the data base  
21 upon which to make those types of determinations.

22 The medical people then make  
23 the determination as to the significance of  
24 risk based on the numbers that are presented.

25 EPA does not make decisions

1  
2 on habitability.

3 ASSEMBLYMAN PILLITTERE: Good.

4 DR. DEWLING: That is why HHS,  
5 the government as a combined effort, with  
6 HHS and EPA made the decision in the recommend-  
7 ation that we made in July regarding the  
8 habitability.

9 ASSEMBLYMAN PILLITTERE: Who is  
10 the government?

11 DR. DEWLING: HHS, the medical  
12 people associated with our agency --

13 ASSEMBLYMAN PILLITTERE: What  
14 I'm trying to find out, and I don't want to  
15 delay this hearing for two or three days,  
16 I'm trying to find out who in this country  
17 makes the decision on habitability? I'm a  
18 citizen.

19 I live in Niagara County.

20 I want to know who tells me that  
21 Niagara County is habitable.

22 DR. DEWLING: The combined  
23 decision of HHS, which is the Health and  
24 Human Services, which is the medical arm  
25 of the Federal government, in conjunction

1  
2 with your local health department makes those  
3 decisions.

4 The final decision-maker is  
5 the State Department of Public Health.

6 That is the final decision-maker.

7 They consult with HHS, but the  
8 local Commissioner of Health has the right  
9 and the responsibility to make decisions  
10 on public health protection.

11 The local Health Commissioner  
12 closes down water supplies if they become  
13 contaminated.

14 He closes down beaches if the  
15 levels become too high.

16 They are the ones that make  
17 the determination of the seriousness of public  
18 health correct.

19 We consult with by HHS in terms  
20 of what experience we have in other areas  
21 of the country, and on that basis EPA provides  
22 the data base upon which to make those kinds  
23 of determinations.

24 ASSEMBLYMAN PILLITTERE: You  
25 never make the determination?



1  
2 DR. DEWLING: For habitability,  
3 EPA, as a separate agency, would not, no.

4 ASSEMBLYMAN PILLITTERE: Thank  
5 you.

6 CHAIRMAN HINCHEY: Assemblyman  
7 Perone.

8 ASSEMBLYMAN PERONE: You stated  
9 to Chairman Hinchey that your existence,  
10 your involvement is really hooked onto the  
11 Superfund.

12 DR. DEWLING: That is correct.

13 ASSEMBLYMAN PERONE: The  
14 appropriation aspect, and I understand that.

15 After all, you are an agency,  
16 and you can only respond to your directive  
17 from the Federal government or the Federal  
18 Legislature.

19 Now, I'm sure Washington works  
20 to some degree along the way we do, as far  
21 as congressional hearings, and seeking  
22 information from agencies in which legislation  
23 can be appropriately made.

24 Therefore, I am assuming  
25 also that you have testified or your department

1  
2 has testified before the Congress as to its  
3 recommendations as to what it perceives EPA  
4 should do in the future, in perpetuity.

5 Have there been such testimony  
6 or recommendations to Congress that EPA,  
7 based upon the hazardous problems, hazardous  
8 toxic problems that we have faced, this Love  
9 Canal obviously can be duplicated in the  
10 thousands, unfortunately, across the country,  
11 obviously the problem is national, it is a  
12 problem that will be in perpetuity, so to  
13 speak;

14 Is EPA recommending to the  
15 Congress, yes, treat us like the Defense  
16 Department, we are always going to need a  
17 defense;

18 Treat us like the Health  
19 Department, we are always going to need  
20 some form of health?

21 EPA must have some sort of  
22 funding in perpetuity to monitor those sites  
23 that we are involved in cleaning up now?

24 Is there any testimony, any  
25 direction?

1  
2 DR. DEWLING: I can't answer  
3 that personally because I have never testified  
4 relating to that, but I know that in 1985,  
5 the tax itself runs out, and I think at this  
6 time now it is just the beginning of 1983,  
7 we have been criticized for not spending  
8 enough of the money fast enough which, when  
9 you look at the big construction dollars,  
10 we will be spending it a lot faster as we  
11 get into the construction of the facilities.

12 I think at that time, we will  
13 know whether or not there would be or would  
14 not be sufficient dollars to carry on, and  
15 finally wind up with a remedial action at  
16 the sites that do present that level of risk.

17 ASSEMBLYMAN PERONE: Do you  
18 see EPA doing more than remedial? I'm asking  
19 your opinion now, testifying before a  
20 legislative group, who will have some aspect,  
21 or hopefully, some communication with our  
22 Federal legislators;

23 Do you feel EPA has a role ✓  
24 to play in perpetuity, besides remedial?

25 DR. DEWLING: No, I do not.

1  
2 ASSEMBLYMAN PERONE: Why?

3 DR. DEWLING: Because I think  
4 the responsibility of long-term activities  
5 rest with the local responsible State or  
6 local community.

7 ASSEMBLYMAN PERONE: If it is  
8 a national problem, and I don't want to debate  
9 with you, if it is a national problem, and  
10 it is, obviously which is why you are in  
11 the business, although not responsible, if it is  
12 a national problem, why does that problem  
13 go away just because of a funding aspect  
14 going away?

15 Don't you feel that there is  
16 a responsibility for a recommendation that  
17 EPA should recommend to the Congress, yes,  
18 fund us in perpetuity until the problem goes away,  
19 and not until the funding goes away?

20 DR. DEWLING: I think you have  
21 to go back to how all these things got there,  
22 and what the joint role of responsibility is.

23 I think the Federal government  
24 is providing the upfront money, the capital  
25 expenditure money, and now the longer term

1  
2 assurance of the integrity of those systems,  
3 the responsible share should be with the  
4 local and State agencies.

5 The Superfund is providing the  
6 front end big capital bucks.

7 ASSEMBLYMAN PERONE: Don't you  
8 see that continuing until the hazard is corrected nationally,  
9 not just in Love Canal, don't you see that  
10 dual responsibility continuing?

11 DR. DEWLING: I do.

12 I am saying to you at this point  
13 in time the availability of dollars --

14 ASSEMBLYMAN PERONE: I am not  
15 talking about beyond that.

16 I am talking about as an  
17 EPA official, don't you feel EPA, in con-  
18 junction with the State, has a long-term  
19 commitment to each other and to these types  
20 of problems?

21 DR. DEWLING: I would agree  
22 with you on that, yes.

23 CHAIRMAN HINCHEY: Well, you  
24 understand our concern.

25 We are particularly concerned,

1  
2 concerned because the State is going to be  
3 ultimately responsible for whatever decisions  
4 are made with regard to the rehabilitation of  
5 the Declaration Area.

6 Furthermore, we are even more  
7 concerned about the future safety of the  
8 health of the people who might be moved back  
9 in there, God forbid, at some point in the  
10 future.

11 Let me just ask you a couple  
12 of questions.

13 I think it should be noted that  
14 EPA has vested in you today the sole  
15 responsibility for testifying on behalf of  
16 the Agency.

17 DR. DEWLING: That is correct.

18 CHAIRMAN HINCHEY: Could you  
19 identify for me other EPA officials who  
20 participated in and who are responsible for  
21 the decision-making process relating to the  
22 study and its conclusions?

23 DR. DEWLING: I was the prime  
24 person responsible for the coordinated activity,  
25 in terms of making the agency decision on

1  
2 which direction to go in terms of bringing  
3 all the data together.

4 CHAIRMAN HINCHEY: However,  
5 you were not involved in the study at its --  
6 when it first began?

7 DR. DEWLING: You are asking  
8 me on ORD, and John Deegan was involved in the  
9 activities of the focal point for the  
10 on-site remediation relative to the conducting  
11 of the study, all that work was done by  
12 the various EPA laboratories throughout the  
13 country.

14 CHAIRMAN HINCHEY: Now, I'm  
15 talking about fundamental public policy  
16 decisions which are inherent in the report  
17 itself, and which were made on an ongoing  
18 basis from the time it was first thought  
19 that a report ought to be done, and the EPA  
20 ought to get involved, until the final date  
21 when the report was published.

22 Who were the EPA officials who  
23 were instrumental in making those decisions,  
24 and participating in a decision-making  
25 process with regard to the conclusions and

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21  
22  
23  
24  
25

the publication of the report?

DR. DEWLING: The final decisions rested with myself, Dr. Courtney Riordan, who was the Acting Assistant Administrator for ORD, and John Deegan, representing the Justice Department, a representative of our own enforcement program, and representatives of NDS and HHS.

CHAIRMAN HINCHEY: Wasn't Mr. Hernandez, the Deputy of --

DR. DEWLING: No, Dr. Hernandez, when I first became involved in this program, gave me -- the Administrator gave me full responsibility for coming up with the decision on how and what to say in that report.

It was my final determination, I advised him of what we were doing.

The determination was to keep this in the scientific realm, without bringing in people that had been previously not involved in this administration in that type of activity.

So my discussions with John



1  
2 Hernandez dealt with indicating to him what  
3 we were doing and the timing we were doing  
4 it in.

5 CHAIRMAN HINCHEY: I am having  
6 difficulty communicating with you, I guess.

7 Who scoped out the report?

8 Who drew the parameters for  
9 the report?

10 Who monitored that process as  
11 it went along?

12 DR. DEWLING: During the  
13 initial phases, Dr. John Deegan.

14 CHAIRMAN HINCHEY: And Dr.  
15 Hernandez?

16 DR. DEWLING: To my knowledge,  
17 no.

18 CHAIRMAN HINCHEY: Was Ann  
19 Gorsuch involved?

20 DR. DEWLING: To my knowledge,  
21 no.

22 CHAIRMAN HINCHEY: She was not  
23 involved in any decision-making process with  
24 regard to the report?

25 DR. DEWLING: To my knowlege,

1  
2 no.

3 For the past year and a half,  
4 I was responsible for the complete coordination  
5 of that, and I had never had any communication  
6 with Ann Gorsuch on this report.

7 CHAIRMAN HINCHEY: All right.

8 But did your work at the  
9 Region II office in 1980, and prior to that,  
10 involve you in the Love Canal study?

11 DR. DEWLING: Most certainly.

12 CHAIRMAN HINCHEY: In what  
13 capacity?

14 DR. DEWLING: I was Director of  
15 the laboratory that ran some of the analysis  
16 initially going back when we originally  
17 found some of the problems in the sumps.

18 CHAIRMAN HINCHEY: All right.  
19 But isn't it a fact that the study was  
20 being coordinated at the Central Office at  
21 that time?

22 DR. DEWLING: It was being  
23 coordinated by the Office of Research and  
24 Monitoring, John Deegan, in Washington.

25 CHAIRMAN HINCHEY: Was Rena

1  
2 LaValle involved in the process?

3 DR. DEWLING: In the final  
4 decision-making process, I was the decision-  
5 maker.

6 CHAIRMAN HINCHEY: Was Rena  
7 LaValle, who was involved with monitoring the  
8 Superfund, was she ever involved in the  
9 decision-making process with regard to the  
10 report, or any of its parts?

11 DR. DEWLING: The decision  
12 on the report and the parameters were made  
13 by the scientists in EPA, for which I had  
14 full responsibility.

15 CHAIRMAN HINCHEY: Is your  
16 answer to that question yes or no?

17 DR. DEWLING: I just answered  
18 you, Rena LaValle was not involved in any  
19 activity regarding final determination.

20 CHAIRMAN HINCHEY: Was she  
21 involved --

22 MR. JOHN: Prior to the final --

23 DR. DEWLING: For the full  
24 time that I was involved in it, I had no  
25 involvement with Rena LaValle's office in making

1  
2 any determinations.

3 I have asked her when we had  
4 to look at the Superfund activities, about  
5 the availability of dollars, but in terms  
6 of the technical contents of the report, the  
7 conclusions in the report, the format of the  
8 report, those conclusions and decisions rested  
9 with myself. There was a consultant that  
10 I hired through Rena LaValle's shop that  
11 provided some of the visuals for me, but that  
12 was it, such as when we showed slides up there.

13 CHAIRMAN HINCHEY: Who was  
14 that consultant?

15 DR. DEWLING: Wagner & Berudi.

16 Heather Bernard was a public  
17 relations type of individual who we dealt  
18 with in terms of the physical presentation  
19 and that was the only aspect that Rena  
20 LaValle's office was involved in.

21 CHAIRMAN HINCHEY: Dr. Dewling,  
22 it is true, is it not, that Region II did  
23 not take part in the environmental monitoring  
24 study until May the 5th, 1980?

25 DR. DEWLING: You mean the

1  
2 physical collection and interpretation? ✓

3 CHAIRMAN HINCHEY: 1982, I  
4 am sorry.

5 DR. DEWLING: That is correct.

6 CHAIRMAN HINCHEY: Until May  
7 5th, 1982.

8 DR. DEWLING: We did not take  
9 physical part in the sample collection, but  
10 we were involved -- Region II was involved  
11 when Dr. Hauser went up there in the design  
12 study, when it first started earlier.

13 In fact, I was personally  
14 involved with that, with Dr. Hauser.

15 MR. JOHN: You were involved  
16 in the design of the study?

#4  
17 DR. DEWLING: I was involved ✓  
18 in laying out some of the alternatives when  
19 we were looking at some of the options  
20 that were available, when we had to get up  
21 there, whether we were going to go and,  
22 you know, the study parts that we were going  
23 to look at.

24 The prime study design was  
25 done by our people in our research laboratories,

1  
2 Dr. Tom Hauser, he was the lead person up  
3 on site who did the work, and the air work  
4 was done in RPP, and the water work was  
5 done in Cincinnati, and some of the soil  
6 work was done out in Las Vegas, and we had  
7 the contractors do that.

8 My personal involvement, I was  
9 not out there physically sampling, but as  
10 Deputy Regional Administrator for Region II,  
11 I was well aware of the activities, and  
12 was involved in the initial draft and report  
13 in terms of reviewing it, and it was not  
14 until May when I was assigned the responsibi-  
15 lity by Dr. Hernandez to have full respon-  
16 sibility for coming out with the report,  
17 did I have full charge of those activities  
18 in ORD, as well as the Region.

19 CHAIRMAN HINCHEY: So you were  
20 given the job of selling the report after  
21 the major decisions, after the main part had  
22 been put together in the Central Office, they  
23 turned to you and said, you got to take this  
24 report out and sell it.

25 DR. DEWLING: I was given that

1  
2 report to review it from a scientific stand-  
3 point.

4 I have a Ph.D in Environmental  
5 Engineering, and I am a Licensed Professional  
6 Engineer. I had the responsibility for  
7 determining whether that report was scientifi-  
8 cally valid and credible.

9 I then worked with HHS --

10 CHAIRMAN HINCHEY: Do you  
11 believe the report is scientifically valid?

12 DR. DEWLING: I wouldn't be  
13 standing here if I did not.

14 CHAIRMAN HINCHEY: I think you  
15 would be, but I --

16 DR. DEWLING: I resent that  
17 type of inference.

18 I am a professional in the  
19 Environmental Protection Agency and I resent  
20 any type of inference that would suggest  
21 that the report had a political motivation,  
22 or that the report is not credible.

23 CHAIRMAN HINCHEY: Well, let  
24 me just say that I don't mean to say it  
25 by inference, I mean to say it very succinctly

1  
2 and clearly, that I believe the report is  
3 not credible.

4 DR. DEWLING: Then I ask you  
5 to provide me with the specific technical  
6 reviews, and I would be most happy to meet  
7 your charges face-on relative to one-on-one,  
8 to your individual charges.

9 CHAIRMAN HINCHEY: You have  
10 had the reviews you request. You have had  
11 the critical reviews that were made available  
12 to you by the independent scientific  
13 community that evaluated the draft report.

14 DR. DEWLING: They did not  
15 evaluate the draft report. The community --  
16 the individuals from HHS looked at raw data,  
17 way before the final report, and they made  
18 their comments, and those problems were  
19 corrected.

20 The --

21 CHAIRMAN HINCHEY: Those problems  
22 were corrected?

23 What problems were corrected?

24 DR. DEWLING: There were problems  
25 initially that were brought up, that were



1  
2 talked about in terms of some of the data  
3 having exceeded the seven-day holding time,  
4 and then the problem was that if it exceeded  
5 the seven-day holding time, you could not  
6 use that data for any valid interpretation.

7 Final studies that confirmed  
8 that storage time went beyond seventeen days  
9 verified that those data could not be used.

10 That was one problem.

11 Obviously, if we had a longer  
12 period of time, some of the controls, and we would  
13 have liked to have had more controls than we had,  
14 so that data base that those eleven  
15 consultants from HHS viewed was not the final  
16 report, they saw bulk data.

17 They did not see the final  
18 report.

19 That data base, based on some  
20 of the comments that were raised by that  
21 group, was then evaluated by NBS, and NBS  
22 had some critiques of the report, no data  
23 were ever changed in the report, and what  
24 was needed was to assure ourselves that  
25 the data were valid, and how best to report

1  
2 the data relative to the integrity and  
3 scientific meaning of what means no detectable  
4 level, and what significance that has  
5 in relationship to how much confidence you  
6 have in what that value could have been,  
7 whether or not there was a false negative in  
8 there.

9 Those are the types of issues  
10 that were involved.

11 The decision on whether or not  
12 the area and the environmental measurements  
13 were valid, were not made just on that basis.

14 The State data, past data, other  
15 data that has been available on the decision  
16 that HHS made on habitability, did not just  
17 involve our report.

18 The consultants that were for  
19 HHS were consultants, they were not decision-  
20 makers. An additional group of Ph.D's and  
21 M.D.'s made the final determination relative  
22 to habitability that was provided to EPA.

23 I have yet to receive other  
24 than from an environmental group, a point  
25 by counterpoint argument, although the

1  
2 Canadians raised some issues to us, and we  
3 made comments back to them, and there are  
4 issues that were made or raised by Dr.  
5 <sup>Silbergeld</sup> Selig from EDF, which we made comment back  
6 to her.

7                   Regardless of those comments,  
8 we do not feel that while there were weak-  
9 nesses in the report, and no, I would not  
10 give the report a ninety-nine, I would give  
11 it somewhere in the 80's but, in fact,  
12 because it is in the 80's does not mean you  
13 cannot come to the conclusions that we did  
14 come to.

15                   I would challenge any respon-  
16 sible scientist to make the charges in  
17 writing, and I will be happy to respond to  
18 them accordingly. But I have yet to receive  
19 such charges or such challenges.

20                   CHAIRMAN HINCHEY: Well, you  
21 have received charges from responsible  
22 scientists who -- in the report you just  
23 mentioned, from the environmental group, and I  
24 assume you were referring to the EDF report.

25                   DR. DEWLING: That is correct,

1  
2 and the responses are incorporated in the  
3 testimony I have given you to put in the  
4 record.

5 CHAIRMAN HINCHEY: All right.

6 Would you define for me the  
7 relationship between Superfund work and  
8 Love Canal, in particular the relationship  
9 with regard to the contamination of local  
10 storm sewers, the clean up of creek  
11 sediments, and the continued maintenance of  
12 the containment system?

13 DR. DEWLING: I think Mr.

14 Nosenchuck will be talking specifics, because  
15 as provided for in our contract or cooperative  
16 agreement with the State, they had the lead,  
17 full responsibility for carrying out that  
18 activity.

19 But basically, we have started  
20 the actions that we had indicated in July,  
21 of cutting off the utilities, and we will  
22 be installing the wall and completing the  
23 cap, hopefully, by November of this coming  
24 year.

25 The contract has already been

1  
2 issued.

3 I think it is 3.9 million dollars,  
4 roughly. 8 million dollars, we increased  
5 the amount of money up there from 7 to 8  
6 million dollars.

7 The monitoring -- there is a  
8 guarantee that the monitoring will be carried  
9 out for three years.

10 We also made the recommendation  
11 that came back to us, that the school be  
12 declared not habitable.

13 The question that came back to  
14 us was, was the HHS decision including the  
15 school, and the answer was yes, we gave a  
16 letter to the State indicating that the school  
17 be considered not ever habitable.

18 ASSEMBLYMAN PILLITERE: That  
19 letter did not say it was -- if I read the  
20 letter correctly, the letter was very  
21 ambiguous.

22 You did not make a definite  
23 statement on the school, because that is what  
24 has caused the litigation from the school  
25 board, because your letter is like your report.

1  
2 DR. DEWLING: I think it was  
3 very clear that Rings 1 and 2 are not  
4 habitable.

5 I don't think there is any clar-  
6 ification needed as to Ring 1 or Ring 2.

7 Anything in those rings is  
8 not habitable.

9 I don't think we can make it  
10 any clearer than that.

11 ASSEMBLYMAN PILLITTERE: I read  
12 your letter, and the impression I got, it  
13 was not habitable because you could not get  
14 to it.

15 DR. DEWLING: I do know --

16 ASSEMBLYMAN PILLITTERE: Every-  
17 thing else was.

18 DR. DEWLING: Nothing in Ring 1  
19 and Ring 2 is considered habitable.

20 ASSEMBLYMAN PILLITTERE: Now,  
21 as EPA, you can make that decision that  
22 something is not habitable.

23 DR. DEWLING: I am saying that  
24 was HHS's determination, based on monitoring  
25 data.

1  
2 ASSEMBLYMAN PILLITTERE: It was  
3 not EPA's decision?

4 DR. DEWLING: It was HHS's  
5 determination.

6 We provide the monitoring data  
7 upon which to make that assessment by the  
8 HHS.

9 MR. JOHN: Dr. Dewling, I have  
10 a couple of questions here.

11 If everything depends -- all  
12 of these approvals depend upon the Superfund  
13 work being completed, wasn't it extremely  
14 risky for Health and Human Services to issue  
15 a statement on habitability before the work  
16 is done, with no guarantee of long-run controls  
17 over the monitoring of the Canal itself?

18 DR. DEWLING: They condition  
19 their statement on the basis that if these  
20 actions take place, removal or containment  
21 or treating or handling the dioxin problems  
22 in the creeks and the storm sewers, assuring  
23 the integrity of the cap, and assuring the  
24 integrity of the wall, that is all pre-  
25 conditioned.

1  
2 If you would wait until all of  
3 that is done, that is an option.

4 The question was, with the  
5 monitoring data that we had available to us,  
6 could one make a determination, and the  
7 answer was yes, they could make a determination,  
8 with the proviso that the remedial action  
9 most certainly had to be undertaken, but the  
10 key here is that the Federal commitment  
11 can be for three years.

12 Beyond that three years, the  
13 decision that you wrestle with, is the  
14 habitability issue on a daily basis as to  
15 whether or not that continuity and permanent  
16 type of integrity in the system, long-term  
17 perpetuity is guaranteed.

18 MR. JOHN: But isn't it a fact,  
19 what happened, once you issued your report  
20 and the statement of habitability was given  
21 to the public, that to move -- that the move  
22 was to have the Revitalization Agency begin  
23 to think that they could sell these houses,  
24 and that even though it may take several  
25 years, the State government cannot guarantee



1  
2 that any funds will be expended beyond a  
3 budget year that we are contemplating now?

4 We are in the same situation  
5 that your Agency is in. Our funds to do  
6 the remedial work, because of a fiscal  
7 crisis, could disappear, too.

8 DR. DEWLING: That is correct.

9 MR. JOHN: But the decision on  
10 habitability could have already been  
11 reached and people could have been moved back  
12 in.

13 What do we do then?

14 DR. DEWLING: I mean, the  
15 decision on habitability clearly indicates not  
16 unless these things were done, and we did  
17 not at any time say massive movement in of  
18 people.

19 We said a prudent person would  
20 consider possible areas that they could move  
21 into while construction was going on, if  
22 they were far enough away from those sites  
23 where construction was going on.

24 Obviously, you don't want to  
25 have people relocated while we are going

1  
2 in and doing construction and starting  
3 cleaning out the sewers, and putting the  
4 wall in.

5 But there are certain areas  
6 distant from that, that are on the borderline  
7 of the Declaration Area, and the other area,  
8 just one block on the other side, where  
9 you could say you could consider rehabilitation.

10 MR. JOHN: You could consider,  
11 which is a good qualification.

12 DR. DEWLING: That is our  
13 position.

14 MR. JOHN: One could also say  
15 no one should move until all the work is  
16 done whatsoever.

17 DR. DEWLING: That is your  
18 decision. We are giving you our opinion,  
19 and trying to present to you the facts that  
20 our decision or our recommendation to you is  
21 based on the recognition that we have full  
22 confidence, maybe erroneously, but I don't  
23 think anybody would feel that you can forget  
24 about Love Canal three years from now.

25 MR. JOHN: Who reviewed your

1  
2 data that you present in your report? Was  
3 it the National Bureau of Standards that  
4 reviewed the data that was collected by  
5 your Agency for this report?

6 DR. DEWLING: The National  
7 Bureau of Standards reviewed the analytical  
8 methodology we used for organic chemicals.

9 MR. JOHN: That was all?

10 DR. DEWLING: That is correct.

11 MR. JOHN: They had no control 7  
12 over how the study was designed, they were  
13 brought in after the study was already in  
14 progress, after the samples had been collected,  
15 and they were under contract with your Agency,  
16 weren't they, to do this review?

17 DR. DEWLING: The Science  
18 Advisory Board, the EPA Science Advisory  
19 Board reviewed the protocol for sampling, and  
20 the regimen for analysis before we actually  
21 did our study.

22 MR. JOHN: Didn't, in fact, they  
23 have some rather interesting criticisms of  
24 your data or the methodology in May of 1982,  
25 specifically May 10th, when they gave you

1  
2 some reports that questioned the limits  
3 of detection, the accuracy of those limits,  
4 their precision, and they wanted confirmation  
5 from the Agency that your information that  
6 you had given them to either agree to or  
7 certify was correct?

8 DR. DEWLING: That is correct,  
9 but it was at an area, at levels that were  
10 in the ten and twenty and thirty parts per  
11 billion.

12 There was never a question  
13 from HHS's perspective, except for dioxin,  
14 what they were concerned about were levels  
15 in the soil, in the high level part per  
16 billion range, and there was never any  
17 question as to the accuracy of the methods,  
18 the state-of-the-art methods for recovering  
19 these types of pollutants, nor the precision  
20 or accuracy of our data at those levels.

21 Now, the question came up,  
22 since ninety percent of the data basically  
23 showed below detect levels, to what degree  
24 of scientific integrity can you assure me  
25 that there is not something out there that

1  
2 you missed?

3 Then what we went back and did  
4 was gather all the chemical detection levels  
5 that we could come up with, worst-case  
6 scenario, and in the worst-case scenario,  
7 we would never come up to a level, from the  
8 health standpoint that they could consider  
9 having to revoke their decision on habitability.

10 MR. JOHN: But the very fact  
11 that NBS made this criticism in May, didn't  
12 cause Health and Human Services to with-  
13 draw their conclusion on habitability, even  
14 if it was only temporarily?

15 DR. DEWLING: They were concerned,  
16 as was expressed by Dr. Brandeiss' testimony,  
17 it was not a hasty decision on their part.

18 They wanted further assurance  
19 from the Agency regarding the data, and one  
20 of the problems was very honestly, and my  
21 role was to coordinate an understanding,  
22 there were volumes of data, and to determine  
23 and present the data on a scientifically-  
24 credible basis on which decisions could be  
25 made.

1  
2 MR. JOHN: But it took you a  
3 month, from May 12th when the data was given  
4 and HHS began to, let's just say,  
5 temporarily withdraw their conclusion on  
6 habitability until July 15th, before there was  
7 any real response.

8 What was going on in that time  
9 frame?

10 DR. DEWLING: I was meeting  
11 with the physicians and the technicians at  
12 HHS to show them the data and we were dis-  
13 cussing the implications of statistical  
14 interpretation of the applications we had  
15 to the data.

16 We then presented the data  
17 to them in the format that was scientifically  
18 credible, which was no different than it  
19 was before.

20 Remember, HHS made their  
21 initial determination based on the raw  
22 numbers that they saw a year and a half  
23 earlier. Their original determination  
24 was not based on any statistical analysis  
25 of the data, it was just based on the raw

1  
2 numbers.

3 MR. JOHN: You did have a  
4 meeting with them?

5 DR. DEWLING: I have had three  
6 or four meetings.

7 MR. JOHN: And you did have  
8 a meeting in which you had to bring the  
9 Administrator of EPA in with NBS to discuss  
10 your whole program relating to Love Canal  
11 and, in particular, the data questions which  
12 had arisen, which caused HHS to change their  
13 perspective or hold their original perspective  
14 back?

15 DR. DEWLING: I never had a  
16 meeting with the Administrator of HHS. I  
17 never had a meeting with the Administrator  
18 of NBS.

19 I only met with the technical  
20 and scientific groups of both groups.

21 MR. JOHN: You were not present  
22 at a meeting on June 15th, in Washington,  
23 with the Director of NBS, Mr. Kremer, from  
24 NBS, and Mr. Gravit, from NBS, and  
25 Administrator Gorsuch, and probably Dr.

1  
2 Hernandez was present, to discuss NBS's  
3 concerns --

4 DR. DEWLING: No.

5 MR. JOHN: --with this report?

6 DR. DEWLING: No.

7 MR. JOHN: Were you present  
8 on June 28th, 1982, when there was a meeting  
9 between EPA, NBS and the Department of  
10 Justice to discuss these problems at NBS?

11 DR. DEWLING: Tell me who was  
12 at the meeting? I had -- the Department of  
13 Justice was at most of the meetings I had  
14 with HHS and NBS.

15 I had meetings in HHS offices  
16 with their physicians. I had meetings in  
17 NBS offices with Dr. Kremer, but I never  
18 had meetings with the appointees of the  
19 Administration.

20 I handled all of my recommend-  
21 ations on the technical area, and all of  
22 the information that came to me was in that  
23 same arena.

24 MR. JOHN: Let me refresh your  
25 memory, if possible, because the testimony



1  
2 doesn't confirm whether you were there or  
3 not, and that is one of the difficulties  
4 with only having you, when there were  
5 other officials of EPA that were involved  
6 in the decision-making process.

7           There was a meeting on May 28th  
8 between EPA, NBS and the Justice Department.

9           They were discussing the method  
10 or procedures used by EPA to arrive at the  
11 detection limits listed in what are called  
12 Tables C-1 and C-3.

13           Are you familiar with those  
14 tables?

15           DR. DEWLING: Yes, I think that  
16 was the method detection limit issue.

17           MR. JOHN: And what was that  
18 issue here, again, that it was parts per  
19 billion and less than ten parts per billion  
20 range?

21           DR. DEWLING: The issue was  
22 to what degree of confidence could we  
23 prescribe a number to those values out there  
24 that were below detectable levels or trace  
25 levels.

1  
2 MR. JOHN: So ninety percent  
3 of your samples were in that non-detectable  
4 range?

5 DR. DEWLING: Yes, or below  
6 trace levels, right.

7 MR. JOHN: Below trace levels.

8 So what NBS is saying, what  
9 does this mean, and you are attempting --

10 DR. DEWLING: HHS, from a  
11 health standpoint, they had to make a  
12 determination on habitability.

13 It was very difficult.

14 They had numbers out here where  
15 you had finite numbers.

16 Then you had numbers over here,  
17 and if you look at some of the data, they  
18 show below detect or not detectable.

19 What degree of confidence,  
20 I have to have a number upon which to make  
21 an assessment in terms of public health.

22 What degree of confidence do  
23 you have that you did not miss a high  
24 pollutant, and that was the argument as  
25 to whether or not we can accept the concept

1  
2 which is a published concept of MDL, method  
3 detection limits, and under that concept,  
4 what we are saying is that we are ninety-eight  
5 percent sure, there is only a two percent  
6 probability that we missed anything out there,  
7 that was greater than twice the method  
8 detection limit, and what we did in the  
9 publication that we gave out -- we gave the  
10 detection limits to all of these.

11 Then the argument came about,  
12 well, if you only get forty or fifty percent  
13 recovery, do you multiply the number by two,  
14 to bring it up to a hundred percent recovery?

15 We did all of that.

16 We took all the worst case  
17 scenarios and presented that data.

18 Then the argument with NBS  
19 was, well, can you classify where you don't  
20 have MDL's for all the methodologies, can  
21 you accept it in various classes of compounds?

22 We got NBS to agree that, yes,  
23 if we classify these in these compounds, can  
24 we scientifically agree that these are the  
25 areas they are in, and use the same recoveries

1  
2 for those compounds?

3 We were able to present HHS  
4 with worst-case scenarios on what those  
5 values might be.

6 MR. JOHN: Okay.

7 You don't know what the role  
8 was then of the Justice Department at this  
9 meeting on the 20th of June? I understand  
10 what your role was, and I understand what  
11 NBS's role was, but what was the role of  
12 the Justice Department, do you remember?

13 DR. DEWLING: The role of the  
14 Justice Department at all times that we  
15 had meetings was to assure that the -- what  
16 statements we made, that they were scientifically  
17 correct and defensible, and, most importantly,

18 if you would look at the ultimate  
19 long-term implications, that if our statements  
20 or comments related to implications of  
21 the ongoing litigation, we would have to  
22 make sure that there was a commonality in what  
23 our direction was going to be and the  
24 direction that they were going in litigation.

25 MR. JOHN: That I think is a

1  
2 very key comment.

3 This study relates to litigation  
4 that is going on by the U.S. Justice Depart-  
5 ment, by our own Attorney General, and  
6 the relationship between the Love Canal  
7 site and Hooker, i.e., Occidental Petroleum,  
8 and that any scientific data released by  
9 any State agency will have an impact.

10 DR. DEWLING: Sure.

11 MR. JOHN: On this litigation.

12 DR. DEWLING: It is the opinion  
13 of the Justice Department that this does not  
14 in any way, shape or form adversely impact  
15 the position of the U.S. government relative  
16 to their ultimate decision on however it  
17 comes out in the courtroom.

18 MR. JOHN: Now, let's just  
19 speculate for a moment.

20 Suppose that NBS had refused  
21 to say that they were satisfied with your  
22 explanation of the detection limits on the  
23 data. IHS then would have not said anything  
24 about habitability, they would have refused  
25 to; is that correct?

1  
2 DR. DEWLING: If NBS said our  
3 data was just lousy, that we couldn't make  
4 any determinations on it, I would not be  
5 standing here.

6 There would have been no report  
7 issued.

8 MR. JOHN: It seems to me that  
9 you did have to have a series of meetings  
10 though to arrive at an understanding,  
11 am I correct, between NBS and HHS over  
12 whether the very data that they are making  
13 decisions on was accurate.

14 DR. DEWLING: Yes.

15 MR. JOHN: And essentially,  
16 EPA had sole control over that data, from  
17 start to finish? I mean, your agency did  
18 not open up this data for peer review at  
19 any point by other scientists, other than  
20 your own agency scientists or your contractor;  
21 is that correct?

22 DR. DEWLING: HHS reviewed  
23 the raw data.

24 MR. JOHN: They also had  
25 problems with that raw data.

1  
2 NBS had the same problem with  
3 that raw data.

4 DR. DEWLING: I don't know.  
5 There are semantics involved here.

6 The point I want to make is that  
7 based on the numbers, in the original set of  
8 data, NBS reached their determination, without  
9 all the other statistical questions regarding  
10 the analysis precision accuracy to very low  
11 levels.

12 MR. JOHN: Mr. Kremer testifying  
13 says that NBS cannot, or could not under  
14 any circumstances certify such data.

15 The data, it is true, for  
16 any technical report are the sole responsibility  
17 of its authors, in this case EPA; is that  
18 correct?

19 MR. DEWLING: That is correct,  
20 NBS is not -- does not put a Good Housekeeping  
21 seal of approval on anything. The agency  
22 responsible for collecting that data has  
23 to assure that the data are scientifically  
24 sound.

25 We had to make that assurance

1  
2 to HHS. What NBS did, they asked, was the  
3 methodology that we followed the best  
4 methodology?

5 Was the quality assurance we  
6 followed, and the integrity of our procedures,  
7 the best that we could possibly use?

8 They had some criticisms of us.

9 They had some valid criticisms  
10 of us.

11 We corrected them relative to  
12 our use of the data and how we might use  
13 that data for making final interpretations.

14 Obviously, if we did not feel  
15 comfortable with the data, HHS could not  
16 have made determinations, and reaffirmed their  
17 original position regarding the habitability  
18 issue.

19 CHAIRMAN HINCHEY: Could you  
20 amplify on that?

21 How did you correct them?

22 DR. DEWLING: In terms of how  
23 they were presented, statistical analysis  
24 of the data --  
25



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CHAIRMAN HINCHEY: In other words --

DR. DEWLING: MDL --

CHAIRMAN HINCHEY: It was the mode of presentation rather than going back and correcting the actual data.

DR. DEWLING: We never went back and changed a number.

CHAIRMAN HINCHEY: Did you go back and get more samples?

DR. DEWLING: No.

CHAIRMAN HINCHEY: Did you go back and check your methodology?

DR. DEWLING: No, we did not go back --

CHAIRMAN HINCHEY: Then what you did, the only difference was in the mode of presentation.

DR. DEWLING: You had reams and reams of data.

The question is, how best you analyze that data in order to allow you to arrive at a firm conclusion in terms of how you were going to make an assessment.

1  
2 I mean, you can look at the  
3 data and how the data are displayed, and  
4 how you are looking at the smaller value  
5 versus the larger value, versus statistical  
6 value, one versus the other, and with what degree  
7 of confidence does one want to make the  
8 decision?

9 NBS did not raise that issue,  
10 but HHS raised that issue, because in ninety  
11 percent of the data we did not know  
12 originally that we would see that many  
13 non-detects.

14 If we had thought that that  
15 is what we would find, obviously, our  
16 sampling protocols would be somewhat  
17 different.

18 Then you use state-of-the-art  
19 technology.

20 It was the best technology at  
21 the time.

22 Were we to use some different  
23 technology today, the answer is yes, because  
24 some of the methodologies have been refined.

25 But the point was that the

1  
2 temporary remedial action had already taken  
3 place.

4 There is no question that we  
5 confirmed the findings in Rings 1 and 2,  
6 but there is no pattern.

7 What we did is compensate.  
8 One hundred fifty thousand analyses were run.

9 The amount of quality assurance  
10 was far in excess of what one would normally  
11 carry out.

12 So we overcompensated for the  
13 fact that it was not seasonal by having  
14 a lot more samples.

15 So there are frailties in  
16 the test, there are frailties in the report.

17 MR. JOHN: All of your samples  
18 were collected in the three-month period;  
19 isn't that correct, between August, September  
20 and October?

21 DR. DEWLING: That is correct.

22 MR. JOHN: 1980.

23 Isn't it true that the original  
24 problem of Love Canal was first noticed in  
25 1978 as the result of some rather peculiar

1  
2 weather patterns?

3 DR. DEWLING: That is correct.

4 MR. JOHN: That suddenly caused  
5 a lot of rainfall to occur, and the material  
6 started to appear in the sumps, in the basements,  
7 in the streams, in the backyards, and people  
8 began to notice what -- something they had  
9 not noticed or had not complained about prior  
10 to this time, and that because of that weather  
11 pattern, the thing was discovered?

12 Now, the weather pattern that  
13 you have for the three months in essence  
14 is now going to be the basis, forever, of  
15 a decision on habitability. That weather  
16 pattern could have **changed** your sampling  
17 techniques, you could have changed your  
18 choices of sampling location, and it never  
19 asked NBS or anybody else outside of your  
20 agency, or your paid contractors, to look  
21 at that methodology of sample locations, the  
22 media types that were to be sampled, the  
23 choices of compounds that were to be analyzed  
24 in each sample, or the conclusions that  
25 you arrived at?

1  
2           You specifically, in your  
3 contract, excluded NBS from doing any of this.

4           DR. DEWLING: We did not exclude  
5 them from doing it. That is not their charge.

#5 6           MR. JOHN: That is what Mr.  
7 Kremer testified to.

8           DR. DEWLING: He said this is  
9 not their responsibility. It is not NBS's  
10 role.

11           MR. JOHN: It also indicates  
12 very clearly that these are things that  
13 should be done to verify a scientific  
14 methodology, particularly in a case where  
15 you are dealing with something of this  
16 degree of complexity.

17           DR. DEWLING: The Science  
18 Advisory Board of EPA reviewed the protocols  
19 before they were undertaken.

20           That Science Advisory Board is  
21 made up of outside consultants that are  
22 not, to my knowledge, paid consultants, they  
23 are university-type people, they are a  
24 Science Advisory Board.

25           They review the protocols and

1  
2 the sampling approaches that we were going  
3 to use.

4 So it was reviewed by an outside  
5 peer review group before it went out, and  
6 it was undertaken.

7 MR. JOHN: Do you have  
8 written comments that you could provide us  
9 from them to EPA on these -- on whatever  
10 they decided, or what they said to you?

11 DR. DEWLING: If we do, I  
12 will be happy to provide them.

13 MR. JOHN: I would like to  
14 speed this up a little bit.

15 Isn't it true that Health  
16 and Human Services never once took their  
17 own samples, checked your samples in the  
18 laboratory, or verified your data other than  
19 what was given them by you or by NBS?

20 DR. DEWLING: That is correct.

21 MR. JOHN: And isn't it true  
22 also that Dr. Brant from the Health and  
23 Human Services, in his testimony last  
24 year, said that they were operating under  
25 an extremely tight time schedule for this

1  
2 project, that they had no control over the  
3 data base, the project design, whether the  
4 limitations placed on the habitability  
5 conclusion could be carried out?

6 DR. DEWLING: I was at that  
7 hearing and, that is correct, however, as  
8 a scientist, as a medical doctor, individuals  
9 were not forced to make determinations based  
10 on the data presented to them.

11 They made determinations based  
12 on the scientific numbers and the procedures  
13 that were followed. No one forced any  
14 scientist to come to any conclusion regarding  
15 Love Canal.

16 MR. JOHN: It seems to me that  
17 there was quite a flurry of activity once  
18 NBS jumped off board and HHS jumped off board,  
19 and for two months there were extensive  
20 meetings with both of these agencies and  
21 either yourself or other officials from EPA  
22 that culminated a few days prior to the  
23 release of the report in NBS changing their  
24 minds again, or at least going back to their  
25 original position, and HHS doing the same

1  
2 thing.

3                   Someone has to feel that there  
4 was at least an excited dialogue going on  
5 between these agencies.

6                   DR. DEWLING: It was exciting.

7                   MR. JOHN: And that if any one  
8 of these two agencies had held firm, what  
9 would have happened to your report?

10                   If NBS had not said it is okay,  
11 and if HHS said we are not going to go with  
12 your data, we are not going to make a  
13 conclusion, what would have happened to your  
14 report then?

15                   DR. DEWLING: Let me state  
16 very unequivocally, if the five scientists  
17 and myself that reviewed this report before  
18 we submitted everything to NBS and HHS  
19 felt that this was not valid, we would not  
20 have submitted it.

21                   Number two, if NBS had not  
22 scientifically accepted what we had done  
23 as credible, this report would not have  
24 come out.

25                   MR. JOHN: Only insofar as they



1  
2 have that capacity to determine whether your  
3 methods of detection and your sampling for  
4 organic compounds were done.

5 DR. DEWLING: That is correct.  
6 I mean, obviously, if our numbers were not  
7 valid, we are not going to report them.

8 MR. JOHN: I just have a feeling  
9 that we would be in a somewhat different  
10 situation today had, maybe, you gone back  
11 to an outside panel of professionals and  
12 had them critique your report prior to its  
13 release, and we would have had their comments  
14 as well.

15 It is just a feeling I have.

16 DR. DEWLING: I think we would  
17 be in the same position with the interpretation  
18 I heard Mr. Hinchey state that, in his opinion,  
19 eight out of the eleven consultants of HHS  
20 had said negative things and HHS's interpre-  
21 tation, Dr. Brand's testimony is just the  
22 opposite.

23 So I am saying it is an individual  
24 interpretation of what other people are  
25 interpreting.

1  
2 MR. JOHN: The point is, that  
3 maybe even those eight critiques one way  
4 or nine critiques the other way, depending on  
5 how you interpret their statements, they  
6 said they had problems dealing with the  
7 data, if they looked at the final report  
8 before it was released and given us a brief  
9 statement like they did to HHS, perhaps  
10 they would have withdrawn their earlier  
11 criticisms; isn't that correct?

12 DR. DEWLING: Their criticisms  
13 deal with a decision that they were asked  
14 to assess relative to HHS, and the question  
15 was: did these data, did these numbers indi-  
16 cate a decision that could be made for or  
17 against habitability?

18 They were not asked about the  
19 design protocols, about the analytical  
20 methods used.

21 They were given numbers to make  
22 an assessment on. Our Science Advisory Board  
23 provided us peer review of those protocols  
24 and techniques that we used.

25 MR. JOHN: I think we are going

1  
2 in circles, and I would just as soon let the  
3 Chairman continue.

4 CHAIRMAN HINCHEY: Well, this  
5 is very instructive, and I appreciate your --

6 ASSEMBLYMAN PILLITTERE: I need  
7 one more minute.

8 CHAIRMAN HINCHEY: -- your  
9 cooperation and forbearance.

10 ASSEMBLYMAN PILLITTERE: I need  
11 a couple of more minutes.

12 You said you are an engineer.  
13 What type of engineer are you?

14 DR. DEWLING: Sanitary.

15 ASSEMBLYMAN PILLITTERE: Sanitary  
16 engineer?

17 DR. DEWLING: Yes.

18 ASSEMBLYMAN PILLITTERE: You are  
19 not a mechanical --

20 DR. DEWLING: Sanitary,  
21 environmental engineer.

22 ASSEMBLYMAN PILLITTERE: Isn't  
23 it good engineering practice to have a  
24 scientist who is reviewing a program to  
25 evaluate the raw data?

1  
2 DR. DEWLING: Sure.

3 ASSEMBLYMAN PILLITTERE: Why do  
4 you take exception to the eleven scientists,  
5 nine of which disagreed with the conclusions,  
6 because they reviewed the raw data -- you  
7 seem to feel that because they did not agree  
8 with the conclusions, that they should not  
9 have reviewed raw data.

10 As an engineer, you would say --  
11 that is what you said in your testimony.

12 DR. DEWLING: The scientists  
13 for HHS were toxicologists, scientists and  
14 M.D.'s that looked at the data with regard  
15 to a decision on habitability, not to the  
16 conclusions that EPA, regarding migration of  
17 pollutants from Love Canal made.

18 They made their determinations  
19 of habitability without seeing this report,  
20 they did it based on the raw data, based  
21 on the actual numbers.

22 ASSEMBLYMAN PILLITTERE: What  
23 was wrong with that?

24 DR. DEWLING: I said there is  
25 nothing wrong with that.

1  
2 I am trying to point out that  
3 they did not change, they made a determination,  
4 and the question was, the data are incorrect.

5 The data are not valid.

6 They made their assessment  
7 in the early stages.

8 ASSEMBLYMAN PILLITTERE: You  
9 are saying that the --

10 CHAIRMAN HINCHEY: The raw data  
11 never changed, did it?

12 DR. DEWLING: In other words,  
13 they made a positive assessment based on  
14 that raw data.

15 CHAIRMAN HINCHEY: What was  
16 the positive assessment?

17 DR. DEWLING: The original statement  
18 of HHS says, based on the scientific data  
19 they had, the original one that came to us,  
20 talked about habitability with these conditions.

21 They did not change their minds.

22 CHAIRMAN HINCHEY: Who did not  
23 change their minds?

24 DR. DEWLING: HHS, when the  
25 issue of the technical data came up, then

1  
2 they said well, hold off, we want to make  
3 sure before we make a final assessment of  
4 this.

5 CHAIRMAN HINCHEY: Were you  
6 asking about HHS?

7 ASSEMBLYMAN PILLITTERE: Let's  
8 start over again.

9 I am not communicating with you,  
10 obviously.

11 Nine scientists said the data  
12 is not sufficient or enough to make a  
13 decision. You are saying, "Well, they don't  
14 know what they are talking about, because  
15 they reviewed the data, they didn't review  
16 our report."

17 I'm saying to you, how could  
18 you and five others devise a report on data  
19 that nine of eleven scientists say isn't  
20 sufficient, when you are supposed to, you  
21 said you are a sanitary engineer, and I  
22 will assume that you have studied the  
23 engineering techniques of reviewing and  
24 evaluating data, how could you, as an engineer,  
25 say you nine scientists don't know what you

1  
2 are talking about because you say the data  
3 is no good.

4 We agree the data is no good,  
5 but you have to read our report of the bad  
6 data and maybe you will agree with our report.

7 That is what you are saying.

8 DR. DEWLING: Let me try to  
9 explain it.

10 ASSEMBLYMAN PILLITTERE: You  
11 have been saying it for the last half hour.

12 The data is no good, and the  
13 nine scientists say it is no good, but you  
14 should read our report.

15 DR. DEWLING: The accusation  
16 of Chairman Hinchey was that the data was  
17 no good.

18 ASSEMBLYMAN PILLITTERE: You  
19 said they looked at the data, but they did  
20 not look at the analytical methods and the  
21 protocols and the techniques, and I'm saying  
22 to you --

23 DR. DEWLING: In their decision-  
24 making, they were assessing -- time, for one  
25 minute.

1  
2 Let me read to you Dr. Brand's  
3 statement, it says, "Our review of the  
4 consultants' comments indicate that all of  
5 them expressed some concern about a number  
6 of issues and scientific uncertainties  
7 relating to the methodology and presentation  
8 of the data. It must be remembered that  
9 this review came before the NBS review.  
10 Nevertheless, with respect to the question of  
11 health effects, a majority of them, eight  
12 out of eleven, indicated today they could  
13 not conclude that the area was not habitable."

14 ASSEMBLYMAN PILLITTERE: You are  
15 agreeing with me then. You are saying eight  
16 of the eleven scientists state that the data  
17 was not sufficient to make a decision, or  
18 to form a conclusion.

19 But then you turn around and  
20 you say well, although they said there was  
21 not enough data, me and five others, after  
22 we wrote the report, changed our mind.

23 DR. DEWLING: No way.

24 ASSEMBLYMAN PILLITTERE: Didn't  
25 eight of the eleven scientists say that the



1  
2 data was not sufficient to make a conclusion?

3 DR. DEWLING: They made a  
4 conclusion. They made a conclusion saying  
5 that it is not not habitable.

6 ASSEMBLYMAN PILLITTERE: Not not  
7 habitable!

8 What is that?

9 DR. DEWLING: I am -- we are  
10 going back to the same issue over and over  
11 again.

12 The purpose of the scientists,  
13 which have diverse backgrounds, is not  
14 to aver a scientific consensus.

15 It was to get their opinions.

16 It was not a voting panel.

17 It was not to get their opinions.

18 NBS and HHS were separate agencies

19 HHS made their determination.

20 CHAIRMAN HINCHEY: And what  
21 was their determination?

22 ASSEMBLYMAN PILLITTERE: Yes,  
23 what was their determination?

24 DR. DEWLING: Their determination --

25 ASSEMBLYMAN PILLITTERE: That

1  
2 the data was not sufficient.

3 DR. DEWLING: No, HHS made the  
4 determination that under conditions of remedial  
5 action, that the area is as habitable as  
6 the control sites, and that they see no  
7 reason to not consider the Declaration Area  
8 habitable.

9 ASSEMBLYMAN PILLITTERE: I give  
10 up.

11 CHAIRMAN HINCHEY: First of all,  
12 I would say -- it was suggested that I  
13 read some of the comments by some of the  
14 consultants back to you.

15 I'm sure you read them many  
16 times and you know them better than I do.

17 DR. DEWLING: I made them  
18 available. We did not try to hide any  
19 consultants' comments.

20 CHAIRMAN HINCHEY: Of course,  
21 you couldn't hide it, of course, you couldn't  
22 hide it. You are not -- this was not some  
23 great magnanimous gesture you made to provide  
24 this information to these people.

25 DR. DEWLING: We handed it out

1  
2 that night. We are not trying to hide anything.

3 Your inference all along has  
4 suggested that.

5 CHAIRMAN HINCHEY: I'm not  
6 saying you were trying to hide it. You gave  
7 them the information and asked them to  
8 critique it.

9 You are trying -- let me finish --  
10 you are characterizing their examination of  
11 that information in such a way that I believe  
12 is not accurate.

13 You are saying that they gave  
14 a kind of carte blanche to the whole thing,  
15 by saying -- but many times they found things  
16 very, very wrong with the whole approach,  
17 with the methodology, with the collection  
18 of data, and most of them concluded that  
19 on the basis of the information that they  
20 had been provided, you couldn't make any  
21 conclusion with any surety whatsoever.

22 DR. DEWLING: All I am saying --  
23 that is your interpretation of HHS.

24 CHAIRMAN HINCHEY: It is not my  
25 interpretation of HHS. That is a simple

1  
2 statement of fact of what was said by the  
3 people of the scientific community to whom  
4 you provided the raw data and asked them for  
5 an analysis.

6 You know that as well as I do.

7 DR. DEWLING: I don't agree with  
8 you, Mr. Hinchey.

9 CHAIRMAN HINCHEY: Well, let  
10 me ask you a couple of more questions.

11 You said that -- there are a  
12 number of times in the report where it says,  
13 and let me quote, it says that "the project was  
14 conceived, initiated, and conducted under  
15 severe budgetary and time constraints."

16 Could you tell me what were  
17 the effects of those severe constraints on  
18 both the scope and the quality of the study,  
19 and what would have been done differently  
20 if those constraints did not exist?

21 DR. DEWLING: I would think if  
22 ideal conditions existed, we would have liked  
23 to have had over a seasonal period; in terms of time as was  
24 presented by one of the speakers before.  
25 Obviously we tried to correct that by having

1  
2 that many more samples to correct for that  
3 deficiency.

4 We would have liked to have  
5 had more controls in the area, but we felt ✓  
6 that the number of samples, the types of  
7 analyses that we had, and the number of  
8 target elements that we were looking for,  
9 gave us the degree of confidence in terms of  
10 the types of conclusions we could reach.

11 CHAIRMAN HINCHEY: Okay.

12 There was some contamination X  
13 found in the Declaration Area.

14 DR. DEWLING: Yes.

15 CHAIRMAN HINCHEY: A judgment was  
16 made that the contamination was not significant.

17 What criteria were used to make  
18 that judgment?

19 DR. DEWLING: HHS's assessment  
20 was that the level that we were finding in  
21 these contaminants in the soils, they were  
22 talking in the area of -- in the high level  
23 part per billion range, and we were nowhere  
24 near that.

25 That was that tradeoff -- not a

1  
2 tradeoff, but a decision point of whether or  
3 not that particular level presented an  
4 unacceptable risk, but not for dioxin.

5 We are talking in a sense of  
6 high level parts per billion, low level parts  
7 per billion, up around nine hundred parts ✓  
8 per billion as the cutoff point.

9 CHAIRMAN HINCHEY: One of the  
10 criticisms of the EPA was that the report  
11 failed to measure for trichloro phenols in ✓  
12 the soil, and they said specifically in their  
13 report that some two hundred tons of that  
14 chemical, which is frequently contaminated  
15 with dioxin, was disposed of at the Canal,  
16 and that only four areas in the Declaration  
17 Site were sampled in the plan for dioxin.

18 DR. DEWLING: We have now  
19 sampled all the sewers.

20 How many samples were taken for  
21 dioxin, do you know off the top of your head?

22 We will have this information  
23 in about two weeks.

24 CHAIRMAN HINCHEY: Okay.

25 We will look forward to that.

1  
2 DR. DEWLING: We did sample  
3 streams, we did sample sediments, we did  
4 sample the sumps, and we did sample a host  
5 of things.

6 CHAIRMAN HINCHEY: For dioxin,  
7 specifically?

8 DR. DEWLING: Yes.

9 CHAIRMAN HINCHEY: In making  
10 the judgment about the significance or not  
11 of materials that were found in the Declaration  
12 Area, was there any concern ever given to  
13 the possibility of long-term effects?

14 DR. DEWLING: The exposure that  
15 this might have over a long term period?

16 CHAIRMAN HINCHEY: Yes, twenty,  
17 or thirty years.

18 DR. DEWLING: Yes.

19 CHAIRMAN HINCHEY: Some concern  
20 was given to that?

21 DR. DEWLING: When they made the  
22 determination of habitability, obviously they  
23 were not worried about any acute or short-term  
24 impacts.

25 CHAIRMAN HINCHEY: Can you tell

1  
2 us about that, what kinds of long-term --

3 DR. DEWLING: You'll have to  
4 ask HHS that.

5 CHAIRMAN HINCHEY: You don't  
6 know that?

7 DR. DEWLING: I did not make the  
8 final determination of habitability, that  
9 was done by the M.D.'s, based on the available  
10 data we had.

11 CHAIRMAN HINCHEY: I understand  
12 that.

13 I was asking you another question.

14 I was asking you about the  
15 determination with regard to long-term  
16 effects, and if you have had any involvement  
17 in that, and you gave me an answer, and I  
18 wonder how you knew that answer.

19 DR. DEWLING: Obviously, we would  
20 not make a determination without considering  
21 that. The specific details, I don't have.

22 CHAIRMAN HINCHEY: Okay.

23 What were the sources of the  
24 contamination that were detected in the Canal  
25 -- rather, in the Declaration Area?



1  
2 DR. DEWLING: You mean what  
3 parameters?

4 CHAIRMAN HINCHEY: You know,  
5 where did they come from, where did those  
6 contaminants come from?

7 How did they get there?

8 DR. DEWLING: Our objective  
9 was to determine whether the material from  
10 Love Canal was getting into the Declaration  
11 Area.

12 Our study was not designed  
13 to pick up if someone had picked up a load  
14 of dirt someplace and transported it there.

15 We would never pick that up  
16 in our type of study. We were looking for  
17 lateral movement through the groundwater,  
18 in which you would pick up a pattern of  
19 movement, and pick up a gradual increase or  
20 decrease, as it came away from the Canal.

21 You would pick this up in the  
22 soil and in the groundwater.

23 We did not do that.

24 CHAIRMAN HINCHEY: You found  
25 evidence of contamination, you satisfied

1  
2 yourself that it was not from the Canal, and ✓  
3 you just dropped it, you didn't make any  
4 determination of where else it might be coming  
5 from?

6 DR. DEWLING: That is correct.

7 The levels that we were  
8 finding in the Declaration Area again were  
9 not at a level, in our opinion, that represented an  
10 incremental increase to public health risk.

11 MR. JOHN: You are not an M.D.,  
12 so you are really relying on Health and Human  
13 Services.

14 DR. DEWLING: That is correct.

15 CHAIRMAN HINCHEY: Are you  
16 satisfied that sufficient attention was  
17 paid to the selection of control sites for  
18 the study, and is it possible, if the control  
19 sites do not represent desirable or safe  
20 conditions, might the control sites also be  
21 contaminated?

22 DR. DEWLING: As I indicated  
23 before, I think we would have preferred to  
24 have more control sites, but we could not  
25 get the control sites with all the type of

1  
2 characteristics that we were looking for, and  
3 then the data were compared not only with  
4 control sites, but other areas around the  
5 country where we had monitoring information.

6 So in our ultimate decision-  
7 making process, we looked at previous data  
8 collected by the State, the ongoing program  
9 of the State, and what we know of other areas  
10 in the country in terms of safe levels, and  
11 then made our final determination.

12 So it was not just on those  
13 individual control sites within the Love Canal  
14 area.

15 CHAIRMAN HINCHEY: Your tables  
16 are illustrative of that.

17 Table 7, for example, I don't  
18 know if you have the report with you, but  
19 Table 7, significant differences observed in  
20 the extent of shallow system groundwater  
21 contamination at Love Canal, do you see that?

22 DR. DEWLING: Yes.

23 CHAIRMAN HINCHEY: You tested  
24 for a number of things, dichlorophenol,  
25 trichlorophenol, dichlorobenzene, a number

1  
2 of other things, fluorine, chlorotoluene,  
3 chorotoluene, chromium, lead, and you found  
4 percentages of detections, and you also  
5 illustrate the number of samples there;

6 Is that correct?

7 DR. DEWLING: That is correct.

8 CHAIRMAN HINCHEY: And then  
9 you go over and you make comparisons.

10 You make a comparison between  
11 the Canal and the Declaration Area and you  
12 arrive at what conclusion there with regard  
13 to 2, 4 dichlorophenol.

14 DR. DEWLING: In this case,  
15 a yes and no on this one.

16 Again, there is a whole volume  
17 on comparisons. There was a difference between  
18 Canal and Declaration Area, and then in  
19 terms of Declaration and Control there was  
20 no difference statistically between the values.

21 CHAIRMAN HINCHEY: What does  
22 that mean?

23 DR. DEWLING: In some cases,  
24 we found that some of the controls had higher  
25 levels than we had in the Declaration Area,

1  
2 than we had in the Canal area.

3 CHAIRMAN HINCHEY: In some areas  
4 the Control had higher levels?

5 DR. DEWLING: In some areas,  
6 we had Control Area that had higher reported  
7 levels than we had in the Declaration Area.

8 CHAIRMAN HINCHEY: Did you ever  
9 do a comparison between the Canal and the  
10 Control Areas?

11 DR. DEWLING: In this case here,  
12 we did, for example, on these parameters here,  
13 we are showing that there is a difference  
14 between the Canal and Declaration Area,  
15 and then for -- we have -- there is no  
16 difference between the Declaration Area and  
17 the Control.

18 So we are saying here the  
19 Declaration Area and Control, there is no  
20 statistical difference between what we are  
21 finding and there was a difference between  
22 the Canal and Declaration Area.

23 If one looked at individual  
24 values, I can show you individual values  
25 over on some control sites we had away from

1  
2 Love Canal, on certain parameters where we  
3 got higher values than we had in the control  
4 site.

5 CHAIRMAN HINCHEY: But this --  
6 your table is illustrative of your conclusion  
7 that, of the level of danger or the level of  
8 non-danger in the Declaration Area, because  
9 you compared 2, 4 trichlorophenol between  
10 the Canal and Declaration Area, there  
11 is a significant difference.

12 DR. DEWLING: That is what we  
13 wanted to show, it is higher in the Canal.

14 CHAIRMAN HINCHEY: Then you  
15 compared 2, 4 dichlorophenol with the  
16 Declaration Area and the Control, and there  
17 is no statistical difference between the  
18 Declaration Area and the Control.

19 DR. DEWLING: That is right.

20 CHAIRMAN HINCHEY: And you  
21 arrive at the conclusion that the Declaration  
22 Area is, therefore, safe with regard to 2, 4  
23 dichlorophenol, right?

24 DR. DEWLING: For the number of  
25 samples that we had --

1  
2 CHAIRMAN HINCHEY: Within the  
3 parameters of your report, of course.

4 DR. DEWLING: But you are not  
5 doing it for one parameter, you are doing it  
6 for a whole host of parameters.

7 CHAIRMAN HINCHEY: I understand  
8 that.

9 I am trying to ask you to focus  
10 your -- there are a whole host of them on this  
11 page. For the purposes of our discussion  
12 at the moment, would you focus your attention  
13 to 2, 4 dichlorophenol, and we can go on to  
14 any of the others if you like after that.

15 You find that there is a  
16 significant difference with regard to the  
17 presence of 2, 4 dichlorophenol when you  
18 look at the Canal and the Declaration Area?

19 DR. DEWLING: Yes.

20 CHAIRMAN HINCHEY: There is a  
21 statistical difference.

22 DR. DEWLING: Right.

23 CHAIRMAN HINCHEY: And the fact  
24 is, that there is more in the Canal than in  
25 the Declaration Area?

1  
2 DR. DEWLING: There is a  
3 statistical difference between the two levels.

4 CHAIRMAN HINCHEY: And then  
5 you look at the Declaration Area vis-a-vis  
6 the Control, and you arrive at the conclusion  
7 that there is no significant difference  
8 between the Declaration Area with regard to  
9 2, 4 dichlorophenol and the Control?

10 DR. DEWLING: That is correct.

11 CHAIRMAN HINCHEY: So far as  
12 the statistical differences are concerned, they  
13 are the same, right?

14 In other words, there is no  
15 statistical difference.

16 DR. DEWLING: No statistical !  
17 difference. !

18 CHAIRMAN HINCHEY: Now, I'm  
19 asking you this question:

20 Did you ever then go and make  
21 a comparison between the Canal and the Control  
22 area to make a determination as to whether  
23 there is any significant difference with  
24 regard to the presence of 2,4 dichlorophenol  
25 in the Canal as opposed to the Control area?



1  
2 DR. DEWLING: We may have. I  
3 would have to go back to the other volume,  
4 I don't know.

5 CHAIRMAN HINCHEY: I will tell  
6 you what you find.

7 You find, no, there is no  
8 significant difference between the -- with  
9 regard to the presence of 2,4 dichlorophenol  
10 in the Canal as opposed to the Control Area,  
11 and that is true also with 2,4,6 trichlorophenol,  
12 1, 4 dichlorobenzene, 1,2,4 trichlorobenzene,  
13 and a whole host, a whole array of chemicals  
14 for which you tested.

15 DR. DEWLING: That is not logical,  
16 because if there is a difference between the  
17 Canal and the Declaration Area, and there is  
18 no difference between the Declaration and  
19 Control --

20 CHAIRMAN HINCHEY: That is the  
21 point exactly, it is not logical, and that is  
22 why your report is not logical.

23 ASSEMBLYMAN PILLITTERE: Now you  
24 sound like one of the eight scientists.

25 CHAIRMAN HINCHEY: You see, that

1  
2 is what happens.

3                   You try to show that the  
4 Declaration Area was free of these various  
5 contaminants by making a comparison between  
6 it and the Control Area which you selected,  
7 which is unspecified, and which we do not know.

8                   However, you --

9                   DR. DEWLING: The control sites  
10 are identified.

11                   CHAIRMAN HINCHEY: Well, I  
12 don't know.

13                   However, you did not go on to  
14 take the next step to test your results and  
15 make a comparison between the Canal and  
16 the Control Area. If you had, you would  
17 have found the same conclusion as you did  
18 with regard to the Declaration Area vis-a-vis  
19 the Control: No difference.

20                   MR. JOHN: Statistical.

21                   CHAIRMAN HINCHEY: No statistical  
22 difference.

23                   DR. DEWLING: You have run that  
24 analysis?

25                   CHAIRMAN HINCHEY: Yes.

1  
2 DR. DEWLING: I would like to see  
3 it.

4 CHAIRMAN HINCHEY: Okay.

5 That is why there can be no  
6 confidence placed in this report.

7 Either that, or we have to  
8 draw the conclusion that all of the Control  
9 Areas are as contaminated as the Canal.

10 ASSEMBLYMAN PILLITTERE: That  
11 was my original statement way back when I  
12 asked you about New York City.

13 DR. DEWLING: If one were to  
14 look -- again, I have to go back to the  
15 other volumes, but if one were to look at  
16 the analysis that this infers here, if there  
17 is a difference between the Canal and the  
18 Declaration Area, and there is no difference  
19 between the Declaration Area and the Control  
20 Sites, it is not logical that there would  
21 not be a difference between the Control Area  
22 and the Canal.

23 CHAIRMAN HINCHEY: Well, yes,  
24 because --

25 ASSEMBLYMAN PILLITTERE: -- the

1  
2 reports are illogical.

3 CHAIRMAN HINCHEY: The reports  
4 are illogical, and it is illogical and faulty  
5 because you did not take enough samples.

6 DR. DEWLING: I don't know how  
7 many more samples we could have taken.

8 CHAIRMAN HINCHEY: Control  
9 samples. You did not take enough control  
10 samples. If you had taken more control samples,  
11 your data might have been statistically valid.

12 DR. DEWLING: If there is no  
13 difference between the Declaration Area and  
14 the Control, what we are saying --

15 CHAIRMAN HINCHEY: Statistical  
16 difference.

17 DR. DEWLING: -- we are saying  
18 there would be a statistical difference  
19 between the Canal and Control.

20 CHAIRMAN HINCHEY: The fact  
21 of the matter is based on your data, there  
22 is no significant statistical difference.

23 DR. DEWLING: I would like to  
24 see that analysis, and until such time, I  
25 have to stand by the position that there is

1  
2 a difference between the Canal and the Control.

3 CHAIRMAN HINCHEY: We will show  
4 it to you.

5 MR. JOHN: We don't doubt that  
6 there is a difference between the Canal and  
7 the Control.

8 DR. DEWLING: That is what you  
9 just said.

10 CHAIRMAN HINCHEY: Be careful,  
11 I have observed one thing about you, you  
12 are a very artful person, and there is no  
13 doubt in my mind why you have been given the  
14 assignment of selling this particular report,  
15 because you are a very skilled man.

16 You are very skilled in the  
17 use of the language, and you are very skilled  
18 in maneuvering your way out of questions and  
19 giving answers to questions which were not  
20 asked.

21 Frankly, that is my opinion,  
22 although I have the greatest respect for you,  
23 you are a man of incomparable ability in  
24 that regard.

25 In that sense, I see a lot of

1  
2 similarity between you and the approach you've  
3 taken with regard to the questions that have  
4 been asked and the report itself.

5 One cannot safely draw conclusions  
6 based on your testimony, and one cannot safely  
7 draw conclusions based on the report, not  
8 because the report was not well meaning, not  
9 because, perhaps, there isn't any -- maybe  
10 there isn't any venality here, I'm not  
11 drawing any conclusions at this moment in  
12 that regard, but it is clear that the  
13 statistical approach was wrong, was invalid,  
14 that no statistician worthy of the name, with  
15 any degree of honor and responsibility, would  
16 attach himself to the statistical method used  
17 in this report.

18 DR. DEWLING: I take issue with  
19 that, and I am willing to accept the challenge.

20 CHAIRMAN HINCHEY: You are on.

21 We thank you very much.

22 ASSEMBLYMAN PILLITTERE: What  
23 school did you go to?

24 DR. DEWLING: Manhattan College,  
25 New York University, and Rutgers University.

1  
2 Sanitary engineering years ago  
3 is now what we call environmental engineering.  
4 You got a degree in civil engineering with  
5 a major in sanitary, and you got a Master's  
6 degree in civil with a major in sanitary.

7 CHAIRMAN HINCHEY: Dr. Dewling,  
8 thank you, we appreciate your forbearance.

9 DR. DEWLING: Thank you for  
10 your time and attention.

11 \* \* \*

12 (The following is the statement  
13 by Richard T. Dewling, Deputy Regional  
14 Administrator, U.S. Environmental Protection  
15 Agency, Region II, before the Subcommittee  
16 on Commerce, Transportation and Tourism of  
17 the Committee on Energy and Commerce, dated  
18 August 9th, 1982, submitted to this hearing:)

19 Good morning, Mr. Chairman and  
20 Members of the Subcommittee.

21 My name is Richard T. Dewling,  
22 and I am Deputy Regional Administrator of  
23 the U.S. Environmental Protection Agency's  
24 Region II Office in New York City. I am  
25 pleased to have the opportunity to discuss

1  
2 my role in the preparation and release of  
3 EPA's Love Canal Environmental Monitoring  
4 Study.

5 Before I describe my role, how-  
6 ever, I believe it would be helpful to give  
7 you a brief outline of my background and  
8 qualifications. I have worked at EPA since  
9 the agency was established.

10 I have served as Director of  
11 Research and Development at EPA's Edison,  
12 New Jersey Water Quality Laboratory and as  
13 Director of Region II's Surveillance and  
14 Analysis Division.

15 I have been Deputy Regional  
16 Administrator since 1978, and I have also  
17 served as Acting Regional Administrator for  
18 approximately two years during that time.

19 I hold a Bachelor's Degree in  
20 Civil Engineering from Manhattan College,  
21 a Master's Degree in Sanitary Engineering  
22 from New York University and a Ph.D in  
23 Environmental Science from Rutgers. I am  
24 an Associate Professor in Environmental Science  
25 at Rutgers.



1  
2 From my work in Region II I was,  
3 of course, familiar with the situation at  
4 Love Canal. However, the Regional Staff  
5 did not take part in the environmental  
6 monitoring study, which was carried out by  
7 the Agency's Office of Research and Development.

8 In early May of this year,  
9 I was asked by John Hernandez, EPA's Deputy  
10 Administrator, to coordinate and manage the  
11 final publication and distribution of the  
12 EPA documents, as well as the interpretative  
13 report by the National Bureau of Standards  
14 and the Department of Health and Human Services.

15 Dr. Hernandez confirmed my  
16 assignment in a memorandum dated May 5th,  
17 to EPA's Associate and Assistant Administrators.  
18 A copy of this memorandum has been provided  
19 to the Subcommittee.

20 Based on my conversations with  
21 Dr. Hernandez, my role was defined as follows:

22 (1) To probe the report's  
23 data base to make sure it was sound and  
24 clearly articulated;

25 (2) To make sure any

1  
2 interpretations or conclusions drawn from the  
3 data base were scientifically supportable;

4 (3) To coordinate EPA's  
5 contacts with HHS and NBS and to make sure  
6 these agencies clearly understood EPA's  
7 data;

8 (4) To plan an orderly and  
9 timely release of the report;

10 (5) To make sure the report  
11 was presented in a manner that would be  
12 understandable and useful to the residents  
13 and officials of Niagara Falls;

14 (6) To make sure the report  
15 was not presented in such a way as to need-  
16 lessly jeopardize Federal and State remediation  
17 involving Love Canal and other Niagara  
18 sites.

19 My first step was to read an  
20 early draft of the EPA report.

21 My initial impression was that  
22 it was basically sound and that the study itself  
23 had been thorough and well conducted. However,  
24 several questions did occur to me.

25 I was not convinced, for example,

1  
2 that the ORD report was the appropriate place  
3 to draw conclusions on habitability or to  
4 make recommendations for further remedial  
5 work under Superfund. I also felt the report  
6 did not identify the control sites clearly  
7 enough and that some of the illustrations  
8 were potentially misleading.

9           Therefore, I asked Courtney  
10 Riordan, Acting Assistant Administrator for  
11 Research and Development to convene a group  
12 of the Agency's leading scientists to help  
13 me in reviewing the report's conclusions,  
14 recommendations and manner of presentation,  
15 and to help with rewriting where necessary.  
16 The data base itself, of course, was accepted  
17 as a given and not something to change.

18           Dr. Riordan appointed a group  
19 led by Thomas Hauser, Director of EPA's  
20 Environmental Monitoring System's Laboratory  
21 in Research Triangle Park, North Carolina.

22           The group included Robert Booth,  
23 Acting Director of the Environmental Monitoring  
24 and Support Laboratory in Cincinnati, Glenn  
25 Schweitzer, Director of the Environmental

1  
2 Monitoring System's Laboratory in Las Vegas,  
3 and John Deegan, who was ORD's Love Canal  
4 Project Coordinator.

5 I also brought into the group  
6 representatives from EPA's Enforcement and  
7 Superfund offices, the Region II Office and  
8 the U.S. Department of Justice. The latter  
9 members were brought in to probe and  
10 challenge the scientists so that we could  
11 be sure the conclusions reached in the  
12 report and the recommendations put forward  
13 were thoroughly justified by the data base  
14 and represented the best scientific judgment  
15 of the Agency.

16 During the course of our  
17 discussions, we agreed that it was not  
18 appropriate for EPA to draw conclusions  
19 related to human habitability. That was a  
20 job for an agency with expertise in human  
21 health, namely the U.S. Department of Health  
22 and Human Services.

23 I also felt that definition  
24 of the specific cleanup projects needed to  
25 deal with the storm sewer and creek bed

1  
2 contamination should be handled through the  
3 Superfund process. We, therefore, rewrote  
4 the report to include only those conclusions  
5 and recommendations that arise directly from  
6 the monitoring data and that reflected  
7 environmental conditions.

8           The Love Canal Report was,  
9 in fact, reviewed by HHS through its Centers  
10 for Disease Control and its National Institute  
11 for Environmental Health.

12           During the summer and fall of  
13 1981, HHS reviewed early drafts of the report  
14 and the raw data produced by the study. The  
15 data were also reviewed for HHS by a group  
16 of eleven outside consultants, who submitted  
17 a range of opinions and cautions.

18           Based on these reviews, HHS  
19 submitted a report dated October 7th, 1981  
20 which concluded that the Love Canal Declaration  
21 Area, outside the Canal, is as habitable  
22 as the control areas with which it was compared.  
23 This conclusion was based on the assumption  
24 that the methods used by EPA in collecting,  
25 storing and testing specimens were satisfactory,

1  
2 that the contamination of local storm sewer  
3 and creek sediments would be cleaned up  
4 and that the containment system would be  
5 optimized.

6 EPA also asked the National  
7 Bureau of Standards to review the analysis  
8 for organic chemicals performed during the  
9 study. On May 10, 1982, NBS submitted its  
10 report. The NBS report raised a number of  
11 questions regarding the adequacy of the  
12 quality control/quality assurance methods  
13 used by EPA, the performance of the various  
14 laboratories used by EPA, and the reliability  
15 of the data at the lower end of the detection  
16 limit.

17 On first reading, I was concerned  
18 that the credibility of the EPA report had  
19 been significantly challenged. This concern  
20 was supported by the fact that HHS, via  
21 a June 16 letter signed by Dr. Edward Brandt,  
22 Jr., Assistant Secretary of Health, withdrew  
23 the Agency's earlier recommendations on  
24 habitability because of the questions raised  
25 by NBS.

1  
2                   However, after reviewing the  
3 NBS questions in detail with the EPA  
4 scientific panel, I became convinced that  
5 a clear articulation of the EPA data, coupled  
6 with a better definition of the detection  
7 limits possible with the analytical methods  
8 EPA used, would clear up the problem.

9                   Accordingly, we prepared a  
10 detailed response to NBS and sought a meeting  
11 to discuss the matter.

12                   During this meeting, the NBS  
13 representatives made clear that, despite the  
14 questions they had raised, they regarded  
15 the EPA study as both reasonable and acceptable.

16                   One of the main issues discussed  
17 was that, because of the extremely low  
18 concentrations of chemicals present in the  
19 vast majority of the samples taken, EPA  
20 was acting at the frontiers of analytical  
21 capability and using "state-of-the-art"  
22 techniques.

23                   In such situations, it is often  
24 the case that not enough prior experience  
25 exists to define with confidence the "method

1  
2 detection limit," or MDL, for the techniques  
3 used.

4           However, we were able to  
5 demonstrate that the MDL's we could define  
6 with confidence for thirty-eight chemicals  
7 could be used for all one hundred fifty  
8 chemicals of interest because of the similarity  
9 of chemical families.

10           Following a number of discussions  
11 with both NBS and HHS, I sent a letter dated  
12 June 29th to Dr. Clark Heath, Director of  
13 the Chronic Disease Division, Centers for  
14 Disease Control, outlining's EPA's position  
15 on the MDL issue. I also arranged to meet  
16 with both NBS and HHS on July 8th in the  
17 expectation of being able to resolve the  
18 remaining issues.

19           During the course of this  
20 meeting it became clear that, while the  
21 questions raised by NBS related to our  
22 measurements in the parts per billion and  
23 the parts per trillion range, HHS was  
24 primarily concerned with making sure we  
25 did not miss any contaminants in the parts



1  
2 per million range and that we were not reporting  
3 "false negatives."

4 At the request of HHS, Raymond  
5 Kammer, Deputy Director of NBS, wrote a  
6 follow-up letter after this meeting. Dated  
7 July 9th, the letter states that the methods  
8 used by EPA are generally acceptable and  
9 represent the state-of-the-art.

10 In addition, Mr. Kammer wrote  
11 that EPA's quality assurance program should  
12 have been adequate to maintain quality  
13 control.

14 Based on the meeting and on  
15 Mr. Kammer's letter, Dr. Brandt was able  
16 to send John Hernandez a letter and statement  
17 dated July 13th reaffirming HHS's former  
18 position on habitability.

19 Dr. Heath agreed to appear  
20 with EPA at our July 14th release of the  
21 report and to state publicly the HHS position.

22 In conclusion, I would like  
23 to stress that at no time was I, or any other  
24 of the EPA scientists involved in the report,  
25 asked to present any conclusions or

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recommendations other than those we felt were thoroughly justified by the scientific data developed by the monitoring study.

I am confident we fulfilled that mandate and I'm confident the report will withstand the most thorough scientific scrutiny. Thank you. I will be pleased to respond to your questions.

\* \* \*

(The following is the statement of Courtney M. Riordan, Ph.D., J.D., Acting Assistant Administrator, Office of Research and Development, U.S. Environmental Protection Agency, before the Subcommittee on Commerce, Transportation, and Tourism, Committee on Energy and Commerce, House of Representatives, dated August 9, 1982, submitted by Dr. Richard T. Dewling:)

Mr. Chairman, and members of the Subcommittee, I am Courtney Riordan, Acting Assistant Administrator for Research and Development for the United States Environmental Protection Agency. I am pleased to provide you with some historical

1  
2 background and an overview of the Agency's  
3 findings at Love Canal.

4 In the 1980's, William T. Love  
5 began excavation of a canal on the eastern  
6 boundary of the City of Niagara Falls, New  
7 York. Only a small portion of the Canal  
8 was dug owing to financial failure of the  
9 Love enterprise.

10 The man-made ditch, approximately  
11 seventy-five feet wide and three thousand  
12 feet long remained undeveloped for decades.

13 Around 1942, Hooker Chemicals  
14 and Plastics Corporation began to use the  
15 Love Canal as a disposal site for its  
16 manufacturing wastes. Hooker acquired owner-  
17 ship of the property in 1947 and deposited  
18 a total of approximately twenty-one  
19 thousand eight hundred tons of chemical waste  
20 in the Love Canal between 1942 and 1953.

21 In 1953, the City of Niagara  
22 Falls Board of Education purchased the closed  
23 Canal.

24 In 1954, the Board constructed  
25 an elementary school near the eastern edge

1  
2 of the central portion of the Canal. The  
3 surrounding area was subsequently developed  
4 with mainly single-family houses. Approxi-  
5 mately one thousand families lived within  
6 a distance of eighteen hundred feet of the  
7 Love Canal by the year 1980.

8           During the mid-1970's, the area  
9 experienced several years of precipitation  
10 that were above normal. Along with the  
11 expected incidence of local flooding of base-  
12 ments and open land was the occurrence of  
13 problems of chemical contamination.

14           In particular, several home-  
15 owners whose dwellings directly abutted the  
16 Canal reported chemicals appearing in their  
17 yards and basements. These observations  
18 of contamination, as well as reports of  
19 adverse health effects associated with  
20 residents living near Love Canal, led to  
21 demands for intervention by local and State  
22 health officials.

23           In 1978, EPA was requested  
24 by the State of New York to assist in conducting  
25 a limited number of environmental measurements

1  
2 in a few houses located adjacent to the  
3 former Canal. The monitoring results showed  
4 the presence of toxic chemicals.

5 The State of New York initiated  
6 a larger-scale investigation and soon  
7 declared a health emergency at Love Canal.

8 President Carter declared a  
9 state of emergency for the Canal area in  
10 August of 1978, enabling the Federal Disaster  
11 Assistance Agency (now the Federal Emergency  
12 Management Agency) to provide temporary  
13 relocation assistance to families living  
14 near Love Canal.

15 At the same time, EPA provided  
16 a four million dollar grant to the State of  
17 New York for the construction of an on-site  
18 treatment facility to process the leachate  
19 that would be collected by a barrier drain  
20 system that was to be constructed to prevent  
21 further migration of chemicals from the Canal.

22 The State of New York soon  
23 thereafter purchased two hundred thirty-eight  
24 homes immediately surrounding the Canal  
25 (the so-called Ring 1 and Ring 2 homes) and

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secured the area from public access.

In December of 1979, the Department of Justice, on behalf of EPA, filed suit under the authorities of the Resource Conservation and Recovery Act, the Safe Drinking Water Act and the Clean Water Act against Hooker Chemical Company seeking penalties, reimbursements for funds expended by the Federal government, and injunctive relief at four Niagara Falls sites, including Love Canal.

In early 1980, the EPA Office of Enforcement sponsored a pilot study to determine if excess chromosomal damage might be present in the Love Canal residents and if such damage could serve as an indicator of human exposure to toxic chemicals coming from the Canal.

The preliminary results of this investigation became public on May 19, 1980.

The confusion about the study's findings created tremendous anxiety and concern in the residents whose homes were outside of Rings 1 and 2. Based on the

1  
2 accumulated environmental and health data  
3 available at that time, President Carter  
4 declared a second state of emergency at  
5 Love Canal on May 21st, 1980.

6 In addition, the White House ✓  
7 directed EPA to conduct a comprehensive  
8 monitoring study at Love Canal to determine  
9 the extent and degree of contamination that  
10 had migrated from the Canal.

11 In a communication of June 4th,  
12 1980, to the citizens of Love Canal, officials  
13 of EPA, the Department of Health and Human  
14 Services, and the Federal Emergency Management  
15 Agency, articulated the purpose of the  
16 study:

17 "The Environmental Assessment  
18 Study, which will also be completed within  
19 six months, should provide significant new  
20 data to determine whether there is a sub-  
21 stantial environmental health risk for  
22 residents in the Love Canal area. At that  
23 time we hope to be able to recommend either  
24 that a health hazard exists and people should  
25 not return to their homes, or that the data

1  
2 indicate that there is not a sufficient  
3 cause for concern and that people should  
4 feel confident to return to or remain in  
5 their homes."

6           The Office of Research and  
7 Development in EPA was assigned responsi-  
8 bility for designing and carrying out the  
9 monitoring study. During the study design  
10 period in June and July of 1980, the State,  
11 Love Canal residents and local officials  
12 all participated in review and comment on  
13 the study plan.

14           Field work began on August  
15 8th, 1980, and all samples had been collected  
16 by October 31st, 1980.

17           The contract calls for the  
18 collection and analysis of the approximately  
19 six thousand field samples that comprised  
20 the study with 5.4 million dollars.

21           The objectives of the EPA  
22 study, more specifically, were as follows:

23           (1) To determine the extent  
24 and degree of environmental contamination  
25 in the Declaration Area attributable to



1  
2 Love Canal as of October 1980;

3 (2) To assess the short-term  
4 and long-term implications of any detected  
5 groundwater contamination;

6 (3) To assess the relative  
7 environmental quality of the Declaration Area;  
8 and

9 (4) To provide an environmental  
10 data base on which decisions could be made  
11 about the habitability of residents in the  
12 Declaration Area.

13 The study was also designed to  
14 answer other questions, for example:

15 (1) Is the barrier drain  
16 system installed in 1978-79 effectively  
17 intercepting contaminants migrating from the  
18 former Canal?

19 (2) Do certain area soil  
20 features -- for example, sandy deposits,  
21 wet areas, or buried utilities, -- serve  
22 as pathways for migrating substances?

23 (3) Are the "swales" -- now-  
24 filled shallow channels with soils in the  
25 vicinity of Love Canal -- preferential routes

1  
2 by which buried substances move into the  
3 surrounding neighborhood?

4 As described above, one  
5 immediate purpose of the study was to provide  
6 as quickly as possible information on the  
7 extent of contamination to the approximately  
8 eight hundred families who were affected  
9 by the emergency declaration of May, 1980.

10 Under that declaration, they  
11 were eligible for temporary relocation for  
12 the duration of the emergency. In October  
13 of 1980, under the authority of special  
14 legislation, the Federal government and the  
15 State of New York agreed to provide funds  
16 for the permanent relocation of those families  
17 located within the Declaration Area.

18 The monitoring study included  
19 samples of indoor air, outdoor air, ground-  
20 water, soil, surfacewater and surfacewater  
21 sediments, sumpwater and sumpwater sediments,  
22 storm sewers and storm sewer sediments,  
23 drinkingwater, and biota.

24 Extensive quality control  
25 and quality assurance procedures were

1  
2 employed and chain of custody documentation  
3 was provided for every sample.

4           Some one hundred fifty thousand  
5 measurements were carried out on the Love  
6 Canal samples. Verification and validation  
7 of these measurements occurred during the  
8 period from December, 1980 through May, 1981.

9           At that time, a letter was  
10 sent from EPA to HHS requesting they provide  
11 EPA with an interpretation of the health  
12 implications of the data. Draft reports  
13 summarizing the results of the monitoring  
14 were prepared by June, 1981.

15           At that time, a decision was  
16 made to request the National Bureau of  
17 Standards to arrange for an external peer  
18 review of the quality of the analytical  
19 chemistry portion of the study.

20           In August of 1981, HHS convened  
21 a meeting of the consultants to assist them  
22 in assessing the health implications of the  
23 results of the monitoring study. HHS  
24 submitted a report to EPA summarizing its  
25 findings as to health implications in November

1  
2 of 1981.

#7  
3 Originally, the NBS review  
4 was scheduled for completion in November  
5 of 1981. Both EPA and NBS, however, under-  
6 estimated the amount of effort and time  
7 that would be required to complete a thorough  
8 examination of the analytical program.  
9 After a series of rewrites and additions  
10 to documentation, the NBS based its final  
11 report on an EPA summary report dated  
12 December 14, 1981 and technical appendices  
13 that were provided to NBS in February and  
14 March of 1982.

15 NBS transmitted the final  
16 review comments to EPA on May 10th, 1982.

17 The NBS review was based upon  
18 written EPA technical documentation provided  
19 to NBS during the period June, 1981 through  
20 February, 1982. As a result of NBS-EPA  
21 interactions, portions of the final EPA  
22 report were extensively rewritten in light  
23 of the constructive NBS suggestions that  
24 are contained in their report but which were  
25 communicated verbally to EPA during the

1  
2 review period.

3           The final EPA report, as a  
4 result, addressed practically all of the  
5 issues and recommendations raised by NBS.  
6 It was HHS's desire for assurances on the  
7 extent to which the EPA report adequately  
8 addressed NBS's concerns that led to the  
9 modification of their June 14th report that  
10 was sent to EPA on June 15th, 1982.

11           On June 28th, 1982, a meeting  
12 was held between NBS and EPA; and on July  
13 8th, another meeting occurred among EPA,  
14 NBS and HHS.

15           These meetings were held to  
16 clarify the relationship between the NBS  
17 review comments and the final EPA report  
18 particularly with respect to method detection  
19 limits for measuring chemicals in water.  
20 Final understanding and agreement on this  
21 issue was reached in the second week of  
22 July as reflected in the statement on  
23 habitability issued by HHS on July 13th, 1982.

24           In a study as large and as  
25 accelerated as the Love Canal monitoring effort,

1  
2 there were inevitable compromises and problems  
3 that impacted in various ways on the overall  
4 quality of the study.

5 For example, we operated  
6 with fewer control sites for air sampling  
7 than we wanted because we were unable to  
8 obtain the desired number of residences that  
9 satisfied our criteria for selection as  
10 a control site. Owing to the concentration  
11 of samples collected during the months of  
12 September and October, a number of water  
13 samples were held, prior to extraction,  
14 for more than seven days even though the  
15 recommended EPA holding period should not  
16 exceed seven days.

17 Subsequent studies by our  
18 Cincinnati laboratory demonstrated that the  
19 effect of excess holding times on samples  
20 containing chemicals in the one hundred  
21 microgram per liter range was not significant.  
22 We looked for a fixed number of target  
23 chemicals with a contingency provision for  
24 the gas chromatograph/mass spectroscopy  
25 analyses that the contractor laboratories

1  
2 identify the twenty highest non-target  
3 chemical peaks in the chromatogram for  
4 each sample.

5 The EPA target list of  
6 chemicals was derived from results of  
7 prior studies, information provided by Hooker  
8 Chemical, and special air and leachate  
9 analyses carried out as part of the planning  
10 phase of the study.

11 The consensus of scientific  
12 opinion is that the search for the approxi-  
13 mately one hundred fifty target chemicals  
14 was more than adequate to determine whether  
15 chemicals had migrated from the Canal.

16 Finally, even though ground-  
17 water was recognized as a major potential  
18 route of contamination, the EPA monitoring  
19 program did not cover the spring season when  
20 one would expect snow to melt and the highest  
21 seasonal concentration of rainfall.

22 To compensate for this problem,  
23 a much larger number of monitoring wells  
24 were installed at Love Canal in the overburden  
25 material than otherwise would have been in

1  
2 order to effectively sample the distribution  
3 of contaminants throughout the shallow  
4 groundwater system. The results of the  
5 hydrogeological investigations demonstrated  
6 that this omission was not significant.

7 The relevant groundwater  
8 tables and absence of contamination preclude  
9 the possibility of adverse impact from  
10 spring conditions.

11 Problems arose even during  
12 the report-writing stage of the study. As  
13 a result of litigation, questions arose  
14 concerning the academic credentials of the  
15 contractor supervisory geologist for the  
16 Love Canal study.

17 We determined that this problem  
18 was inconsequential to the study because  
19 of the role the individual actually played  
20 in the conduct of the work. He was at all  
21 times supervised by EPA scientists;

22 He was not responsible for  
23 siting wells, for collection of samples, or  
24 the analysis of any data.

25 These problems are as real



1  
2 as the many successes of the study that we  
3 have pointed out on many occasions in the  
4 past. The simple fact is that the pattern  
5 of results of the monitoring and subsurface  
6 investigations are so consistent as to  
7 minimize the potential impact that these  
8 problems might have had on the overall findings  
9 and conclusions of the study.

10 The results of the EPA monitoring  
11 study at Love Canal were released to the  
12 public on July 14th, 1982. The general  
13 conclusions of the study can be summarized  
14 succinctly and quickly.

15 The environmental monitoring  
16 study did not produce any evidence that  
17 Love Canal has contributed to environmental  
18 contamination of the area encompassed by  
19 the second emergency declaration order with  
20 the exception of contamination of certain  
21 storm sewer lines and creek sediments.  
22 The results obtained from the separating  
23 monitoring programs confirm one another.

24 There is a consistent  
25 multimedia pattern of contamination within

1  
2 Ring 1 of the Canal area and in storm sewers  
3 and stream sediments in selected portions  
4 of the Declaration Area directly attributable  
5 to the migration of substances from Love  
6 Canal.

7                   However, there is no consistent  
8 multimedia pattern of contamination in the  
9 Declaration Area directly attributable to  
10 migration from Love Canal.

11                   The instances of contamination  
12 that were detected conform fully to the  
13 geology of the site, as determined through  
14 the hydrogeological investigation, and can  
15 be explained by that means.

16                   Soil, sump, and shallow ground-  
17 water contamination in Ring 1 was probably  
18 caused by the migration of substances  
19 through more permeable soil or fill. These  
20 more permeable soils, however, occur  
21 naturally as random and discontinuous patches  
22 and has been further interrupted by  
23 construction activities (e.g., sewers),  
24 so they would not allow long-distance ground  
25 migration of chemicals.

1  
2                   The existence and defective  
3 operation of the barrier drain system,  
4 and the extent of relatively impermeable  
5 clay in the area, suggests that future  
6 long-distance migration of contaminants from  
7 Love Canal is unlikely.

8                   Because of the apparent lack  
9 of a hydraulic connection between the  
10 shallow and deep groundwater aquifers,  
11 it is unlikely that contaminants could  
12 migrate from shallow to deep groundwater.  
13 Contamination of storm sewer sediments, as  
14 noted previously, probably occurred prior  
15 to remedial construction at the site.

16                   The environmental monitoring  
17 study suggests that the barrier drain  
18 system around the formal Canal has been  
19 working as designed, preventing migration  
20 of buried waste. In particular, the outward  
21 movement of migrating contaminants has  
22 been contained, and the direction of near-  
23 surface groundwater flow is toward the  
24 drains.

25                   Consequently, contaminated

1  
2 groundwater is being drawn back, intercepted,  
3 and treated by the on-site leachate treatment  
4 facility.

5 Finally, the study produced  
6 no evidence that, outside of Ring 1, the  
7 former swales served as preferential trans-  
8 port routes for chemicals to travel from  
9 Love Canal.

10 This concludes my review of  
11 the Agency's report.

12 I will be happy to answer any  
13 questions you may have.

14 \* \* \*

15 (The following is the prepared  
16 statement of John Deegan, Jr., Ph.D, Special  
17 Assistant to the Director, Office of Monitoring  
18 Systems and Quality Assurance, Office of  
19 Research and Development, U.S. Environmental  
20 Protection Agency, before the Subcommittee  
21 on Commerce, Transportation and Tourism,  
22 Committee on Energy and Commerce, House of  
23 Representatives, August 9th, 1982, submitted  
24 by Dr. Richard T. Dewling:)

25 Mr. Chairman and Members of

1  
2 the Subcommittee, my role in the EPA Love  
3 Canal Environmental Monitoring Program  
4 began on June 10th, 1980. Prior to that  
5 date, I was a professor of Political Science  
6 and of Oncology at the University of  
7 Rochester in Rochester, New York.

8 While at Rochester, my areas  
9 of specialization and research interest  
10 was statistics and research design, public  
11 policy analysis, and health policy (with  
12 special interest in cancer-related health  
13 services research). My teaching duties  
14 consisted mainly of advanced graduate level  
15 courses in statistics and research methodology.

16 I joined the EPA in 1980 to  
17 serve as the on-scene coordinator and project  
18 coordinator of the Environmental and Health  
19 Studies that were proposed initially by  
20 the Agency, and to represent the Agency  
21 to the public and interested media.

22 As part of my duties, I was  
23 given the task of overseeing (for the Office  
24 of the Deputy Administrator) the studies  
25 planned by the Office of Research and

1  
2 Development, in order to help insure that  
3 they met high standards of high scientific  
4 merit and to assist in insuring that they  
5 addressed policy concerns.

6 I was also given the responsi-  
7 bility of coordinating Love Canal-related  
8 monitoring activities with all relevant  
9 offices within EPA, with other Federal agencies  
10 and with New York State.

11 I would like to note at the  
12 outset that my employment with EPA did not  
13 begin until after EPA's role at Love Canal  
14 was restricted to that of environmental  
15 monitoring.

16 In addition, by the time I  
17 was hired by EPA, management responsibility  
18 for the conduct of the Love Canal study  
19 had been assigned to Dr. Courtney Riordan,  
20 initial study design considerations were  
21 completed, and an EPA project director,  
22 Dr. Thomas Hauser, was selected for the  
23 field sampling portion of the project.

24 Also, it is important to note  
25 that primary study design responsibilities

1  
2 (including quality assurance and quality  
3 control) was vested in the cooperative  
4 efforts of four EPA Research and Development  
5 laboratories, and that these laboratories  
6 had distinct monitoring missions such as  
7 air or groundwater.

8 My role in writing the EPA  
9 Love Canal report can be stated simply:  
10 I am the chief author of the report.

11 More specifically, I helped  
12 develop and articulated the collective  
13 opinions, interpretations and conclusions  
14 of the numerous agency scientists that were  
15 involved in performing the Love Canal study.

16 In order to perform this  
17 function, I drafted virtually the entire  
18 narrative portion of Volume I;

19 I drafted the narrative portion  
20 of Volume II and was responsible for the  
21 content of the material included in the  
22 appendices to Volume II;

23 I drafted the narrative portion  
24 of Volume III and was responsible for the  
25 contents of the material included in the

1  
2 appendices to Volume III.

3 In addition, I participated in  
4 the review of all contractor and subcontractor  
5 reports prepared as part of the project. I  
6 should mention, however, that even though  
7 I was the primary author of the Love Canal  
8 report, the report was subjected to numerous  
9 internal and external reviews for scientific  
10 accuracy and completeness, and it currently  
11 reflects the collective views of all those  
12 Agency scientists involved in the study.

13 The problems that I had in  
14 coordinating the Love Canal project and in  
15 writing the report may be categorized into  
16 three groups: General;

17 Managerial;

18 Technical.

19 The problems that I choose to  
20 refer to as general are those that occurred  
21 during the conduct of the study, are difficult  
22 to more precisely characterize, were unique  
23 to Love Canal, and required the initiation  
24 of Agency actions.

25 First, interactions with New York



1  
2 State on Love Canal-related issues had to  
3 be formalized prior to initiating sampling  
4 activities at the site. Hence, an EPA/New York  
5 State agreement on cooperation, and a  
6 confidentiality agreement that permitted  
7 the ready exchange of data, was instituted.

8           Second, a proposed boycott  
9 of the EPA monitoring program by the Love  
10 Canal Homeowners Association had to be  
11 resolved. As a result of my initiatives,  
12 the cooperation of numerous other Love Canal  
13 area residents was obtained, and the proposed  
14 boycott was nullified.

15           The managerial problems that  
16 I encountered during the writing of the  
17 report derived in part from my initial  
18 appointment in the Agency to an office  
19 other than Research and Development.

20           My accountability to top  
21 management in numerous EPA offices resulted  
22 not only in the desired continual oversight  
23 of all phases of the project, but it also  
24 contributed to difficulties in coordinating  
25 the activities of those laboratory personnel

1  
2 responsible for initiating monitoring studies  
3 at the site.

4                   Scientific and logistical  
5 problems associated with conducting a  
6 comprehensive multimedia monitoring study  
7 required that I coordinate the activities  
8 of the EPA laboratories involved in the  
9 Love Canal Study in order to resolve many  
10 operational problems.

11                   Finally, the need to coordinate  
12 the efforts of numerous statisticians and  
13 systems analysts located throughout the  
14 Agency, and the efforts of numerous scientists  
15 located in multiple laboratories, required  
16 extensive management oversight in order to  
17 perform those technical functions required  
18 as part of the Love Canal study.

19                   The technical problems that  
20 I encountered during the study and the  
21 writing of the report posed major difficulties  
22 for the successful completion of the project.

23                   Briefly, these problems occurred  
24 as a result of the need to achieve high  
25 standards of scientific merit in the performance

1  
2 and description of all activities comprising  
3 the Love Canal study, the need to assure  
4 accurate and complete documentation of a  
5 very large and complex multimedia environ-  
6 mental monitoring study, and the need to  
7 integrate all of these concerns into a  
8 project report that was readable by the  
9 general public and appropriate for the  
10 scientific community.

11           Partially in response to these  
12 concerns, an audit of the validity of  
13 chemical identifications in environmental  
14 samples performed by the analytical sub-  
15 contractors was conducted by EPA. In addition,  
16 a comprehensive review of the procedures  
17 for the organic chemicals analyses performed  
18 on Love Canal samples was performed by the  
19 National Bureau of Standards.

20           These activities resulted in  
21 improved documentation of the study and  
22 served to underscore the validity of the  
23 study's conclusions.

24           My involvement in the development  
25 of an EPA statement on habitability stemmed

1  
2 from an early recognition that health studies  
3 would not likely be conducted at Love Canal  
4 by the Centers for Disease Control, and  
5 that such a statement was necessary to  
6 fulfill the commitment made by the U.S.  
7 government to the residents of Love Canal.

8 I argued that from strictly  
9 an environmental contamination perspective,  
10 an EPA recommendation on habitability could  
11 be made, and the recommendation could  
12 logically consist of three alternatives.

13 First, if evidence of severe  
14 environmental contamination resulting  
15 directly from Love Canal were found to be the  
16 residential portions of the emergency  
17 Declaration Area, then the mere potential  
18 for human exposure to such contamination  
19 would require EPA to conclude that the area  
20 was uninhabitable.

21 Second, if some evidence of  
22 environmental contamination resulting directly  
23 from Love Canal were found in the residential  
24 portions of the emergency Declaration Area,  
25 and there was potential for human exposure

1  
2 to such contamination, then EPA might be  
3 able to offer a judgement on the habitability  
4 of the area if the health implications of  
5 the observed chemical contamination could  
6 be evaluated by means of an exposure assess-  
7 ment and risk assessment.

8 Third, if no evidence of  
9 environmental contamination resulting directly  
10 from Love Canal were found in the residential  
11 portions of the emergency Declaration Area,  
12 then no increased human exposure to potential  
13 environmental hazards caused by Love Canal  
14 would have occurred, and no increased risks  
15 of human health effects would have been caused  
16 by Love Canal, and consequently, no environ-  
17 mental hazards caused by Love Canal would  
18 exist on which EPA could judge the residences  
19 in the emergency Declaration Area uninhabitable.

20 As a result of the consistency  
21 of the monitoring data demonstrating the  
22 absence of Love Canal-related environmental  
23 contamination in the residential portions  
24 of the emergency Declaration Area, and the  
25 limited potential for contaminant movement

1  
2 through the environment that was demonstrated  
3 by the geological and groundwater hydrology  
4 studies conducted by EPA at Love Canal, I  
5 recommended that EPA make a statement on the  
6 habitability of the area.

7           Such a statement was included  
8 in early drafts of the EPA Love Canal report.

9           Even though a statement on  
10 habitability was included in the early  
11 drafts of the EPA Love Canal report, I  
12 also recognized that the human health impli-  
13 cation of the monitoring data should be  
14 evaluated simultaneously by the U.S.  
15 Department of Health and Human Services.

16           Therefore, I recommended that  
17 the health implications of the monitoring  
18 data should be considered as part of an  
19 overall U.S. Government evaluation of environ-  
20 mental hazards caused by Love Canal. Partially  
21 as a result of my recommendations, the U.S.  
22 Department of Health and Human Services  
23 was requested in early 1981 to review the  
24 monitoring data for human health implications,  
25 and to determine from a health perspective

1  
2 the habitability of the area encompassed by  
3 the Emergency Declaration Order.

4 This concludes my statement.

5 I will be happy to answer any questions  
6 you may have.

7 \* \* \*

8 (The following is the prepared  
9 statement of John W. Hernandez, Jr., Ph.D.,  
10 Deputy Administrator, U.S. Environmental  
11 Protection Agency, before the Subcommittee  
12 on Commerce, Transportation and Tourism,  
13 Committee on Energy and Commerce, U.S.  
14 House of Representatives, August 9th, 1982,  
15 submitted by Dr. Richard T. Dewling:)

16 Mr. Chairman and Members of  
17 the Subcommittee, I am John W. Hernandez,  
18 Jr., Deputy Administrator of the Environmental  
19 Protection Agency.

20 I am pleased to have the  
21 opportunity to be here to discuss with you  
22 the Agency's activities with respect to the  
23 Love Canal area in Niagara Falls, New York.

24 Before I read my brief statement  
25 telling you of my role in the study, I would

1  
2 like to introduce the persons accompanying  
3 me today: Dr. Courtney Riordan, Acting  
4 Assistant Administrator for the Office of  
5 Research and Development. Dr. Riordan will  
6 deliver a brief summary of the Agency's  
7 involvement at Love Canal and will present  
8 an overview of EPA's Environmental Monitoring  
9 Study, the procedures EPA followed in  
10 producing the report, the review which the  
11 report underwent, and the process inter-  
12 pretation of the results of the report.

13 Dr. John Deegan, Special  
14 Assistant to the Director within the Office  
15 of Research and Development is also  
16 accompanying us today. Dr. Deegan has been  
17 Coordinator of the Love Canal Project since  
18 June of 1980 and is the principal author  
19 of the Love Canal monitoring study.

20 He will be outlining the  
21 process he followed in the writing of  
22 the report as it went through various drafts.

23 Dr. Richard Dewling is  
24 Deputy Regional Administrator of our EPA  
25 Office in New York. He coordinated and



1  
2 managed the process of final publication  
3 and distribution of the EPA Love Canal Report  
4 and the interpretative reports by the other  
5 agencies involved in the Love Canal effort.

6 Dr. Dewling will complete our  
7 presentation with a description of the  
8 final stages of the review process that  
9 culminated in the EPA's presentation of the  
10 Love Canal monitoring study to the residents  
11 of the area on July 14th, 1982.

12 Also with us today is Mr.  
13 William Hedeman, Director of the Office of  
14 Emergency and Remedial Response, which planned  
15 and designed the remedial cleanup work to  
16 be done at Love Canal in collaboration with  
17 the State of New York. He is available for  
18 questions on this aspect of EPA's overall  
19 activities at the site.

20 Dr. Riordan will start and  
21 the others of us will blend in our pieces  
22 as we go along.

23 As Deputy Administrator, my  
24 role in the Love Canal monitoring project  
25 was to remain informed of the management

1  
2 and progress of the study. The Love Canal  
3 monitoring study was clearly a major  
4 programmatic effort assigned to the Office  
5 of Research and Development.

6           Since my arrival at EPA in  
7 the late spring a year ago, Dr. Riordan,  
8 the Acting Assistant Administrator of this  
9 office, has kept me informed as to issues  
10 as they arose. I, in turn, periodically  
11 briefed the Administrator.

12           Other than briefings, my  
13 initial involvement at EPA on the subject  
14 of Love Canal came in June of 1981 when I  
15 received a disturbing report from a sub-  
16 committee of the Agency's Science Advisory  
17 Board that had been reviewing our monitoring  
18 study.

19           Dr. Leonard Greenfield,  
20 Chairman of the Sampling Protocol Study Group,  
21 made the following finding to Dr. Riordan  
22 on May 28th, 1981:

23           "Because of the necessary  
24 constraints placed on the analytical  
25 contractors, it appears that a significant

1  
2 number of compounds of toxicological interest  
3 and enforcement potential were not reported.

4 " The data set is incomplete;  
5 an in-depth effort should be undertaken at  
6 once with those experts having the resources,  
7 relevant analytical expertise, and the  
8 familiarity with those compounds that were  
9 unreported. In particular, for some selected  
10 compounds that would not be intuitively sought,  
11 a manual search of certain magnetically  
12 stored original acquisition data should be  
13 undertaken."

14 One of the members of Dr.  
15 Greenfield's committee was Dr. John Laseter,  
16 a consultant to the Science Advisory Board.  
17 In mid-May, 1981, Dr. Laseter telephoned  
18 Dr. Riordan and stated that it was likely  
19 that certain chemicals should have been  
20 identified and listed in the inventory of  
21 chemicals at the Love Canal site but were  
22 not.

23 It was in this mid-May tele-  
24 phone conversation that Dr. Laseter informed  
25 Dr. Riordan that he believed that EPA had

1  
2 missed some compounds because he (Dr. Laseter )  
3 had worked for the Hooker Chemical Company  
4 and that he had knowledge of some of the  
5 chemicals that could have been buried in the  
6 Love Canal area.

7 Dr. Riordan asked Dr. Laseter  
8 for a listing of the missing chemicals or  
9 the methods Dr. Laseter had used to identify  
10 the chemicals. In response to this request,  
11 Dr. Riordan received a proposal for a sole  
12 source procurement from Dr. Laseter.

13 It was this conversion which  
14 prompted me to meet with Dr. Laseter to  
15 further discuss the matter. Dr. Laseter  
16 informed me that he could not reveal what  
17 he suspected because of certain confidentiality  
18 agreements that he had with Hooker Chemical.

19 He did, however, offer to do  
20 additional work for EPA to "discover" these  
21 chemicals for a fee.

22 At our meeting, I sought his  
23 voluntary cooperation in the matter of the  
24 "missing" or unlisted chemicals, and  
25 explained that we would not fund him, as he

1  
2 suggested, to do such a task because of  
3 potential conflicts of interest.

4           Unfortunately, Dr. Laseter  
5 remained steadfast on the matter, owing to  
6 his confidentiality agreement with Hooker.

7           In response to the dilemma  
8 raised by Dr. Laseter, I directed that this  
9 issue be referred to the Justice Department.

10           The Agency, through the Justice  
11 Department, was able to obtain a release from  
12 Hooker Chemical and Plastics Corporation  
13 for Dr. Laseter from his confidentiality  
14 agreement for the purpose of discussing  
15 with Justice and EPA any relevant information  
16 regarding chemicals disposed of at Love Canal.

17           In response, it is my under-  
18 standing that Dr. Laseter stated to the  
19 Justice Department that he had no special  
20 or unique knowledge concerning hazardous  
21 waste disposed of in Love Canal of which EPA  
22 was not already aware and that his concerns  
23 were not based on any privileged, special  
24 information about materials disposed of in  
25 Love Canal, but rather were general concerns

1  
2 that might be voiced by other similarly-  
3 qualified scientists.

4                   Throughout the past year, I  
5 have visited with or had correspondence  
6 with a number of public officials and members  
7 of Congress on Love Canal issues.

8                   An example was my letter of  
9 July 16, 1981 to Mayor Michael O'Laughlin of  
10 Niagara Falls, New York, telling him about  
11 plans to announce a program for remedial  
12 action at Love Canal using Superfund money  
13 that the Congress had authorized for cleanup  
14 of hazardous waste sites.

15                   I also noted we planned to  
16 proceed with engineering activities designed  
17 to remedy contamination previously found  
18 in Canal area storm sewers and Black Creek.

19                   The core of my July, 1981  
20 letter to Mayor O'Laughlin noted that  
21 EPA intended to see that the following  
22 steps were completed to assure the absolute  
23 scientific validity of the report before  
24 its release:

25                   (1) A comprehensive audit

1  
2 of analytical chemical results to verify  
3 the accuracy of substance identification  
4 in Love Canal samples;

5 (2) Peer review of analytical  
6 chemistry work under the direction of the  
7 National Bureau of Standards;

8 (3) Review of monitoring  
9 data for potential health implications by  
10 the Centers for Disease Control under the  
11 Department of Health and Human Services.

12 I noted that at the conclusion  
13 of these efforts, the report would be  
14 released to the public. Copies of my letter  
15 to Mayor O'Laughlin were sent to a number  
16 of other public officials interested in  
17 our plans for review and evaluation of our  
18 Love Canal study.

19 At about the same time, I entered  
20 into telephone and office negotiations with  
21 Dr. Edward Brandt, Assistant Secretary  
22 for Health, Department of Health and Human  
23 Services at HHS to obtain their evaluation  
24 of our monitoring data in order to provide  
25 Love Canal residents with information on

1  
2 habitability.

3           As a part of this process,  
4 on July 24th, 1981, I wrote to Secretary  
5 Schweiker of HHS saying that before the  
6 end of July EPA intended to provide his  
7 Department with EPA's thoughts concerning  
8 the process that should be followed regarding  
9 review of the data and its release.

10           I noted that since the Love  
11 Canal situation was presently in litigation,  
12 EPA had to insist that data not be released  
13 to anyone outside of HHS until mutually  
14 agreed-upon procedures were established.

15           Subsequently, on July 31, 1981,  
16 I wrote to Daniel Borque, Deputy Executive  
17 Secretary at HHS. This letter noted that  
18 the Centers for Disease Control had received  
19 EPA's data set and draft Love Canal report  
20 for review and that HHS had agreed to review  
21 it under the confidentiality provisions.

22           I also enclosed a proposed  
23 agreement which reflected our mutual under-  
24 standing of procedures and practices with  
25 respect to the handling of data. A final



1  
2 version of this inter-agency agreement was  
3 signed by me and by Dr. Brandt on August 7th,  
4 1981.

5 In early October, I received  
6 a report from HHS, dated October 7th, 1981,  
7 providing EPA with a statement on habitability  
8 based on the draft of our preliminary report.  
9 This HHS statement conditioned their inter-  
10 pretation on a finding by NBS that our data  
11 set was valid.

#8 12 The staff at ORD initiated  
13 a data review to consider the questions raised  
14 by Dr. Greenfield in his letter of May 28th.  
15 On October 6th, 1981, I wrote Dr. Greenfield  
16 in response to these concerns noting that  
17 EPA had initiated two efforts to insure the  
18 scientific quality of the data:

19 (1) A technical audit was  
20 carried out on five percent of the gas  
21 chromatograph/mass spectroscopy (GC/MS)  
22 computer tapes to determine whether contractors  
23 had adequately identified chemicals based  
24 on mass spectra generated by GC/MS systems;  
25 and

1  
2 (2) EPA commenced an expert  
3 review of the protocols and analytical  
4 results with the National Bureau of Standards  
5 to determine whether the study was designed  
6 adequately to measure target organic chemicals.

7 My active involvement with  
8 the Love Canal issue was minimal during the  
9 next several months, with the exception of  
10 a visit to the National Bureau of Standards  
11 on December 14th, 1981 to discuss some  
12 of the NBS concerns with respect to our  
13 preliminary draft report.

14 On the basis of this meeting,  
15 we agreed that EPA should make extensive  
16 revisions in our written text and that we  
17 would provide NBS with copies as soon as  
18 possible before they continued review.  
19 From time to time I had telephone conversations  
20 with NBS staff to insure that we were  
21 meeting concerns that they had raised.

22 On April 23rd, 1982, I received  
23 a letter from Dr. Raymond Kammer, Deputy  
24 Director of the National Bureau of Standards,  
25 responding to some questions I had raised

1  
2 with him in a recent phone call. Dr. Kammer  
3 informed me that NBS would be willing to  
4 have a representative attend at a formal  
5 presentation of EPA's report to the Love  
6 Canal residents and to respond to questions  
7 on the NBS review of the study.

8 Dr. Kammer noted that NBS  
9 planned to deliver the review of the EPA  
10 monitoring study on May 10th, 1982.

11 Upon receiving the NBS evaluation  
12 of our report, it was clear that we still  
13 needed to improve upon the explanation of  
14 the limits of detection for various chemicals  
15 analyzed in our study. Dr. Riordan and  
16 Dr. Dewling were given the responsibility  
17 of remedying this problem.

18 On May 5th, 1982, I wrote to  
19 a number of public officials at local,  
20 State and Federal levels, including several  
21 members of the New York Congressional  
22 delegation.

23 The letter stated that Dr.  
24 Richard Dewling, Deputy Regional Administrator  
25 for Region II, had been designated to

1  
2 coordinate and manage the process of final  
3 publication and distribution of documents  
4 and any interpretative statements by other  
5 agencies;

6 That Dr. Dewling would be  
7 responsible for decisions on scheduling  
8 any presentation of documents as well as  
9 final format of documents and that any  
10 further questions should be referred to him.

11 The letter noted EPA's respon-  
12 sibility to provide the Love Canal residents  
13 with results of the EPA environmental study.  
14 I explained that the report would include an  
15 evaluative statement by NBS and HHS.

16 On June 4th of this year, I  
17 received a letter from Dr. Edward Brandt  
18 of HHS. He noted that HHS had received a  
19 final draft of EPA's report, as well as  
20 results of the NBS review of our study.

21 He informed that the final  
22 HHS review should be completed within the  
23 next few weeks.

24 He stated that the documents  
25 were being analyzed by the same group of

1  
2 public health scientists who had evaluated  
3 the health implication of environmental  
4 monitoring data the previous November.

5           On July 13th, 1982, Dr.  
6 Brandt wrote me again, endorsing an inter-  
7 pretative statement and noting that the  
8 HHS statement regarding habitability contained  
9 in the HHS report dated October 7th, 1981  
10 is accurate.

11           On June 17, 1982, the  
12 Administrator received a letter from members  
13 of the Senate Committee on Environment and  
14 Public Works inquiring as to the status  
15 of our Love Canal report and setting a date  
16 for a public hearing should EPA not have  
17 issued our findings by that date. After  
18 consulting with all concerned, I felt  
19 confident that we could complete all of the  
20 necessary changes and additions to our  
21 report and to discuss these changes with  
22 HHS and NBS staff by July 14th, 1982.

23           Having set this as the final  
24 date, the results of the EPA Love Canal  
25 monitoring study were publicly released to

1  
2 the residents of the area.

3 At this time, Mr. Chairman,  
4 I would like to turn to Dr. Dewling for  
5 his overview of the study. Since there are  
6 various aspects of the Love Canal project,  
7 I will be pleased to answer any questions  
8 you may have after the remaining EPA witnesses  
9 have testified.

10 \* \* \*

11 (The following is a supplementary  
12 statement of John Deegan, Jr., Ph.D., Special  
13 Assistant to the Director, Office of Monitoring  
14 Systems and Quality Assurance, Office of  
15 Research and Development, U.S. Environmental  
16 Protection Agency, submitted by Dr. Richard  
17 T. Dewling:)

18 This supplementary statement  
19 has been prepared in response to a request  
20 by the Hon. John J. LaFalce to address the  
21 testimony presented before the subcommittee  
22 on Commerce, Transportation and Tourism  
23 of the Committee on Energy and Commerce,  
24 by Ellen K. Silbergeld, Ph.D., Chief Toxics  
25 Scientist of the Environmental Defense Fund.

1  
2 (E.D.F.) .

3                   The request of Mr. LaFalce  
4 states "... please direct your attention  
5 to Ms. Silbergeld's criticisms of the study  
6 design, sampling site plan, study execution,  
7 and statistical analysis of the data."

8                   My testimony deals with each  
9 of these points and has been organized to  
10 correspond to the six sections of Dr.  
11 Silbergeld's formal statement (hereinafter  
12 referred to as the E.D.F. testimony) .

13                   Intent of the Love Canal Study.

14                   The E.D.F. testimony asserts  
15 that "the expressed intention of the Love  
16 Canal Study was...to determine convincingly  
17 the habitability of the Declaration Area."

18                   While it is clear that a  
19 determination of the habitability of the  
20 area defined by the state of emergency order  
21 (the Declaration Area) issued by the President  
22 of the United States on May 21st, 1980 was  
23 of paramount importance to the Federal  
24 agencies involved at Love Canal, and was  
25 performed, it was not the sole objective of

1  
2 the environmental monitoring program conducted  
3 by EPA at Love Canal.

4 In particular, the expressed  
5 intent of the EPA Love Canal Study, Environ-  
6 mental Monitoring at Love Canal, Volume I,  
7 EPA-600-4-82-030a (hereinafter, EPA Love  
8 Canal Report) was to:

9 (1) Determine the current  
10 extent and degree of chemical contamination  
11 in the Declaration Area;

12 (2) Assess the short-term  
13 and long-term implications of groundwater  
14 contamination in the general vicinity of  
15 Love Canal; and

16 (3) Provide an assessment of  
17 the relative environmental quality of the  
18 Love Canal Emergency Declaration Area. (EPA  
19 Love Canal Report, Page 1).

20 And, it was only through the  
21 performance of these tasks that an environ-  
22 mental data base be obtained on which decisions  
23 could be made regarding the habitability  
24 of residences located in the Declaration Area.

25 The EDF testimony next goes



1  
2 on to assert that habitability has both  
3 an absolute and a relative meaning, and  
4 suggests that the EPA Love Canal Study is  
5 somehow lacking because it focuses on the  
6 issue of relative habitability.

7           While such a statement about  
8 habitability is obviously true, it ignores  
9 the limitations and the current state of  
10 toxicologic knowledge and monitoring capa-  
11 bilities, and the complexity of the attendant  
12 requisite societal costs/benefit determinations.  
13 And, it is these limitations that render  
14 an assessment of "absolute" habitability  
15 (a term that is ambiguous, at best) an  
16 impossible undertaking at the current time.

17           Even though this point is  
18 overlooked by the EDF, they continue with  
19 this line of reasoning and implore the  
20 subcommittee to "consider the effect of  
21 a positive set of findings from a health  
22 effects investigation on the standing of  
23 the [EPA Love Canal] Report."

24           However, the fundamental  
25 dilemma facing all such epidemiologic

1  
2 investigations of environmentally-attributed  
3 adverse health effects centers on different-  
4 iating causal relationships from spurious  
5 correlations.

6 In particular, unequivocal  
7 determination of environmentally -related  
8 adverse health causal processes is predicated  
9 on an ability to document human exposure  
10 to actual environmentally-available toxic  
11 substances, an ability to document length  
12 of exposure and dosage, and an ability to  
13 identify dose-response relationships for  
14 particular health outcomes of interest.

15 Furthermore, the methodological  
16 difficulties associated with attempting  
17 to determine causal relationships between  
18 observed health effects and environmentally-  
19 available toxic substances are increased  
20 due to the extensive remedial actions taken  
21 at Love Canal since the fall of 1978, and  
22 much of the monitoring data has been collected  
23 subsequent to the completion of those  
24 remedial actions.

25 To paraphrase my earlier

1  
2 testimony, any attempt to attribute an  
3 observed increased incidence or prevalence  
4 of adverse health effects in residents of  
5 the Love Canal Declaration Area to exposure  
6 to toxic substances that have migrated from  
7 the landfill, requires a fundamental  
8 demonstration of increased environmental  
9 availability of those substances due directly  
10 to Love Canal.

11 Without an increase in  
12 environmental availability of potentially-toxic  
13 substances (and ignoring the necessity of  
14 documenting human exposure at harmful con-  
15 centration levels), it follows that there  
16 can be no increased human exposure to  
17 contaminants, no incremental health risks  
18 incurred, and, therefore, no increased adverse  
19 health effects attributable to environmental  
20 contamination caused by Love Canal.

21 The EPA Love Canal Study  
22 documents clearly that the potential for  
23 human exposure to environmentally-available  
24 Love Canal-related contaminants was restricted  
25 to certain portions of Ring 1, basically the

1  
2 area south of Wheatfield Avenue along both  
3 97th and 99th Streets, and to certain  
4 portions of Black and Bergholtz Creeks (given  
5 the reasonable assumption that it is unlikely  
6 that human exposure to Love Canal-related  
7 contaminants present in certain storm  
8 sewer lines occurred).

9           Prior to remedial construction,  
10 human exposures to substantial levels of  
11 environmentally-available toxic substances  
12 within the Ring 1 area and in Black Creek  
13 very likely occurred. However, it should  
14 be recalled that public access to the  
15 Ring 1 area has been prohibited since 1978,  
16 and to Black Creek since 1980, and that  
17 the Ring 1 area has been subjected to  
18 extensive remedial measures.

19           From the health effects  
20 perspective, the available and relevant  
21 health data collected by the State of New  
22 York at Love Canal conformed fully to the  
23 patterns of environmental contamination  
24 found by both the EPA and New York State.

25           Specifically, certain suggestive

1  
2 health effects in residents that might be  
3 attributable to exposure to the toxic sub-  
4 stances disposed of in Love Canal were  
5 found to have occurred in precisely those  
6 same geographical areas (particularly the  
7 southern portion of Ring 1) where monitoring  
8 data revealed the availability of substantial  
9 concentrations of environmental contaminants  
10 that were caused directly by Love Canal.

11 At the same time, the New  
12 York State health data also revealed clearly  
13 the absence of demonstrable health effects  
14 in residents living in the Declaration Area,  
15 another epidemiologic finding that conformed  
16 fully to the environmental monitoring data.

17 A review of the existing  
18 literature reveals that all other formal  
19 health-effects epidemiologic investigations  
20 performed at Love Canal have findings that  
21 conform to the patterns of environmental  
22 contamination found by both the EPA and  
23 New York State at Love Canal.

24 However, even if some yet-to-be-  
25 released epidemiologic investigation, such

1  
2 as the 1980 EDF (Growth and Maturation) Study  
3 of children living in the Declaration Area,  
4 were to demonstrate a statistically-  
5 significant increase in adverse health  
6 effects, the problem described previously  
7 of causally inferring such outcomes to  
8 Love Canal-related environmental agents  
9 remains.

10 Finally, it should be noted  
11 that none of the comments offered previously  
12 are intended to rule out the possibility  
13 that certain instances of personal injury  
14 may have indeed resulted from the past  
15 exposures of residents who ventured near  
16 to Love Canal-related toxic substances that  
17 were environmentally available in the  
18 vicinity of Ring 1 and Black Creek prior  
19 to remedial actions.

#### 20 SCIENTIFIC QUALITY

21 The EDF testimony states that  
22 a "fundamental question relates to the  
23 quality of this [EPA Love Canal] Report as  
24 a scientific document," and that the EPA  
25 should "prepare a document meeting the

1  
2 standards of scientific peer review."

3 In response, it should be noted  
4 that the EPA Love Canal Report has received  
5 numerous accolades, has been hailed as  
6 a "model environmental monitoring report,  
7 with quality assurance," and has been sub-  
8 jected to the most extensive scientific  
9 peer review ever conducted by the EPA.

10 This is not to say, however,  
11 that the EPA Love Canal study is without  
12 flaws. To the contrary, the EPA Love Canal  
13 Report goes to great lengths to identify  
14 all problems experienced during the  
15 conduct of the study that may have had  
16 an impact on the findings and conclusions,  
17 and delineates clearly the limitations of  
18 the investigations performed at Love Canal.

19 It is the consensus of EPA  
20 scientists that none of the minor study  
21 design problems that are identified in the  
22 EPA Love Canal Report, or the types and  
23 magnitudes of the common problems that  
24 were experienced during execution of the  
25 study, affected the overall conclusions of

1  
2 the study;

3           Namely, that Love Canal-related  
4 environmental contamination was confined  
5 basically to geographical areas located  
6 immediately adjacent to the formal landfill  
7 (Ring 1), certain storm sewer lines, and  
8 to Black Creek.

9           Two other charges in this  
10 section of the EDF testimony are that "there  
11 is no indication that the [EPA Love Canal]  
12 Study design were submitted for review," and  
13 that "it is not evident that the final  
14 draft [of the EPA Love Canal Report] was  
15 reviewed by [the Public Health Service] or,  
16 more importantly, [the National Bureau of  
17 Standards]."

18           As is stated clearly on Pages  
19 221, 245, and 268 of the EPA Love Canal  
20 Report, the study design was reviewed  
21 numerous times and approved by the sampling  
22 protocol study group of the EPA Science  
23 Advisory Board.

24           With regard to the second  
25 charge, it should be noted that prior to



1  
2 public release of the EPA Love Canal final  
3 report, the report was reviewed thoroughly  
4 by the Department of Health and Human Services,  
5 and those revisions that were made to the  
6 quality control portions of the final  
7 report were discussed with the National  
8 Bureau of Standards.

9                   However, as others have  
10 pointed out repeatedly in testimony before  
11 the Subcommittee, it was not the responsibility  
12 of either HHS or NBS to review the EPA  
13 Love Canal final report for acceptability.

14                   Rather, the NBS reviewed the  
15 EPA documentation describing the procedures  
16 and results of the organics monitoring  
17 program (including quality assurance)  
18 employed by the EPA at Love Canal and HHS  
19 reviewed the EPA Love Canal monitoring data  
20 from a potential health-effects perspective.

21                   Contrary to the assertion  
22 of the EDF, the conclusions of these  
23 Federal organizations do not "remain  
24 curiously unclear." As was stated clearly  
25 by the NBS, the analytical procedures

1  
2 employed by the EPA for organic analyses  
3 were appropriate and the "best overall"  
4 methods, and the quality assurance program  
5 was adequate to document the performance  
6 of the analytical laboratories participating  
7 in the Love Canal study.

8           It should be noted carefully  
9 that the NBS's concerns with the EPA Love  
10 Canal study relates solely to the completeness  
11 of the EPA's documentation of the quality  
12 assurance program, and not to the adequacy  
13 of the quality assurance program.

14           As a result of the useful peer  
15 comments provided by the NBS, the EPA Love  
16 Canal Report was strengthened with regard to the  
17 presentation of the quality assurance program  
18 and results obtained from the Love Canal  
19 Study.

20           Furthermore, the EPA stands  
21 fully behind the validity of the Love Canal  
22 analytical data and the conclusions of the  
23 study.

24           With regard to HHS, the  
25 conclusions of the scientists and physicians

1  
2 of the Public Health Service who reviewed  
3 the EPA Love Canal data and report were  
4 also stated clearly. To paraphrase the  
5 opinion of the Public Health Service, no  
6 adverse health effects among residents of  
7 the Declaration Area would be expected from  
8 the low levels of chemicals that were  
9 frequently detected in the residential portions  
10 of the Declaration Area and, in comparison  
11 to the monitoring results obtained from  
12 control sites, the Declaration Area was  
13 judged to be habitable.

#### 14 HISTORY OF THE REPORT

15 Although the history of the  
16 EPA Love Canal Report has been documented  
17 thoroughly and reviewed in detail before  
18 the Subcommittee, the EDF testimony fails  
19 in numerous instances to present an accurate  
20 portrayal of events. Rather than redundantly  
21 reciting the report's history accurately,  
22 my comments shall be directed to a rebuttal  
23 of the specific areas in the EDF testimony.

24 The EDF testimony begins by  
25 alleging that samples "...were collected

1  
2 for analysis by selected subcontracting  
3 analytic laboratories. The abilities of  
4 these laboratories to meet minimum performance  
5 standards was not uniformly ascertained  
6 before the study was initiated and, in fact,  
7 some of the laboratories were not initially  
8 capable of performing the more advanced  
9 analytical techniques of capillary column  
10 gas chromatography."

11 The EPA Love Canal Report  
12 states clearly in Appendices C, D and E,  
13 in the sections entitled Selection of  
14 Contractors (specifically on Pages 227, 253  
15 and 270), that the ability of the analytical  
16 laboratories to meet minimum performance  
17 standards was ascertained before the study  
18 was initiated.

19 While time constraints did  
20 somewhat limit this process, compensation  
21 was provided through application of a  
22 two-phased quality assurance/quality control  
23 (QA/QC) program.

24 The two-phase QA/QC program  
25 employed in the Love Canal Study involved the

1  
2 imposition on the analytical laboratories  
3 of a minimally-acceptable, and approved by  
4 the EPA, QC program which was designed to  
5 document that good laboratory practices were  
6 followed and the laboratories were operating  
7 in control.

8 As was stated in the EPA Love  
9 Canal Report, many of the laboratories  
10 adopted even more stringent QC programs than  
11 that which was required by the EPA.

12 In addition to the QC program,  
13 the EPA employed an intentionally-redundant,  
14 retrospective QA program for validating the  
15 analytical data that had been generated  
16 by the laboratories. The EPA QA program  
17 involved the use of an innovative surrogate  
18 analyte system that permitted the validation  
19 samples on an individual basis, and a  
20 determination by the EPA for precision and  
21 accuracy of individual laboratories.

22 As a result of these efforts,  
23 a subset of the analytical data was judged  
24 to meet the requisite EPA standards and  
25 was validated. The activities and results

1  
2 of the QA/QC program are described in detail  
3 in Appendices C, D and E of the EPA Love  
4 Canal Report.

5 The EPA Love Canal Report states  
6 clearly that some of the analytical  
7 laboratories were not capable initially of  
8 performing the more advanced techniques of  
9 capillary column gas chromatography. The  
10 discovery of this fact, which was anticipated  
11 and corrected, was a positive result of  
12 the comprehensive QA/QC program employed  
13 by the EPA in the Love Canal Study.

14 It should be noted that the  
15 relative newness of fused silica capillary  
16 column technology in December of 1980 virtually  
17 guaranteed that some difficulties would  
18 be experienced by some laboratories.

19 However, the EPA had every  
20 reason to believe that complex environmental  
21 samples would be obtained widely throughout  
22 the Declaration Area. And, it was because  
23 of the advantages which would be derived  
24 from use of the capillary column technology  
25 on such samples that the potential occurrence

1  
2 of such problems was judged a necessary  
3 compromise.

4 In concert with this decision,  
5 the EPA initiated a program to educate  
6 the analytical laboratories, introduce the  
7 technology, and compensate for any variability  
8 in performance that resulted through appli-  
9 cation of the QA data validation procedure.

10 In retrospect, it was noted  
11 that only relatively little additional  
12 variability in performance, over the more  
13 familiar packed gas chromatograph column,  
14 was experienced by the analytical laboratories.

#9 15 The next point raised in the  
16 EDF testimony is that the "initial study  
17 design was focused on...the determination  
18 of whether or not chemicals from the dumpsite  
19 at Love Canal had moved into the Declaration  
20 Area. The appropriate approach to answering  
21 this question was to sample within the  
22 structure of an isopleth,...and correlated  
23 with the distance from the Canal itself.

24 At some point after the study began, this  
25 design was abandoned, and the data was

1  
2 stratified on a strict comparison basis...  
3 [with]...samples from...so-called control  
4 areas within Niagara Falls."

5 In response to this point,  
6 it should be noted that the EPA study design  
7 was not altered from its avowed purpose of  
8 determining whether or not chemicals from  
9 the dumpsite had migrated into the Declaration  
10 Area.

11 Furthermore, the EDF is  
12 incorrect in suggesting that the sampling  
13 conducted at Love Canal should have been  
14 done within the structure of an isopleth,  
15 and the statement reflects an apparent lack  
16 of knowledge of environmental monitoring  
17 principles. The EPA attempted, in the  
18 accepted and necessary post hoc fashion,  
19 to identify concentration isopleths of  
20 contaminants that had migrated from the  
21 landfill.

22 Due to the rapid decline in  
23 concentration levels with distance, and  
24 the selective migration of contaminants  
25 from the landfill through relatively more



1  
2 permeable soil transport pathways, the EPA  
3 was unable to identify concentration  
4 isopleths outside of Ring 1.

5                   Consequently, concentration  
6 levels in the Declaration Area "except for  
7 contaminants found in certain storm sewer  
8 lines" were not correlated with the distance  
9 from Love Canal.

10                   Finally, the study design  
11 from the outset stratified sampling for a  
12 certain environmental media (such as air),  
13 in order to gain statistical efficiency  
14 and for comparison purposes, and control  
15 site sampling for all environmental media,  
16 in order to permit estimation of the  
17 contamination that was present in the  
18 Declaration Area and which was directly  
19 attributable to Love Canal.

20                   Another point raised by the  
21 EDF pertained to a meeting held in Atlanta,  
22 Ga., during August, 1981, at the Centers  
23 for Disease Control, by the Public Health  
24 Service. The EDF testimony states that  
25 the Public Health Service "convened a meeting

1  
2 of ten (sic) consultants to assist in  
3 evaluation of the [EPA Love Canal] Report.  
4 The document made available by EPA to the  
5 consultants was in draft, and much of the  
6 supporting data was difficult to comprehend,  
7 a situation protested by some of the expert  
8 reviewers and by the PHS. Significant  
9 questions were raised by the consultants and  
10 by PHS as to the adequacy of sampling  
11 methodology and details of data analysis.  
12 Sometime that same summer, EPA submitted  
13 its material to the [NBS] in order to obtain  
14 answers to these important methodological  
15 questions."

16 It is apparent from this  
17 passage taken from the EDF testimony that  
18 some confusion exists concerning the events  
19 surrounding the review of the Love Canal  
20 monitoring data by the PHS and the NBS.  
21 Regardless of the causes of such confusion,  
22 it appears that these events are in need  
23 of some clarification.

24 The Department of Health and  
25

1  
2 Human Services convened a panel of eleven  
3 consultants in August of 1981 for the  
4 purpose of assisting members of the PHS  
5 in determining the health implications of  
6 the EPA Love Canal monitoring data.

7 As the EPA Love Canal project  
8 coordinator, I was asked by HHS to give  
9 an oral presentation on the monitoring  
10 project at the PHS meeting, to be available  
11 throughout the meeting to answer questions  
12 that might arise, and to prepare a special  
13 set of tabulations of the monitoring data  
14 in a format that was stipulated by the  
15 PHS.

16 In partial response to this  
17 request, I prepared a briefing document  
18 that described the study design and scope  
19 of the Love Canal monitoring studies, a  
20 set of tabulations of the monitoring data  
21 in the format that was specified by the  
22 PHS, a large package of technical materials  
23 that describe the sampling and analytical  
24 protocols and QA/QC programs, and a listing  
25 of all analytical results that were obtained

1 from every sample collected at Love Canal.  
2

3 The briefing document and  
4 data tabulations that I prepared were  
5 distributed by HHS, prior to the August,  
6 1981 meeting, to the PHS and its panel of  
7 consultants.

8 It should be noted that at  
9 no time was there ever any intent by either  
10 the EPA or the Department of Health and  
11 Human Services to have the PHS or its panel  
12 of consultants review the findings and  
13 conclusions of the May, 1981 first draft of  
14 the EPA Love Canal final report. Rather,  
15 it was the intent of the PHS to concentrate  
16 solely on a review of the monitoring data  
17 and to have its consultants assist in the  
18 process of determining the health implications  
19 (if any) of the data, independently of  
20 any conclusions that the EPA might have  
21 reached regarding the extent and degree of  
22 environmental contamination in the Declaration  
23 Area that was caused by Love Canal.

24 In retrospect, it is unfortunate  
25 that the intent of the PHS to focus the

1  
2 attention of the panel of consultants primarily  
3 on a review of the results of the EPA Love  
4 Canal Monitoring Program may not have been  
5 communicated clearly.

6 Also, failure on the part  
7 of the PHS to inform the panel of consultants  
8 that they would not be reviewing the EPA  
9 Love Canal final report (because it was  
10 still in preparation) may have served to  
11 confuse some members of the PHS panel about  
12 the function of the panel.

13 Furthermore, failure on the  
14 part of the PHS to articulate and delineate  
15 clearly the role and limited involvement  
16 of the consultants in the PHS deliberations  
17 and recommendation on habitability, has  
18 contributed to uncertainty in some quarters  
19 as to the legitimacy of the decision and  
20 the process by which it was reached.

21 It appears that many of the  
22 frustrations expressed by some of the PHS  
23 panel members resulted from these factors,  
24 and that these factors may have contributed  
25 to the misunderstandings expressed in

1  
2 the EDF testimony and by others.

3 With regard to the involvement  
4 of the NBS in reviewing the EPA Love Canal  
5 materials, it should be made clear at the  
6 outset that the NBS's role was restricted  
7 (by mutual agreement) to peer reviewing the  
8 analytical procedures used for organic  
9 analyses, and the EPA documentation of the  
10 Love Canal QA/QC procedures and results.

11 This review was initiated  
12 by the EPA in order to insure that high  
13 standards of scientific quality were attained  
14 in the conduct and documentation of the  
15 Love Canal Study, and the recognition of  
16 the inevitable close scrutiny to which the  
17 EPA Love Canal Report would ultimately be  
18 subjected.

19 Consequently, and contrary to  
20 the EDF allegation, the NBS was not asked  
21 by the EPA to review the "sampling methodology  
22 and details of data analysis" in response  
23 to "significant questions" raised by the  
24 consultants.

25 Rather, the NBS was asked by

1  
2 the EPA to peer review the procedures used  
3 for organic chemicals analysis, and QA/QC  
4 procedures and results, because of their  
5 recognized expert abilities in the fields  
6 of analytical chemistry and QA/QC, and  
7 because of the EPA's desire to achieve  
8 high standards of scientific quality in  
9 the conduct and documentation of the Love  
10 Canal project.

11 In addition, the EDF is  
12 incorrect in their statement that "...NBS  
13 refused to certify the data contained in  
14 the EPA [Love Canal] Report..."

15 It is the policy of the NBS  
16 to never "certify" the data provided by  
17 anyone other than the NBS, and it is inappro-  
18 priate of the EDF to attempt to equate  
19 peer review with certification requirements.

#### 20 STUDY DESIGN

21 The EDF testimony that was  
22 presented as a critique of the Love Canal  
23 study design contains numerous errors of  
24 fact. For the sake of brevity, a "point,  
25 counterpoint" format has been adopted to

1  
2 respond to the charges made by the EDF.

3 To begin with, the EDF states  
4 that the EPA Love Canal Study was "not  
5 designed to be a comparative study." As I  
6 have already stated, this charge by the  
7 EDF is simply due to a lack of knowledge  
8 about the design of the Love Canal Study.

9 It was always the intent of  
10 the monitoring program to allow estimation  
11 of the incremental environmental contamination  
12 in the Declaration Area that was caused  
13 by Love Canal. To this end, control site  
14 sampling was stipulated from the outset in  
15 order to allow the requisite determination  
16 of ambient contamination levels.

17 Next, EDF states that the  
18 "original EPA objective was to quantitate  
19 current, actual and typical levels of  
20 chemical contamination in the Declaration  
21 Area." Even though the EDF testimony does  
22 not identify an EPA document from which  
23 one can determine the authoritativeness  
24 of this statement, it is true that an  
25 EPA objective was to quantitate the current



1  
2 (as of 1980) and typical (it is unclear  
3 what the EDF means by "actual") levels of  
4 contaminations in the Declaration Area.

5 It is also true that this  
6 is precisely what the EPA did at Love Canal;  
7 the results are presented in detail in  
8 Volume III of the EPA Love Canal Report.

9 The EDF next asserts that  
10 "concentration gradients of substances which  
11 might have migrated from the former Canal  
12 to the Declaration Area were to be identified.  
13 In response, it should be observed that  
14 the EDF is correct in asserting that it  
15 was the EPA's intent to identify concentration  
16 gradients for contaminants that had  
17 migrated from Love Canal.

18 However, because the extent of  
19 environmental contamination was confined  
20 basically to Ring 1 of the Canal area, it  
21 was not possible (except for certain storm  
22 sewer lines) to identify concentration  
23 gradients extending into the Declaration Area.

24 It is for this reason that  
25 the EPA Love Canal Report does not identify

1  
2 concentration gradients (except for certain  
3 storm sewer lines) in the Declaration Area.

4 This point is documented  
5 repeatedly in the EPA Love Canal Report.

6 The EDF then states that  
7 "The inability of the subcontracting laboratory  
8 to detect and quantitate chemicals in a  
9 significant proportion of the samples  
10 (about ninety percent of the values reported)  
11 forced the EPA to modify its approach in  
12 mid-stream."

13 In reply, it is offered that  
14 the abilities of the analytical laboratories  
15 to determine routinely the presence of organic  
16 contaminants present in environmental samples  
17 in the low parts-per-billion range, and  
18 for certain chemicals in the low-parts-per-trillion  
19 range, performance levels that are commensurate  
20 with the current state-of-the-art in analytical  
21 chemistry, is well-documented in the EPA  
22 Love Canal Report.

23 Consequently, it must be  
24 concluded that the inability of the sub-  
25 contracting laboratories to detect and

1  
2 quantitate chemicals in a significant pro-  
3 portion of the samples was due to either  
4 the absence of environmental contaminants  
5 in the Declaration Area, or to contaminants  
6 being present at such low levels that they  
7 were consistently below the method detection  
8 limits that were demonstrated by the  
9 analytical laboratories, and which are repre-  
10 sentative of the state-of-the-art in  
11 analytical chemistry.

12           Based upon expert knowledge  
13 of the chemical and physical properties of  
14 the substances monitored at Love Canal,  
15 the EPA concluded that the overwhelmingly  
16 consistent monitoring evidence obtained,  
17 most likely demonstrated an absence of  
18 environmental contaminants in the Declaration  
19 Area that were caused by migration from  
20 Love Canal.

21           Another point raised in the  
22 EDF testimony concerns sampling in Area 97.

23           The EDF claims: "Area 97  
24 sites were contiguous with the Declaration  
25 Area and include the 102nd Street Landfill."

1  
2 As is stated clearly in the  
3 EPA Love Canal Report, sampling Area 97  
4 consists of those sites that were located  
5 outside of the Declaration Area, and which  
6 were sampled at the request of local residents.

7 Sampling Area 97 sites were  
8 not used for control comparison purposes  
9 because they were not explicitly selected  
10 as control sites. Sampling Area 97 sites  
11 were not necessarily located contiguous with  
12 the Declaration Area, and was sometimes  
13 at considerable distance from the Declaration  
14 area.

15 And, sampling Area 97 sites  
16 were not located on the 102nd Street Landfill.

17 The next point raised in  
18 this section of the EDF testimony that  
19 deserves comment is as follows:

20 "The original EPA study Design  
21 and Sampling Site Plan allowed for sufficient  
22 chemical sampling in the Declaration Area."

23 In response, it must be  
24 observed once again that the "original"  
25 study design and sampling designs developed

1  
2 by the EPA were precisely the same as the  
3 designs that were utilized by the EPA at  
4 Love Canal.

5 Several of the items on the  
6 brief list of alleged "flaws," that the  
7 EDF identifies with the EPA Love Canal study  
8 designed, deserve response.

9 First, the EDF states that  
10 "criteria for the selection of control area  
11 sampling sites was not presented."

12 In response, note that the  
13 criteria the EDF seeks are presented on Page  
14 7, and again on Pages 38 and 39 of the EPA  
15 Love Canal Report.

16 Second, the EDF states that  
17 "Area 97 sampling sites were included or  
18 excluded in analyses as the EPA saw fit."

19 As was stated previously,  
20 sampling Area 97 sites were always treated  
21 in a consistent fashion, and were never  
22 included in the statistical analyses of  
23 the data as either Declaration Area sites  
24 or as control sites.

25 This decision was made

1  
2 deliberately because sampling Area 97 sites  
3 were not selected by means of valid sampling  
4 procedures, but were sampled at the specific  
5 request of local residents. Supplementary  
6 statistical analyses of the data, employing  
7 soil and subwater sites located in sampling  
8 Area 97, first as control sites, and then  
9 as Declaration Area sites, reveal that the  
10 findings and conclusions reached in the EPA  
11 Love Canal remained unchanged.

12 Finally, the EDF states that  
13 "The 'control' sampling site at Packard Road  
14 near Young Street, Town of Niagara (99023) is  
15 alleged to be located near another significant  
16 source of pollution."

17 In order to respond, it must  
18 be presumed that it is the EDF's allegation  
19 that this site is located near another  
20 significant source of pollution, because to  
21 date it has been so identified by either  
22 the Department of Environmental Conservation  
23 of New York State or by the EPA.

24 Furthermore, the EPA monitoring  
25 data obtained from this site do not support

1  
2 the EDF's contention that it is located near  
3 another "significant" source of pollution.

4 STATISTICAL ANALYSES

5 The testimony offered by the  
6 EDF on the statistical aspects of the EPA  
7 Love Canal Study contains a number of errors  
8 which makes a coherent response difficult.  
9 Therefore, the following comments are offered  
10 on general aspects of the data analyses  
11 performed, and specific aspects of the  
12 EDF testimony are addressed whenever possible.

13 To begin with, it should be  
14 made clear that the inferential statistical  
15 analyses performed on the Love Canal monitoring  
16 data was but one component of a large set  
17 of analyses conducted on the data. In fact,  
18 the primary analyses performed on the monitor-  
19 ing data were graphical and descriptive in  
20 nature, and consisted of attempts to identify  
21 trends or patterns of contaminants in the  
22 Declaration Area, and to determine the  
23 existence of concentration gradients of  
24 contaminants that had migrated from Love Canal  
25 into the Declaration Area.

1  
2                   The specific statistical  
3 analyses that were performed consisted of  
4 aggregating the data according to sampling  
5 areas, and by Declaration, Canal, and Control  
6 Areas, and computing a variety of descriptive  
7 statistical characterizations of the data,  
8 including means, medians, deciles, ranges,  
9 and frequency distributions.

10                   The results from these  
11 analyses are all included in Volume 3 of  
12 the EPA Love Canal Report. In addition,  
13 supplementary descriptive analyses were  
14 performed for the purpose of aiding in the  
15 determination of spatial trends in the  
16 data.

17                   The analyses that were performed  
18 consisted of correlation analyses, principal  
19 component factor analyses, and cluster  
20 analyses. All of these complimentary  
21 analyses of the monitoring data supported  
22 the same conclusion, and agreed fully with  
23 the conclusion reached independently by the  
24 hydrogeological investigation;

25                   Namely, that environmental



1  
2 contamination caused directly by Love Canal  
3 was confined basically to the Love Canal  
4 area.

5           The inferential statistical  
6 analyses performed on the monitoring data  
7 were conducted to supplement the descriptive  
8 analyses, and to provide a basis for assessing  
9 the statistical reliability of the findings  
10 obtained.

11           The specific form the inferential  
12 statistical analyses performed on the  
13 monitoring data was a necessary consequence  
14 of the results obtained from the analytical  
15 chemistry portion of the program. More  
16 precisely, the fact that a very large  
17 proportion of the monitoring results obtained  
18 from the Declaration Area yielded outcomes  
19 that were below the detection of the analytical  
20 methods employed, although at such low  
21 concentrations (that is, at "trace" levels)  
22 that only qualitative identifications could  
23 be performed, meant that the inferential  
24 statistical methods employed must be capable  
25 of handling both quantitative and

1  
2 non-quantitative data.

3 The methods selected, a  
4 difference of proportions procedure and  
5 a difference of medians procedure, using  
6 Fisher's exact test for the computation of  
7 probability values, were appropriate for the  
8 task.

9 In addition to the selection  
10 of appropriate inferential statistical  
11 test procedures, it was recognized that the  
12 establishment of lenient data requirements  
13 and statistical hypothesis testing criteria  
14 would facilitate the process of determining  
15 the extent of environmental contamination  
16 caused by Love Canal.

17 Therefore, the following steps  
18 were taken to increase the likelihood of  
19 obtaining statistically-significant results  
20 which, if found, would suggest that the  
21 Declaration Area was contaminated by  
22 chemicals that had migrated from Love Canal,  
23 and would serve to help safeguard the  
24 public health.

25 First, chemicals that were

1  
2 identified qualitatively (that is, at trace  
3 concentrations) were considered to be positive  
4 occurrences of detection.

5                   Second, a lenient level of  
6 significance (an alpha level of 0.10 rather  
7 than the more traditional levels of 0.05  
8 or 0.01) were selected as an appropriate  
9 criterion level for rejection of the null  
10 hypothesis, and to increase the statistical  
11 power of the test.

12                   Third, directional alternative  
13 hypotheses were postulated (rather than the  
14 more traditional non-directional alternative  
15 hypotheses, which are also known commonly  
16 as two-tailed tests), so as to more readily  
17 enable rejection of the null hypothesis, and  
18 to also increase the statistical power of  
19 the tests.

20                   And finally, all hypotheses  
21 were tested individually rather than  
22 simultaneously, an action that was deliberately  
23 taken and which served to increase the  
24 nominal alpha level above 0.10 and to  
25 increase the overall statistical power of

1  
2 the tests.

3           At this point, let us turn to  
4 a more detailed consideration of the subject  
5 of statistical power, a topic of apparent  
6 concern to EDF. Let us begin by attempting  
7 to clarify the concept of statistical power  
8 and then turn to a discussion of the EDF  
9 testimony.

10           The power of a statistical test  
11 may be defined as the probability of rejecting  
12 a null hypothesis when it is false, that is,  
13 the probability of making the correct  
14 decision when testing an hypothesis. Naturally,  
15 in any given situation one would want the  
16 power of the test to be "high," in order to  
17 help insure that in some specific instance  
18 the correct decision will likely be made  
19 concerning the postulated (but unknown) true  
20 state of nature.

21           However, given the inherent  
22 uncertainty plaguing all decisions that  
23 are based on statistical inference, not only  
24 can one never be assured that the "correct"  
25 decision will be made in any given situation,

1  
2 but one must simultaneously guard against  
3 the possibility of spurious outcomes  
4 occurring.

5 Such outcomes in statistical  
6 inference are known as Type 1 errors, also  
7 referred to as "false positive" results  
8 (one might think of these as akin to an  
9 investigator jumping to the wrong conclusion),  
10 which occur with probability equal to the  
11 level of significant alpha.

12 To help minimize such problems,  
13 a principal of statistical estimation has  
14 been formulated, and is routinely followed,  
15 which leads to the selection of the most  
16 powerful test statistic among a class of  
17 competing alternatives.

18 In practice, however, the  
19 power achieved by a particular test statistic  
20 is a function of numerous factors some of  
21 which are known or under the control of  
22 the investigator. Some of those factors  
23 that are under the control of the investigator,  
24 and which can increase the power of a  
25 particular test statistic even after the

1  
2 sample data has been collected, include  
3 raising the level of significance (alpha)  
4 employed, and proposing a directional  
5 alternative hypothesis instead of a non-  
6 directional (two-tailed) alternative hypothesis.

7           In addition, a factor that  
8 may be partially under the control of the  
9 investigator and which may be adjustable  
10 prior to the collection of data, is the  
11 size of the sample.

12           This factor can be used to  
13 increase the power of the test statistic  
14 if the investigator has the latitude to  
15 increase the size of the sample.

16           Finally, a factor that is  
17 outside the control of the investigator, but  
18 which has great influence on the actual  
19 power of the test statistic in a specific  
20 situation, is the value of the parameter of  
21 interest in the target population.

22           Unfortunately, an investigator  
23 almost never knows the true value of a  
24 parameter of interest in a target population,  
25 and, therefore, is precluded from knowing

1  
2 the true power of the test statistic employed  
3 in any particular situation.

4 The implications of the fore-  
5 going discussion are straightforward.

6 First, considerations of power  
7 lead the statistician to the selection of  
8 an optimal test statistic from among a class  
9 of plausible alternatives.

10 Second, certain actions taken  
11 by the investigator, such as increasing  
12 the level of significance or proposing a  
13 directional alternative hypothesis, can  
14 result in a relative increase in power for  
15 a selected test statistic even after the  
16 sample data have been collected.

17 Finally, and perhaps most  
18 important to this discussion, the "adequacy"  
19 of the power attained by a test statistic  
20 in a particular situation cannot be judged  
21 against an absolute standard (partially  
22 because none exists) in an effort to  
23 determine if the power would be "acceptable."

24 The reason for this is because  
25 the actual power attained by a test statistic

1  
2 in a particular situation is ordinarily  
3 unknown, and because there are numerous  
4 factors outside the control of the investigator  
5 that, in certain circumstances, may impose  
6 limitations on the power attainable by the  
7 test statistic (for example, power may be  
8 limited by constraints that affect the  
9 sample collection process).

10 Therefore, it should be  
11 recognized that statistical power is a  
12 relative characteristic. Consequently, the  
13 "adequacy" of the power attainable by a  
14 test statistic in a particular situation  
15 must be judged according to the context in  
16 which the research has been conducted.

17 It is the opinion of the  
18 numerous EPA scientists involved in the  
19 Love Canal project that the descriptive  
20 data analysis procedures employed, and the  
21 criteria used for interpretation of the  
22 inferential statistical analyses, yielded  
23 sufficient useful statistical information  
24 to permit determination of the spatial  
25 distribution of contaminants that had



1  
2 migrated from Love Canal.

3           However, the conclusions  
4 stated in the EPA Love Canal Report regarding  
5 the distribution of Love Canal-related  
6 environmental contaminants were not based  
7 only on these results. Rather, the conclusions  
8 were derived from the highly consistent  
9 multimedia findings of a general absence  
10 of detectable levels of contaminants in  
11 Declaration Area environmental samples (which  
12 was revealed solely by the analytical  
13 chemistry portion of the program), the  
14 overwhelming agreement of the descriptive  
15 and inferential statistical results (which  
16 demonstrated the high internal consistency  
17 of the monitoring data) and the correspondence  
18 of these results with the independent findings  
19 of the hydrogeological program (which  
20 suggested that there was but limited potential  
21 for distant groundwater transport of the  
22 contaminants from Love Canal).

23           All of these findings, when  
24 considered simultaneously, provided enormous  
25 support for the validity of the conclusion

1  
2 that environmental contamination caused by  
3 Love Canal was confined basically to the  
4 Ring 1 area surrounding the formal landfill.

5 Let us now turn briefly to  
6 offering some comments directly specifically  
7 in response to selected portions of the EDF  
8 testimony. The first set of observations  
9 pertain to the portion of the EDF testimony  
10 dealing with power.

11 The EDF states that: "Displayed  
12 in Table 2 (of the EDF testimony) is the  
13 ability, or power, to detect twice and  
14 five times as much chemical contamination  
15 in the Declaration Area as compared to the  
16 'control' area... Even if this were the  
17 case, the sampling design could not have  
18 detected a statistically significant  
19 difference. As shown in Table 2, the number  
20 of sites compared is far below adequate."

21 In response, the following  
22 observations are offered.

23 First, as was stated previously,  
24 inferential statistical analyses played  
25 a limited role in determination of the extent

1  
2 of environmental contamination caused by  
3 Love Canal, and were not the sole or primary  
4 basis as implied by the EDF.

5           Second, the analytical chemistry  
6 portion of the investigation, and not the  
7 statistical analyses of the monitoring data,  
8 revealed that environmental contamination  
9 caused by Love Canal was confined basically  
10 to Ring 1 of the Canal area.

11           The analytical chemistry  
12 portion of the investigation also revealed  
13 that even with the massive sampling effort  
14 conducted at Love Canal, only limited  
15 occurrence of environmental contaminants  
16 could be found in the Declaration Area  
17 (except for Love Canal-related contamination  
18 that was found in particular storm sewer  
19 lines and in certain creeks and rivers).

20           And, that the infrequent and  
21 isolated instances of contamination which  
22 were found in the Declaration Area were  
23 ordinarily at very low concentration levels  
24 (low parts per billion), and were not unusual  
25 findings for either the Greater Niagara Falls

1  
2 area or for other industrialized urban areas  
3 nationwide.

4 Third, the power calculations  
5 reported by the EDF in their Table 2 are  
6 but straw men, and are necessarily based  
7 upon assumptions and hypotheses that may  
8 have no connection to reality.

9 The relationship between the  
10 ostensible power probabilities offered and  
11 reality is an unanswerable question, and  
12 is irrelevant to a determination of the  
13 environmental quality of the Declaration  
14 Area which was assessed directly from the  
15 analytical chemistry monitoring data.

16 Fourth, Agency statisticians  
17 have to date been unable to reproduce the  
18 figures reported in Table 2 of the EDF  
19 testimony, and it seems likely that serious  
20 errors exist in the EDF calculations.

21 And, finally, the power  
22 calculations performed by EDF were computed  
23 incorrectly on the number of sites sampled  
24 in selected environmental media. (for example,  
25 shallow system groundwater and soil), and

1  
2 not according to the number of samples  
3 collected in each medium.

4 In those instances where the  
5 number of site samples is less than the  
6 number of independent samples (for example,  
7 the number of independent soil samples  
8 equals two times the number of soil sampling  
9 sites for a large number of organic compounds),  
10 the power calculations presented by EDF  
11 are too low and may be grossly inaccurate.

#10 12 In commenting on specific  
13 instances of what the EDF considers to be  
14 serious statistical errors on the part of  
15 the EPA, the following was offered for  
16 shallow system groundwater:

17 "Fifteen of the seventy-four  
18 [sic] chemicals chosen for show statistically  
19 increased frequencies of detect in the  
20 Canal Area as compared to the Declaration  
21 Area. Of the fifteen chemicals, no signifi-  
22 cant difference was found between the  
23 Declaration Area and the 'control' areas...  
24 Clearly, the reason no difference was found  
25 was the inadequate number of 'control' sampling

1  
2 sites. ...Simply put, no conclusions concerning  
3 chemical contamination in the shallow system  
4 groundwater can be made."

5 The following is offered in  
6 response.

7 First, conclusions reached  
8 concerning chemical contamination in the  
9 shallow system groundwater found in the  
10 Declaration Area were derived from the  
11 virtual absence of even qualitative identifi-  
12 cations of the one hundred fifty chemicals  
13 determined in shallow system groundwater  
14 samples during the analytical chemistry  
15 portion of the investigation.

16 Second, the descriptive  
17 statistical analyses conducted on the  
18 monitoring data served to confirm the  
19 analytical chemistry findings of an absence  
20 of Love Canal-related contamination in the  
21 Declaration Area, and demonstrated empirically  
22 that shallow system groundwater contamination  
23 was confined to Ring 1 of the Canal Area.

24 Also, these analyses demon-  
25 strated that identifiable concentration

1  
2 isopleths were confined to Ring 1 of  
3 the Canal Area.

4 Third, the inferential  
5 chemical analyses were conducted fully to the  
6 results of the descriptive analyses, and  
7 demonstrated that Love Canal-related shallow  
8 systems groundwater contamination was  
9 confined to Ring 1 of the Canal Area. The  
10 validity of this inferential conclusions  
11 is based on simple logic.

12 Note that approximately the  
13 same number of Canal Area and Control Site  
14 shallow system groundwater samples were  
15 collected. Therefore, if one were to a priori  
16 assume that the difference in contamination  
17 between the Canal-Declaration and Declaration-  
18 Control Areas were equal, then the power  
19 of the inferential tests comparing contami-  
20 nation in the Canal Area to the Declaration  
21 Area, and in the Declaration Area to the  
22 Control Area, would be approximately equal.

23 Because the inferential tests  
24 performed were powerful enough to detect  
25 significant differences between the Canal

1  
2 and Declaration Areas, they would have also  
3 been powerful enough to detect similar  
4 differences between the Declaration and  
5 Control Areas, had such differences existed.

6           Consequently, it must be con-  
7 cluded that such differences in shallow  
8 system groundwater contamination did not  
9 likely exist between the Declaration Area and  
10 the Control Site sampled.

11           Finally, the conclusions reached  
12 concerning chemical contamination of the  
13 shallow system groundwater found in the  
14 Declaration Area conformed fully to the  
15 implication of the hydrogeologic program.  
16 The results from these investigations demon-  
17 strated that there was only limited potential  
18 for distant groundwater transport of  
19 contaminants from Love Canal, that is,  
20 transport of contaminants from Love Canal  
21 into the Declaration area.

22           And, these results were  
23 fully consistent with the results obtained  
24 from the analytical chemistry portion of  
25 the program, the descriptive statistical



1  
2 analyses performed on the monitoring data,  
3 and the inferential statistical analyses  
4 performed on the monitoring data.

5 In concert, all of these  
6 results support the validity of the con-  
7 clusion that shallow system groundwater  
8 contamination directly attributable to Love  
9 Canal was confined to Ring 1 of the Canal  
10 Area.

11 Because the comments offered  
12 by the EDF regarding the EPA soil findings  
13 are basically redundant with the criticisms  
14 given for shallow system groundwater, they  
15 will not be restated here.

16 In like fashion, I will not  
17 re-state my answer, because the response  
18 would be similar to that which was just  
19 given.

20 The only criticism offered  
21 by the EDF in regard to the EPA sump monitoring  
22 program located at Love Canal, that differs  
23 from those already discussed, pertains to  
24 the number of independent sump samples  
25 collected.

1  
2                   Basically, the EDF criticizes  
3 the inferential statistical analyses performed  
4 on the sump monitoring data by the EPA  
5 because the data include a number of sump  
6 sampling sites at which samples were  
7 collected across time.

8                   The EDF argues that for sumps  
9 to be an appropriate unit of statistical  
10 analysis should be sites, rather than samples,  
11 and that to have ignored this problem is  
12 a violation of one of the assumptions of  
13 the statistical tests employed.

14                   As a result, they claim that  
15 "[N]o legitimate conclusions can be reached  
16 concerning sump water contamination by the  
17 EPA."

18                   A response to this criticism  
19 is straightforward.

20                   First, the analytical chemistry  
21 portion of the investigation revealed that  
22 virtually no organic compounds were present  
23 in Declaration Area sump water samples.

24                   Second, the isolated instances  
25 of contaminated Declaration Area sump water

1  
2 samples that were found, and the few compounds  
3 that were detected in those samples, revealed  
4 the presence of contaminants at very low  
5 concentrations (low parts per billion).

6 Third, the infrequent occurrence  
7 of sump water contaminants in certain  
8 Declaration Area sumps could not be related  
9 to Love Canal and, outside of Ring 1, it  
10 was not correlated with the occurrence of  
11 contaminants in other environmental samples  
12 collected in the Declaration Area.

13 Fourth, the descriptive  
14 statistical analyses of the sump water  
15 monitoring data fully supported the findings  
16 just described.

17 And, finally, the issue is  
18 debatable as to the appropriate unit analysis  
19 of the sump water monitoring data for  
20 inferential statistical purposes.

21 It is clear that for those  
22 sump water monitoring sites sampled  
23 repeatedly, the time interval between  
24 samples was such that complete refreshing  
25 of the sump contents occurred.

1  
2 Therefore, the repeatedly-sampled sump  
3 monitoring sites represented stationery  
4 sampling locations, and the samples obtained  
5 from those sites were logically independent.

6                   Consequently, it may be  
7 argued that the inferential analyses performed  
8 on the sump water monitoring data were  
9 conducted appropriately, and that the monitoring  
10 data satisfied the required assumptions of  
11 the statistical technique employed. Based  
12 upon this justification, it is appropriate  
13 to add that the findings of the inferential  
14 analyses of the sump water monitoring data  
15 conformed fully to the other extensive  
16 analyses performed on the data.

17                   In conclusion, all analyses  
18 of the sump water monitoring data revealed  
19 that Love Canal-related environmental  
20 contamination was confined to Ring 1 of the  
21 Canal Area.

22                   One final point raised in this  
23 section of the EDF testimony warrants  
24 response.

25                   The EDF states that "The EPA

1  
2 failed to measure trichlorophenol (TPC) in  
3 the soil." And, that this "indicates a  
4 failure by the EPA to target importan [sic]  
5 toxic substances."

6 In actuality, two trichloro-  
7 phenols were included in the compounds  
8 targeted for water, soil, and sediment  
9 analyses. (See the EPA Love Canal Report,  
10 Page 167).

11 These and all other trichloro-  
12 phenols, of which there a total of six  
13 possible, have very similar physical and  
14 chemical properties, and would likely occur  
15 together in a waste, although some may be  
16 preferentially manufactured or discarded.

17 Therefore, a detection of  
18 either of the two targeted trichlorophenols  
19 would have been an indication of the possible  
20 presence of the others.

21 Furthermore, these compounds  
22 were susceptible to detection as part of  
23 the EPA-required non-target chemical  
24 analyses performed on all water, soil, and  
25 sediment samples. (See the EPA Love Canal

1  
2 Report, Page 295).

3 No trichlorophenols were  
4 detected in any Declaration Area soil samples.

5 STUDY EXECUTION

6 The EDF testimony is critical  
7 of the EPA's execution of the Love Canal  
8 Study on two counts: "Problems in methods  
9 selection and program evaluation, and  
10 problems encountered during execution of  
11 the laboratory analyses."

12 Because the content of this  
13 section of the EDF testimony deals mainly  
14 with the latter issue, the first point shall  
15 be addressed in perfunctory fashion.

16 Perhaps the best way to  
17 respond to the EDF allegation of problems  
18 in methods selection and program evaluation  
19 that plague the EPA Love Canal Study, is  
20 to turn to the comprehensive and detailed  
21 peer review of the monitoring program  
22 performed by the National Bureau of Standards  
23 for substantiation of the criticisms.

24 It may be recalled that the  
25 NBS initiated a review of one portion of the

1  
2 monitoring study, the analyses for organic  
3 chemicals, at the behest of the EPA on July  
4 20, 1981. This review, which was concluded  
5 in May of 1982, resulted in a report entitled  
6 "Review of Materials Provided by EPA on the  
7 Analysis for Organic Chemicals in the EPA  
8 Love Canal Monitoring Study" (NBSIR 822511,  
9 May 1982, hereinafter referred to as the  
10 NBS Review.)

11 In direct response to the  
12 EDF allegation of problems in methods  
13 selection and program evaluation, I would  
14 like to quote two brief passages from the  
15 NBS Review:

16 "Chemical identification and  
17 quantitation by gas chromatography-mass  
18 spectrometry (GC-MS) was appropriate to the  
19 general goals and objectives of the study  
20 and represented the best overall technique  
21 for monitoring organic chemicals in  
22 environmental samples." [NBS Review, Page  
23 6, emphases added].

24 "The sample collection and  
25 analytical protocols were generally complete

1  
2 for the air and water monitoring efforts  
3 and have been, to varying degrees, widely  
4 used in environmental monitoring for  
5 several years." [NBS Review, Page 6,  
6 emphases added].

7 One additional quote, from a  
8 letter prepared by Raymond G. Kammer, Ph.D.  
9 (Deputy Director, NBS) to Richard T. Dewling,  
10 Ph.D. (Deputy Regional Administrator, EPA  
11 Region II), dated July 9th, 1982, and  
12 published in the document entitled "Environ-  
13 mental monitoring at Love Canal Inter-Agency  
14 Review" (EPA, May, 1982), is also relevant  
15 and warrants repeating here:

16 As I stated to you [Dr. Dewling]  
17 and CDC [referring to a meeting on July  
18 8th, 1982 of representatives from the EPA,  
19 NBS, and CDC], the methods of analyses  
20 used by EPA for water, soil and sediments  
21 and air are generally-acceptable methods  
22 and represent the state-of-the-art. As we  
23 stated in our review, although there are  
24 difficulties in implementation, the number,  
25 nature and frequency of analysis of quality



1  
2 assurance samples specified by EPA should  
3 have been adequate to maintain quality control."  
4 (Emphases added).

5           Given the NBS comments just  
6 cited, it must be concluded that no NBS  
7 substantiation exists regarding the EDF  
8 allegation of problems in methods selection  
9 and program evaluation that would undermine  
10 the EPA Love Canal Study.

11           To the contrary, the NBS  
12 review supports the sampling and analytical  
13 procedures employed by the EPA at Love Canal,  
14 and endorses the design of the quality  
15 assurance/quality control (QA/QC) programs.

16           The only issue not addressed  
17 explicitly by the NBS, and which is justly  
18 outside the purview of the peer review  
19 process (that is, it is the responsibility  
20 of the EPA to determine), is an overall  
21 general characterization of the study which  
22 assesses the adequacy of the data to meet  
23 the stated goals and objectives of the study.

24           In this regard, it is the  
25 consensus opinion of Agency scientists that

1  
2 the EPA Love Canal Report and supporting  
3 materials document fully the sampling and  
4 analytical methods employed, and that the  
5 comprehensive QA/QC program employed in  
6 the Love Canal Study was operating as  
7 designed to enable the analytical laboratories  
8 to operate in control, to identify instances  
9 of problems encountered and corrective  
10 actions taken, and to determine the degree  
11 of precision and accuracy of the analytical  
12 measurements obtained.

13 And, that these were sufficient  
14 to permit the EPA to determine validly the  
15 extent and degree of environmental contam-  
16 ination in the Declaration Area that was  
17 caused directly by Love Canal.

18 A number of other allegations  
19 by the EDF yet remain in this section of  
20 the testimony, and each will be responded to  
21 in as brief a fashion as possible.

22 The EDF testimony states:

23 "[T]hese standards [referring  
24 to guidelines published by the American  
25 Chemical Society] include such obvious

1  
2 concerns as measuring the effects of  
3 collection and storage methods on levels  
4 of chemicals in the samples. In fact, the  
5 sample containers were found to contribute  
6 phthlates into the water samples..."

7 In response, it should be  
8 noted that the EPA methods used at Love  
9 Canal are replete in detail regarding pro-  
10 cedures to be employed for collection and  
11 storage of samples.

12 Substantial documentation of  
13 the effects of collection and storage methods  
14 was obtained from the comprehensive QA/QC  
15 programs employed at Love Canal, and the  
16 results from these efforts are described  
17 in detail in the EPA Love Canal Report.

18 (See the EPA Love Canal Report, Pages 234 and  
19 256).

20 In addition, the detection of  
21 common phthalic acid esters in a number of  
22 samples, and being able to identify their  
23 presence as artifacts due to sampling container  
24 or laboratory materials contamination rather  
25 than as environmental pollutants, demonstrated

1  
2 the effectiveness of the QA program.

3           It is now widely accepted in the  
4 scientific literature that many reports  
5 of di(2-ethyhexyl) phthalate and di-n-  
6 butyl phthalate in environmental samples  
7 are the results of unrecognized sample  
8 container or laboratory materials contamina-  
9 tion.

10           Furthermore, it is known that  
11 these chemicals are very likely not present  
12 in the wastes disposed of at Love Canal,  
13 since they came into prominence as volume  
14 industrial chemicals in the mid-1950's,  
15 although Love Canal Landfill was closed in  
16 1953.

17           Their growth in use has  
18 paralleled the development of the plastics  
19 industry between 1955 and 1980. Hooker  
20 Chemicals and Plastics Corporation, the  
21 former owner of the Love Canal site, manu-  
22 factured halogenated organics and, more  
23 specifically, chlorinated organics, and  
24 not plasticizers at their Niagara Falls  
25 Plant.

1  
2 The waste materials from  
3 Hooker's production of halogenated organic  
4 products were the primary chemicals disposed  
5 of in the Love Canal.

6 The EDF testimony next states  
7 that: "[N]o collection standards are  
8 reported to have been set up, a procedure  
9 whereby field samples are spiked with known  
10 amounts of representative compounds to  
11 determine the rates of, for example,  
12 volatilization of compounds over time."

13 In response, it is to be noted  
14 that EDF's allegation is correct; no environ-  
15 mental samples were spiked in the field.

16 It is the opinion of the  
17 EPA that field spiking samples to determine  
18 rates of change in samples during the ship-  
19 ment, storage, and handling stages does  
20 not yield reliable information on contaminant  
21 loss. In a large multimedia environmental  
22 monitoring program, with numerous sampling  
23 personnel involved in thousands of samples,  
24 the risk of artifactual sample contamination  
25 occurring in the field during spiking

1  
2 operations is great because adequate laboratory  
3 facilities are not available in the field.

4           Sampling preservation and  
5 storage requirements were sufficiently well  
6 understood, and their compliance well-  
7 documented, to render field spiking of samples  
8 an unnecessary risk.

9           EDF next alleges that:

10           "[a]ppropriate numbers of  
11 replicates were not taken in order to  
12 determine variability of the sample population.

13           The EPA's own 7-7-7 rule --  
14 of seven field samples, seven field blanks,  
15 seven spiked blanks -- was not followed.

16           In response, note that (as  
17 quoted previously) the NBS does not agree  
18 with this allegation. In fact, a reasonable  
19 number of the more than six thousand eight  
20 hundred samples collected at Love Canal  
21 were replicates.

22           More specifically, five percent  
23 of the samples collected were field  
24 duplicates and ten percent were laboratory  
25 duplicates; all together, more than five

1  
2 thousand seven hundred QA/QC samples were  
3 analyzed. (See the EPA Love Canal Report,  
4 Pages 235, 240, and 8).

5 A collection of such a large  
6 number of duplicates would ordinarily have  
7 been sufficient to allow efficient statistical  
8 estimation of precision. Unfortunately,  
9 for statistical purposes, unfortunately for  
10 the environment and the public's health,  
11 most samples had analytical results for  
12 all targeted analytes that were below the  
13 limits of detection, which were usually  
14 in the very low parts-per-billion range  
15 or lower.

16 The large proportion of  
17 environmental samples that yielded analytical  
18 results with all analytes below the limits  
19 of detection was definitely an unexpected  
20 result, and (except for air samples) require  
21 the EPA to compute precision estimates from  
22 alternative QA samples, referred to as  
23 laboratory control standards (LCS).

24 For water analyses, LCS's  
25 consisted of a solution of analytes of

1  
2 known concentration in re-agent water;  
3 for soil-sediment analyses, LCS's consisted  
4 of the standard reference material known  
5 as River Sediment 1645, provided by the  
6 National Bureau of Standards; and for air  
7 samples, estimates of precision were obtained  
8 from the results provided by colligated  
9 field samples.

10 Precision statistics for water  
11 analyses are reported in Tables C-6 and  
12 C-7 of the EPA Love Canal Report (Pages  
13 242 and 243); precision statistics for soil  
14 and sediment analyses are reported in Tables D-2  
15 and D-3 of the EPA Love Canal Report (Pages  
16 262 and 263); and precision statistics  
17 for air analyses are presented in Table E-5  
18 of the EPA Love Canal Report (Page 278).

19 For all media, precision  
20 statistics were not computed unless a  
21 reasonable number of appropriate sample  
22 results were available for a particular  
23 analyte. Usually, this meant that at least  
24 five replicate measurements were available  
25 from each participating analytical laboratory;



1  
2 for most analytes, many more measurements  
3 were available.

4 The EDF charge that the EPA  
5 did not follow a 7-7-7 "rule," simply  
6 demonstrates that the EDF does not understand  
7 the operating principles of QA/QC, and that  
8 far more than seven of some types of quality  
9 control samples were analyzed by most  
10 analytical laboratories.

11 Finally, it should be noted  
12 that at the current time, no such formal  
13 "rule" exists in any EPA regulation.

14 The next charge offered by the  
15 EDF is that "[i]n most cases, duplicate  
16 samples were not taken at each site..."

17 As stated previously, based  
18 upon well-established QA/QC principles, a  
19 sufficient number of field samples were  
20 collected for allowing efficient statistical  
21 estimation of precision. Therefore, it is  
22 difficult to grasp the meaning or intent  
23 of this criticism by the EDF, unless they  
24 simply do not understand the manner in  
25 which duplicate samples permit determination

1  
2 of the precision of analytical measurements.

3 The EDF testimony continues  
4 with the allegation that "such standard  
5 procedures as randomization of samples,  
6 inclusion of blind spiked samples or performance  
7 evaluation samples, and internal recovery  
8 samples were not set up."

9 In response, note that the  
10 EPA Love Canal Report states clearly in  
11 numerous instances that both purposive and  
12 simple random sampling was employed for  
13 sample collection. As a result of this  
14 sampling procedure, samples were distributed  
15 to analytical laboratories on a random  
16 basis.

17 Furthermore, statistical  
18 analyses of the monitoring data confirmed  
19 that no spatial biases or analytical biases  
20 differences differentiate the performance  
21 of the analytical laboratories.

22 With regard to the issue of  
23 use of quality control samples, it should  
24 be noted that a great variety of QC samples  
25 were used in the Love Canal Study, and

1  
2 their nomenclature and use are documented  
3 thoroughly in the EPA Love Canal Report.

4 Perhaps, the fact that the  
5 EDF testimony used different terminology  
6 for certain QC samples than that which was  
7 used in the EPA Love Canal Report, may lead  
8 to confusion. To help alleviate this  
9 potential problem, an attempt has been made  
10 to translate the EDF terminology.

11 For example, the EDF refers to  
12 "internal recovery samples" which were  
13 referred to as laboratory control standards  
14 in the EPA Love Canal Report. Also, per-  
15 formance evaluation samples were employed  
16 but blind spiked samples were not.

17 However, other types of QC  
18 samples, such as surrogate analytes, were  
19 employed but were not mentioned in the EDF  
20 testimony.

21 Finally, note that as the  
22 previously-cited NBS Peer Review states,  
23 the design of the QA/QC program was adequate  
24 to maintain operating control in the  
25 analytical laboratories.

1  
2                   The EDF summarizes their  
3 comments on QA/QC by stating: "[t]hese and  
4 other issues are failures to study design,  
5 as a result of which appropriate measures  
6 for establishing validity, precision, and  
7 accuracy were not incorporated into the  
8 instructions for the subcontractors [the  
9 analytical laboratories] from the inception  
10 of the work."

11                   In response, note that it  
12 is stated clearly in numerous instances in  
13 the EPA Love Canal Report (for example, see  
14 Pages 41, 223, and 246) that the QA/QC program  
15 was designed intentionally so that the  
16 EPA had sole responsibility for data validation,  
17 and for estimating precision and accuracy.

18                   These tasks were accomplished  
19 through application of a purposefully  
20 redundant retrospective review of all of  
21 the monitoring and quality control data,  
22 and the validation of that subset of monitoring  
23 data would satisfy the EPA standards.

24                   The process of retrospectively  
25 validating the monitoring data was accomplished

1  
2 for water, soil, and sediment samples  
3 through utilization of an innovative  
4 surrogate analytes quality assurance procedure,  
5 which permitted retrospective validation  
6 of all samples on an individual basis (see  
7 the EPA Love Canal Report, Pages 235-238 and  
8 Pages 256-261);

9 For air samples, data validation  
10 was also performed retrospectively through  
11 utilization of specially-prepared quality  
12 assurance standards called calibration check  
13 samples (see the EPA Love Canal Report,  
14 Pages 275-277).

#11 15 After the quality controlled  
16 monitoring data had been validated by the  
17 EPA, through application of intentionally  
18 redundant retrospective quality assurance  
19 procedures, the EPA then calculated estimates  
20 of precision and accuracy as was described  
21 previously. Because these tasks were the  
22 exclusive responsibility of the EPA,  
23 instructions on these matters were  
24 intentionally not provided to the analytical  
25 laboratories or to the prime contractor.

1  
2 All of these qualities are  
3 described in detail in the EPA Love Canal  
4 Report.

5 The next concern expressed  
6 by the EDF in this Section of testimony  
7 was that: "[t]he major problem in execution  
8 was encountered after the analytic results  
9 were in. As much as ninety percent of the  
10 samples had no detectable compounds present."

11 In response, it should be  
12 observed that while the analytical results  
13 were unexpected, the monitoring data have  
14 been carefully and fully validated, and  
15 the precision and accuracy of the data are  
16 known. It is difficult to comprehend why  
17 such an outcome, which was so fortuitous  
18 to public health and the environment, should  
19 be considered a problem in study execution  
20 by the EDF.

21 The next issue raised by  
22 the EDF pertains to the determination of  
23 detection limits for the analytical sub-  
24 contractors. Basically, the EDF makes two  
25 allegations regarding the utilization and

1  
2 determination of detection limits.

3 First, the EDF claims that  
4 the approach of determining method detection  
5 limits (MDL's), which was developed by the  
6 EPA Environmental Monitoring and Support  
7 Laboratory-Cincinnati (See Environmental  
8 Science and Technology, 15 (1981), 1426-1435)  
9 was incorrectly employed.

10 The EDF states that "[t]hese  
11 criteria [referring apparently to the MDL  
12 methodology] were not followed."

13 And, second, the EDF states  
14 that "MDL's were not established for all  
15 analytes. In some cases, analogs were used,  
16 but the strict procedures of the [American  
17 Chemical Society] were not followed."

18 In response, it should be  
19 noted that the EPA scientists who developed  
20 the MDL methodology were the same scientists  
21 who worked with me in writing the quality  
22 assurance appendices to the EPA Love Canal  
23 Report, and that the same scientists were  
24 responsible for computing MDL's from the  
25 results obtained by the Love Canal analytical

1  
2 laboratories.

3 Furthermore, it is certainly  
4 the case that the MDL methodology was followed  
5 exactly, and employed correctly.

6 With regard to the second point,  
7 it is true that MDL's were determined for  
8 a subset of the target compounds, and that  
9 the subset included model compounds for the  
10 complete set of targeted compounds. The  
11 reasons that MDL's were computed on a  
12 collection of model compounds, and not on  
13 the entire set of targeted set of compounds,  
14 were cost and time constraints, and limitations  
15 of data availability.

16 Furthermore, the approach of  
17 using model compounds to develop analogs  
18 for similar groups of compounds is a valid  
19 methodology, and is accepted widely in  
20 scientific research.

21 The EDF is also correct in  
22 pointing out that the procedures of the  
23 American Chemical Society (ACS) were not  
24 used directly for determining MDL's. The  
25 reason for this is simply that the MDL



1  
2 procedure, which is consistent with the  
3 philosophical approach articulated by the  
4 ACS but differs operationally, is an analyte  
5 present procedure, and is therefore preferred.

6           The ACS procedure is not  
7 based on analyte present measurements, but  
8 rather is based on the measurement of  
9 background noise. Consequently, the ACS  
10 procedure measures only one component of  
11 the signal to noise ratio.

12           With the ACS procedure, repeated  
13 measurements of background noise are required,  
14 and a background noise standard deviation  
15 is computed. The ACS advocates that qualitative  
16 identification of compounds not occur at  
17 levels less than three times the background  
18 standard deviation, and that quantitative  
19 concentration levels not be reported at  
20 levels less than ten times the background  
21 standard deviation.

22           It is the consensus of the  
23 EPA scientists involved in the Love Canal  
24 project that the ACS procedure is too  
25 conservative, and leads to too high an MDL.

1  
2           The procedures used for com-  
3           puting MDL's are described in the EPA Love  
4           Canal Report (see Pages 228-232 and 253-254).  
5           It should also be noted that MDL's were  
6           not employed in any fashion for the  
7           validation of data.

8           The next criticism presented  
9           in the EDF testimony concerns recovery, that  
10          is, the extraction efficiency of the  
11          analytical methodologies employed.

12          The EDF alleges that "[n]o  
13          information is provided which makes it  
14          possible to determine recoveries, the factor  
15          by which to multiply analyzed results."

16          In response, note that this  
17          assertion is incorrect, and that there are  
18          sections in the EPA Love Canal Report which  
19          present method recoveries (see Table C-5,  
20          Tables D-1 and D-4, and Tables E-8 and E-10).

21          Anyone who is interested in  
22          computing concentrations collected for  
23          recoveries may do so, within the precision  
24          of the data, using the information presented.

25          The next allegation presented

1  
2 by the EDF is that "[c]omparability of results  
3 among laboratories cannot be determined."

4 And, that "[t]he wide range of MDL's reported  
5 by the laboratories in Table C-1 [of the  
6 EPA Love Canal Report] indicates significant  
7 problems in proficiency."

8 In response, note that the  
9 comparability of results from the analytical  
10 laboratories can be determined from the  
11 material presented in the EPA Love Canal  
12 Report. This information consists of results  
13 for each analytical laboratory on such  
14 relevant items as MDL's (see, for example,  
15 Table C-1 in the Love Canal Report), per-  
16 formance evaluation samples (see, for example,  
17 Table C-4 in the EPA Love Canal Report),  
18 and precision estimates derived from  
19 laboratory control standards (see, for  
20 example, Table C-6 in the EPA Love Canal  
21 Report).

22 Information of the sort just  
23 described is provided separately in the EPA  
24 Love Canal Report for water (Appendix C),  
25 soil and sediment (Appendix D), and air

1  
2 analyses (Appendix E).

3           The second portion of the  
4 EDF allegation, pertaining to MDL's, has  
5 already been partially answered. However,  
6 because the issue has been raised again,  
7 a few additional comments are warranted.

8           The measurement of low-level  
9 ("trace") amounts of organic compounds in  
10 environmental samples is a challenging task  
11 for the analytical chemist. Because of the  
12 inherent uncertainties associated with such  
13 efforts, it has become common practice to  
14 require that a certain concentration level  
15 of a compound be present in a sample before  
16 an analyst will assert that a compound is  
17 actually present (that is, qualitatively  
18 identify the presence of the compound in  
19 the sample).

20           In addition, it has become  
21 common practice to require that a somewhat  
22 higher concentration level be established  
23 as the minimum level at which the concentration  
24 of the compound present in a sample will be  
25 quantified (that is, quantitatively report

1  
2 the amount of the compounds present in a  
3 sample).

4                   These two levels are referred  
5 to frequently as the limit of detection  
6 (LOD) and the limit of quantitation (LOQ),  
7 and are the basis on which analytical  
8 laboratories report the presence or absence  
9 of organic compounds in samples.

10                   The actual ability of the  
11 analytical laboratories to employ a method  
12 and detect with high probability the  
13 presence or absence of organic compounds  
14 in a sample, was assessed independent of  
15 the nominal LOD's and LOQ's by the EPA.

16                   As was described previously,  
17 performance-based measures of the capabili-  
18 ties of the analytical laboratories in  
19 trace analyses, referred to as method  
20 detection limits (MDL's), were determined  
21 by the EPA for each laboratory according  
22 to analytical method and environmental medium.

23                   Due to unavoidable variations  
24 in execution and performance associated  
25 with the state-of-the-art analytical

1  
2 methodologies employed for trace analyses  
3 of complex environmental samples, the LOD's  
4 and LOQ's of a method are variable.

5 More specifically, for a given  
6 method, both the LOD and LOQ vary from  
7 one compound to another, from one sample  
8 matrix to another, from one analyst to another,  
9 from one measurement system to another, and  
10 can vary in the same measurement system from  
11 one determination to the next.

12 Naturally, all of these factors  
13 may be compounded when multiple laboratories  
14 are involved in the analysis of samples.  
15 The MDL's, as computed for the Love Canal  
16 analytical laboratories, represent measures  
17 of overall operating performance of the  
18 analytical laboratories across the entire  
19 period of sample analyses, and incorporate  
20 the variabilities described.

21 With regard to the EDF  
22 allegation of a "wide range of MDL's" reported  
23 by the laboratories in Table C-1 of the  
24 EPA Love Canal Report, it must be mentioned  
25 that it is neither unusual nor unexpected

1  
2 for the MDL's to vary from one analytical  
3 laboratory to the next, from one method to  
4 the next, and from one compound to the next.

5           Furthermore, it is the  
6 consensus of the EPA scientists involved  
7 in the Love Canal Study, the same scientists  
8 that were responsible for having previously  
9 developed and validated the EPA analytical  
10 methods employed at Love Canal and who  
11 developed the MDL measurement principle,  
12 that the range of MDL's achieved by the  
13 analytical laboratories was a normal dis-  
14 tribution of performance among laboratories.

15           Perhaps the most significant  
16 fact about the reported MDL's, a fact that  
17 has been overlooked by the EDF, is that  
18 all of them are below three parts per  
19 billion (a very small amount), and all but  
20 four of them are below thirty-five parts  
21 per billion.

22           This performance level is  
23 considered by the EPA to represent the  
24 State of the art achievable for the analytical  
25 methods employed, and the analytical methods

1  
2 employed by the EPA were judged to be  
3 acceptable by the NBS.

4           When considered in this context,  
5 the overall satisfactory performance of the  
6 analytical laboratories becomes readily  
7 apparent, and the fact that for one compound  
8 the MDL ranges across the laboratories from  
9 two parts per billion to forty parts per  
10 billion is of no consequence to the validity  
11 of the conclusions of the investigation.

12           The final point raised by the  
13 EDF in this section of the testimony was  
14 that when the "proficiency" of the analytical  
15 laboratories was assessed by the EPA (pre-  
16 sumably through the use of performance  
17 evaluation samples), "a wide variance in  
18 competence was found."

19           Even though similar allegations  
20 have already been discussed, it should be  
21 pointed out that the overall performance  
22 of the analytical laboratories was judged  
23 acceptable by the EPA. And, note once again  
24 that the function of the quality control  
25 programs employed at Love Canal, of which



1  
2 performance evaluation samples were one  
3 component, was to discover problems with  
4 the execution of the methods and to enable  
5 timely corrective actions, and to permit  
6 determination by the EPA of the precision  
7 and accuracy of the obtained measurements.

8                   Performance evaluation samples  
9 were special QC samples prepared by the  
10 quality assurance branch of the EPA  
11 Environmental Monitoring and Support  
12 Laboratory-Cincinnati, and were used for  
13 diagnostic purposes in determining  
14 appropriate methods execution by the  
15 analytical laboratories.

16                   In order for an analytical  
17 laboratory to have an acceptable result,  
18 the laboratory must identify correctly the  
19 unknown analytes present in the sample, and  
20 measure their concentrations to within  
21 the acceptance limits established by the  
22 EPA. As was stated in the EPA Love Canal  
23 Report (see Pages 232-235), the general  
24 performance of the analytical laboratories  
25 in identification was excellent, with very

1  
2 few analytes missed.

3           The unacceptable results  
4 reported were due largely to concentrations  
5 measurements that were outside the acceptable  
6 range. This problem was attributed to the  
7 use of a new tool (fused silica capillary  
8 columns on gas chromatographers), which was  
9 deemed essential by the EPA, and some initial  
10 difficulty in adjusting to this in some  
11 laboratories.

12           The performance evaluation  
13 sample served to assist in this adjustment  
14 and to provide data on the applicability  
15 of the columns.

16           Finally, it should be noted  
17 that the information derived from performance  
18 evaluation samples was not used to estimate  
19 precision and accuracy, or to validate the  
20 data from field samples.

#### 21 CONCLUSIONS

22           In conclusion, it is unfortunate  
23 that confusion concerning the credibility of  
24 the findings and conclusions of the EPA  
25 Love Canal Report has resulted from the

1  
2 misunderstandings and misinterpretations  
3 presented in the EDF testimony. Hopefully,  
4 this testimony has contributed to a  
5 correction and clarification of the issues  
6 raised by the EDF.

7 Finally, a few additional  
8 observations are warranted.

9 From an objective perspective,  
10 it is clear that although the investigations  
11 performed at Love Canal are not perfect, they  
12 are representative of the best form of  
13 environmental monitoring capable of being  
14 performed today. And, the findings and  
15 conclusions of the EPA Love Canal Study,  
16 which are totally free of outside influence,  
17 are as definitive as the science was capable  
18 of achieving given the constraints existing  
19 on the study.

20 To add the caveat that the  
21 investigations performed at Love Canal are  
22 not perfect is neither intended to be a  
23 disclaimer of some sort, nor an abandonment  
24 of responsibility for the findings and  
25 conclusions of the study.

1  
2                   Rather, such a statement  
3 simply expresses the fact that limitations  
4 exist in our ability to design, conduct,  
5 and interpret complex investigations of  
6 complicated phenomena.

7                   Whenever such investigations  
8 are conducted under the microscope of  
9 heightened public awareness, and are  
10 politicized, controversy will inevitably  
11 surround the effort, regardless of the  
12 findings or conclusions of the study.

13                   \* \* \*

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1  
2 CHAIRMAN HINCHEY: Our next  
3 speaker will be Dr. Richard Cook.

4 DR. COOK: Chairman Hinchey,  
5 Members of the Committee and Staff, and  
6 others associated with the Joint Committee  
7 hearing, I'm grateful to your giving me  
8 this opportunity to be here to present  
9 testimony regarding the Love Canal Waste  
10 Site and adjacent property.

11 I am Richard J. Cook, Associate  
12 Professor and Chairman of the Department  
13 of Chemistry at Kalamzoo College, in  
14 Kalamazoo, Michigan.

15 I hold a B.S. degree from the  
16 University of Michigan, and M.S. and Ph.D.  
17 degrees from Princeton University, all  
18 in the field of Chemistry.

19 My activities over the past  
20 fifteen years have been focused on teaching  
21 and research in the areas of organic and  
22 analytical chemistry, with particular  
23 emphasis on the study of environmental  
24 quality.

25 I'm a member of the Scientific/

1  
2 Technical Advisory Board of the Ecumenical  
3 Task Force of the Niagara Frontier, a position  
4 which I hold without pay.

5 In recent months, I have  
6 devoted considerable time to the study of the  
7 U.S. Environmental Protection Agency study  
8 Environmental Monitoring at Love Canal, the  
9 Inter-Agency Review of the same, and  
10 associated documents.

11 On this basis, I should like  
12 to address Issues 2 and 3 of your list of  
13 selected subjects relevant to testimony,  
14 viz., the adequacy of the EPA study and  
15 the related conclusions drawn by the Depart-  
16 ment of Health and Human Services.

17 The EPA Love Canal Monitoring  
18 Program represents a large-scale, well-  
19 intentioned effort to assess the extent  
20 of chemical contamination in the area  
21 surrounding the chemical dumpsite. While  
22 such information has an obvious bearing  
23 on any decision regarding repopulation, it  
24 is clearly not sufficient for answering the  
25 questions at hand.

1  
2                   The highly-complex question  
3 of habitability must also be addressed  
4 through toxicologic and epidemiologic studies,  
5 risk analysis, including projections of  
6 long-term exposure, chemical synergism, and  
7 the effects of time and conditions upon  
8 chemical migration.

9                   The EPA study, whether by  
10 design or result, bears only on the issue  
11 of chemical contamination in a number of  
12 selected media over a brief period of time.  
13 Therefore, even if sampling and analysis  
14 were designed and implemented flawlessly,  
15 such a study only represents a portion of  
16 the information necessary to make a meaningful  
17 assessment of habitability. My comments  
18 on experimental design, implementation, and  
19 interpretation will then necessarily deal  
20 only with the limited subject of the apparent  
21 current state of chemical contamination.

22                   In Dr. Dewling's own words,  
23 he just said there is more to determining  
24 habitability than the level of chemical  
25 contamination.

1  
2 We just heard him say that,  
3 so I think I would assume that the EPA then  
4 agrees with that statement.

5 However, I find the report  
6 inconsistent with that position.

7 Despite the limitations just  
8 mentioned, the EPA study represents an  
9 ambitious undertaking, with sampling,  
10 analysis, and data generation on a scale  
11 seldom seen. In fact, the size of the  
12 project, coupled with an apparent mandate  
13 to complete it quickly, has significantly  
14 reduced its reliability and usefulness.

15 The logistics of a program  
16 of this size is challenging under the  
17 best of circumstances, but considering the  
18 the short time period which was allowed,  
19 they must have been overwhelming.

20 In retrospect, a program  
21 conducted at a less-intense level, over a  
22 longer period of time would have been more  
23 reliable and productive. The combination  
24 of number of samples and required high  
25 sophistication of analysis led to difficulties



1  
2 which were still being dealt with long  
3 after sampling and analyses were complete.

4 A large number of sub-  
5 contractors doing analyses, particularly  
6 multi-substance trace analyses, introduces  
7 a level of uncertainty which must be closely  
8 monitored through a rigorous quality  
9 assurance and control program. Even prior  
10 to this, time must be taken for adequate  
11 training, equipment acquisition and testing.

12 The use of a number of  
13 laboratories to perform analyses without  
14 multi-laboratory testing of precision,  
15 accuracy, detection limits, etc., is  
16 clearly inadequate, particularly for trace  
17 methods.

18 By this I mean, as a practicing  
19 chemist, you will find that if you do a  
20 particular analysis a number of times, if  
21 you are doing a trace analysis, particularly,  
22 where the levels are small, you will find  
23 a degree of variability everytime you do  
24 the analysis. In other words, you will  
25 come up with a slightly different answer.

1  
2 The question is, what is the  
3 degree of that variability, and also, what  
4 uncertainty do you introduce by having  
5 many people do the analysis? There is a whole  
6 degree of variability introduced there.

7 Therefore, most studies of  
8 this type spend a great deal of time previous  
9 to the study making sure all of those factors  
10 are well in hand. This study simply did  
11 not have time for that sort of care.

12 The use of performance standards  
13 which represented analyte levels much  
14 greater than those found in typical field  
15 samples is highly questionable.

16 There are indications throughout  
17 that the magnitude of this project was simply  
18 too great to adequately insure proper  
19 preparation and subsequent control.

20 The large variations in  
21 performance quality from laboratory to  
22 laboratory, the lack of meaningful method  
23 detection limits determined by each lab,  
24 the lack of adequate on-site visits,  
25 excessive sample holding times and lack

1  
2 of adequate recovery data are some indications  
3 that this thesis is correct.

4           Too much of the quality  
5 assurance/control work appears to have been  
6 done after the sampling and analyses were  
7 complete, an approach which is inadequate  
8 at best.

9           The program was simply too  
10 large a scale over too short a time to  
11 yield the most reliable, meaningful results.

12           However, for the written  
13 record, I have provided some discussion of  
14 that, and I would be glad to respond to any  
15 particular questions you may have regarding  
16 that.

17           As I say, it would appear  
18 from reading the EPA documents and associated  
19 materials that too much of the quality  
20 assurance control work appears to have been  
21 done retroactively, after the sampling  
22 analyses were complete. That is an inadequate  
23 approach.

24           The program just simply seems  
25 to have been too large a scale over too

1  
2 short a period of time to give the best  
3 results.

4           The original study, as they  
5 stated, was to determine a level of change  
6 in contamination out from the Love Canal area.  
7 So they did the directed, purposeful  
8 analysis along those lines.

9           It is clear from their results,  
10 and they state this, that this expectation  
11 was not met. Evidently, the levels that  
12 they found had no systematic concentration  
13 gradient, as we call it, and so that that  
14 aspect of the study was not fulfilled.

15           Now, Dr. Dewling has just  
16 said that that was not anticipated, and,  
17 frankly, they would have run the study  
18 differently. I would say the same thing,  
19 I would say also that before you do a  
20 study like this, you better anticipate that  
21 sort of possibility.

22           There is no indication that  
23 this possible outcome was given adequate  
24 attention during the planning stages,  
25 because if they had, the study would have

1  
2 reflected this through more careful and  
3 greater attention to the selection and number  
4 of controls, to sample holding times, and  
5 particularly, to the proper and complete  
6 establishment of method detection limits.

7 It is precisely this lack of  
8 attention to such details which has rendered  
9 this study less useful than it otherwise  
10 might have been.

11 It is not clear from the EPA  
12 report those aspects of the project which  
13 were recognized as weak before implementation  
14 and those recognized after the data were in  
15 and the work reviewed by others.

16 However, it is clear that  
17 the EPA does recognize now at least some  
18 of the shortcomings of the monitoring program.

19 There is no question that a  
20 study of such wide scope deserves more  
21 time and resources. One cannot escape  
22 the conclusion that this was a rushed and  
23 hectic program in response to a variety  
24 of pressures, pressures which were not  
25 scientific, they were of a political nature.

1  
2 I'm not calling the work  
3 political, but I'm talking about the pressures  
4 of time and budget.

5 Nonetheless, even given the  
6 constraints as stated by the EPA, the project  
7 would have benefitted greatly from a  
8 greater level of outside peer review at  
9 the planning stage, and I emphasize, at the  
10 planning stage, before sample one was taken.

11 Now, Dr. Dewling has referred  
12 to the Science Advisory Board of the EPA,  
13 and that they reviewed the protocol, and  
14 there is no record that I am aware of  
15 regarding that review process.

16 He offered to make it available.  
17 I hope you will see to it that he does  
18 provide such a record, including those people  
19 who were on that advisory board, and their  
20 comments.

21 For example, the value of  
22 peer review before doing the sampling, I  
23 would illustrate the National Bureau of  
24 Standards which has received much attention  
25 because they were brought in after the

1  
2 sampling and analysis. Had the NBS been  
3 brought in prior to the sampling and  
4 analysis, many of the weaknesses to which I  
5 refer would have been easily overcome when  
6 there was still time to do something about it.

7 Without such planning in  
8 advance, one is frequently left with  
9 attempting to repair the study retroactively,  
10 or in an attempt to salvage something of  
11 apparent significance, to misinterpret the  
12 results.

13 It would appear that the EPA  
14 has done some of each.

15 There are some positive features  
16 to the program, and let me briefly mention  
17 them here. Again, my written report will  
18 provide more detail on this.

19 They have selected, I think,  
20 a large number of target compounds, compounds  
21 which they were going to try to detect, and  
22 one is only left to assume that the choice  
23 of those specific substances was based on  
24 a reasonable scientific judgment of both  
25 things like leachate content, the material

1  
2 that is coming out of that landfill, and  
3 into the recovery system now, the inventory  
4 of the landfill that was provided by Hooker,  
5 previous studies, and toxicity, and  
6 persistent properties of these compounds.

7 Now, there are arguments  
8 about specific compounds, you mentioned  
9 trichlorophenols, for instance, a greater  
10 level of emphasis on the dioxin issue, those  
11 matters are, I think, of legitimate scientific  
12 debate, but overall, the numbers of compounds  
13 selected, and those compounds selected, I  
14 think, were reasonable.

15 The selection of several media,  
16 which includes the water, the soil, the air,  
17 sump water and so forth, I think is appro-  
18 priate, because you expect, if contamination  
19 has occurred, to see contamination perhaps  
20 in one or more media, and you would not  
21 want to restrict yourself to just one.  
22 Biological indicators were done, but with  
23 very little emphasis and I find that this  
24 is somewhat disturbing because amplification  
25 of these trace materials is very common in



1  
2 natural systems.

3 EPA has admitted this because  
4 they say that their goal was to investigate  
5 the use of locally-available biological  
6 systems as potential indicators of contam-  
7 inants.

8 I would have liked, personally,  
9 to have seen that aspect of the study  
10 amplified. The selection of sampling sites  
11 was random and specific, which appears to  
12 be adequate to give representative coverage,  
13 and their special attention to swales and  
14 sand deposits, sewers, and so forth, as  
15 possible transport mechanisms is a positive  
16 feature of the design.

17 Again, lacking access to details  
18 of the site and its history, it can only  
19 be assumed that adequate study and careful  
20 judgement were used in this phase of the  
21 study design.

22 So there are some aspects  
23 of the study, I think, that are reasonable.

24 The other aspect of the study  
25 that I would like to focus most of my

1  
2 attention on at this point, there are  
3 serious deficiencies in the study, in the  
4 planning, implementation, and I will stress  
5 in a minute, also the interpretation of  
6 the results.

7           There is little information  
8 given on the criteria of selection of  
9 control sites or on the planning to be used.  
10 Unfortunately, such a study as this is only  
11 as good as the control selection which, in  
12 this case, was clearly highly inadequate.

13           This is perhaps the most  
14 serious weakness of the study, but,  
15 ironically, it is the one, and probably the  
16 single one criticism that would have surfaced  
17 most frequently in an adequate peer review.

18           Generally, as much time,  
19 effort and resources must be devoted to  
20 control sites as test samples. It is not  
21 as glamorous, I will admit.

22           Sometimes it gives pretty  
23 boring results, but you have to have it.

24           You have to spend just about  
25 as much time and money on it as you do

1  
2 in other areas.

3 Any drug company will tell  
4 you that. The Department of Agriculture  
5 will tell you that. Other agencies will tell  
6 you that.

7 While there has been a signi-  
8 ficant amount of justified criticism about  
9 the quality of the control sites, I would  
10 like to focus on the effects of the numbers  
11 of control sites that were chosen. This  
12 monitoring program generated a tremendous  
13 amount of experimental data, there is no  
14 question. If you see the raw data, it is  
15 several feet thick.

16 So the tremendous amount of  
17 experimental data in order to have meaning  
18 for anybody has to be somehow reduced, and  
19 interpreted.

20 Accepted methods of statistical  
21 analysis are necessary for meaningful  
22 objective interpretation of such data, and  
23 for reducing the data to a form which is  
24 accessible and understandable to the water  
25 community, as well as the scientific community.

1  
2 Unfortunately, statistical  
3 methods have been used and misused to lead  
4 to conclusions which are highly misleading.

5 A few examples should illustrate  
6 this point I think adequately.

7 I refer to one of the  
8 tables that you had mentioned earlier, Mr.  
9 Chairman, as well as others, they are  
10 specifically Tables 7 ,8 and 9 in the EPA  
11 report, and I have attached copies of those  
12 tables to my testimony.

13 These tables summarize findings  
14 and I emphasize that these tables are  
15 directly from the EPA report.

16 These tables summarize the  
17 findings of selected substances in shallow  
18 groundwater and soil and sumpwater respectively.

19 EPA has compared the  
20 frequency of detection of these substances  
21 in the Canal, Declaration and Control Areas,  
22 listing whether or not differences can be  
23 considered significant.

24 Now, note that in the table  
25 that describes -- in Table 7, entitled

1  
2 "Significant Differences Observed in Extent  
3 of Shallow System Groundwater Contamination  
4 at Love Canal."

5 I have added all three tables,  
6 and there are sixty-two compounds or elements  
7 contained in these tables.

8 If you look at the conclusions  
9 the EPA reached regarding the yes and no  
10 decisions that you referred to earlier, Mr.  
11 Chairman, for all sixty-two, note that three  
12 of the sixty-two Canal versus Declaration  
13 Area comparisons are said to show significant  
14 differences with the Canal showing greater  
15 frequency detection.

16 What we are doing is comparing  
17 the Canal with the area in question, the  
18 Declaration Area.

19 What those tables show is that  
20 for those sixty-two substances, in all cases  
21 but three, the Canal shows higher contamina-  
22 tion than the Declaration Area, and it is  
23 statistically significant.

24 Now, that is not entirely sur-  
25 prising. I think EPA has freely said on

1  
2 many occasions that the Canal, is highly con-  
3 taminated, the immediate Canal area is highly  
4 contaminated, but the question is now compar-  
5 ing this to the Declaration Area, quite log-  
6 ically, the Declaration Area is less contam-  
7 inated than the Canal, so this is not a sur-  
8 prising result.

9 As a matter of fact, it seems  
10 entirely reasonable that it is a statisti-  
11 cal significance.

12 For all sixty-two Declaration  
13 versus Control comparisons, all sixty-two,  
14 the differences are said to be statistically  
15 significant, and I again refer you to the  
16 tables in which the second column shows  
17 the Declaration Area, the area in question,  
18 versus the Control sites. Not one of those  
19 sixty-two is statistically significant.

20 That means that if you were  
21 looking at this table, and if you are  
22 drawing conclusions, as they are supported  
23 in the text of the EPA Study, one  
24 draws the logical conclusion that the  
25 Declaration Area is now statistically and

1  
2 presumably significantly different in levels  
3 of contamination versus the Control sites.

4           Whereas, the Canal is signi-  
5 ficantly more contaminated than the Declar-  
6 ation area.

7           The evidence would seem very  
8 clear, the EPA goes to great lengths to show  
9 that that is statistically the case. They  
10 say it is entirely consistent with the other  
11 studies, including the geological studies,  
12 the hydrogeologic studies that have been  
13 conducted and the analytical chemistry data.

14           Okay, Dr. Dewling has refer-  
15 red to another whole volume of statistical  
16 analysis, there is, in fact, another whole  
17 volume of statistical analysis.

18           He used that expression in  
19 response to one of your questions, and you  
20 would have to infer that we have another  
21 whole volume.

22           One would have to assume that  
23 you have backup data and reasons to put a  
24 table or a series of tables in the final  
25 report upon which conclusions are being drawn.

1  
2                   The tables in fact show nothing  
3 of the kind, and I don't think you will find  
4 the qualified, objective statistician  
5 who will maintain that they do.

6                   I think I can best illustrate  
7 this by showing you the tables as I have  
8 modified them, adding the third column, the  
9 column that EPA has chosen to leave off.

10                   The logical third conclusion,  
11 the logical third comparison is comparing  
12 Canal with Control site.

13                   Any statistician will look  
14 at that and say there are three comparisons  
15 you make, they would say Canal/Declaration,  
16 Declaration/Control and Canal/Control.

17                   Two tables, two such columns  
18 appear on the EPA tables.

19                   Dr. Michael Stoline, a  
20 Professor of Mathematics at Western Michigan  
21 University, has been kind enough to provide  
22 the calculations to allow such a comparison.

23                   We used the same statistical  
24 test used by the EPA. Technically, it is  
25 called a one-tailed difference of proportions



1  
2 test, with a level of significance, using  
3 the Fisher's Exact Test.

4 All of that is not important  
5 here, the point is that we used the same  
6 test which they used for their table.

7 The results I have added to  
8 that appear in the third column on the  
9 extreme right, and it is in slightly different  
10 type, so it is clear that that is my addition  
11 and not the EPA's.

12 The point I want to make to  
13 you, Mr. Chairman, and the rest of the Com-  
14 mittee, is that fifty-seven of sixty-two  
15 comparisons, that is, between Canal and  
16 Control, there is no statistical difference.

17 We are now comparing what the  
18 EPA and everyone said is an obviously-  
19 contaminated area with the same controls  
20 and we are finding, in fifty-seven of the  
21 sixty-two cases, that there is no statistical  
22 difference that can be made legitimately,  
23 and this is from the very same EPA data  
24 that they are using.

25 In the remaining five cases

1  
2 we gave them the benefit of the doubt,  
3 there was marginal statistical differences  
4 that could be found.

5 Now, none of you have to be  
6 statisticians to realize the significance  
7 of the absence of that third column. It  
8 means that even the obvious cotamination  
9 found in the control area is being matched  
10 totally by the method of sampling and the  
11 numbers of controls. The results of these  
12 comparisons are drawn solely from inadequate  
13 control and inadequate experimental design  
14 and inferential statistics; because the  
15 number of Control sites is smaller, there  
16 is simply inadequate statistical power to  
17 make meaningful comparisons between Control  
18 or Declaration Area and Control.

19 The only legitimate comparisons  
20 that can be made from here are between the  
21 Declaration and the Canal.

22 The reason for that is if you  
23 look at the number of samples they ran,  
24 picking off numbers here at random,  
25 forty-three, one hundred four, and so forth,

1  
2 they ran a lot of samples out of the  
3 Declaration Area and out of the Canal Area.

4 You then have a legitimate  
5 comparison that you can make. Therefore,  
6 they are statistically okay in concluding  
7 that there is a significant difference between  
8 the Canal and the Declaration Area.

9 I don't think that that comes  
10 as a surprise to anybody.

11 They are totally unjustified  
12 in drawing the conclusion that there is no  
13 statistical difference -- let me restate  
14 that:

15 The fact that there is no  
16 statistical difference between the Declaration  
17 and Control is statistically correct, you  
18 can't make the statistical inference that  
19 there is a meaningful difference.

20 The problem we have here is  
21 that you cannot make a logical scientific  
22 conclusion that the Declaration Area is,  
23 therefore, uncontaminated.

24 The third column I think sums  
25 that up.

1  
2 I will be glad to respond to  
3 specific questions which you may have on  
4 that method of calculation or any inferences  
5 that we draw.

6 Now, frankly, it is just dif-  
7 ficult for me to understand how a report  
8 of this magnitude, with so many competent  
9 scientists involved, could find its way into  
10 this report, and also, the fact that the  
11 summary tables and the discussion of the  
12 inferential statistical conclusions that  
13 you make from those tables, occupies such  
14 a central portion of that report is disturbing  
15 to me, because unless you are willing to  
16 spend hours upon hours delving through the  
17 data and the narrative, the conclusions you  
18 are going to draw, from a quick look at that  
19 report, or even a ten or twenty-hour reading  
20 of that report, unless perhaps you are really  
21 aware of the statistical test involved, and  
22 so forth, is that, in fact, there is over-  
23 whelming evidence shown by the 5.6 million  
24 dollar study that the Declaration Area is  
25 uncontaminated, or not contaminated

1  
2 significantly.

3 I really must say that that  
4 does not speak very well for the veracity  
5 of the report.

6 They have such obvious errors,  
7 and not perhaps errors just of omission,  
8 but commission.

9 It is interesting, but Dr. Dewling  
10 is not here. He challenged you to provide  
11 a one-on-one refutation of the data, and  
12 I'm here to do that, and he is not here.

13 I am sorry that that is  
14 the case. I would be glad to provide for  
15 him, in writing, and I also shall be glad  
16 to, after speaking with Dr. Stoline, to ask  
17 his cooperation in any further work on this  
18 issue.

19 We are very glad to have them  
20 go over our calculations on this whole affair,  
21 and we would be very glad to have other  
22 statisticians seek to find out what sort  
23 of legitimate conclusions you can draw.

24 I am confident that the sub-  
25 stance of what I am saying here is correct.

1  
2 Now, let's go on from the sta-  
3 tistical inference, since my position is  
4 since the numbers of Control sites are insuf-  
5 ficiently small that you can't draw that  
6 conclusion, let's go and use a little bit  
7 of common sense and logic. Let's just go  
8 down and take a look at the numbers of detect-  
9 ions in the Declaration Area versus the number  
10 of detections in control.

11 There is not sufficient num-  
12 bers of control to make a statistical infer-  
13 ence, but let's just have a look to see if  
14 you are detecting these materials more often  
15 in the Declaration Area than you are in the  
16 Control, even though there is some debate  
17 about the quality of the selection in Control.

18 For instance, if you look at  
19 Table 9 for a substance called tetrachloro-  
20 ethene, it was detected in fifteen of the  
21 one hundred four sump samples measured.

22 Let me repeat, in one hundred  
23 fifteen of the one hundred four sump samples  
24 measured, tetrachloroethene was detected.

25 I would suppose it would be

1  
2 available, but we are not given the details  
3 about whether that might have been detected  
4 repeatedly in one particular sump or in  
5 several, or if it happened to show up now  
6 and then over time in the particular sump.

7 I would presume that that detail is available.

8 I do not have that available  
9 to me.

10 If we use straightforward  
11 techniques, we can readily show that the  
12 detection of TCE at this frequency is  
13 statistically significant to ninety-five  
14 percent confidence.

15 This procedure is readily  
16 applied to other substances.

17 Let me just briefly explain  
18 what that means.

19 It means that to detect fifteen  
20 times out of one hundred four that substance,  
21 with ninety-five percent confidence, if you  
22 did that one hundred four determinations  
23 again and again and again, you would end  
24 up with some range, and that range is roughly  
25 between four and twenty percent that,

1  
2 with ninety-five percent confidence, you  
3 would be detecting that material, which is  
4 why I say it is statistically significant  
5 in a different sense from the way EPA was  
6 using inferential statistics.

7 If we apply this procedure  
8 to other materials detected, many of them  
9 are detected more frequently in the Declar-  
10 ation Area than in Control. For example,  
11 of the thirty-four compounds listed for the  
12 sump study on Table 9, thirteen of them are  
13 shown to have been detected in the Declar-  
14 ation Area versus no detection in Control.

#13  
15 To be conservative, if they  
16 throw out those that were not detected more  
17 than four percent of the time, we regard  
18 them as insignificant; nine compounds still  
19 remain with a detected sump frequency in  
20 the Declaration versus zero in control.

21 Furthermore, Table 8 shows  
22 that nine substances ~~were detected~~ more frequently  
23 in the Declaration samples than in the Control  
24 samples, while the opposite was true in only  
25 two cases.



1  
2 One is led to quite the opposite  
3 conclusion from what EPA draws, that is,  
4 there is some tentative evidence that the  
5 Declaration Areas shows contamination over  
6 and above that shown in the Control. If  
7 you use their inferential statistics, you  
8 draw quite the opposite conclusions.

9 It is my position, if you could  
10 show the inferential statistics are improperly  
11 applied, then you draw the opposite conclus-  
12 ion.

13 A further concern is the number  
14 of controls that show, apparently, levels of  
15 certain compounds, for example, alpha-BHC,  
16 delta-BHC, gamma-BHC, there are pesticides  
17 and also included are benzene and Toluene which  
18 were found in the sump control samples.  
19 Because of only one control sump and few  
20 samples, this may be an artifact.

21 In any case, having controls  
22 which exceed test area levels by as much  
23 as five-fold do not lend themselves to mean-  
24 ingful comparisons.

25 By that I mean, they are using

1  
2 a control, they are using what is called  
3 a directional analysis.

4 All of their statistics are  
5 based on the Canal being higher and the  
6 Declaration Area being higher than Control.

7 Anytime you have a control  
8 that comes out higher than others, your test  
9 indicates no statistical significance. So  
10 you get rid of the problem of having to deal  
11 with a control that has a fifty percent detect  
12 rate of certain compounds.

13 It is clear they did not deal  
14 with that issue.

15 CHAIRMAN HINCHEY: May I see  
16 if I understand you there?

17 You are comparing Canal-  
18 Declaration-Control. If you come up with  
19 a situation where the Control shows higher  
20 levels of contamination than the Canal or  
21 the Declaration, is that what you said --

22 DR. COOK: Say that again,  
23 please?

24 CHAIRMAN HINCHEY: If you --  
25 you are comparing the three, the Canal, the

1  
2 Declaration Area, and the Control, and I  
3 want to see if I understand you correctly.

4 Whenever you arrive at a situa-  
5 ation where the contamination for a various  
6 chemical or substance is higher in the Control  
7 Area than it is in either of the other two,  
8 that it is a wash?

9 DR. COOK: Right.

10 CHAIRMAN HINCHEY: The whole  
11 thing is thrown out?

12 DR. COOK: That is a character-  
13 itic of a one-tailed test.

14 One-tailed refers to the fact  
15 that you are only looking for a difference  
16 in one direction.

17 CHAIRMAN HINCHEY: I see.

18 If you get the unexpected  
19 phenomenon of the difference in the opposite  
20 direction, your test is useless?

21 DR. COOK: Your statisti-  
22 cal inference, that "no" gets into the column  
23 automatically.

24 CHAIRMAN HINCHEY: I see.

25 The "no" jumps in there

1  
2 automatically.

3 DR. COOK: Yes.

4 Even if you had a very large  
5 control, and for some reason the control  
6 is very high and the Declaration is very  
7 low, you would show no statistical difference  
8 on a directional test.

9 CHAIRMAN HINCHEY: So that  
10 is another example of the poor quality of  
11 the statistical analysis used in the report?

12 DR. COOK: I think the direct-  
13 ional test has some merit in that it does  
14 have certain implications of statistical  
15 power which I don't think is appropriate  
16 to go into here.

17 What it does, I think, is mask  
18 obvious patterns that cause you to have a  
19 look and say what is going on here.

20 It causes you to say there  
21 is no statistical difference, therefore,  
22 we go on.

23 Some inferential statistics  
24 can be very useful if properly applied.

25 I don't mean to say it is not

1  
2 useful. I mean we need to use some common  
3 sense in applying them.

4 CHAIRMAN HINCHEY: But in this  
5 case, they were improperly applied; is that  
6 what you are saying?

7 DR. COOK: Had the number of  
8 controls been larger, there may have still  
9 been some cases in which control came out  
10 higher than the Declaration Area.

11 It perhaps could happen for  
12 any number of reasons. It probably would  
13 not be very likely, but it could happen.

14 In that case, sufficient tests  
15 would show a "no" in that column.

16  
17 ASSEMBLYMAN PILLITTERE: Your  
18 data shows that the control was higher than  
19 in the Declaration Area?

20 DR. COOK: I think you will  
21 find several more of those in other tables  
22 as well.

23 The Control does rise higher  
24 than some of the Declaration Area samples.

25 All I am saying is with the

1  
2 Fisher's One-Tailed Test, it tells you there  
3 is no statistical significance to them.

4 Let me just say here that Dr.  
5 Dewling just referred to the peer review  
6 group, this group of eleven to which you  
7 were referring before.

8 He said they were dealing with  
9 the raw numbers. The biggest problem that  
10 HHS has with these reviewers is trying to  
11 keep them restricted to the particular area  
12 to which they were appointed.

13 The reviewers kept wanting  
14 to bring up what about the numbers of con-  
15 trols, and so on? That wasn't part of their  
16 mandate.

17 Well, several of the reviewers,  
18 nonetheless, made comments about it in their  
19 final reports. This was dismissed in part  
20 for the fact that they did not understand  
21 their initial charge.

22 But anyway, that apart, they  
23 were dealing with the raw numbers.

24 CHAIRMAN HINCHEY: Could I  
25 ask you for an amplification on that?

1  
2                   The EPA, when they sought this  
3 review by an independent group of scientists,  
4 HHS sought to constrain the purview of those  
5 scientists?

6                   DR. COOK:     Constrained -- I  
7 would be more conservative, I guess, in apply-  
8 ing it, because I would say there was a speci-  
9 fic which they were to inspect, they were  
10 to inspect certain areas of raw data, and  
11 there is part of the written record regarding  
12 that, and I don't recall word-for-word, I  
13 would be reluctant to say exactly what it  
14 was, but there was a specific area which  
15 they were to do their comments on.

16                   Many of the reviewers went  
17 beyond that, and that is what I'm referring  
18 to.

19                   Dr. Dewling said that those  
20 referees were working with the raw numbers,  
21 that there was no statistical analysis  
22 available to them at the time, implying that  
23 their conclusions might have been different  
24 had they had that available to them.

25                   I hope now that I have

1  
2 illustrated that that statistical analysis  
3 that he was referring to is improper. It  
4 is also interesting that Mr. Deegan, who  
5 was the immediate Project Coordinator, in  
6 response to -- and this is a matter of written  
7 record -- in response to one of the consult-  
8 ants -- one of the consultants who said it  
9 looks like there is more detection in the  
10 Declaration Area versus Control;

11 Mr. Deegan said yes, but they  
12 have been shown to be statistically insigni-  
13 ficant.

14 Later on, being subjected to  
15 criticisms of the statistical inference,  
16 Mr. Deegan said yes, but we realize there  
17 are some problems with the number of controls,  
18 but you have to look at the analytical data.

19 Now, which is it going to be?

20 You can't look at the analyti-  
21 cal data at one time and say that it is not  
22 significant because we show statistically  
23 it is not, and then you can't respond to  
24 criticisms of statistics by saying you have  
25 to look at the analytical data.



1  
2                   You have to approach it in  
3 a more consistent fashion.

4                   I think what remains to be  
5 addressed is the central question at hand,  
6 at what level of each substance is the medium  
7 considered to be contaminated, or perhaps  
8 an early indication of incipient contaminat-  
9 ion?

10                   The EPA failed to address this  
11 issue accurately, and instead, dismissed  
12 the level detected as trace.

13                   Nowhere does EPA address the  
14 possible source of the substances, nor the  
15 possible implications that are present.

16                   Despite EPA's dismissal of  
17 the significance of these levels, these fre-  
18 quencies of detection would not be expected  
19 at least without the proviso that we are  
20 talking about, heavily-industrialized urban  
21 areas, which is something they keep referring  
22 to.

23                   Even then, I think the case  
24 has not been made well.

25                   They put some appendices in

1  
2 the back to show levels, but they have not dis-  
3 cussed that issue in any detail or sufficient-  
4 ly, I would say.

5 I think the EPA should explicit-  
6 ly state their criteria for deciding whether  
7 something is contaminated or not.

8 Before concluding, let me brief-  
9 ly examine what some have called endorsement  
10 of the EPA Study or conclusions drawn from  
11 it, and this has received some attention  
12 already.

13 In August of 1981, the Depart-  
14 ment of Health and Human Services contracted  
15 with eleven non-Federal consultants to review  
16 the EPA data.

17 In October of 1981, HHS issued  
18 a conditional statement of habitability,  
19 concluding that the Declaration Area is as  
20 habitable as the Control Area is, with which  
21 it was compared.

22 That is always put on there  
23 as a condition.

24 This statement was based on  
25 the conditions that regular environmental

1  
2 testing must continue, that the drainage  
3 system and cover must be fully maintained,  
4 and HHS reached these conclusions "fully  
5 recognizing the differences of opinion offered  
6 by consultants."

7 HHS further concluded that  
8 sufficient consensus, and I want to emphasize  
9 that, sufficient consensus is present to  
10 permit conclusions on the major issues involv-  
11 ed.

12 Sufficient consensus on whose  
13 part?

14 By whose definition?.

15 That is really the question  
16 I want to examine now.

17 If we examine the written re-  
18 ports, and you referred to this earlier,  
19 of all eleven consultants, and I have done  
20 so in great detail, it causes me to reach  
21 quite a different conclusion.

22 In the first place, the consult-  
23 ants were asked to address the specific ques-  
24 tion, and this has received discussion, and  
25 I think it should receive further discussion:

1  
2 "Based on available data, can you conclude  
3 that the Declaration Area is not habitable?"

4 This is where we get into the  
5 area of the area is not not habitable.

6 That is a rather strange use  
7 of the language, and it comes as the result  
8 of the way the question was phrased.

9 It is quite clear that phrasing  
10 the question in this manner is improper,  
11 for the response of "no" is technically man-  
12 dated for any range of available data.

13 If you had no data, you would  
14 have to say no to that, to anything less  
15 than absolutely definitive.

16 This statement, the statement  
17 that one cannot judge an area inhabitable  
18 --let me start again, since this gets confus-  
19 ing because of the way the question was word-  
20 ed.

21 The statement that one cannot  
22 judge an area inhabitable should not lead  
23 to the conclusion that the area is habitable.  
24 That is the central issue involved here.

25 Despite the improper and

1  
2 prejudicial nature of the central question,  
3 and I can't think of any objective scientist  
4 that would state a question that way and  
5 try to draw the sorts of conclusions that  
6 are being drawn --

7 CHAIRMAN HINCHEY: Exactly!

8 DR. COOK: -- despite the way  
9 that question was worded, the responses of  
10 the consultants can hardly be considered  
11 to be an endorsement of habitability.

12 Five of the consultants clearly  
13 stated that lack of sufficient data alone  
14 causes the answer to be no, and they are  
15 very specific about pointing that out.

16 Three other respondents, while  
17 less pointed in their call for further data,  
18 stated serious reservations.

19 All consultants agreed that  
20 continued care and monitoring of the site  
21 was essential indefinitely.

22 Had the question been more  
23 properly stated, "Based upon available data,  
24 can you conclude that the area is habitable,"  
25 it would appear that most or all of the

1  
2 consultants would have answered no.

3           So the function of the question  
4 is reflected by the answers that were given  
5 and the way that these respondents are now  
6 being quoted or misquoted.

7           Dr. Dewling's comments seek  
8 to minimize the seriousness of the level  
9 of your concerns.

10           He specifically mentioned a  
11 couple of areas, and you know fully well,  
12 Mr. Chairman, that from reading those records  
13 yourself, that those were not minor concerns.  
14 As a matter of fact, they went outside the  
15 area of just looking at the data and the  
16 experimental methods used.

17           They covered the entire range  
18 of insufficiency of toxicological information,  
19 insufficiency of control sites, suitable  
20 control sites, suitable numbers of sites,  
21 and so forth, all very serious concerns,  
22 indeed.

23           Some have said that the National  
24 Bureau of Standards has endorsed the EPA  
25 Study.

1  
2 Dr. Kammer has made it clear  
3 that the comments pertain to procedures and  
4 methods only, and that NBS cannot certify  
5 the data gathered by a different agency.

6 Furthermore, he states, "NBS  
7 cannot comment on the significance of the  
8 problems that NBS has identified to the con-  
9 clusions of the EPA Report, because such an  
10 evaluation requires knowledge of the health  
11 effects and mechanisms of the chemical migra-  
12 tion and degradation in addition to knowledge  
13 of chemical analysis."

14 The NBS is making it very clear  
15 that they want their name associated with  
16 the report in only one specific area, and  
17 even then I detect that they are not that  
18 enthused about the way the various agencies  
19 have used their comments on the report.

20 It is important to note that  
21 all other aspects of the EPA Study were ex-  
22 cluded from NBS review, by agreement between  
23 the Agencies.

24 These matters include evaluation  
25 of:

1  
2 (1) Choice of sample locations  
3 and media;

4 (2) Reduction of acquired  
5 data, which is where the statistical analyses  
6 come in;

7 (3) Quality and quantity of  
8 control sites and samples;

9 (4) Conclusions drawn by EPA.

10 NBS is not responsible and  
11 has not commented on any of those.

12 Critical peer review of these  
13 points or of this report, I should say, if  
14 submitted to a scientific journal, which  
15 is refereed by an outside panel of independ-  
16 ent, competent scientists, I believe  
17 this report would not be published in such  
18 a publication based upon its weaknesses,  
19 as it stands in its final form now.

20 Also, it is interesting that  
21 problems outlined in the detailed NBS Review  
22 concerning analysis alone caused HHS to temp-  
23 orarily withdraw its previous conclusions  
24 about habitability.

25 So those were serious sorts



1  
2 of allegations that NBS had, and those were  
3 the issues that were the subject of this  
4 series of meetings that was referred to earl-  
5 ier.

6 It almost seems as if this  
7 is science by negotiation, and so I have  
8 some reservations about that.

9 In response to Mr. Deegan's  
10 referral to critical testimony, he referred  
11 to the EDF, the Environmental Defense Fund  
12 testimony, it was a rather detailed study  
13 or series of comments, probably the most  
14 detailed that was done.

15 He said that those had been  
16 responded to.

17 I have read the forty-five  
18 page document that was provided by Mr. Deegan  
19 of the EPA, and the responses are less than  
20 adequate in my opinion.

21 The responses are highly quali-  
22 fied, and are in some cases evasive, and  
23 they do not answer the essential and most  
24 important issues raised by that group.

25 In conclusion, let me say that

1  
2 the benefits of hindsight in post-study review  
3 are recognized.

4 Critical peer review is an  
5 accepted and useful device to further the  
6 goals of scientific inquiry, and this is  
7 the spirit in which this review is offered.

8 Further study is clearly war-  
9 ranted, and the shortcomings of earlier  
10 should be used to strengthen subsequent  
11 efforts.

12 I think a defensive posture  
13 at this point is unproductive.

14 The Love Canal Monitoring Pro-  
15 gram does not answer the question of habitab-  
16 ility of the Declaration Area, nor could  
17 it be expected to with the constraints of  
18 time under which it was apparently placed.

19 The project could well have  
20 benefitted significantly from more planning  
21 time and more outside peer review at its  
22 early stages.

23 The authors of the EPA Report  
24 themselves implicitly acknowledge the uncer-  
25 tainty of the conclusions drawn from the

1  
2 study.

3 While most good scientific  
4 studies are cautious in drawing conclusions,  
5 few are so filled with nebulous, qualified  
6 statements.

7 Statements such as these can  
8 be found throughout:

9 "...the project was conceived,  
10 initiated, and conducted under severe budget-  
11 ary and time constraints." (Page 16 and  
12 throughout the report).

13 "...the data revealed no clear  
14 evidence of environmental contamination..."  
15 (Page IV).

16 "...No clear evidence of sump  
17 contamination was found in the Declaration  
18 Area that could be directly attributed to  
19 the migration of contaminants from Love  
20 Canal." (Page 19).

21 "...virtually no evidence..."  
22 (Page 78).

23 "...No systematic evidence..."  
24 (Page 78).

25 While few scientific studies,

1  
2 particularly one so extensive and detailed, will  
3 yield results of absolute certainty, one  
4 cannot help but be struck by the extraordinary  
5 extent of qualification found in this report.

6 It is not that such qualification is unjust-  
7 ified; it is, and it should be more strongly  
8 and clearly stated.

9 Despite some serious flaws,  
10 the results of the multi-media chemical monit-  
11 oring program do indicate the absence of  
12 gross, high-level contamination in the vici-  
13 nity of the Declaration Area.

14 However, conclusions about  
15 the long-term migration of contaminants into  
16 the Declaration Area cannot be made on the basis  
17 of this study nor can anything definitive  
18 be said about possible health effects.

19 To interpret the EPA results  
20 as a go-ahead for rehabilitation of the  
21 Declaration Area would be a serious mistake  
22 indeed.

23 However reassuring that low  
24 levels of detected contamination are to some,  
25 that is exactly the result to be expected

1  
2 during early stages of chemical migration.

3                   Despite       extensive       remedial  
4 measures, there is no current assurance that  
5 materials have stopped migrating from the  
6 site, or if they have, that the situation  
7 will remain static indefinitely.

8                   I think the questions of contin-  
9 ued care, cost projections, mistakes and  
10 so forth is a relevant question for this  
11 Committee to consider.

12                   Additional       monitoring,       more  
13 carefully planned, implemented, and interpret-  
14 ed, should be carried out over a longer period  
15 of time.

16                   Detailed       follow-up       studies  
17 on those sites showing positive detection  
18 should be considered in addition to a general  
19 monitoring program.

20                   Correlations between detection  
21 and solubility-sorbtion-diffusion character-  
22 istics of individual compounds should be  
23 investigated.

24                   Further study is warranted,  
25 to be strengthened in part from experiences

1  
2 gained from this baseline study.

3 I think that is what it is,  
4 it is a starting point.

5 The results of the present  
6 study certainly do not support a decision  
7 to repopulate the declaration area at this  
8 time.

9 I don't reach this position  
10 lightly. I have long admired the abilities  
11 and the objectivity of the Environmental  
12 Protection Agency and the competency of their  
13 scientists and the quality of their work.

14 However, I have reached the  
15 conclusion that this study falls short.

16 I will admit the first time  
17 I read their report, I was quite impressed.

18 It seemed very detailed.

19 It was more detailed than most  
20 other studies I have ever seen of this nature.

21 But I did not stop there!

22 I kept looking, and that is  
23 the point at which I began to realize that  
24 the study was falling short.

25 Dr. Dewling has rated this

1  
2 if you were to grade it, he said he would  
3 give it something in the 80's, and that he  
4 would not give it a Ninety-nine.

5 As an instructor, I would agree  
6 with him.

7 I would rate it someplace in  
8 the 80's, which to me is B-level work.

9 Now, the question is, do you  
10 want to base a decision such as this on a  
11 report that is admitted by the person who  
12 is most directly in charge of the report  
13 to be B-level work?

14 I think not.

15 But others will have to draw  
16 that conclusion.

17 I think the real question is,  
18 is there room for reasonable doubts?

19 Is there reason for competent  
20 scientists to disagree on these issues, all  
21 politics aside?

22 I think there is.

23 I think when there is reasonable  
24 doubt among scientists, I would have to say  
25 that public policy-makers will have to

1  
2 err on the side of caution rather than err  
3 in the other direction.

4 "In perpetuity" is a long time.  
5 Humans and their technologies are imperfect,  
6 particularly over long periods of time.

7 On that basis, I reached the  
8 conclusion that this study is not sufficient  
9 to reach the sorts of decisions that are  
10 being suggested about rehabilitation.

11 Thank you for your attention.

12 CHAIRMAN HINCHEY: My inclina-  
13 tion is to applaud you.

14 (Applause.)

15 CHAIRMAN HINCHEY: Are there  
16 any questions?

17 ASSEMBLYMAN PILLITTERE: No,  
18 he is too smart for me.

19 ASSEMBLYMAN PERONE: Well, I think we asked  
20 a lot of questions of Dr. Dewling, and I  
21 am very impressed with your report, and I  
22 think you have educated me quite a bit, but  
23 just in deference to playing devil's advocate  
24 here, I think we should at least pose a few  
25 questions, especially on a couple of your



1  
2 last conclusions.

3 I have no reason to disagree  
4 with your report; quite the contrary, I think  
5 your report bolsters and clears up a lot  
6 of questions I had in my mind when I first  
7 was hearing about the EPA Report.

8 But you said towards the end,  
9 "where there is a possibility of reasonable  
10 doubt amongst scientists, that governmental  
11 agencies should err on the side of caution."

12 I will not address the govern-  
13 mental area decision, because we have trouble  
14 making our own decisions without you making  
15 one for us. I will go back to the scientific  
16 aspect, however.

17 You also stated that you agree  
18 that this report could be rated as a B.

19 Now, taking the devil's advocate  
20 side here, and I also wish that Dr. Dewling  
21 was still here, but in deference to him,  
22 I don't know if he knew, maybe he did, I  
23 don't know, that you were going to be the  
24 one who was going to appear next, and I would  
25 have loved to have seen him stay here and

1  
2 hopefully, possibly have him answer some  
3 of your questions, but since he is not here,  
4 on the issue of reasonable doubt, is there,  
5 based on your detailed study, ground for  
6 a scientist, a reasonable scientist, to  
7 feel or come to the conclusions that Dr.  
8 Dewling has in his report?

9 I mean, everything you said  
10 up to that comment led me to believe that  
11 a reasonable group of scientists, and  
12 you even stated it, would not publish this  
13 report, but if a reasonable group of scientists  
14 really went into it in depth like you did,  
15 they would not allow a journal to publish  
16 it, it seems like you are backtracking a  
17 little bit, although maybe you are not, and  
18 I just want to clarify it.

19 Where you say that reasonable  
20 scientists could go either way, I wonder  
21 if you can clear that up for me?

22 Do you see what I'm saying?

23 DR. COOK: If I don't respond  
24 directly, please rephrase it, and I  
25 will --

1  
2 ASSEMBLYMAN PERONE: It is a hard issue to  
3 focus on, because I'm having trouble posing  
4 the question.

5 DR. COOK: The issue of publica-  
6 tion in a journal -- very often, the criteria  
7 for publication are in the experimental design  
8 and implementation.

9 The conclusions often are con-  
10 troversial drawn in even the finest of scient-  
11 ific studies, therefore a referee is much  
12 more likely to turn down a publication if  
13 it has no significance, if he has probable  
14 reason to suspect errors in conducting the  
15 experiment, and so forth.

16 So very often, things are  
17 published, the reviewers don't agree perhaps  
18 with the conclusions, so that -- does  
19 that help with that aspect of your question?

20 I am not backing off.

21 ASSEMBLYMAN PERONE: The purpose of my question  
22 is not to cross-examine you.

23 I am trying to bolster --

24 DR. COOK: If I am leaving  
25 that impression, let me try to straighten

1  
2 that out.

3 ASSEMBLYMAN PERONE: Only towards the end,  
4 did I get this impression.

5 DR. COOK: The reason I say  
6 scientists differ, you could have a parade  
7 of EPA scientists come in here and perhaps  
8 HHS scientists, and so forth, and they would  
9 stand there and tell you that that report  
10 was okay;

11 Or, that, yes, there are flaws,  
12 but the conclusions we reach are okay.

13 You could have another parade  
14 of scientists come in here and tell you quite  
15 the opposite.

16 So there are going to be scient-  
17 ists that are going to disagree on the conclu-  
18 sions reached in this report.

19 I think that that is just a  
20 statement of fact.

21 Now, the question is, are there  
22 flaws in that report that, if you examined them  
23 in detail, start to reflect upon the conclu-  
24 sions that are drawn?

25 Now, my feeling is that if

1  
2 you have objective scientists removed from  
3 the whole Agency issue, where your whole  
4 livelihood is tied up in it, then I think  
5 there you would start to see a consensus  
6 of opinion that, yes, this is an indication  
7 of certain levels or lack thereof, but it  
8 is not definitive evidence that there is  
9 a -- that there is not a health risk problem  
10 or a repopulation problem.

11 I am starting to sound like  
12 the HHS question on there is not.

13 I think that there is sufficient  
14 ground to say that the report is a starting  
15 point, that is not definitive, and that  
16 scientists who make a living being very cau-  
17 tious about the conclusions they draw would  
18 draw the same sorts of conclusions that I  
19 have stated to you, that there is insufficient  
20 information and documentation.

21 ASSEMBLYMAN PERONE: Taking it from a plain  
22 language point of view, which we have been  
23 dealing with in the Legislature lately, why  
24 would you give it an 80, since you would  
25 give it a good mark for going into the detail,

1  
2 as you said, having preliminarily read it,  
3 you were impressed on the first reading,  
4 why would you give it an 80 if you feel that  
5 it is pretty faulty in its conclusions, when  
6 it has huge gaps that were not sufficiently  
7 statistically looked into?

8 Why wouldn't you characterize  
9 it, and I am not being facetious, I'm trying  
10 in your own words to ask you, why would you  
11 give it that 80?

12 DR. COOK: That is the question.  
13 I have difficulty answering for my own stud-  
14 ents, when they ask me that question.

15 ASSEMBLYMAN PERONE: We can understand that.

16 DR. COOK: First of all, I  
17 wanted to agree with something that Dr.  
18 Dewling had said.

19 ASSEMBLYMAN PERONE: That is an answer, and  
20 I appreciate that.

21 DR. COOK: Secondly, I think  
22 that -- secondly, I think that the study  
23 is an immense study, it had some good aspects  
24 to it.

25 I think the intentions were

1  
2 honorable, and I think that, the amount of  
3 work that went into it was very large.

4 We certainly know that the  
5 amount of resources that went into it were  
6 quite substantial.

7 ASSEMBLYMAN PERONE: 80 for effort, but I  
8 won't ask you what you would give it for  
9 results.

10 DR. COOK: There are certain  
11 aspects of the experimental design and quality  
12 control that are really quite acceptable,  
13 and I don't mean to say that the whole thing  
14 was shabby, it was done carelessly.

15 I am saying it could have been  
16 much better had it been reviewed more tho-  
17 roughly before it began.

18 There was too little of it  
19 afterwards, and too much of the review came  
20 too late, and I think whenever you hear Dr.  
21 Dewling say that they wished they had more  
22 control sites, you are hitting on a little  
23 point of sensitivity there, and they could  
24 do nothing about that retroactively.

25 ASSEMBLYMAN PERONE: What do you think is

1  
2 involved in terms of time, energy, dollars,  
3 if you can, to make this report, according  
4 to your analysis, a valid one?

5 What further has to go into  
6 this?

7 DR. COOK: Are you referring  
8 to this report and the data that was used  
9 here?

10 ASSEMBLYMAN PERONE: Yes, if you can.

11 DR. COOK: There is very little  
12 that you can do further.

13 ASSEMBLYMAN PERONE: Take away the conclusions  
14 and go back to the data-gathering, what do  
15 you think would be involved in adding the  
16 areas -- filling up the gaps, so to speak,  
17 and then looking at it again for the conclu-  
18 sory aspect?

19 DR. COOK: Based upon the data  
20 that you have now, with this study, there's  
21 little more that you could do.

22 You could use the data as sort  
23 of a baseline, and look for changes, for  
24 instance, if you monitor again, with this  
25 new methodology that Dr. Dewling is referring



1  
2 to, he is admitting that they do the study  
3 differently now.

4 If you do it differently now,  
5 you might draw different conclusions.

6 Therefore, the question is,  
7 how do you decide whether a new study is  
8 warranted?

9 You decide on the basis of  
10 additional things you may find, and on the  
11 basis of weaknesses in the previous study.

12 So I think your question in-  
13 volves an immense answer, I am afraid, but  
14 my conclusion would be that you now have  
15 a study in place. I don't like the way  
16 the data were handled and the conclusions  
17 were drawn, but in fact, I think much of  
18 the analytical data has some validity.

19 I have some questions about  
20 certain aspects of the --

21 ASSEMBLYMAN PERONE: Would you say about half  
22 the work is done, or three-quarters of the  
23 work is done?

24 I know it is being very simplis-  
25 tic, and I understand that.

1  
2 DR. COOK: I cannot say, because  
3 the reason -- like I say, perpetuity, that  
4 extends into a long time, and so you have  
5 to have constant monitoring, constant upkeep  
6 and maintenance and redesign, and so forth,  
7 for the whole protection system.

8 ASSEMBLYMAN PERONE: There comes a point where  
9 we would like to get some sort of conclusion,  
10 and I'm asking, to make a reasonable conclus-  
11 ion, to fill in the gaps that you pointed  
12 out, that obviously were the basis of your  
13 criticism, and if you can't answer it, I  
14 understand that, ~~but are~~ we almost there?

15 Do we have a lot more to go?

16 I understand you would like  
17 to have a much longer period of time to con-  
18 duct the study.

19 DR. COOK: I think you have  
20 a long way to go.

21 I think you need to analyze  
22 over periods of time, and I'm talking about  
23 spans of years, and I'm talking about all  
24 the seasonal fluctuations.

25 I'm talking about the rate

1  
2 of migration of materials through soils  
3 and water, which is very slow in many cases.

4 We have cases in Michigan  
5 where groundwater contamination is showing  
6 up now thirty or forty years after some  
7 material was dumped on the surface.

8 This is just a fact that  
9 we are going to have to live with.

10 The contamination moves very,  
11 very slowly through soils and through water  
12 and, therefore, I would think that you  
13 are not close to reaching a conclusion  
14 in that area that it can be resettled.

15 I think you have to err on  
16 the side of caution, and say we better  
17 at least look for a period of years, and  
18 think this thing over.

19 Now, whether that area should  
20 ever be considered to be safe for rehabilitation,  
21 I really can't say that.

22 I really don't know.

23 ASSEMBLYMAN PERONE: I also applaud your  
24 report, and I am somewhat new to Love Canal.

25 We don't have a Love Canal

1  
2 in Westchester, fortunately, because maybe  
3 we were more residential for many  
4 more years than this area up here.

5 ASSEMBLYMAN PILLITTERE: You  
6 just don't know it.

7 ASSEMBLYMAN PERONE: That is right, but at  
8 least I am up here, Joe, to find out.

9 I compliment you on bringing  
10 a neophyte up-to-date and informing him.

11 Congratulations!

12 DR. COOK: Thank you.

13 CHAIRMAN HINCHEY: Dr. Cook,  
14 would it be worthwhile, do you think, to  
15 do the kind of analysis you have done and  
16 to translate that to the air media, to do  
17 an air resource evaluation, a statistical  
18 comparison --

19 DR. COOK: I think so. The  
20 only reason that these three were selected,  
21 is that there is a limited amount of time  
22 to have a look at the data and do the calculations  
23 and so forth.

24 I think if all the sets of data  
25 had been looked at, and this is off the top of

1  
2 my head, I am only guessing now since the  
3 calculations have not been run, but I guess  
4 we would see the same pattern.

5 CHAIRMAN HINCHEY: Could we ask you  
6 to do those calculations? Would you be able  
7 to do them, or have them, or have them done  
8 for us, would that be possible?

9 DR. COOK: I think that, yes,  
10 we can.

11 CHAIRMAN HINCHEY: Without put-  
12 ting any time frame on it, but when you could  
13 get it done?

14 DR. COOK: I think that that could  
15 be done, yes.

16 CHAIRMAN HINCHEY: I want to make  
17 it clear to anybody that is interested, that  
18 you have come here today as a volunteer on  
19 your own volition, and that you have done  
20 this work independently of any work of this  
21 Committee, or as far as I know, anyone else,  
22 because of your interest in it, and the need  
23 you perceived with regard to the study, that  
24 need be taken up; is that correct?

25 DR. COOK: That is correct.

1  
2 ASSEMBLYMAN PERONE: You deserve a lot of thanks  
3 from all of us for that.

4 DR. COOK: Thank you.

5 ASSEMBLYMAN PILLITTERE: I like  
6 your addition of that last column.

7 ASSEMBLYMAN PILLITTERE: Thank  
8 you, Dr. Cook, very much.

9 We will now take a ten-minute  
10 recess.

11 (Whereupon, a ten-minute recess  
12 was taken.)

13 \* \* \*

14

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TABLE 7. SIGNIFICANT DIFFERENCES OBSERVED IN EXTENT OF SHALLOW SYSTEM GROUND-WATER CONTAMINATION AT LOVE CANAL

Compound/Element	Percent Detect (Number of Samples)			Comparison <sup>†</sup>		Canal- Control
	Decl.	Control	Canal	Canal - Decl.	Decl. - Control	
4-Dichlorophenol	2.1 (47)	9.1 (11)	18.8 (16)	Yes	No	No
4,6-Trichlorophenol	0.0 (47)	0.0 (11)	13.3 (15)	Yes	No	No
4-Dichlorobenzene	0.0 (47)	0.0 (11)	12.5 (16)	Yes	No	No
2-Dichlorobenzene	0.0 (47)	0.0 (11)	12.5 (16)	Yes	No	No
2,4-Trichlorobenzene	0.0 (47)	0.0 (11)	12.5 (16)	Yes	No	No
2,3,4-Tetrachlorobenzene	0.0 (47)	0.0 (11)	12.5 (16)	Yes	No	No
1-Naphthylene	4.3 (47)	0.0 (11)	18.8 (16)	Yes	No	No
1,2-Dichloroethene	4.3 (47)	0.0 (11)	18.8 (16)	Yes	No	No
1,1-Dichloroethene	2.3 (43)	0.0 (11)	14.3 (21)	Yes	No	No
1,2-Dichloroethene	2.3 (43)	27.3 (11)	19.0 (21)	Yes	No	No
1-Chlorotoluene	0.0 (43)	0.0 (11)	19.0 (21)	Yes	No	No
2-Chlorotoluene	0.0 (43)	9.1 (11)	10.0 (20)	Yes	No	No
3-Chlorotoluene	0.0 (43)	0.0 (11)	9.5 (21)	No ( $\alpha=0.104$ )	No	No
1,2-Dichlorobenzene	2.3 (43)	0.0 (11)	23.8 (21)	Yes	No	No
Ammonium	66.0 (43)	70.0 (10)	92.9 (14)	Yes	No	No
	72.3 (47)	77.8 (9)	100.0 (13)	Yes	No	No

Comparisons based on a one-tailed difference of proportions test ( $\alpha=0.10$ ), using Fisher's exact test, for the areas indicated, and in the order presented.

CONTAMINATION AT LOVE CANAL

Compound/Element	Percent Detect (Number of Samples)		Comparison <sup>1</sup>	
	Decl.	Control Canal	Canal - Decl.	Decl. - Control Canal
Phenanthrene	23.8 (105)	44.4 (9)	No ( $\alpha=0.108$ )	No
$\alpha$ -BHC	8.3 (109)	0.0 (9)	Yes	No
$\delta$ -BHC	10.1 (109)	0.0 (9)	Yes	No
$\gamma$ -BHC (Lindane)	6.4 (109)	0.0 (9)	Yes	No
Heptachlor epoxide	0.9 (109)	0.0 (9)	Yes	No
Endrin	9.2 (109)	0.0 (9)	Yes	No
DDT	5.5 (109)	0.0 (9)	Yes	No
1,1-Dichloroethene	2.3 (213)	0.0 (17)	Yes	No
Chloroform	19.2 (213)	41.2 (17)	Yes	No
3-Chlorotoluene	0.0 (213)	0.0 (17)	Yes	No
Chlorobenzene	1.4 (212)	0.0 (17)	Yes	No
Cadmium	4.6 (108)	0.0 (9)	Yes	No

<sup>1</sup>Comparisons are based on a one-tailed difference of proportions test ( $\alpha=0.10$ ), using Fisher's exact test, for the areas indicated, and in the order presented.



TABLE 9. SIGNIFICANT DIFFERENCES OBSERVED IN THE EXTENT OF  
SUMP WATER CONTAMINATION AT LOVE CANAL

Compound	Percent Detect (Number of Samples)		Comparison <sup>†</sup>	
	Decl.	Canal	Canal - Decl.	Control - Canal
2-Nitrophenol	0.0 (104)	23.1 (13)	Yes	No
Phenol	4.8 (104)	30.8 (13)	Yes	No
4-Chloro-3-methylphenol	0.0 (104)	15.4 (13)	Yes	No
Hexachloroethane	0.0 (103)	23.1 (13)	Yes	No
1,4-Dichlorobenzene	11.5 (104)	46.2 (13)	Yes	No
1,3-Dichlorobenzene	1.9 (104)	53.8 (13)	Yes	No
1,2-Dichlorobenzene	0.0 (104)	38.5 (13)	Yes	No
Hexachlorobutadiene	0.0 (104)	30.8 (13)	Yes	No
1,2,3-Trichlorobenzene	0.0 (104)	15.4 (13)	Yes	No
1,2,4-Trichlorobenzene	0.0 (104)	53.8 (13)	Yes	No
Naphthalene	6.7 (104)	30.8 (13)	Yes	No
2,4-Dichlorotoluene	0.0 (104)	23.1 (13)	Yes	No
Hexachlorobenzene	1.0 (104)	38.5 (13)	Yes	No

(continued)

<sup>†</sup>Comparisons were based on a one-tailed difference of proportions test ( $\alpha=0.10$ ), using Fisher's exact test, for the areas indicated, and in the order presented.

TABLE 9 (continued)

Compound	Percent Detect (Number of Samples)		Comparison <sup>1</sup>	
	Decl.	Control Canal	Canal - Decl.	Decl. - Control Canal - Cont
Anthracene	10.6 (104)	0.0 (4)	38.5 (13)	No
1,2,3,4-Tetrachlorobenzene	0.0 (104)	0.0 (4)	46.2 (13)	No
Tetrachlorotoluenes	0.0 (89)	0.0 (4)	36.4 (11)	No
$\alpha$ -DHC	17.1 (105)	40.0 (5)	42.0 (14)	No
$\beta$ -DHC	17.1 (105)	0.0 (5)	35.7 (14)	No ( $\alpha=0.102$ )
$\delta$ -DHC	14.4 (104)	20.0 (5)	35.7 (14)	No
$\gamma$ -DHC (Lindane)	18.1 (105)	20.0 (5)	50.0 (14)	No
trans-1,2-Dichloroethene	0.0 (104)	0.0 (5)	31.3 (14)	No
Chloroform	7.7 (104)	0.0 (5)	37.5 (16)	No
1,2-Dichloroethane	1.0 (104)	0.0 (5)	12.5 (16)	No
Trichloroethene	1.9 (104)	0.0 (5)	31.3 (16)	No
Benzene	7.7 (104)	40.0 (5)	43.8 (16)	No
1,1,2,2-Tetrachloroethane	0.0 (104)	0.0 (5)	18.8 (16)	No

(continued)

<sup>1</sup>Comparisons were based on a one-tailed difference of proportions test ( $\alpha=0.10$ ), using Fisher's exact test, for the areas indicated, and in the order presented.

TABLE 9 (continued)

Compound	Percent Detect (Number of Samples)		Comparison <sup>1</sup>	
	Decl.	Canal	Canal - Decl.	Decl. - Control
	Canal	Control	Canal - Control	Canal - Control
o-Xylene	1.9 (104)	0.0 (5)	25.0 (16)	Yes No
m-Xylene	3.8 (104)	0.0 (5)	31.3 (16)	Yes No
Tetrachloroethene	14.4 (104)	0.0 (5)	37.5 (16)	Yes No
Toluene	16.3 (104)	20.0 (5)	43.8 (16)	Yes No
2-Chlorotoluene	0.0 (90)	0.0 (5)	40.0 (15)	Yes No
3-Chlorotoluene	0.0 (90)	0.0 (5)	40.0 (15)	Yes No
Chlorobenzene	1.9 (104)	0.0 (5)	37.5 (16)	Yes No
Ethyl benzene	3.9 (90)	0.0 (5)	25.0 (16)	Yes No

<sup>1</sup> Comparisons were based on a one-tailed difference of proportions test ( $\alpha=0.10$ ), using Fisher's exact test, for the areas indicated, and in the order presented.

1  
2 CHAIRMAN HINCHEY: If we could  
3 resume, please, Ladies and Gentlemen, I would  
4 appreciate it.

5 The next person to present testi-  
6 monty before the Committee will be Mr. Norman H.  
7 Nosenchuck, from the New York State Department  
8 of Environmental Conservation.

9 MR. NOSENCHUCK: Good afternoon,  
10 Mr. Chairman, Mr. Pillittere, and Members of  
11 your staff.

12 My name is Norman H. Nosenchuck,  
13 I am the Director of the Division of Solid Wastes  
14 of the New York State Department of Environ-  
15 mental Conservation.

16 I have the responsibility of  
17 administering the State's Solid Waste Management  
18 Program.

19 The program is administered with  
20 the following goals in mind:

21 (1) Achieve efficient management  
22 of non-hazardous solid wastes, including the  
23 effective recovery of material and energy  
24 from the solid waste stream, and the environ-  
25 mentally sound disposal of other non-hazardous  
solid wastes;

1  
2 (2) Insure that all hazardous  
3 wastes are transported, stored, treated and  
4 disposed of with maximum protection of human  
5 health and minimum environmental impact.

6 (3) Accomplish effective  
7 remediation of sites previously used for  
8 hazardous waste disposal that significantly  
9 impact upon human health or the environment.

10 The New York State Department  
11 of Environmental Conservation's responsibilities  
12 for remedial construction work at the Love Canal  
13 Landfill began in the latter part of 1978. The  
14 Department's responsibilities included review-  
15 ing and approving of plans for remedial con-  
16 struction in the southern portion of the Love  
17 Canal site undertaken by the City of Niagara  
18 Falls, providing on-site environmental monitors  
19 for the construction activity at the Love  
20 Canal site, and consulting with Federal,  
21 State and local agencies on the development  
22 of long-range engineering plans addressing the  
23 problems at the site.

24 The work undertaken by the  
25 City of Niagara Falls included a barrier

1  
2 drain system, parallel to, and on both sides of  
3 the southern portion of the Love  
4 Canal, and a clay cap over the southern  
5 portion of the dumpsite.

6 In 1979, DEC entered into a  
7 cooperative agreement with the U.S. Environ-  
8 mental Protection Agency to carry out and  
9 evaluate additional measures to control the  
10 escape of hazardous waste from the Love Canal  
11 site.

12 Additional remedial construct-  
13 ion was undertaken by DEC in 1979-80 to com-  
14 plete the work started by the City of  
15 Niagara Falls. The tile drain started by the  
16 City of Niagara Falls was completed and now sur-  
17 rounds the Canal.

18 The tiled drain was installed  
19 twelve to twenty feet below the surface.  
20 This drainage and collection system serves as  
21 a barrier to prevent further horizontal escape  
22 of chemical waste from the Love Canal and as  
23 the means of collecting the leachate, contami-  
24 nated groundwater, still being generated in  
25 the Canal.

1  
2 An on-site treatment plant was  
3 built to treat the leachate collected by  
4 the tile drain system. The entire landfill  
5 was covered with a minimum of three feet of  
6 compacted clay. The clay cap prevents human  
7 contact with the wastes, greatly reduces the  
8 amount of water entering the Canal site, and  
9 this reduces the generation of leachate and  
10 minimizes volatilization of contaminants.

11 Sampling, monitoring, study and  
12 evaluation have continued.

13 In the summer of 1980, more than  
14 one hundred seventy monitoring wells were  
15 installed throughout the community by the  
16 Environmental Protection Agency to monitor any  
17 shallow or bedrock contamination.

18 Air and soil samples were also  
19 collected for chemical analysis.

20 A review of this information  
21 indicates that additional remedial work is needed.

22 On July 15th, 1982, the New  
23 York State Department of Environmental Conser-  
24 vation entered into an assistance agreement,  
25 Under the Comprehensive Environmental

1  
2 Response Compensation Liability Act of 1980,  
3 better known as CERCLA or Superfund, with the  
4 United State Environmental Protection Agency,  
5 to do seven remedial tasks at the Love Canal  
6 site.

7 This agreement, which was initial-  
8 ly funded with seven million dollars, has been  
9 increased to about eight million dollars.

10 The tasks are as follows:

11 (1) The first remedial task to  
12 be performed under CERCLA includes the instal-  
13 lation of a below-ground concrete wall, two  
14 feet thick and about fourteen feet deep, con-  
15 structed into the underlying clay.

16 The wall is to be installed  
17 around the entire perimeter of the Love Canal  
18 site to enhance the effectiveness of the exist-  
19 ing leachate collection system around the  
20 Love Canal site and reduce the operation and  
21 maintenance cost of the existing treatment  
22 facility by eliminating shallow groundwater  
23 infiltration into the collection system.

24 Underground utilities will be cut  
25 off.



1  
2 New sewer lines will be installed  
3 for the leachate treatment plant.

4 New off-site stormwater drainage  
5 facilities will also be constructed.

6 The 99th Street School will be  
7 demolished.

8 The clay cap covering the Canal will  
9 be expanded on the east and west sides and  
10 improved through a synthetic membrane over the  
11 cap.

12 Soil will be placed over the mem-  
13 brane and seeded.

14 To complete this part of the  
15 remedial work at the Love Canal site, the  
16 Department, in December of 1982, entered  
17 into a construction contract with Severson  
18 Construction Corporation of Niagara Falls,  
19 New York.

20 This work has been divided into  
21 two phases.

22 The first phase began this fall  
23 and involves the cleaning of sewers that serve  
24 the immediate Love Canal area, the plugging and  
25 abandoning of the sewers, the cleaning of trees

1  
2 which grow adjacent to the Canal, and the  
3 installation of alternative stormwater drainage  
4 facilities.

5 This phase of the work is  
6 scheduled to be completed by the end of this  
7 month.

8 The remainder of the site contain-  
9 ment work is scheduled to resume later this  
10 spring and includes the installation of the  
11 concrete cutoff wall around the Canal site.

12 Also included in this phase of  
13 the work is a complete regrading of the site to  
14 enhance runoff from the site and the placement  
15 of a synthetic membrane over the entire Canal  
16 which will further promote runoff from the  
17 site.

18 These actions will reduce the  
19 amount of water which enters the Love Canal,  
20 is collected and must be treated by the existing  
21 leachate collection system. This construction  
22 work is scheduled to be completed by  
23 September.

24 To assist the Department in the  
25 management and supervision of this remedial

1  
2 construction, we entered into a  
3 contract with a consulting firm, CH 2M Hill,  
4 Inc., having offices in Pittsford, New York.

5 (2) The second remedial task  
6 under CERCLA is an examination of the sewers  
7 that drain to the north of the site. It is  
8 known that both the storm and sanitary sewers  
9 serving the Love Canal area have been contam-  
10 inated by the Love Canal. The extent of this  
11 problem and an engineering assessment as to what  
12 is the best approach to deal with the contami-  
13 nants in these sewers is to be determined in Task  
14 No. 2.

15 (3) The third remedial task under  
16 CERCLA involves an investigation of the Black  
17 and Bergholtz Creeks. These two creeks  
18 receive stormwater drainage from the Love  
19 Canal area and are known to have been contami-  
20 nated by discharges from the Love Canal.

21 This task also involves an engine-  
22 ering assessment as to the extent of the problem,  
23 and what alternate means may be available to  
24 remediate the problem.

25 (4) The fourth remedial task

1  
2 under CERCLA includes an engineering assessment  
3 of the storm sewers which drain to the south of  
4 the Love Canal.

5           These storm sewers which dis-  
6 charge directly into the Niagara River are  
7 known to have been contaminated by drainage  
8 from the Love Canal.

9           (5) The fifth remedial task  
10 under CERCLA involves the design of the long-  
11 term groundwater monitoring program to  
12 evaluate the effects and the effectiveness of  
13 the remedial programs which are in place or to  
14 be built at the Love Canal.

15           (6) The sixth remedial task  
16 under CERCLA involves an investigation of an  
17 area to the south of the 102nd Street Storm-  
18 water Outfall. This area in the Niagara River  
19 is an area of shallow water, and it is  
20 thought that the bottom sediments of the river  
21 in this area contain a considerable quantity of  
22 chemical contaminants that have been discharged  
23 from the Love Canal.

24           This area will be sampled and an  
25 engineering assessment will be made of the

1  
2 extent of the problem, and a discussion of the  
3 alternative means of remediating this area will  
4 be presented.

5 (7) Task seven of the CERCLA  
6 assistance agreement provides for an examinatio-  
7 ion and assessment of the sanitary sewer  
8 facilities which lie to the west of Love Canal.  
9 It is thought that these sewers which previous-  
10 ly served the homes adjoining the Love Canal,  
11 have been contaminated by the Love Canal.

12 To complete tasks two through  
13 seven, the New York State Department of  
14 Environmental Conservation contracted with  
15 two consulting firms: Malcolm Pirnie, Inc.,  
16 having offices in White Plains, New York, and  
17 E.P.C. Jordan, having offices in Portland,  
18 Maine.

19 The description of Malcolm  
20 Pirnie, Inc. work is as follows:

21 Malcolm Pirnie is responsible  
22 for completing tasks 2, 3, 4, 6 and 7 described  
23 above.

24 Samples from test borings, sewers,  
25

1  
2 creeks and the Niagara River will be analyzed.  
3 From the results of the analyses the extent of  
4 contamination will be determined, migration  
5 pathways identified and the contaminant effects  
6 assessed.

7           Following a thorough analysis,  
8 cleanup alternatives will be discussed and  
9 evaluated after which a recommended action  
10 will be selected.

11           The field sampling program was  
12 completed in January and the laboratory analy-  
13 sis should be completed by the end of February.

14           A draft report should be avail-  
15 able in May and a final report including the  
16 recommended actions should be completed by  
17 September.

18           If the recommended actions  
19 include additional remedial construction,  
20 appropriate contract documents will be prepared  
21 construction bids will be taken, and construct-  
22 ion will be done in 1984.

23           E.C. Jordan is responsible for  
24 completing Task 5.

25           The only thing holding back the

1  
2 beginning of that work at the present time is  
3 the EPA approval of the quality assurance/  
4 quality control plan that E.C. Jordan has  
5 submitted.

6 As soon as that is received, we  
7 expect E.C. Jordan to start very soon.

8 The objective of the monitoring  
9 program is to measure and evaluate the effects  
10 and effectiveness of the site containment  
11 program, the concrete wall, the clay cap,  
12 etc., and cleanup work at the Love Canal.

13 This work will involve a review  
14 of existing information, a study of the Love  
15 Canal area, collection of additional soil  
16 samples and the design of both a short and  
17 long-term monitoring program.

18 This study will develop a clear  
19 understanding of the movement of surface and  
20 groundwater to and from the site.

21 In addition to a detailed review  
22 of existing site information and discussions  
23 with previous investigators, new test borings  
24 will be made along the alignment of the new  
25 concrete cut-off wall.

1  
2 Analysis of samples from these  
3 borings, coupled with other site information,  
4 will be used to develop a series of computer  
5 models that will represent actual site condi-  
6 tions.

7 Past studies carried out by  
8 numerous investigators indicated that ground-  
9 water movements in the Love Canal area is con-  
10 trolled by a complex combination of man-made  
11 and natural geologic conditions.

12 In view of these conditions, the  
13 groundwater models that are developed will have  
14 to take into account a large number of factors.  
15 These models will be used to predict long-term  
16 movement of groundwater, and contaminants to  
17 and from the site. The model will then be  
18 used to design the monitoring plan.

19 The model will be of use in selecting  
20 appropriate locations and depths for monitoring  
21 wells and sampling schedules. Such additional  
22 wells will complement the approximately two  
23 hundred existing monitoring wells for use in  
24 the long-term monitoring program.

25 Results of the stream and sewer



1  
2 studies being conducted by Malcolm Pirnie,  
3 Inc., will be used to determine the need for  
4 additional monitoring in those areas.

5 In summary, we expect to complete  
6 site containment work late this fall. Addi-  
7 tional remedial construction work, if found  
8 necessary as a result of the Malcolm Pirnie,  
9 Inc. work, will take place in 1984.

10 Additional monitoring wells, if  
11 found necessary as a result of the E.C. Jordan  
12 work, will be installed. The long-term monitor-  
13 ing program will begin this summer.

14 I would like, Mr. Chairman, to  
15 give you some additional information.

16 Earlier, a question had been  
17 raised on the amount of samples that we are  
18 to take, and I have that information.

19 The sampling program that I  
20 talked about has resulted in about one hundred  
21 forty water samples, both in the sanitary and  
22 storm sewers, over sixty sediment samples from  
23 the soils adjacent to the sewers, and over one  
24 hundred fifty sediment samples from the  
25 sewers will also be taken.

1  
2 We will be taking additional  
3 samples during the storm events.

4 We have taken in Black Creek about  
5 almost thirty water samples, over eighty sedi-  
6 ment samples, and in Bugnoltz Creek, over  
7 forty water samples and over one hundred thirty  
8 sediment samples.

9 In the area of the 102nd Street  
10 Outfall in the Niagara River, we have taken  
11 about three hundred thirty sediment samples.

12 The question had been raised of  
13 the ~~quanti~~ quantitative dioxin analysis, and we have  
14 taken over forty samples for this purpose.

15 The point that I would like to  
16 make for everybody's benefit is that all of  
17 the results of all of the sampling work that we  
18 will receive and the reports, will be  
19 subject to a full and thorough public discussion  
20 and evaluation.

21 This is part of our program in  
22 connection with completely informing the public  
23 at all times of what is going on, and in that  
24 we have published, and the first issue came out  
25 this week, and this is a copy of a Love Canal

1  
2 Landfill publication, it is the first issue which  
3 will be published from time to time.

4 Let me just read from the first  
5 paragraph in here, this is the first issue of  
6 the Love Canal Update:

7 "The purpose of the Update is to  
8 keep concerned citizens, interested groups,  
9 government officials, members of the media,  
10 informed about the progress of remedial actions  
11 and of the monitoring program taking place at  
12 the Love Canal Landfill. We will be covering  
13 information concerning current activities at the  
14 site, what new documents are available for  
15 review, advising you on citizen participation  
16 activities, and reporting on the citizen  
17 input we have received."

18 We have established a toll-free  
19 line, in order to make it easier for people  
20 concerned about the Love Canal Landfill to ask  
21 questions or have their comments recorded.

22 DEC had opened a toll-free 800  
23 telephone line, and this telephone will be  
24 answered by members of DEC's Citizen Participat-  
25 ion Unit, who will listen to your questions and

1  
2 either provide an answer immediately or get back  
3 to you with accurate information.

4 The telephone line is open from  
5 9 to 5 p.m., Monday through Friday, and if the  
6 staff is busy, and cannot immediately answer the  
7 phone, you will hear a recorded message asking  
8 you to provide your name and telephone number.

9 The telephone line is 1-800-342-  
10 9269.

11 We are also in the process of  
12 opening up, and we hope to have people in our  
13 office at the Love Canal Site to answer  
14 questions, probably sometime in early March.

15 It is of interest to note, and in  
16 all fairness to EPA, when we did negotiate the  
17 agreement with EPA, the Superfund Agreement,  
18 the assistance agreement, we did tell EPA it was  
19 necessary for us to have two people present at  
20 the site, and the Federal government, as a  
21 matter of fact has paid for those two people as  
22 part of the assistance agreement under the  
23 Superfund Program.

24 The State has an opportunity on  
25 a site-specific basis to use as its match for

1  
2 the funds any expenditures that had been  
3 expended at a particular site between the  
4 period January 1, 1978 and December 11th, 1980.

5 We had spent enough money then,  
6 we believed, so it was not necessary for us to  
7 come up with a ten-percent match. Therefore,  
8 the money being received right now is Federal  
9 funds totally.

10 I appreciate the opportunity to  
11 make this presentation, Mr. Chairman, and I  
12 would be pleased to answer any questions you and  
13 the members of the panel might have.

14 CHAIRMAN HINCHEY: Thank you, we  
15 appreciate your testimony very much.

16 ASSEMBLYMAN PILLITTERE: On Page 2  
17 you stated that the original work was undertaken  
18 by the City of Niagara Falls.

19 Who is now totally responsible for  
20 the work?

21 Is the City of Niagara Falls doing  
22 the work?

23 Is DEC doing the work?

24 Is EPA doing the work?

25 MR. NOSENCHUCK: DEC has the

1  
2 responsibility.

3           DEC assumed the responsibility  
4 initially in 1979, under -- there was a coopera-  
5 tive agreement signed in 1979, where the State  
6 of New York put up four million dollars, matched  
7 by four million dollars in Federal funds.

8           After the advent of the Federal  
9 Superfund Law, we were given an opportunity to  
10 apply and we did apply, and we assumed what is  
11 known as lead agency status, where the State of  
12 New York, through the Department of Environment-  
13 al Conservation, has the responsibility to do  
14 the work.

15           The work that we do is reviewed by  
16 EPA.

17           Anything that we do needs to have  
18 EPA approval.

19           All of our activities are reviewed,  
20 and we do have -- EPA has an oversight role with  
21 us.

22           But the Department of Environment-  
23 al Conservation has a lead role responsibility.

24           In connection with what was asked  
25 earlier about the long-term monitoring, as a

1  
2 condition, as a condition, and this is standard  
3 for any agreement signed under this law, for a  
4 state to seek assistance, the state has to  
5 guarantee the Federal government that they, the  
6 state, will be responsible for the long-term  
7 operation and maintenance, be it the Love Canal  
8 or be it the Pollution Abatement Services, or  
9 any other site in the United States, and that  
10 commitment was made by the State of New York.

11 So that the State of New York has  
12 a written contractual agreement with the Federal  
13 government, that the State will assume the  
14 long-term operation and maintenance, of course,  
15 in connection with the project, and that can  
16 last for a very, very long period of time.

17 We heard some discussion about  
18 the Federal Superfund terminating in Federal  
19 fiscal year 1985.

20 It is my personal opinion that  
21 that would be a mistake in this country. It is  
22 my personal opinion that the Federal government  
23 should be involved in providing funds to clean  
24 up these hazardous waste dumpsites for as long  
25 as there is a problem, and that is just a

1  
2 personal opinion.

3 ASSEMBLYMAN PILLITTERE: Has  
4 Niagara Falls ever been paid for the work they  
5 did in 1978?

6 MR. NOSENCHUCK: I think the Mayor  
7 will be here, and --

8 ASSEMBLYMAN PILLITTERE: Have you  
9 been paid yet?

10 THE MAYOR: We have gotten most of  
11 it.

12 ASSEMBLYMAN PILLITTERE: Not all  
13 the money --

14 THE MAYOR: We are a million or  
15 two short.

16 ASSEMBLYMAN PILLITTERE: Will you  
17 pay them?

18 MR. NOSENCHUCK: I don't think the  
19 bills come to our department, and I think the  
20 agreement is on somebody else.

21 ASSEMBLYMAN PILLITTERE: The other  
22 thing is on Page -- you mentioned, if work has  
23 to be -- if an effort has to be expended, it  
24 will be done in 1984.

25 How can you, on Page 7, if you



1  
2 you don't know what construction work has to be  
3 done, how can you state that it will be done in  
4 1984?

5 MR. NOSENCHUCK: The reason I said  
6 that is the work, the remedial work, the addi-  
7 tional investigation that is going on right now  
8 will go on through most of -- well, we will get  
9 the final reports, the draft reports sometime  
10 in the summer, and then we are going to have  
11 public discussion on this thing.

12 What will come out through these  
13 reports are an assessment of the problem, the  
14 extent of the problem, alternative methods of  
15 solving it, whatever they might be, and I don't  
16 know what they are yet, and then a recommended  
17 alternative for solving the problem.

18 Now, that recommended alternative  
19 I think everybody can agree, is going to be some  
20 sort of construction activity.

21 Now, that construction activity  
22 will require the development of plans and speci-  
23 fications, the preparation of contract docu-  
24 ments, the taking of bids;

25 Therefore, I stated in my

1  
2 testimony, it is my opinion that the work will  
3 take place in 1984.

4 I don't see how we could start  
5 earlier than that.

6 ASSEMBLYMAN PILLITTERE: My next  
7 question is, on Page 3 you stated that the  
8 99th Street School will be demolished.

9 MR. NOSENCHUCK: That is  
10 correct.

11 ASSEMBLYMAN PILLITTERE: The  
12 Attorney General, without answering my ques-  
13 tion as to who should pay for it, said it is  
14 in litigation, and my question to you is,  
15 how can you demolish a building when the  
16 Attorney General says nothing can be done  
17 because it is in litigation?

18 MR. NOSENCHUCK: I don't think  
19 the Attorney General said that.

20 ASSEMBLYMAN PILLITTERE: That  
21 is what he said.

22 MR. NOSENCHUCK: I don't think  
23 he said nothing could be done.

24 ASSEMBLYMAN PILLITTERE: He  
25 said --

1  
2 MR. NOSENCHUCK: The question  
3 I think related to the cost, which is about  
4 -- there is a claim and an allegation that the  
5 school has a certain value, and what he said,  
6 essentially, and what I am going to say is  
7 that the courts will decide that.

8 In the meantime, In the mean-  
9 time, and I will give you an up-to-date status  
10 report where we are on that, in the meantime  
11 we filed on the 16th, or we sent, I don't know  
12 if they were filed yesterday or today, but we  
13 sent on the 16th, maps and easement descrip-  
14 tions to the Secretary of State in Albany.

15 When we receive a certificate  
16 from the Secretary of State acknowledging  
17 receipt of maps and descriptions, we will file  
18 those maps and descriptions with the County  
19 Clerk here in Niagara County.

20 We will then have the right to  
21 demolish the school.

22 The only possible problem in  
23 connection with all of this is some land owned  
24 by the Urban Development Corporation. We can-  
25 not appropriate the land, and we have

1  
2 requested that UDC give DEC the title for a  
3 dollar fee waiver, and this might cause some  
4 delay, but essentially, we expect to have  
5 everything in hand shortly, and that the  
6 school will be demolished on schedule.

7 Our original schedule called for  
8 the school to be demolished, it was either in  
9 April or May, but hopefully we will probably  
10 have it down before then.

11 The courts will decide the  
12 question of the value.

13 ASSEMBLYMAN PILLITTERE: The  
14 other question, which was brought to my  
15 attention, there are still families living in  
16 Rings 1 and 2.

17 MR. NOSENCHUCK: I don't believe  
18 -- well, there are some families living in the  
19 upper corner, in Ring 2, I believe.

20 There is nobody living in Ring  
21 1.

22 ASSEMBLYMAN PILLITTERE: There  
23 are two families living in Ring 2.

24 MR. NOSENCHUCK: That is  
25 correct.

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ASSEMBLYMAN PILLITTERE: How  
could two families be living in Ring 2, when  
the DEC and everybody is saying that Ring 2  
is uninhabitable?

MR. NOSENCHUCK: I don't think  
DEC questioned -- addressed the question of  
habitability.

How can they be living there?

They are living there, because  
they are there, and the families, like every-  
body else, had been given an opportunity to  
sell the land to the State.

They chose not to.

That is their decision, and I  
will not examine their decision.

That is not my purpose.

ASSEMBLYMAN PILLITTERE: Are you  
saying that DEC had not determined any habit-  
ability of Rings 1, 2 and 3?

MR. NOSENCHUCK: The proper agency  
for determining habitability is the Department  
of Health, the Commissioner of the Department  
of Health, in consultation with the appro-  
priate -- with the appropriate health

1  
2 officials, and I would suspect that when Dr.  
3 Huffaker testifies, he will address himself  
4 to that issue.

5 ASSEMBLYMAN PILLITTERE: Is he  
6 from the Department of Health?

7 MR. NOSENCHUCK: Yes, he is.

8 ASSEMBLYMAN PILLITTERE: We have  
9 a quote in this newspaper article that states  
10 that most of the homes will be habitable,  
11 while this construction is going on, and I  
12 want to ask, is that with regard to the con-  
13 struction you are doing?

14 MR. NOSENCHUCK: I gave them my  
15 personal opinion, and it is my personal  
16 opinion that homes in the Declaration Area  
17 can be -- people can move in on an incremental  
18 basis, which is just a personal opinion.

19 ASSEMBLYMAN PILLITTERE: You are  
20 speaking as the DEC?

21 MR. NOSENCHUCK: I was there  
22 speaking in connection with the DEC, and I  
23 believe that is an article concerning the  
24 signing -- I believe that was on the 15th or  
25 the 16th, or thereabouts, regarding the

1  
2 signing of the agreement, and when I tried to  
3 shy away from that somebody said well, what  
4 is your personal opinion, and I gave them my  
5 personal opinion.

6 I cannot be held responsible for  
7 how it appears in the press.

8 ASSEMBLYMAN PILLITTERE: What  
9 is your personal opinion on Ring 3?

10 MR. NOSENCHUCK: My personal  
11 opinion is that on an incremental basis,  
12 people can move in, and depending upon the  
13 development, I don't believe people should be  
14 in an area where you are doing construction  
15 work, I don't think that is a good practice.

16 I don't think they should move  
17 in until it is finished, but that is my per-  
18 sonal opinion, that on an incremental basis  
19 it is habitable.

20 CHAIRMAN HINCHEY: Thank you,  
21 Norman.

22 MR. NOSENCHUCK: Thank you,  
23 Mr. Chairman.

24 Thank you, Gentlemen.

25 \* \* \*

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CHAIRMAN HINCHEY: Our next speaker will be Dr. Irwin D.J. Bross, from Roswell Park Memorial Institute.

DR. BROSS: Good afternoon, Chairman Hinchey, Ladies and Gentlemen.

Since there will be speakers present from the Health Department, speaking for the Health Department, let me make it clear that although I have been Director of Biostatistics at Roswell Park since 1959, and for seven years have been Acting Head of Epidemiology, I do not speak for the Health Department.

I do not speak for Roswell Park. I am speaking here as an individual.

Because of the questions that could arise as to the qualifications of Health Department people to speak on a topic, when there seems to be, as there might very well be, quite divergent statements being made, I have not seen anything that the Health Department intends to present, so I am not at all reacting to it.



1  
2 By way of qualification, as a  
3 public health scientist and biostatistician-  
4 epidemiologist for more than thirty years, I  
5 have published more than three hundred papers,  
6 and my latest book, Scientific Strategies To  
7 Save Your Life, deals in detail with studies  
8 of the hazards of low-level ionizing radiat-  
9 ion.

10 As I stated, for more than  
11 twenty years I have been Director of Bio-  
12 statistics at Roswell Park Memorial Insitute  
13 for Cancer Research in Buffalo, New York, for  
14 seven of those years as Acting Chief of Epi-  
15 demiology, and before that was at Cornell  
16 University Medical College and Johns Hopkins.

17 I am a longtime fellow of the  
18 American Stastistical Association and also a  
19 fellow of the American College of Epidemio-  
20 logy.

21 If people want to contradict me,  
22 I believe they should show at least equal  
23 qualifications.

24 ASSEMBLYMAN PILLITTERE: Then  
25 I cannot ask you any questions.

1 DR. BROSS: I meant expert  
2 witnesses.

3 Before I go any further though,  
4 I would like to give the Committee -- I had  
5 submitted my testimony previously, but I had  
6 also some attachments which I had not pre-  
7 viously given.

8 There is only one copy of the  
9 attachment, because most of it is not probably  
10 too important.

11 Let me quickly mention a couple  
12 of points that are in the attachment.

13 One is that there is a letter  
14 dated August 17th, 1982, which I wrote to  
15 NATURE, dealing with this matter, and I  
16 believe that the Environmental Protection  
17 Agency has had a copy of this material.

18 In spite of the statements that  
19 have been made that no one has challenged  
20 these reports, I do not believe they are quite  
21 correct.

22 Another point that is involved  
23 here, and one which I may spend a little more  
24 time on because quite a few things I was going  
25 to say have already been said, and I do not

1  
2 want to be repetitive, the matter that does  
3 seem to concern this panel, which is not just  
4 are there some chemicals around, or how many  
5 parts per billion are there, but what is going  
6 to happen to the people if they move back in?

7 CHAIRMAN HINCHEY: Exactly.

8 DR. BROSS: As one of the  
9 attachments, I have taken a section from the  
10 New York Times recently called "Calculating  
11 the Odds on Accurate Risk Assessment," dealing  
12 with this question of what can you actually  
13 say about the hazards, and so forth, and what  
14 you will see throughout this article, which  
15 I won't attempt to give you a resume of, they  
16 referred to such things as good economic fore-  
17 casts or long-range weather forecasts, and  
18 cites the experience with the caterpillars  
19 as an example.

20 Finally, there is a very dif-  
21 ficult area, and I might say that a panel of  
22 physicians is no more competent to consider  
23 the question than anyone else, because the  
24 scientific information on the hazards of  
25 specific chemicals was not that good.

1  
2 Now, the other item in here is  
3 an article which I wrote entitled "Muddying  
4 the Water at Niagara," which appeared in the  
5 "New Scientist," which deals specifically with  
6 an analysis of data on people at Love Canal,  
7 which shows that there was serious genetic  
8 damage in Ring 1, so that we know that these  
9 chemicals can do harm.

10 We don't know how much you can get  
11 by with, and I don't know that we will know  
12 this in the near future.

13 Anyway, those are, by way of in-  
14 troducing, the attachments.

15 On the statistical comments, so  
16 much has been said about the statistical  
17 analysis, it would seem perhaps a little re-  
18 dundant for me to add that I also did the  
19 comparison between the inner ring or Canal,  
20 as it is called in the publication, and the  
21 control, and there is no differences, so I can  
22 confirm the other statistical calculations,  
23 but I suppose I drew a somewhat different  
24 conclusion than they did, which was that all  
25 of Niagara Falls is as badly contaminated

1  
2 as the inner ring of Love Canal.

3           So it seems to me that if the  
4 Mayor of Niagara Falls wishes to use EPA's  
5 statistical argument to claim that the reset-  
6 tlement area is no more contaminated than  
7 other Niagara Falls neighborhoods, he should  
8 also then go onto television and tell visitors  
9 to the Convention Center that they are being  
10 exposed to the same chemicals and levels of  
11 chemicals that the people in the inner ring  
12 of Love Canal were exposed to, something which  
13 I don't think he will do.

14           The EPA statistical argument  
15 leads to this conclusion because it is a  
16 totally incompetent statistical analysis.

17           The previous speaker, a nice  
18 young man, gives people B grades, but I grade  
19 on results, and I'm afraid I have to give the  
20 statistical analysis an F.

21           What the results really show,  
22 actually, is that the number of controls --  
23 for instance, in sumpwater, which I will say  
24 something about, in their report they say  
25 they took one hundred four samples of the

1  
2 Declaration Area.

3 Now, that is just -- that is  
4 just silly.

5 I mean, it is terrible. It is  
6 bad design, and then to try to do an analysis,  
7 once you start out with this design, is  
8 ridiculous, in a way.

9 So what this really shows is  
10 that there were just too few control samples  
11 to give me the proper statistics. The study  
12 statistics in this report are simply incom-  
13 petent.

14 Now, I think that without going  
15 into more elaborate statistical detail than  
16 that, I will go back a little bit to my pre-  
17 pared testimony, but I won't say as much  
18 because I do think I would like to touch  
19 briefly on the concerns regarding how do you  
20 tell whether an area is, in fact, safe for  
21 human habitation?

22 Who can give a guarantee of  
23 this?

24 What data do you need to give  
25 such an guarantee?

1  
2                   It seems to me these are the  
3 questions the Committee has been concerned  
4 about, and if I forget to mention them, I hope  
5 they will remind me.

6                   I will, however, go back to my  
7 report.

8                   The title I originally started  
9 with is: "Is EPA Lying to the Public about  
10 the Chemcial Contamination in the Vicinity  
11 of the Love Canal?"

12                   I guess you can infer my answer.

13                   There has been a great deal of  
14 controversy over the chemical contamination  
15 and the health effects of this contamination  
16 in the vicinity of the Love Canal. The EPA  
17 report on "Environmental Monitoring at Love  
18 Canal, Volume I" based on 8.5 million dollars  
19 in research that was supposed to have settled  
20 the issue has only made matters worse.

21                   From the standpoint of a public  
22 health scientist, there is really no scienti-  
23 fic or statistical reason for further contro-  
24 versy, because the data tables in this report  
25 do, in fact, clearly settle the matter.

1  
2 When I said the results or con-  
3 clusions were all wrong, I was not referring  
4 to the data.

5 The data is there, and it should  
6 be used.

7 What these tables show to anyone  
8 who can read English, as a matter of fact,  
9 without special scientific or statistical  
10 training, but willingness to look at some num-  
11 bers is:

12 (1) There has been extensive  
13 migration of chemicals from the original Love  
14 Canal area into the area designated for reset-  
15 tlement, called the Declaration Area in the  
16 report.

17 (2) There is far more chemical  
18 contamination in the resettlement area than  
19 in other Niagara Falls neighborhoods.

20 (3) In view of the existing  
21 scientific evidence that the chemicals in the  
22 original Love Canal area caused problems, and  
23 in view of the lack of adequate quantitative  
24 information on health effects for most of the  
25 chemicals, it would be contrary to prudent



1  
2 public health policy to give any assurances  
3 that the resettlement area is safe.

4 Now, as I say, you don't have  
5 to be an expert to verify what I have been  
6 saying, because they fall directly from the  
7 facts in the EPA report, particularly Table  
8 9 of this report.

9 It is completely unnecessary for  
10 our legislative panel, or for anyone else, for  
11 that matter, to listen to the opinions or dis-  
12 agreeing opinions of experts, scientific or  
13 otherwise, because they can look directly at  
14 the facts.

15 Let me say this much:

16 In modern science, the prime  
17 directive of modern science is a theory must  
18 fit the facts.

19 The final analysis in modern  
20 science is what the facts say.

21 It is not what a panel of  
22 experts, or it is not what the government  
23 witnesses say;

24 It is what the facts say, and  
25 we do have the facts here.

1  
2                   So before certainly any effort  
3 is made for a return to the Love Canal, I  
4 think that it is essential that these facts  
5 be considered, and that the statements that  
6 have been made about these facts by EPA be  
7 subjected to review.

8                   Now, all three of the statements  
9 that I made that follow directly from Table  
10 9 and the other data tables in this report are  
11 in flat contradiction to what EPA says in its  
12 summary.

13                   In other words, EPA knowingly,  
14 deliberately, and unconscienably lied to the  
15 public about the chemical contamination in the  
16 vicinity of Love Canal.

17                   At first hearing, it may seem  
18 incredible or unbelievable that a Federal  
19 agency committed to environmental protection  
20 should betray its public trust by making false  
21 statements that would endanger the public  
22 health and safety, and particularly, that they  
23 should make statements about findings that  
24 are contradicted by the data in the same  
25 report, in exactly the same report.

1  
2 But that is exactly what the  
3 case is.

4 If you look at Table 9, you  
5 could just go down the table and see for your-  
6 selves, there are fifteen chemicals which are  
7 found in the immediate vicinity of Love  
8 Canal, which are found in the resettlement  
9 area, which are not found in other neighbor-  
10 hoods.

11 Let me say something about the  
12 sample force.

13 No different statistical tests,  
14 but there was a reason which was given by EPA  
15 for this decision, to use only four controls,  
16 and, in fact, the gentleman who testified was  
17 personally responsible for that decision, had  
18 been advised that it was a bad decision, and  
19 had said, no, we don't have to take samples  
20 in other neighborhoods, we know those chemi-  
21 cals aren't there, why should we waste all of  
22 our resources?

23 CHAIRMAN HINCHEY: You know that  
24 to be a fact, they said that, that was his  
25 attitude?

1  
2 DR. BROSS: I think he said this  
3 actually repeatedly, to the best of my  
4 knowledge.

5 Now, I believe if you have a  
6 researcher, he could dig it out directly, but  
7 I can't produce it as a citation.

8 That is exactly the reason that  
9 was given for using four samples when every-  
10 body told him that four samples were not  
11 enough.

12 Well, if you are willing to say  
13 the other neighborhoods do not have this con-  
14 tamination then, of course, you have no  
15 question but there is much more contamination  
16 in a Declaration Area than in the other neigh-  
17 borhoods.

18 Actually, in Table 9, if you  
19 start counting them up, you will find that  
20 there are, as I say, these chemicals which  
21 show in the Declaration Area, not in the Con-  
22 trol, and there is not a single chemical which  
23 is found in the other neighborhoods, and not  
24 in the resettlement area.

25 Now, this is a score of fifteen-

1  
2 nothing!

3 MR. JOHN: It is my understand-  
4 ing, it was only one control for the sump-  
5 water; is that correct?

6 DR. BROSS: No, they had four  
7 samples, four or five --

8 MR. JOHN: But the same locat-  
9 ion?

10 DR. BROSS: But that is still  
11 another problem.

12 I mean, that is another thing  
13 that was criticized, and they said, well, we  
14 just don't need to worry about the controls,  
15 we know that there is nothing there.

16 But when you have a score of  
17 fifteen to nothing, and EPA calls this a tie  
18 score, and says the contamination is no worse  
19 in the resettlement area than in other Niagara  
20 Falls neighborhoods, then you have to ask  
21 yourself, how does EPA expect to get away with  
22 this?

23 Well, they did.

24 Actually, I have listed in my  
25 paper the names of the chemicals and so forth,

1  
2 and there are really about thirty chemicals,  
3 and there is another situation that occurs,  
4 there are a few chemicals. where you find a  
5 positive sampling not only in the Love Canal  
6 area, and the Declaration Area, but in the  
7 other areas, and they were mentioned.

8 In fact, they were identified  
9 by our chemist expert as pesticides.

10 Any explanation required for  
11 migration in this situation?

12 The EPA did not know where the  
13 chemicals were coming from.

14 What has happened, is that there are  
15 about thirty chemicals which are in the total  
16 list which are not in the general area and  
17 half of these roughly have migrated into the  
18 resettlement area, but before anybody is re-  
19 assured by the fact that only half of them  
20 have migrated, let me mention something which  
21 will be said later, but just briefly, about  
22 Dr. Barry Commoner examining the table which  
23 I had written in the NATURE paper for the  
24 molecular weights.

25 What he found was that the

1  
2 molecules that would be expected to migrate  
3 fastest tend to be the ones in the list of  
4 chemicals that migrate.

5 Not a surprise!

6 But what this means is that  
7 sooner or later, those other chemicals will  
8 be migrating into the resettlement area, and  
9 the contamination is likely to get worse in  
10 time, which is precisely one of the concerns,  
11 what will be the long-term effect?

12 Right now, we do not know, and  
13 we may not know for ten years, but this is a  
14 problem where we have evidence from the EPA  
15 report that there is migration, and evidence  
16 that indicates it will be continuing.

17 Now, we have heard of the Love  
18 Canal homeowners; I guess I will call them what  
19 some people refer to, always or sometimes, as  
20 volcano people.

21 They are people who live on  
22 active volcanoes and this may be their  
23 prerogative.

24 However, I think it is one thing  
25 to let the person live on a volcano site, but

1  
2 is another thing to sell lots on a volcano  
3 with a guarantee, or any kind of assurance.

4 This is a fraud, as far as I'm  
5 concerned, and it is a very dangerous fraud;  
6 EPA has aided and abetted this fraud.

7 Now, I think what I would like  
8 to mention very briefly, without going through  
9 everything that I have said in my prepared  
10 testimony, is with reference to the reviews of  
11 panels.

12 As you have seen, you might say  
13 how could EPA expect to get away with it, when  
14 anybody could look at Table 9 and see this for  
15 themselves?

16 It does not take expertise.

17 The fact is, they did get away  
18 with it for a long time.

19 As you have heard, they were  
20 reviewed by a whole series of panels. There  
21 were panels inside EPA, internal panels f  
22 EPA, and there were panels set up by the Centers  
23 for Disease Control who reviewed this, and the  
24 Centers for Disease Control has the primary  
25



1  
2 mission of protecting your health and mind  
3 against hazardous substances, including chemi-  
4 cals.

5 Then they were reviewed by per-  
6 sons outside of government, who were not  
7 happy.

8 But you might wonder how could  
9 all of these people read all of this and miss the  
10 message?

11 Well, I think maybe part of the  
12 story is that when you get a big, long report,  
13 you read the text, but tables are a little bit  
14 dull, even for a statistician.

15 Furthermore, you have to look  
16 at the tables with some plan or hypothesis in  
17 mind, and that is, in fact, what led me to  
18 this.

19 I did not -- I just happened on  
20 it.

21 I was going to do a statistical  
22 analysis, and when I found that it was a  
23 fifteen-nothing game, I said oh, no, I don't  
24 need a quantitative analysis now, this is  
25 qualitative.

1  
2 Obviously, there are more chemi-  
3 cals in this resettlement area than in the  
4 control area, which is why I was led to this,  
5 and I have looked at the other things, and you  
6 get the same sort of picture.

7 I might say that air pollution  
8 does not quite work this way, because, in  
9 fact, air pollution has a different spread  
10 system. You do not find big differences be-  
11 tween the areas with respect to air pollution.

12 Softwater is very important, and  
13 this is mentioned in Table 9, and the reason  
14 it is important, softwater is the best col-  
15 lector, that is where they get the most  
16 samples and chemicals and most contaminations.

17 It also happens to be the place  
18 where people become -- get in contact with  
19 chemicals.

20 I mean, it is a definite source.

21 So soft water is particularly im-  
22 portant for that reason.

23 Of course, that is strong evi-  
24 dence.

25 The evidence as I see it, for

1  
2 soil, the score is nine-zero, and for ground-  
3 water, four-one, and this is by EPA's stand-  
4 ards.

5 CHAIRMAN HINCHEY: Would you  
6 want to explain that a little bit more? Would  
7 you want to clarify what you are saying with  
8 those numbers

9 DR. BROSS: There are three  
10 areas listed, the Canal, the  
11 Declaration, and the Control Area.

12 Now, in some cases, all three  
13 show positive samples.

14 In these cases, it is in the  
15 environment.

16 However, with pesticides, it is  
17 not, it is a chemical that is there, and it  
18 really is generally not out in the Niagara  
19 Falls environment, and there aren't necessar-  
20 ily any differences, that is to say, the  
21 Declaration Area has pesticides just like the  
22 other neighborhoods in the Niagara Falls Area.

23 CHAIRMAN HINCHEY: There are  
24 certain chemicals that are ubiquitous in this  
25 region?

1  
2 DR. BROSS: Yes, they are pesti-  
3 cides, primarily.

4 But I suggest that you ask a  
5 chemist, because I am not an expert on  
6 chemistry.

7 The other comparisons are, if  
8 you leave these out of consideration and just  
9 look at those samples where you are looking  
10 at the -- you don't get all three areas con-  
11 taminated, but two of the areas, let's say,  
12 then where you get the two areas contaminated,  
13 for instance, in Table 9, those were always  
14 the Declaration Area and Love Canal.

15 There is more contamination  
16 at the Canal Area than areas in the Declarat-  
17 ion Area, and that is why you get that  
18 significant difference, which I would inter-  
19 pret as a real difference.

20 What it means is, naturally when  
21 you start from the source, and a chemical is  
22 migrating, you get more at the source than you  
23 do where it is migrating to.

24 In fact, that particular analy-  
25 sis shows that there is really migration.

1  
2 But that is where these come  
3 from.

4 So when you look at how many are  
5 in the Declaration Area and not in the  
6 Control, you have a large number.

7 When you look at it the other  
8 way around, how many are in the Control and  
9 not in the Declaration Area, there is maybe  
10 a couple.

11 So that is where -- I try to put  
12 this in a non-statistical sense, because it  
13 is really a qualitative matter. Anybody can  
14 look at the chemicals and see them.

15 So that, in fact, what you have,  
16 rather clearly from the EPA report, according  
17 to the data, as I have said, is evidence of  
18 migration, and also evidence that there is  
19 more contamination in the Declaration Area,  
20 or in the Resettlement Area than there is in  
21 the other neighborhoods, so that the argument  
22 of the EPA that there is no difference is sim-  
23 ply outright false, there is just no two ways  
24 about it.

25 This is -- the falsity of this

1  
2 is critical because EPA does not go into, and  
3 you heard after a little wandering around in  
4 circles, that EPA does not look at or consider  
5 the hazards of those chemicals, that is not  
6 EPA's province.

7           Some of you might like a record  
8 that says getting it up there is my province,  
9 but where it comes down, that is somebody  
10 else's business, it is not my province, but  
11 somebody else's province.

12           Now, if, obviously, you really  
13 want to know is the area habitable, and you  
14 know that there is excess contamination in the  
15 Settlement Area, then you must go into this  
16 in greater detail, which was never done.

17           It was never done by the medical  
18 panels.

19           Let me say something to remind  
20 you about the validity of what medical panels  
21 do.

22           HHS panels seem to be regarded  
23 by some people in government as the ultimate  
24 authority, but, in fact, a responsible HHS  
25 panel should have caught the same points which

1  
2 have been made today.

3 It is not a terribly sophisti-  
4 cated statistical point that we are involved  
5 with here.

6 CHAIRMAN HINCHEY: We believe  
7 that they may have caught it, and they were  
8 subsequently talked out of it.

9 DR. BROSS: Well, in any case,  
10 it does not argue well for the reliability of  
11 decisions on habitability made by the HHS  
12 panel.

13 CHAIRMAN HINCHEY: Yes, sir.

14 DR. BROSS: And I might very --  
15 since, as I mentioned, I was in the Health  
16 Department, let me say right away, I am not  
17 a doctor, and I don't have the same view of  
18 doctors that doctors have of doctors, and I  
19 don't regard a doctor as somebody who could  
20 look at a mass of data and say, ah, yes, it is  
21 habitable.

22 I don't think doctors have this  
23 miraculous power.

24 In fact, it is a very difficult  
25 decision to deal with, this whole question of

1  
2 habitability, and that is, in fact, the gist  
3 of the Times article I referred to, namely,  
4 that guessing as to whether something is  
5 habitable or not, the level of risk in an  
6 area, is like long-range weather forecasting  
7 or economic forecasting, whether we are out  
8 of the recession or not, or what the situation  
9 will be in the election of 1984, these are  
10 guesses, and not very good guesses either.

11 To have the lives, the health  
12 and safety of human beings depend entirely on  
13 such guesses is not good, as far as I'm con-  
14 cerned, public health, and it is not good  
15 public policy either.

16 Let me very briefly say a little  
17 bit more about this matter of the evidence  
18 that exists.

19 There have been repeated state-  
20 ments in the scientific literature, and  
21 elsewhere, that there is no evidence of health  
22 hazards at Love Canal, no published papers.

23 Well, I have given you a pub-  
24 lished paper, it is in the New Scientist, and  
25 it is a British journal, and why is it there?



1  
2 For the simple reason that it  
3 is very difficult to publish a paper like this  
4 on hazards of a chemical industry in the  
5 United States, ~~since~~ technical journals in this  
6 country are reviewed by people that have  
7 connections with the government or with the  
8 chemical industry, or others, and it is easier  
9 just to send it abroad, where they have heard  
10 of Love Canal, but they don't have a personal  
11 involvement, and they can get it published.

12 It is based on data, by the way,  
13 from the State Health Department. The State  
14 Health Department analyzed this data, and they  
15 found these results, and then they sort of  
16 recanted.

17 The results are crystal clear  
18 when they are properly analyzed statistically,  
19 and just why the Health Department back-  
20 paddled on this, I don't know.

21 But as far as the data go, it  
22 is strong.

23 There is genetic damage, there  
24 are excess birth defects, there is excess  
25 reproductive wastage at Love Canal --

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CHAIRMAN HINCHEY: Can I interrupt you again?

Would you provide us with that background data at your convenience?

DR. BROSS: It is in the paper.

CHAIRMAN HINCHEY: It is in the paper?

DR. BROSS: Yes.

CHAIRMAN HINCHEY: Do we have a copy of that?

DR. BROSS: Yes, although I didn't give it to you beforehand --

CHAIRMAN HINCHEY: We made some copies, I understand.

DR. BROSS: Let me say one thing about my fellow scientists.

I am not as kind to them either as others.

The journal SCIENCE, which is the establishment journal in this country, publishes a lot of papers. They have an editorial policy, it is an extremely biased policy, and their policy has been Love Canal is a false alarm, it is a false alarm.

1  
2 No one was ever hurt at Love  
3 Canal.

4 Essentially, this false alarm  
5 is in the headline of the SCIENCE article  
6 dealing with the evidence at Niagara Falls.  
7 There is very strong pressure on persons, I  
8 felt it, not to publish papers which indicated  
9 there are serious health hazards from radiat-  
10 ion or chemicals or other things in the  
11 environment, where there are agencies, Federal  
12 agencies or private sector corporations who  
13 have an interest in not having this informat-  
14 ion put out.

15 I might, for your information,  
16 tell you one thing I was not going to say, but  
17 I will tell you anyway.

18 When I went to Germany, I went  
19 to Heidleberg, and I was giving a paper there  
20 on radiation. I talked to a young man in the  
21 Epidemiology Department, and he had done a  
22 study with a doctor at a German chemical plant  
23 where dioxin was a contaminant, and he had  
24 found very clear evidence that this was a  
25 serious human hazard.

1  
2 He was telling me privately, and  
3 so this is hearsay, if you want, he said that  
4 the lawyer from Dow, which was connected with  
5 this German affiliate, had come over there and  
6 had gotten the professor of Toxicology at  
7 Heidelberg to say there was nothing to this.  
8 This person never did a statistical or epidem-  
9 iological paper, but this person was prepared  
10 to testify as a toxicologist that there was  
11 nothing to this finding.

12 Then it was very clever of this  
13 Dow lawyer, he went to the head of the insti-  
14 tute, where, incidentally, in Germany there  
15 is still a good bit of this herr-doctor-  
16 professor business, and he said, look at what  
17 is going to happen, this young man -- the  
18 epidemiologist had been asked by EPA in fact  
19 to come and testify in the United States, to  
20 come to the United States from Germany, and he  
21 went to the head of the institute and said  
22 look, you are going to have a toxicologist,  
23 a fairly important person testifying one way,  
24 and a little old epidemiologist testifying the  
25 other way;

1  
2 How is that going to look for  
3 discipline at this institute?

4 There wasn't any testimony.

5 So I say this as an anecdotal  
6 example, because this is why there is a lot  
7 of evidence on these matters, and the evidence  
8 is not in the public domain, for one reason  
9 or another.

10 Now, let me finally conclude on  
11 this one note:

12 When you have positive evidence  
13 of hazards, and you have positive evidence  
14 in the EPA report itself of contamination in  
15 the Declaration Area, then it is not prudent  
16 public health policy to put people into this  
17 area.

18 You do not know whether it is  
19 safe.

20 There is no one who can tell you  
21 with assurance that it is safe.

22 I am not prepared to say with  
23 finality of any kind, it is either safe or  
24 unsafe.

25 There simply is no way on the

1  
2 basis of current information to give an  
3 assurance of safety. When you have evidence  
4 that these chemicals have caused genetic  
5 damage in humans at Love Canal, you don't put  
6 people back in the same general area when  
7 there is really not a necessity in the first  
8 place.

9           So I think that the Committee  
10 has done a good job of getting both sides of  
11 the question aired, and the only thing I would  
12 say to the Committee, as far as the Committee  
13 goes, is don't be over-awed by scientists;

14           Don't even be over-awed by men,  
15 of course, I am not very over-awing;

16           But look at the data, that  
17 is what counts.

18           Thank you.

19           (Appause.)

20           CHAIRMAN HINCHEY: Thank you  
21 very much, Doctor.

22           I will refer to you as doctor,  
23 because you are a Ph.D.

24           ASSEMBLYMAN PILLITTERE: The  
25 bottom line of what you are saying, If I

1  
2 can understand it, is that there is contamina-  
3 tion in the third ring, the Declaration Area.

4 DR. BROSS: Yes.

5 ASSEMBLYMAN PILLITTERE: And  
6 that migration will continue to occur in spite  
7 of the two-foot concrete perimeter that Mr.  
8 Nosenchuck stated would be in there.

9 DR. BROSS: Let me state that  
10 I am not an expert on the procedures for hold-  
11 ing contamination in, and what is going to be  
12 done, and how it is going to be done.

13 What I am saying is that there  
14 is evidence that there was migration, and pro-  
15 bably that the chemicals that are slow migrat-  
16 ing are still in the process, and so they will  
17 be coming up in maybe a few years.

18 But as far as being absolutely  
19 certain that there is migration or no migrat-  
20 ion, I can't testify to that.

21 I don't know.

22 It seems to me though that --

23 CHAIRMAN HINCHEY: You can  
24 testify that there is migration now.

25 DR. BROSS: Yes, and that is

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all.

Whether there will be migration after the remedial measures are taken, or just how much migration there will be, or how long it will take, I can't say.

I would say that the evidence in the EPA report itself, the facts, and not the statements, clearly show that there is this risk, and if we are talking about, what was it, eternity, or perpetuity --

CHAIRMAN HINCHEY: Perpetuity, yes.

DR. BROSS: It is essentially just a matter of time.

CHAIRMAN HINCHEY: That is correct.

ASSEMBLYMAN PILLITTERE: Could I ask, Mr. Nosenchuck, since it was an unfair question to ask you, I should have asked Mr. Nosenchuck when he was up there;

Do you feel that your remedial work will prevent any further migration?

DR. NOSENCHUCK: Yes, the remedial work that we did in 1979-80, as far as we



1  
2 can tell, effectively stopped the outward  
3 migration of the chemicals from the Canal site  
4 itself.

5  
6 We further found that we had in  
7 effect a reverse flushing beyond the barrier  
8 drains, we were even cleaning up the area be-  
9 yond that.

10 The work that I described before  
11 that we are doing will actually enhance the  
12 work that we did before, since not only are  
13 we putting in this barrier drain in the shal-  
14 lows, going down about fourteen feet into the  
15 clay, but we are going to be extending the  
16 clay cap; we're knocking down the school;

17 Then we are putting over the  
18 entire thing high density polyethylene syn-  
19 thetic covering;

20 Then we are covering that up  
21 with soil.

22 On top of everything else we are  
23 doing, we are putting into place a long-term  
24 groundwater monitoring program, such as I  
25 described, the extent of which is yet to be  
determined, and the whole purpose of that is

1  
2 to determine the effectiveness of the work  
3 that we are doing.

4 It is my opinion that the work  
5 that we are doing will stop and has stopped,  
6 through the barrier drain, but we are going  
7 to enhance everything else that we did, it is  
8 my opinion.

9 ASSEMBLYMAN PILLITTERE: Thank  
10 you.

11 DR. BROSS: Could I give a  
12 non-expert opinion on the same subject in this  
13 sense:

14 The EPA report says look, we  
15 have our experts, we have our geologists, we  
16 have all of these people, and they have  
17 proved with their mathematical models and so  
18 forth, that there can't be any contamination  
19 in the Delcaration Area and, sure enough, our  
20 evidence, our facts show that there is no con-  
21 tamination;

22  
23 But that argument does not work  
24 if there is contamination.

25 All that shows then is that the

1  
2 mathematical model isn't right.

3 CHAIRMAN HINCHEY: What you have  
4 discovered, not by going out and taking sam-  
5 ples yourself, but merely by looking at the  
6 data which was presented by the EPA in their  
7 report, you have discovered that, first of  
8 all, what we know, that there are large num-  
9 bers of very dangerous chemicals in the Love  
10 Canal itself.

11 DR. BROSS: That is right.

12 CHAIRMAN HINCHEY: That had been  
13 put there over long periods of time, chemicals  
14 which we know have serious adverse consequences  
15 on human beings if they are exposed to them  
16 unduly.

17 DR. BROSS: That is right.

18 CHAIRMAN HINCHEY: Furthermore,  
19 that quantities of those chemicals have out-  
20 wardly migrated from the Canal into the  
21 so-called Declaration Area;

22 That that migration has occurred  
23 over time;

24 In all probability, there is  
25 some likelihood that it is going to continue.

1  
2 DR. BROSS: Right.

3 CHAIRMAN HINCHEY: That is cor-  
4 rect?

5 DR. BROSS: Yes.

6 CHAIRMAN HINCHEY: And that we  
7 have discovered certain quantities of those  
8 chemicals, and there is reason to believe that  
9 additional quantities of those chemicals, may,  
10 in fact, migrate out over time?

11 DR. BROSS: That is more specu-  
12 lative, but it is correct.

13 CHAIRMAN HINCHEY: Furthermore,  
14 there are other chemicals which migrate more  
15 slowly than some chemicals.

16 Chemicals like people move more  
17 slowly than others.

18 DR. BROSS: Right.

19 CHAIRMAN HINCHEY: And that the  
20 slower-moving chemicals will migrate perhaps  
21 in some fashion outwardly also, over  
22 periods of time.

23 DR. BROSS: Right, this is a  
24 very definite possibility, and as I say, in  
25 many of these decisions, you are forced to

1  
2 make a decision in the face of uncertainties.

3 Yes.

4 DR. BROSS: And in the situation  
5 where you have to make decisions in the face  
6 of uncertainties, there is one rule that I  
7 would recommend as a prudent one for legisla-  
8 tors or public officials, or anyone else,  
9 which is what I call the primacy principle.

10 I mention it in my book on pub-  
11 lic health statistics.

12 When you are in a situation  
13 where there is a large measure of doubt, the  
14 benefit of the doubt should be given to people  
15 and not given to the technology.

16 CHAIRMAN HINCHEY: Precisely.

17 Thank you very much, Doctor.

18 \* \* \*

19 (The following is the prepared  
20 testimony of Dr. Irwin D.J. Bross, Director  
21 of Biostatistics, Roswell Park Memorial  
22 Institute, Buffalo, New York:)

23 There has been a great deal of  
24 public controversy over the chemical contami-  
25 nation and the health effects of this

1  
2 contamination in the vicinity of the Love  
3 Canal. The EPA report "Environmental  
4 Monitoring at Love Canal, Volume I" (EPA-600/4-  
5 82-030a, May, 1982) based on 8.5 million  
6 dollars in research that was supposed to have  
7 settled the issue has only made matters worse.

8 Yet, from the standpoint of a  
9 public health scientist, there is really no  
10 scientific or statistical reason for further  
11 controversy. The data tables in the cited  
12 report, do, in fact, clearly settle the mat-  
13 ter.

14 What they show (and anyone who  
15 can read English can see this without any  
16 special scientific or statistical training)  
17 is:

18 (1) There has been extensive  
19 migration of chemicals from the original Love  
20 Canal Area into the area designated for reset-  
21 tlement (called the Declaration Area in the  
22 report.)

23 (2) There is far more chemical  
24 contamination in the resettlement area than  
25 in other Niagara Falls neighborhoods.

1  
2 (3) In view of the existing  
3 scientific evidence tht the chemicals in the  
4 existing Love Canal Area caused health problems,  
5 and in view of the lack of adequate quantitative  
6 information on health effects for most of the  
7 chemicals, it would be contrary to prudent pub-  
8 lic health policy to give any assurances that  
9 the resettlement area is safe.

10 These points can easily be veri-  
11 fied by anyone. -- including mayors, reporters or  
12 other media representatives, and concerned citi-  
13 zens -- who will take the trouble to do so.  
14 There is no scientific controversy whatsoever on  
15 these points.

16 The facts in the EPA report, and  
17 in particular in Table 9 of this report, are in-  
18 disputable, and it is entirely unnecessary to  
19 rely on the biased and unreliable opinions of  
20 so-called "experts."

21 In modern science the prime  
22 directive is "a theory must fit the facts," and  
23 it is the fact and not the opinion of experts  
24 that determine what is scientifically true.

25 Here, EPA has developed extensive

1  
2 factual evidence and it is this evidence, and not  
3 opinions, beliefs, "interpretations," or any-  
4 thing other than factual evidence that should  
5 be the basis for any decision on any return to  
6 the Love Canal.

7           Now all three of the above state-  
8 ments that follow directly from the EPA facts  
9 are in flat contradiction to the claims that EPA  
10 makes in the summaries. There can be no con-  
11 doning or excusing what EPA has done.

12           EPA has knowingly, deliberately,  
13 and unconscienably lied to the public about the  
14 chemical contamination in the vicinity at Love  
15 Canal.

16           At first hearing, it may seem  
17 incredible or unbelievable that a Federal  
18 agency committed to environmental protection  
19 should betray its public trust by making false  
20 statements which endanger the public health  
21 and safety.

22           What may seem particularly unbe-  
23 lievable is that EPA should make statements  
24 about the findings in the report which are flatly  
25 contradicted by the data tables in the same



1  
2 report.

3           Even more surprising, the contra-  
4 dictions can be seen by anyone, with or without  
5 scientific training or experience, who simply  
6 takes the trouble to look at a data table like  
7 Table 9 in this report.

8           What anyone can see directly from  
9 Table 9 is the names of fifteen chemicals  
10 which are found in the immediate vicinity of  
11 the Love Canal and in the Resettlement Area  
12 but are not found in any other neighborhood in  
13 Niagara Falls. In Table 9, which is entitled  
14 "Significant Differences Observed in the Extent  
15 of Sumpwater Contamination at Love Canal,"  
16 there is not a single chemical which is found  
17 in other neighborhoods and not in the Reset-  
18 tlement Area.

19           There is a score of fifteen to  
20 zero and yet EPA calls this a tie score (e.g.,  
21 "The contamination is no worse in the Resettle-  
22 ment Area than in other Niagara Falls neigh-  
23 borhoods").

24           For anyone who might have trouble  
25 reading Table 9 in the EPA Report, Table 2

1  
2 of my letter to NATURE lists the names of fifteen  
3 chemicals to which I refer and the names of  
4 fourteen other chemicals which were found in  
5 Ring 1 at Love Canal and not in the Resettle-  
6 ment Area. What this means is that about half  
7 of the chemicals have migrated.

8 Before anyone is reassured that  
9 only half of the chemicals have migrated, I  
10 should mention that Dr. Barry Commoner has  
11 analyzed the lists in Table 2 by molecular  
12 weights and has found that the molecules that  
13 would be expected to migrate fastest tend to be  
14 the ones that are in the list of chemicals that  
15 migrated.

16 What this means is that sooner  
17 or later other chemicals will be migrating into  
18 the Resettlement Area and that the contamina-  
19 tion can only get worse with time.

20 At Love Canal, there are homeown-  
21 ers who might be called the Volcano People.  
22 As you know, there are people who live near  
23 active volcanoes and won't move. This may be  
24 their prerogative.

25 However, it is something else

1  
2 again to sell lots of a volcano with a phony  
3 guarantee that there is no danger. This is the  
4 kind of dangerous fraud that has been proposed  
5 in the resettlement and the EPA has aided and  
6 abetted this fraud.

7 To do this, they have lied about  
8 migration, they have lied about contamination,  
9 and they have lied about habitability.

10 The actions of EPA are not just  
11 immoral, they are criminal.

12 EPA is guilty of reckless  
13 endangerment of those who would be resettled.

14 However, for some who are hearing  
15 this for the first time, there would be this  
16 question:

17 How on earth could EPA expect to  
18 get away with this when anyone who looked at  
19 the data in Table 9 would know EPA was lying?

20 The answer is that EPA not  
21 only expected to get away with this --  
22 they did get away with it for a long time.

23 Let me remind you that the EPA  
24 Report was reviewed inside the Agency by a  
25 whole series of supposedly expert panels.

1  
2 This report was reviewed by a  
3 whole series of other Federal agencies -- again  
4 by persons who were supposed to be government  
5 experts.

6 Among the agencies was the Bureau  
7 of Standards and the Centers for Disease Control  
8 which is charged with the Responsibility for pro-  
9 tecting the public health against chemical con-  
10 taminants and other hazards.

11 Then there were reviews by persons  
12 who were supposed to be independent -- entirely  
13 outside the government. With all of these dif-  
14 ferent people and panels reading the EPA  
15 Report, is it possible that no one looked at  
16 Table 9?

17 The answer is, most people, most  
18 scientists, and even most biostatisticians do  
19 not enjoy reading data tables. They tend to  
20 read texts and skip talbes.

21 Moreover, reading a data table  
22 scientifically is something more than glancing  
23 at it. One has to look at the t able with  
24 certain hypotheses in mind that one wants to  
25 test.

1  
2 This is why I noticed what was  
3 going on in Table 9. I framed a test of EPA's  
4 "no migration" hypothesis for sumpwater.

5 Then I went on to look at the  
6 other tables in a similar way.

7 Actually, I was going to do a  
8 statistical analysis of Table 9 but it turned  
9 out that it was unnecessary. When you have a  
10 fifteen-zero game, quantitative analysis is  
11 unnecessary.

12 The findings are qualitative.

13 It was not a matter of quantitat-  
14 ing more or less migration. It boils down to a  
15 simple yes-or-no result: There were chemicals  
16 found in the Resettlement Area in Ring 1 that  
17 were not found in other neighborhoods.

18 This is important in many ways.  
19 However, I have time to stress just one point  
20 concerning the adequacy of the EPA measurements  
21 that have been questioned.

22 The questions raised do not affect  
23 a qualitative argument such as I have made from  
24 Table 9. There may be questions about just  
25 how precise the measurement of a given chemical,

1  
2 chloroform for instance may be.

3 But while there might be some  
4 over-or-under estimate of the amount of  
5 chloroform, there is no such uncertainty about  
6 whether the chemical was detected at all or  
7 not.

8 Table 9 shows that chloroform was  
9 found in 37.5 percent of the samples in Ring 1,  
10 in 7.7 percent of samples in the Resettlement  
11 Area, and in none of the samples in the  
12 Control -- in the other Niagara Falls neighborhoods

13 Remember, we are talking here  
14 about sumpwater -- something to which residents  
15 would be directly exposed and where we have the  
16 most reliable samples for contaminants.

17 So far, the focus has been on  
18 sumpwater, but much the same thing is going  
19 on in other EPA data tables for soil and  
20 groundwater.

21 Air pollution is something  
22 else.

23 All the EPA results are summarized  
24 in Table 1 of my NATURE paper. There is evi-  
25 dence of migration of chemicals in soil and

1  
2 groundwater and the chemicals are found much  
3 more often in the Resettlement Area than in  
4 other Niagara Falls areas. The score is  
5 90 for soil and 41 for groundwater.

6 The EPA Report argues that since  
7 there is supposed to be no more contamination  
8 in the Resettlement Area than in other Niagara  
9 Falls neighborhoods, it is unnecessary for it to  
10 go into a quantitative risk assesement of the  
11 health effects. It probably lacks competence  
12 to do this job anyway.

13 As the attached New York Times  
14 story indicates, this is a very tricky business  
15 indeed. My paper in the British journal,  
16 NEW SCIENTIST (Volume 88, No. 1231, Pages  
17 728-729, December 11, 1980), presents strong  
18 epidemiological evidence that these chemicals  
19 caused serious genetic damage to persons in  
20 the inner ring at Love Canal.

21 In the face of the positive  
22 evidence of health hazards and the virtual  
23 impossibility that the scientific proof that the  
24 area is safe, it is only prudent public health  
25 policy to avoid putting human beings back into

1  
2 an area known to be contaminated.

3           The simplest way that I can show  
4 you that the EPA use of statistics in Table 9  
5 is totally incompetent is to show you that this  
6 argument leads to a ridiculous conclusion when  
7 the inner ring at Love Canal is compared to  
8 other Niagara Falls neighborhoods. This  
9 conclusion is that all of Niagara Falls is as  
10 badly contaminated as Love Canal.

11           So if the Mayor wants to use the  
12 EPA statistical argument to claim that the  
13 Resettlement Area is no more contaminated than  
14 other neighborhoods, he should use the same  
15 argument to claim that visitors to the  
16 Convention Center are exposed to the same toxic  
17 chemicals that are in the inner ring at Love  
18 Canal.

19           To follow the EPA statistical  
20 argument to the absurd conclusion it is only  
21 necessary to use Fisher's Exact Test to compare  
22 the "Canal" and "Controls" in the same way that  
23 the "Declaration Area" is compared to  
24 "Controls."

25           Because there were no significant



1  
2 differences in the comparison of the Declaration  
3 Area with the Controls, EPA claims this shows  
4 there is no difference in the contamination.  
5 When the comparison between the "Canal" Area  
6 and the "Controls" is done in the same way,  
7 there are no significant differences here either.

8           What both results really show  
9 is that there are far too few "Control" samples  
10 to give meaningful statistics.

11                   \* \* \*

12

13

14

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24

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TABLE 9. SIGNIFICANT DIFFERENCES OBSERVED IN THE EXTENT OF  
SUMP WATER CONTAMINATION AT LOVE CANAL

Compound	Percent Detect (Number of Samples)		Comparison <sup>1</sup>	
	Decl.	Control Canal	Canal - Decl.	Decl. - Control
2-Nitrophenol	0.0 (104)	0.0 (4)	23.1 (13)	Yes No
Phenol	4.8 (104)	0.0 (4)	30.8 (13)	Yes No
4-Chloro-3-methylphenol	0.0 (104)	0.0 (4)	15.4 (13)	Yes No
Hexachloroethane	0.0 (103)	0.0 (4)	23.1 (13)	Yes No
1,4-Dichlorobenzene	11.5 (104)	0.0 (4)	46.2 (13)	Yes No
1,3-Dichlorobenzene	1.9 (104)	0.0 (4)	53.8 (13)	Yes No
1,2-Dichlorobenzene	0.0 (104)	0.0 (4)	38.5 (13)	Yes No
Hexachlorobutadiene	0.0 (104)	0.0 (4)	30.8 (13)	Yes No
1,2,3-Trichlorobenzene	0.0 (104)	0.0 (4)	15.4 (13)	Yes No
1,2,4-Trichlorobenzene	0.0 (104)	0.0 (4)	53.8 (13)	Yes No
Naphthalene	6.7 (104)	0.0 (4)	30.8 (13)	Yes No
2,4-Dichlorotoluene	0.0 (104)	0.0 (4)	23.1 (13)	Yes No
Hexachlorobenzene	1.0 (104)	0.0 (4)	38.5 (13)	Yes No

(continued)

<sup>1</sup>Comparisons were based on a one-tailed difference of proportions test ( $\alpha=0.10$ ), using Fisher's exact test, for the areas indicated, and in the order presented.

TABLE 9 (continued)

Compound	Percent Detect (Number of Samples)			Comparison <sup>†</sup>	
	Decl.	Control	Canal	Canal - Decl.	Decl. - Control
Anthracene	10.6 (104)	0.0 (4)	38.5 (13)	Yes	No
1,2,3,4-Tetrachlorobenzene	0.0 (104)	0.0 (4)	46.2 (13)	Yes	No
Tetrachlorotoluenes	0.0 (89)	0.0 (4)	36.4 (11)	Yes	No
$\alpha$ -BHC	17.1 (105)	40.0 (5)	42.9 (14)	Yes	No
$\beta$ -BHC	17.1 (105)	0.0 (5)	35.7 (14)	No ( $\alpha=0.102$ )	No
$\delta$ -BHC	14.4 (104)	20.0 (5)	35.7 (14)	Yes	No
$\gamma$ -BHC (Lindane)	18.1 (105)	20.0 (5)	50.0 (14)	Yes	No
trans-1,2-Dichloroethene	0.0 (104)	0.0 (5)	31.3 (14)	Yes	No
Chloroform	7.7 (104)	0.0 (5)	37.5 (16)	Yes	No
1,2-Dichloroethane	1.0 (104)	0.0 (5)	12.5 (16)	Yes	No
Trichloroethene	1.9 (104)	0.0 (5)	31.3 (16)	Yes	No
Benzene	7.7 (104)	40.0 (5)	43.8 (16)	Yes	No
1,1,2,2-Tetrachloroethane	0.0 (104)	0.0 (5)	18.8 (16)	Yes	No

(continued)

<sup>†</sup>Comparisons were based on a one-tailed difference of proportions test ( $\alpha=0.10$ ), using Fisher's exact test, for the areas indicated, and in the order presented.

TABLE 9 (continued)

Compound	Percent Detect (Number of Samples)		Comparison†	
	Decl.	Control Canal	Canal - Decl.	Decl. - Control
o-Xylene	1.9 (104)	0.0 (5)	25.0 (16)	No
m-Xylene	3.8 (104)	0.0 (5)	31.3 (16)	No
Tetrachloroethene	14.4 (104)	0.0 (5)	37.5 (16)	No
Toluene	16.3 (104)	20.0 (5)	43.8 (16)	No
2-Chlorotoluene	0.0 (90)	0.0 (5)	40.0 (15)	No
3-Chlorotoluene	0.0 (90)	0.0 (5)	40.0 (15)	No
Chlorobenzene	1.9 (104)	0.0 (5)	37.5 (16)	No
Ethyl benzene	3.9 (90)	0.0 (5)	25.0 (16)	No

† Comparisons were based on a one-tailed difference of proportions test ( $\alpha=0.10$ ), using Fisher's exact test, for the areas indicated, and in the order presented.

No opinions here expressed should be construed as reflecting official positions of the administration of  
Roswell Park Memorial Institute or of the N.Y. State Health Department

August 17, 1982

Editor  
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To the Editor:

The U.S. Environmental Protection Agency (EPA) has released a report on "Environmental Monitoring at Love Canal Volume 1" (EPA-600/4-82-030a, May 1982) which was supposed to determine the habitability of the houses in the "Declaration Area" at Love Canal. The report distinguishes three areas in Niagara Falls, the "Canal Area" (or "Ring 1" of homes immediately adjacent to the dumpsite that would not be reoccupied), the "Declaration Area" (Decl.) which are the homes whose habitability was to be determined, and a "Control Area" which lies beyond the Declaration Area. The report gives the results of an extensive environmental monitoring program that tested for a long list of targeted organic and inorganic substances (see Appendix A of the report for lists) in water, soil, sediment, biological samples, and air. As might be expected the conclusions on habitability proved highly controversial, but the focus of this letter is on the question of the migration of the chemicals at Love Canal into the Declaration Area, a matter of physical science and not a matter of health effects.

(i.e., significant difference on a one-tailed Fisher exact test); for Decl. vs. Control, the table says "No" (i.e., no significant difference).

Virtually all of the Canal vs. Decl. comparisons are "Yes" and all of the Decl. vs. Control show "No"--leading EPA to erroneously conclude that this proved that there was equal contamination in the Declaration Areas and the Control Areas (and, in turn, led EPA to erroneously conclude that they were equally habitable). Even a quick glance at the actual data will show that the Declaration Areas show consistently more contamination than the Control Areas.

Rather than attempting to explain the elementary mistake in statistical inference that led EPA to a false conclusion on migration, it is easier to show how the data indicates extensive migration of chemicals into the Declaration Area (i.e., into the area that is now being repopulated).

In qualitative terms, Table 9 shows either evidence of contamination from a given chemical in a particular area or no evidence. Hence, there are 8 possible combinations of results. However, one of them, where there are no positive findings in any of the three areas, does not appear in the table.

Now consider what each combination means in terms of migration. If the Canal Area is positive and the other two are negative, this suggests that the chemical came from Love Canal but has not migrated beyond the Canal Area. If all three areas are positive, this suggests that the chemical is widespread in the Niagara Falls environment and therefore this result is not informative on migration. If the chemical

and Declaration Area negative, this would be in line with the no-migration hypothesis.

What does the EPA data actually show? It shows that for every one of the 15 chemicals, the Declaration Area was positive and the Control Area was negative. Even without statistical calculations, this is solid evidence that the no-migration hypothesis must be rejected.

Strictly speaking, the qualitative co-occurrence of chemicals in the Canal Area and Declaration Area in Table 1 does not establish the direction of migration. However, the proportion of positive sump samples is invariably higher in the Canal Area, suggesting that the migration is from the Love Canal dumpsite to the "Ring 1" homes and then to the more distant Declaration Area.

From Table 1 it would appear that about half (15) of the chemicals that probably migrated from the dumpsite (29) are found in the Declaration Area and these are listed in Table 2. Since this letter is concerned with the question of migration, it will not comment on the possible health hazard from these chemicals.

While the sump samples provide the clearest evidence of migration, the results are confirmed by the soil samples and the shallow system ground-water contamination data in Table 1. Note that when the Canal Area is positive and one of the other areas shows contamination, that other area is almost always the Declaration Area. The results are so clear and consistent that it is difficult to see how EPA could miss

TABLE 1

QUALITATIVE RESULTS FOR CHEMICALS DETECTED  
IN EPA SURVEY AT LOVE CANAL BY AREA  
AND TYPE OF SAMPLE<sup>1,2</sup>

TYPE OF SAMPLE	AREA <sup>3</sup>	QUALITATIVE RESULTS							TOTAL
	Canal	Decl.	Control						
Sump	14 <sup>5</sup>	0	0	15	0	0	5	34	
Soil	1	0	0	9	0	0	2	12	
Ground Water <sup>4</sup>	7	0	0	4	1	0	4	16	
Air	0	0	0	0	0	2	6	8	

<sup>1</sup> Abstracted from EPA-600/4-82-020a

<sup>2</sup> Any positive report of a chemical in a given area is "+" and "0" means no positive report for the chemical.

<sup>3</sup> Canal = Ring 1 around Love Canal;  
Decl. = Declaration Area;  
Control = Areas more distant from dump.

<sup>4</sup> Shallow system ground water samples

<sup>5</sup> Count of number of chemicals where the Canal Area was "+" and the other areas were "0". The chemicals are listed in Table 2.



# Muddying the water at Niagara

Irwin D. J. Bross

**L**OVE CANAL, a suburb of Niagara Falls in New York State, is the scene of the largest and most notorious of America's hazardous-waste tragedies. It exploded once again into prominence in mid-1980 with the first of a number of controversial studies of the effects on the health of the local community of the toxic wastes dumped there (*New Scientist*, vol 86, p 298). Here a leading American biostatistician airs his views on the latest report.

Was there a serious public health hazard at Love Canal or was it merely much ado about nothing? The answer depends on whether you believe the opinions of a blue-ribbon panel convened by Governor Carey of New York State or look at the factual evidence that this panel was supposed to consider.

The facts come from an epidemiological survey of the Love Canal area begun in June 1978 and focused on excess miscarriages, birth defects, and low birth weights. The panel did not question the facts themselves. Instead, the 10 October, 1980, report of this panel says: "The results of the latter studies were and remain inconclusive, owing in part to the relatively small population available for study and the absence of a comparable, matched population of controls with which to compare the figures. The investigators (Dr Nicholas Vianna and others at the Department of Health) thought there might be some increase in miscarriages and infants with low birth weight, but the data cannot be taken as more than suggestive." The following are the facts:

(1) Using maps and aerial photographs, Vianna and colleagues divided the Love Canal area into five sub-areas where, on the basis of proximity and drainage, different levels of chemical

contamination would be expected. There were about twice as many pregnancies in the three areas of probable lower contamination as in the two areas of higher contamination. The contamination evaluation was made before the health survey was completed.

(2) In the two areas of probably high contamination, there were 158 pregnancies and 37 miscarriages. In the other three areas there were 318 pregnancies and 35 miscarriages. The risk of miscarriage was more than twice as high in the women in areas of high contamination as in the controls at Love Canal from areas of lower contamination.

(3) The 113 per cent increase in the miscarriage rate is statistically significant. (The data have 95 per cent confidence limits from 17 per cent to 319 per cent.) This large increase is also significant from the stand-point of public health and indicates a serious hazard.

(4) In the higher contamination areas there were 122 live births and 14 documented birth defects. In the control areas there were 280 live births and 15 birth defects. Again, the risk of birth defects was more than twice as high in the areas at Love Canal with probable high contamination as in those areas with probable low contamination.

(5) The 114 per cent increase in birth defects considered by itself is not quite statistically significant at the 95 per cent level. However, under the null hypothesis of no effect from chemical contamination, the miscarriages and birth defects would be statistically independent. The chance that both would be markedly elevated is extremely small, much less than 1 per cent. If, however, the contamination had produced genetic damage, then under this non-null hypothesis one would expect both types of reproductive wastage to be elevated.

(6) An informal statistical argument on the above point can be based on the fact that there are 10 ways to divide the five sub-areas into a two-area combination and a three-area combination. There is therefore one chance in 10 that the highest differential in miscarriages would occur in the combinations suggested by the maps. There is the same chance that this would also be true for birth defects. Thus the probability of both events occurring is  $0.1 \times 0.1 = 0.01$ —one chance in 100.

(7) Methodological details in the Vianna report establish the validity of the controls. The women in the higher and in the lower contamination areas are similar with respect to age, race, and other factors. The women in the higher

risk areas have a further control obtained by comparing their pregnancy histories before and after moving to Love Canal. There are no documented birth defects in 57 live births prior to the move to Love Canal.

There is a striking difference between what the blue-ribbon panel report says about data and what it actually does with data. It says: "The public deserves less than the facts as we know them concerning environment-host interaction even if those facts constitute an incomplete body of knowledge and if they reveal the limitations of the science of this field at the present time." However, the blue-ribbon report does not mention any of the above facts (it offers only opinions of the type already quoted). It might be noted that the Health Department report also does not present the above facts directly, and it is necessary to do some digging to get to the facts in that report.

Finally, do the above facts demonstrate that the chemical contamination at Love Canal has probably produced a serious public health hazard? This question involves assessment of scientific evidence and there are two different approaches to this task. On one hand, one can make a rigorous and objective evaluation of the quality of the data and the implications for public health. An alternative approach is to make subjective judgements on the basis of "expert opinion". From the internal evidence of the blue-ribbon panel report it is clear that the panel exclusively relied on the latter approach.

What is needed for objective evaluation? One requirement is a careful view of the methodology used in the design, conduct and analysis of the Health Department's survey at Love Canal. Current "state of the art" standards for epidemiological field studies the methodology is acceptable and the quality control on the data exceeds usual

## One long wait

**H**OLIDAY TRADE in Red China is booming. Both Pan Am and British Airways have now been granted government approval to provide the first regular passenger air service across the Pacific for 30 years. But once in China visitors must still fly on aircraft operated by the Chinese Civil Aviation Administration which has a monopoly on internal air travel. A group of Japanese tourists recently told a story of CCAA bureaucracy. Their flight from Chengdu to Tianjin via Peking was much faster than scheduled because a fog at Peking prevented the airliner from making its routine halfway stop. Chinese bureaucracy works in strange ways. The CCAA rule book says passengers bound for Tianjin have to fly via Peking. So once the fog cleared the Tianjin-bound passengers had to fly back to Peking and then re-fly to Tianjin before they were allowed to board the plane.



standards. The 100 per cent increase in reproductive wastage (shown here by subjective statistical methods) can be compared with corresponding increases in previous studies of this type. Very rarely, such studies are recognised as one of our best early-warning signals of environmental hazards, particularly of genetic damage. A 50 per cent increase in signal a serious hazard. Thus, there is strong evidence here of a very serious health hazard at Love Canal. In spite of the facts about Love Canal, the opinions of the blue-ribbon committee have been heralded in the mass media as *Science* (for example, 31 October, p 513) as the "last word" on the matter. Thus, there is now a widespread opinion in the science establishment in the US that Love Canal was much ado about nothing. According to *Science*, the late report calling the site a "public health time bomb" created an "atmosphere of public hysteria" and "had no scientific fact." I have presented here the evidence that readers can form their own opinion on this question. Underlying the question is a more basic one concerning the standard for truth in science: scientific truth determined by fidelity to the facts or by the opinions of "prestigious scientists"?

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## years of malaria eradication

John Timson

MALARIA is usually regarded as a tropical disease but historically it is a recent development. It is one of the most ancient diseases of man being recorded as far back as 300 BC. Perhaps our primate ancestor suffered from malaria before clearly human. It has affected the course of history by making some areas uninhabitable. The devastating malaria epidemics which spread throughout the Roman Empire in the 3rd century contributed significantly to the empire's decline and fall. In the 17th century malaria epidemics spread from the low-lying, badly drained, marshy tracts such as the Fens of East Angles and the marshes on both sides of the Thames estuary in Kent and Essex. Recorded centres include London, Romney and Pevensey in Sussex, Exeter and Bridgwater in Devon and the Channel. The disease was not eradicated from London as late as 1859. The increasing value of land led to the reclamation of the Thames Embankment in 1864 malaria cases were reported and by the beginning of the 20th century a systematic search in the area would produce only one case. The search has been fortunate. Malaria

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Charles Louis Alphonse Laveran (1845-1922) from Chanteclair in 1909

had been almost eradicated by accident as a side product of the boom in land prices. By accident because at that time the cause of the disease was unknown. In the Middle Ages there were a number of diseases collectively known as the agues. In the 17th century Jesuit missionaries introduced to Europe from Peru a cure for some of these agues which they had found being used by the natives. This was cinchona bark which contained quinine. Cardinal John de Lugo, who was procurator general of the Jesuits, was the chief advocate of its use in Europe. This had the unfortunate side effect that many physicians distrusted "Jesuit bark", or "Cardinal's bark" as it was often called, because of religious prejudice. The use of cinchona was in any event limited by its high cost which also led to it being sold well adulterated with aloes and other bitter-tasting materials. The agues which responded to cinchona became known as malaria from the Italian *mal' aria*, bad air, because it was often believed to be caused by the gases rising from marshes. It was not until early November 1880 that a French military physician, Alphonse Laveran, discovered the real cause of the disease, the malarial parasite, while working at a military hospital in Algeria.

Charles Louis Alphonse Laveran was born in France on 22 July 1845, the son of a doctor who had also served in Algeria. He studied medicine at Strasbourg and during the Franco-Prussian war of 1870-1871 he served as a doctor with the French army. In 1878 he was posted to Algeria, first to Bône and later to Constantine where he made his most important discovery. He reported his finding in a brief note to the Academy of Medicine, of which he was to be president many years later, which printed it in its *Bulletin* (vol 44, p 1268).

The *Lancet* reported Laveran's discovery almost a year later (12 November, 1881, p 840) stating that Laveran

had himself found the parasite in 180 of 192 malaria patients whose blood he had examined. Unfortunately, the idea that a microscopic parasite in the blood was the cause of malaria was greeted without enthusiasm where it was not totally disbelieved. At that time the new science of bacteriology was in fashion and several bacteria had already been claimed to be the cause of malaria. Although these had been shown not to be the malarial bacillus it was still widely assumed that one day the right bacterium would be found. Robert Koch, one of the founders of bacteriology, said in 1880, however, that there might be other agents of disease as well as bacteria, this was disregarded by his eager followers. One problem was that the malarial parasite was not easy to recognise under the microscope and almost all of those who did see it at that time had had to have it shown to them by someone who had already learned to recognise it. The French military authorities were certainly unimpressed by Laveran's discovery and he was not promoted.

In 1884 Laveran left Algeria and from then until 1894 he was professor of military hygiene at the École du Val de Grâce, the French army's medical school in Paris. This was in a sense a return home for Laveran, who had spent the years 1874 to 1878 there as agrégé professor of epidemic medicine. However, it meant that he had much less opportunity to work on malaria. After 10 years at the École du Val de Grâce, Laveran was given a number of temporary administrative appointments at Lille and Nantes. It became clear to him that he had no chance of continuing his research while in the army and in 1896 he resigned and went to the Pasteur Institute in Paris. There he was able to continue his research on diseases caused by parasites in the blood in both animals and man. Eventually his work was recognised by the scientific world which had now accepted that the malarial parasite was the causative agent of malaria and in 1907 he was awarded the Nobel prize for medicine for work on parasitic protozoa. Laveran used the occasion of his Nobel address to give a precise and detailed account of his discovery of the malarial parasite. Typically he used his prize money to establish a laboratory, known as the Laveran Laboratory, at the Pasteur Institute, which was to undertake research in tropical medicine.

Laveran's return to France in 1884 effectively prevented him from investigating the manner in which the malarial parasite was transferred from one victim to the next. Once the organism causing malaria had been positively identified this was the vital next step because control of the spread of malaria would be possible if the carrier could be identified and destroyed. This next step was to be taken by Ronald Ross, a man with a background and personality not unlike that of Laveran.

This is the first of a two part series. The next part will be published next month.

# Calculating the Odds on Accurate Risk Assessment

By DAVID SHRIBMAN

WASHINGTON — Consider the problem of ethylene dibromide, a pesticide used in the battle against the Mediterranean fruit fly. Some specialists have questioned how much exposure to the pesticide will produce adverse health effects in humans and have prompted the Occupational Safety and Health Administration to examine the consequences of using the chemical. "We have to hurry up without making a mistake," said David Bell, chief of economic impact assessments for the agency's office of regulatory analysis. "You don't want harmful exposures to go on too long, but you don't want to make a snap decision either."

The technique the agency uses in this inquiry is known as risk assessment, a process that, in a society full of pesticides, food additives and radiation dangers, is increasingly becoming part of the political decision-making machinery.

Although scientists have made great strides in risk assessment, they recognize that the technique is still more of an art than a science and that many uncertainties remain. "With the approaches we have right now, we're probably not as good as weather or economic forecasting," said Sorell L. Schwartz, professor of pharmacology at Georgetown University Medical Center. "If you're going to believe the next economic forecast, then you can think about — repeat, think about — possibly accepting the kinds of risk assessments we can make now."

Risk assessment begins with calculations but ends with something that computers, formulas and tables alone cannot master — judgment. In performing a typical assessment of cancer risk, for example, specialists use data on the incidence of cancer in animals and the amount of a chemical to which the test subjects have been exposed. Then, with the aid of a computer, they estimate what level of exposure will cause no more than

one-in-a-million lifetime risk of cancer in humans. These calculations are made on the assumption that animal data can be applied to man and that the mathematical models used are accurate.

"Risk assessment allows decision-makers who represent the public to make far more objective choices than the public otherwise would be able to do," said Robert G. Tardiff, executive director of

## Ideas & Trends Continued

the board on toxicology and environmental health hazards for the National Academy of Sciences. "If we're talking, for example, about a new drug, the Food and Drug Administration is making a declaration about the relative benefits and dangers of that drug. Sometimes it becomes a Solomon kind of decision, but that's what high-ranking public officials are supposed to do."

The occupational safety agency, for example, examined the number of accidents among those who work on flat roofs and decided that the risks were not great enough to require that guard rails be installed for such work. "We're not insurance actuaries with a table of odds," said Mr. Bell. "There is no solid information, and we're constantly asking ourselves how safe we should play it. That itself is a risk assessment."

Such questions involve more than the kind of theoretical debates that enliven laboratory discussions, however. Even though the Reagan Administration has made the reduction of Government reputation part of its economic theology, the

demand for safety guidelines continues. Government officials, industry executives and scientists are finding that risk assessment is a tool they must use together.

"We have to be pretty conservative," concedes Robert D. Stephens, deputy director for toxic substances control at the California Department of Health Sciences. "There may be reasonable evidence that a chemical causes cancer in animals, but we may not know whether it does in humans. Is it then prudent public policy to assume that it does cause cancer in humans? The fact that we cannot prove a relationship should not stop us from suggesting to the public what is prudent."

During the Carter Administration, the Consumer Product Safety Commission, the Environmental Protection Agency, the Food and Drug Administration and the occupational safety agency worked to create uniform guidelines for risk assessment. The interagency group came up with three dozen steps to guide the interpretation of experimental and other data, the relationship between the dosage of toxic chemicals and the incidence of cancer, and the analysis of exposure to these substances.

Even its advocates, however, acknowledge that the technique has not been adequately developed. "We're learning, but we aren't there yet," said Joseph V. Rodricks, former deputy associate commissioner for health affairs at the F.D.A. "This is important business, and we've got a pretty shoddy research base for important public health decisions."

The potential applications of more sophisticated techniques cannot be overestimated. Some specialists believe that, if sufficient data become available, the process eventually may be able to help avoid health threats such as those at Love Canal in Niagara Falls, N.Y., or at least help resolve disputes over such crises once they become part of the public debate.

"Risk assessment only deals with what we know," said Beverly R. Paigen, a former consultant for the carcinogen risk assessment group at the E.P.A. and an adviser to residents of the Love Canal neighborhood. "At Love Canal, we had knowledge of what those chemicals do to workers on the job. We had no knowledge as to what they do to pregnant women in the home. There are still very few chemicals for which we know enough to come out with a risk assessment that takes into account the general population."

1  
2 CHAIRMAN HINCHEY: The next speak-  
3 er will be Mr. Robert Huffaker, From the New  
4 York State Department of Health.

5 MR. HUFFAKER: My name is Robert  
6 Huffaker.

7 I am an Associate Director of the  
8 Office of Public Health of the New York State  
9 Department of Health. My office provides overall  
10 direction and coordination of Health Department  
11 programs involved in toxic waste sites such as  
12 the Love Canal.

13 In response to the suggested  
14 subjects for testimony, the Department of  
15 Health staff has again reviewed the EPA Love  
16  
17 Canal Report and the joint statements by  
18 Health and Human Services, the National Bureau  
19 of Standards, and the Environmental Pro-  
20 tection Agency, the Environmental  
21 Monitoring at Love Canal Inter-Agency Review.  
22 Technical deficiencies in the EPA report similar  
23 to those noted by the National Bureau of  
24 Standards and Health and Human Services were  
25 identified.

1  
2                   These shortcomings, however, are  
3 modified by our own work, which supports the EPA  
4 finding that monitoring "reveal(s) a limited  
5 pattern of environmental contamination restrict-  
6 ed mainly to the immediate vicinity of the in-  
7 active hazardous waste landfill," i.e., Ring 1.

8                   The DOH, therefore, concurs with  
9 the Health and Human Services conclusion that  
10 the Love Canal area outside of Ring 2 is as  
11 habitable as the Control Areas with which it was  
12 compared. The area may be reoccupied subject  
13 to continued maintenance of the Canal cover and  
14 the ultimate cleanup of storm drains and stream  
15 beds known to be contaminated with dioxin.

16                   The risk associated with the  
17 reinhabitation (sic) of those homes under the  
18 safeguards described in the Health and Human  
19 Services report become the operational equi-  
20 valent of "safe" or being without significant  
21 increased hazard.

22                   Each of our activities is asso-  
23 ciated with some uncertainty, but we cannot  
24 ignore the responsibility for making decisions  
25 because of our lack of absolute certainty. We

1  
2 must not allow ourselves to fall into the trap  
3 of attempting the statistical impossibility of  
4 proving the absence of the potential of any  
5 adverse health effect whatsoever.

6 CHAIRMAN HINCHEY: What does that  
7 mean? Could you clarify that?

8 MR. HUFFAKER: I think that is the  
9 hub of the discussion Mr. Pillittere had  
10 earlier today.

11 This is the inability to prove a  
12 negative. We can say we know of no reason why  
13 you cannot, but we cannot guarantee that it is  
14 safe, this is the position that the argument  
15 revolves itself around right now.

16 Concerning health effects, we may  
17 be searching for a rare event, trying to  
18 measure it against the large background of  
19 similar health effects caused by other factors.

20 The problems of measuring the  
21 rare event and of distinguishing them from "no  
22 effect" levels are actually greater than those of  
23 identifying outcomes of heaviest exposures.

24 Within the health parameters,  
25 we have studied and recognize the necessary

1  
2 limitations of the observational techniques,  
3 and we believe that the rehabilitation of those  
4 homes can proceed under the cautions and condit-  
5 ions identified by the EPA and HHS.

6 We noted the observations of  
7 several reviewers of the EPA report who stressed  
8 the desirability of acquiring more inform-  
9 ation, both qualitative and quantitative,  
10 about chemicals in the Declaration Area. Data  
11 generated by our Department do meet part of  
12 this need; however, it is not realistic to  
13 believe that we will ever have all possible in-  
14 formation on this subject.

15 Nonetheless, there is sufficient  
16 combined State-Federal data which present a  
17 generally-consistent environmental profile to  
18 provide the basis for rational decision-making.

19 As you might recall, on August 2nd,  
20 1978, then-Commissioner Robert P. Whalen  
21 declared a state of emergency and ordered that  
22 certain actions be taken. On February 8th,  
23 1979, Commissioner Axelrod issued a supple-  
24 mental order which continued the Whalen order  
25 in effect.

1  
2 In both instances, specific areas  
3 of concern for Love Canal were identified and  
4 appropriate remedial actions were recommended  
5 or ordered. Some activities, such as the  
6 leachate collection and disposal system and the  
7 initial capping of the Canal, had been complet-  
8 ed; other actions are ongoing, including studies  
9 of health effects experienced by persons who  
10 lived at the Canal.

11 The recommendation that pregnant  
12 women and children under two years of age  
13 "residing in homes between 97th and 103rd  
14 Streets bounded by Colvin Boulevard and  
15 Frontier Avenue and in those homes which  
16 abutt Colvin Boulevard on the north between  
17 97th Street on the west and 100th Street on the  
18 east, temporarily move from such homes," is  
19 largely moot as Ring 1 and Ring 2 homes  
20 have been demolished.

21 The area included in this  
22 recommendation outside of Ring 2 was found  
23 subsequently not to differ from the rest of  
24 the Declaration Area and that recommendation  
25 can, therefore, be withdrawn.



1  
2 The studies of the health of  
3 persons who lived at the Love Canal is continu-  
4 ing. At this time, we have completed locating  
5 all families that ever resided at the Love Canal  
6 study area.

7 This study cohort includes  
8 5,062 individuals. We have also completed  
9 approximately 4,310 interviews so that inter-  
10 viewing is more than eighty-five percent  
11 completed.

12 During the interviews, 1,475  
13 individuals reported medical conditions that  
14 must be confirmed by a physician and  
15 hospital records.

16 This effort has generated continu-  
17 ing contacts with two hundred thirteen  
18 hospitals and one hundred eleven physicians.

19 Approximately one half of the  
20 medical conditions have been confirmed to date.

21 We have identified all women who  
22 conceived and gave birth while residing in the  
23 Love Canal study area. Analysis of the birth  
24 outcomes of this cohort with respect to low  
25 birth rate and congenital malformations has

1  
2 begun.

3 I trust this information and  
4 statement of the Health Department's position  
5 will be useful to you.

6 Thank you for the opportunity to  
7 make this presentation.

8 CHAIRMAN HINCHEY: Thank you very  
9 much.

10 Are there any questions?

11 ASSEMBLYMAN PILLITTERE: I listen-  
12 ed to your report, and I heard the Attorney  
13 General, and I wonder if we are from the same  
14 State.

15 I asked the same question of the  
16 Attorney General, and I have been asking this  
17 question for the last six months regarding  
18 the statement made by the Attorney General  
19 that I read in the newspaper, that if people  
20 planned on moving back, he would take them  
21 to court.

22 How could the Attorney General say  
23 he would take people to court if they moved  
24 back to the Love Canal area and the  
25 Department of Health, who is the spokesman for

1  
2 habitability or the health environment of the  
3 State, have two completely different views?

4 Aren't you talking to each other?

5 Is he not part of the same state  
6 under the new Governor Mario Cuomo?

7 MR. HUFFAKER: I don't know that  
8 we are as far apart as it sounds.

9 What I understand Mr. Abrams to  
10 have said was that if they started to sell homes  
11 without completing the SEQRA process, he would  
12 take appropriate action, which was to go to  
13 court.

14 I don't recall him saying anything  
15 about suing anyone who bought a home, if that is  
16 what I understood your statement to be. We have  
17 not suggested here that anyone move back in.

18 We agree with Mr. Nosenchuck's  
19 position that it certainly should be possible  
20 to move back in incrementally.

21 One should bear in mind that there  
22 are a lot of people who live in that area now,  
23 a lot of people, at least four hundred people,  
24 and there are empty houses in between their  
25 houses, and I think those people deserve some

1  
2 consideration also regarding the habitability  
3 of the area.

4 They have stuck it out for a long  
5 time.

6 CHAIRMAN HINCHEY: But we wouldn't  
7 want to condition our findings on the basis of  
8 the fact that somebody is already there.

9 You wouldn't want to slant your  
10 conclusions in such a way to try to prove that  
11 what they did by moving there was correct, which  
12 is not the case.

13 MR. HUFFAKER: No, sir, we would  
14 not.

15 ASSEMBLYMAN PILLITTERE: Don't  
16 misinterpret what I'm saying. I'm not saying  
17 either one of you is right. All I'm saying is  
18 that you have two leaders of the State,  
19 specifically Dr. Axelrod, the Health  
20 Commissioner, and the Attorney General for  
21 the State of New York, who have completely  
22 opposite opinions.

23 I will read from Page 4 of his  
24 statement, where he states, and he has it  
25 underlined, so obviously he wants to make a

1  
2 point of it. "Neither the work done today at  
3 Love Canal, nor the proposed Superfund work will  
4 achieve or is intended to achieve these object-  
5 ives, namely, total containment and cleanup."

6 He has it underlined.

7 That is his statement.

8 He read it this morning in front  
9 of the cameras, it is all being taped and  
10 recorded;

11 Yet, on your Page 2, the Health  
12 Department in the same state talks about the  
13 same piece of land, and it says "within the  
14 health parameters we have studied and  
15 recognizing the necessary limitations of the  
16 observational techniques afforded by epidemio-  
17 logy, we believe that the reinhabitation of  
18 those homes can proceed under the conditions  
19 and cautions identified by the EPA and HHS."

20 Here you have Dr. Axelrod saying,  
21 fine, move in, everything is okay, and we have  
22 the Attorney General saying, I don't care what  
23 you do, you cannot move in or I will sue you.

24 MR. HUFFAKER: There is very  
25 obviously a major difference of opinion on how

1  
2 effective the remedial activity has been.

3 Perhaps some of that will be set-  
4 tled with monitoring that is -- with the wells  
5 that are going in, and things of this sort.

6 Mr. Abrams does not believe it is  
7 working or will work, and DEC and their engine-  
8 ers, and EPA, believe it has been successful.

9 We would like to see how that  
10 comes out.

11 ASSEMBLYMAN PILLITTERE: How could  
12 the people -- you know, you stated your concern,  
13 and I have a concern about the people who are  
14 living there, don't think I am not concerned  
15 about the people who are living there, and I  
16 am also concerned with the people who have moved  
17 out.

18 How do you expect that they would  
19 view all of this if the Commissioner of Health  
20 is saying one thing and the Attorney General  
21 is saying the opposite?

22 Who are they going to believe?

23 They obviously don't believe the  
24 politicians. Who are they going to believe?

25 It would be nice if the three of

1  
2 you got together and closed the door and came  
3 out with some agreement or -- if I were living  
4 in Love Canal, I would wonder who to believe.

5 I would be confused  
6 by that.

7 I don't believe anybody myself.

8 I have heard testimony this  
9 morning, I don't know who to believe.

10 If I can't believe Dr. Axelrod,  
11 and I can't believe our Attorney General, and  
12 I'm supposed to be closer to the problem than  
13 the people out in the audience, how do you expect  
14 them to have any faith in our State government?

15 It is probably an unfair question  
16 to ask you.

17 MR. HUFFAKER: Well, it is a good  
18 question, but I can't answer it.

19 CHAIRMAN HINCHEY: Is this the  
20 testimony of the Commissioner of Health?

21 MR. HUFFAKER: Yes, sir.

22 CHAIRMAN HINCHEY: You say that  
23 there are technical deficiencies in the EPA  
24 Report similar to those noted by the National  
25 Bureau of Standards and Health and Human

1  
2 Services, and they are identified.

3           Would you be willing to state now  
4 that there are additional deficiencies in the  
5 EPA Report that go beyond those identified by  
6 the NBS and HHS? You were sitting here all day.

7           MR. HUFFAKER: Yes, I heard the  
8 testimony.

9           We asked the appropriate staff  
10 people to review --

11           CHAIRMAN HINCHEY: I am asking you  
12 the question.

13           I am asking you a question based  
14 on your experience of the last six hours, you  
15 came with a statement today, identifying tech-  
16 nical deficiencies in the EPA Report.

17           You said that they are identified,  
18 they were identified previously by the National  
19 Bureau of Standards and Health and Human  
20 Services.

21           I am asking you if you now believe  
22 that there are additional deficiencies beyond  
23 those identified by those two agencies in the  
24 EPA Report.

25           MR. HUFFAKER: No, sir.



1  
2 CHAIRMAN HINCHEY: You don't think  
3 that there are any additional deficiencies  
4 beyond those noted by the National Bureau of  
5 Standards or the Health and Human  
6 Services?

7 You don't believe any additional  
8 deficiencies were noted here in the testimony  
9 today?

10 MR. HUFFAKER: No, there was a  
11 great deal of concern about other deficiencies.  
12 There is a long and detailed rebuttal to the  
13 Environmental Defense Fund critique, done by  
14 Dr. Deegan, and one has to --

15 CHAIRMAN HINCHEY: We know that.  
16 We have heard about that.

17 I used to have an English teacher  
18 when I was in school, and she used to say there  
19 are certain words in the English language to  
20 be avoided. She called them weasel words,  
21 and that forty-five page report is replete with  
22 what my English teacher would call weasel  
23 words.

24 I would suggest to you that that  
25 forty-five page report is not in any sense a

1  
2 proper or adequate response to the Environmental  
3 Defense Fund's testimony.

4 I would respectfully ask you to  
5 analyze it carefully, both the response and the  
6 EDF statements before you say that, before you  
7 say that for the record here before this Commit-  
8 tee, as a representative of the Commissioner  
9 of the New York State Department of Health.

10 MR. HUFFAKER: I appreciate your  
11 concern, sir.

12 CHAIRMAN HINCHEY: Well, I think  
13 it is clear to many people here that there are  
14 additional deficiencies in the report.

15 It is clear to me that the con-  
16 clusions reached by the EPA are not sound con-  
17 clusions, based on the testimony that we have  
18 heard here today, based on their own data, the  
19 analysis of their own data, that they are  
20 statistically fraudulent, as a matter of fact.

21 I am wondering, in addition to the  
22 shortcomings that you observed, that were recog-  
23 nized by the National Bureau of Standards and  
24 Health and Human Services, you say that those  
25 particular shortcomings, separate and apart

1  
2 from others that we have identified here today,  
3 those shortcomings are modified by our own work,  
4 which supports the EPA findings that the moni-  
5 toring reveals a limited pattern of environ-  
6 mental contamination.

7 Well, what are your own findings?

8 What are -- what is your own  
9 work?

10 Can you explain your own work to  
11 those of us here, and provide us with detailed  
12 copies of that work?

13 I would like to know now from you  
14 here what that work consists of, and in what  
15 fashion it modifies the shortcomings which you  
16 note in your testimony.

17 MR. HUFFAKER: The boring holes in  
18 all of the yards in the Canal area, some  
19 six hundred, took stratified samples from  
20 those --

21 CHAIRMAN HINCHEY: This is the  
22 Declaration Area?

23 MR. HUFFAKER: Yes, I don't have the  
24 distribution of it, I would have to get that for  
25 you.

1  
2 We did the analysis for selected  
3 chemicals, and again this is based on conversatio  
4 that you have heard earlier about what is likely  
5 to migrate, what is likely to remain that  
6 would be recognizable, and what had a Hooker  
7 fingerprint on it, that sort of thing, and look  
8 for patterns of migration from the Canal out  
9 into the area, wells, homes, swales, and so on.

10 We were unable to come up with a  
11 pattern of any chemicals that showed any -- a  
12 pattern of distribution that would indicate  
13 migration.

14 Whether it was a flowout or  
15 anything of this sort, we don't know.

16 CHAIRMAN HINCHEY: I would direct  
17 your attention to the EPA Report itself.

18 The EPA Report shows a pattern  
19 of outward migration from the Canal into the  
20 Declaration Area.

21 That is -- we have seen that here  
22 as a matter of fact today.

23 Are you familiar with the EPA  
24 Report?

25 MR. HUFFAKER: Yes, sir, not

1  
2 intimately, I don't know what is on Table 7.

3 CHAIRMAN HINCHEY: Well, do you  
4 know what is on Table 7?

5 MR. HUFFAKER: I know today, after  
6 the conversation.

7 CHAIRMAN HINCHEY: Well, that one  
8 particular table shows a pattern of outward  
9 migration into the Declaration Area.

10 It shows the presence at least  
11 of the same chemicals in the Declaration Area  
12 that exist in the Canal, and no one has been  
13 able to say how they got there except from the  
14 Canal;

15 No one has been able to suggest  
16 any other possible avenue of entrance, so it  
17 would seem to me, not as a scientist, but as a  
18 layman, as a person trying to understand this  
19 whole business, that there is documented  
20 evidence of contamination in the Declaration Area.

21 Now, you have just told us that  
22 you have come up with findings contrary to those  
23 presented to us by the EPA. Your borings show  
24 no evidence of any incidence of that contamina-  
25 tion in the Declaration Area.

1  
2 That does not make sense.

3 MR. HUFFAKER: I will have to get  
4 the data and I will send you a copy of what we  
5 found by location.

6 CHAIRMAN HINCHEY: You say that  
7 the rehabilitation of those homes can proceed  
8 under the conditions and cautions identified  
9 by the Environmental Protection Agency and  
10 HHS.

11 Now, as I recollect those con-  
12 ditions, they include the eventual cleanup,  
13 total cleanup of sewers, the creeks, the elim-  
14 ination of dioxin and other contaminants from  
15 sediments and soils, and monitoring in  
16 perpetuity;

17 Is the State of New York willing  
18 to assume the responsibility for the monitoring  
19 of that area in perpetuity?

20 MR. HUFFAKER: I think that is  
21 the question that we have to ask the Legis-  
22 lature, because that is where the funds come  
23 from.

24 CHAIRMAN HINCHEY: No, no, I'm  
25 asking -- you have made a statement in your

1  
2 testimony, and you said as follows:

3 "Those homes --" I want to get  
4 exactly what you said, what Dr. Axelrod, I  
5 assume, is saying -- quite frankly, I am surprised

6 "The rehabilitation of those homes  
7 can proceed under the conditions and cautions  
8 identified by the Environmental Protection  
9 Agency and Health and Human Services."

10 So what we have here from the  
11 Health Department is a statement that the State  
12 of New York is prepared to monitor that area in  
13 perpetuity;

14 Is that correct?

15 MR. HUFFAKER: We are pretty  
16 close, but not quite together.

17 We said we would endorse rehabilit-  
18 ation provided these things were done. Now,  
19 two of the things are easy to do, but it  
20 takes money.

21 We will clean the sewers and the  
22 creeks and so on, and enlarge the cap.

23 The third item, which is the one  
24 we are discussing here, is the monitoring for-  
25 ever.

1  
2 Here we have a problem because of  
3 budgetary constraints. EPA has told us that  
4 this is a State or local problem, and they  
5 will not fund it forever.

6 My understanding is that the  
7 sitting Legislature cannot commit future Legis-  
8 latures to funding --

9 ASSEMBLYMAN PILLITTERE: Mr.  
10 Nosenchuck said we signed a contract saying  
11 that we will do this, that the State signed a  
12 contract saying we will do this.

13 MR. HUFFAKER: Do you want to  
14 respond to that, because --

15 ASSEMBLYMAN PILLITTERE: Your  
16 statement about an hour and fifteen minutes ago  
17 said that the State signed a contract to do this.

18 MR. NOSENCHUCK: The State  
19 signed --

20 CHAIRMAN HINCHEY: That is not for  
21 monitoring in perpetuity.

22 It signed the contracts with  
23 regard to the seven points he noted in his  
24 testimony, and that had nothing to do with  
25 monitoring in perpetuity. There is nobody in



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this world who is ready to sign a contract with regard to perpetuity.

MR. NOSENCHUCK: I never said we did, Mr. Chairman.

ASSEMBLYMAN PILLITTERE: What did you say?

MR. NOSENCHUCK: The Chairman is correct.

ASSEMBLYMAN PILLITTERE: He put words in your mouth?

MR. NOSENCHUCK: No, he did not.

ASSEMBLYMAN PILLITTERE: Did you say --

MR. NOSENCHUCK: We signed an agreement with the Federal government which made the State agree to the long-term operation and maintenance --

ASSEMBLYMAN PILLITTERE: That is the same thing, isn't it, long-term --

MR. NOSENCHUCK: In connection with those seven activities that we talked about.

At the same time the State did that, I might add that as we are all aware,

1  
2 there is is a lawsuit that the Federal  
3 government and the State of New York is involved  
4 with against the responsible party, and that has  
5 yet to be resolved.

6 The State of New York and the  
7 United States of America are looking to respons-  
8 ible parties to pick up these costs.

9 The reason that the work proceeded  
10 now is because of the availability --

11 ASSEMBLYMAN PILLITTERE: Why is it  
12 everytime I ask a question I can't get a simple  
13 yes or no?

14 CHAIRMAN HINCHEY: Looking for  
15 Santa Claus or waiting for Godot, probably.

16 ASSEMBLYMAN PILLITTERE: I will  
17 try again.

18 This gentleman here just said  
19 that we could not commit ourselves to long-term  
20 monitoring and analysis.

21 An hour and fifteen minutes ago,  
22 you said that when we got the money from EPA, we  
23 agreed to the operation and maintenance for a  
24 long time.

25 I mean, long term means you keep

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on going.

Did you not say that the State of New York signed a contract for operation and maintenance, long-term, beyond my election term, which ends December 31st, 1984, which is long-term?

Yes or no, without all the frills.

MR. NOSENCHUCK: Long-term operating and maintenance, yes.

CHAIRMAN HINCHEY: What are the time constraints?

MR. NOSENCHUCK: All it said was for operation -- long-term operation and maintenance costs in connection with the work that is going on there, that is my recollection.

ASSEMBLYMAN PILLITTERE: Long-term in perpetuity.

MR. NOSENCHUCK: I can get you the exact details and photocopy it, if you desire. I will do that.

CHAIRMAN HINCHEY: I am going to refer now to the testimony of Beverly Paigen, dated May 1st, 1981, entitled "The Love Canal

1  
2 Controversy," prepared for the Institute of  
3 Society, Ethics, and the Life Sciences at the  
4 Hastings Center.

5 She says as follows:

6 "At a February, 1979 meeting, the  
7 Health Commissioner publicly praised my contri-  
8 butions --" talking about this problem that we  
9 are dealing with today -- "publicly praised  
10 my contributions and promised the residents of  
11 Love Canal that studies would follow on  
12 respiratory, urinary and nervous systems."

13 It is now almost three years since  
14 that promise, but these studies have not been  
15 done nor identified.

16 That was May 1 of 1981.

17 What is the status of those  
18 studies, do you know?

19 MR. HUFFAKER: Those of you who  
20 live on the Canal have probably already been  
21 interviewed as part of the health surveil-  
22 lance and physical examinations --

23 A VOICE: Wrong!

24 MR. HUFFAKER: That material  
25 that I referred to in here about the followup,

1  
2 people who lived on the Canal, the data on the  
3 -- part of it is in shape so they can begin analysis  
4 and the rest of it will probably be into 1984.

5 The project is continuing, sir.

6 CHAIRMAN HINCHEY: I would appreciate it if you would provide me with the  
7 detailed information on those specific reports,  
8 on those specifics, let me say it again.  
9

10 MR. HUFFAKER: The urinary  
11 tract --

12 CHAIRMAN HINCHEY: Yes, these are --

13 MR. HUFFAKER: And nervous --

14 CHAIRMAN HINCHEY: Studies will  
15 follow on the respiratory, urinary and nervous  
16 systems.

17 I would like to know the status  
18 of those studies, whether they have been  
19 initiated, and what is their condition.

20 MR. JOHN: Basically what we are  
21 after is, you mention on Page 3 of your  
22 testimony that studies of the health of persons  
23 living at Love Canal are continuing, and that  
24 is a nice, general answer.

25 What we would like is specific

1  
2 details of all of the studies that are now being  
3 planned, in process, or have been completed  
4 dealing with the Love Canal residents.

5 Is that possible to accumulate,  
6 either a chart for us, and then we can go onto  
7 the further details and the paperwork that we  
8 would like to get from that chart, that might  
9 facilitate this Committee's activity a little  
10 bit?

11 MR. HUFFAKER: Yes.

12 MR. JOHN: The other thing I would  
13 like, if you are familiar with the EPA chromo-  
14 some study that was done.

15 MR. HUFFAKER: Yes, but not in  
16 great detail.

17 MR. JOHN: Would you characterize  
18 your opinion of the Health Department of the  
19 State of New York as the result of that  
20 study?

21 MR. HUFFAKER: The EPA Study?

22 MR. JOHN: Yes, was it satis-  
23 factory? Was it unsatisfactory? What did it  
24 conclude?

25 MR. HUFFAKER: It was an

1  
2           unsatisfactory study.

3                       This has been repeated by CDC. I  
4 talked to Dr. Heath the other day, and they are  
5 starting analyses on it, I understand all the  
6 slides have been read now by the panel who was  
7 looking at the preparation.

8                       MR. JOHN: They are reviewing the  
9 original data that was collected, or they are  
10 doing a separate study?

11                      MR. HUFFAKER: A completely new  
12 study.

13                      CHAIRMAN HINCHEY: I'm going to  
14 provide you with several pages of this testimony  
15 from Dr. Beverly Paigen, and I would be grateful  
16 to you if you would respond in detail to the  
17 questions that are raised in the testimony.

18                      I am going to take a couple of  
19 moments now to read a little bit of that into  
20 the record so you are familiar with it, and so  
21 the record reflects our concern.

22                      MR. HUFFAKER: Will you give me a  
23 copy of this?

24                      CHAIRMAN HINCHEY: Yes, I will, I  
25 will provide you with copies of this, and ask

1  
2 you for a detailed response to the question  
3 that she raises, but I want to read part of it  
4 into the record now.

5 It says as follows:

6 "The most striking aspect of the  
7 Thomas Report, issued in the Fall of 1980, was  
8 its absence of documentation. The report had no  
9 references to the scientific studies that  
10 provided the basis of the conclusions or any  
11 statements of facts or tables of data to support  
12 the conclusions."

13 Now, the Thomas Report refers to  
14 a report by a group chaired by Louis Thomas, it  
15 was a group of people put together by the  
16 Governor of the State of New York in response to  
17 the call for a Moreland Act investigation. A  
18 Moreland Act investigation never took place, but  
19 in lieu of that, the Governor appointed a panel  
20 of experts, and Louis Thomas is Chancellor of  
21 Sloan-Kettering Memorial Cancer Center, and  
22 also Chairman of the panel.

23 Let me continue:

24 "The most striking aspect of the  
25 Thomas Report, issued in the fall of 1980, was



1  
2 its absence of documentation. The report had  
3 no references to the scientific studies that  
4 provided the basis for the conclusions nor any  
5 statements of facts or tables of data to support  
6 the conclusions. The only documentation was a  
7 list of studies which had been reviewed together  
8 with a sentence about the results. The  
9 only Department of Health studies were:

10 "(1) The adverse pregnancy out-  
11 comes by Vianna, et al.;

12 "(2) Blood counts and liver  
13 function tests of residents;

14 "(3) Medical examination of  
15 one hundred twelve construction workers.

16 "Missing was any reference to the  
17 major epidemiological effort by the State with its  
18 twenty-two page questionnaire on health. (Three  
19 other studies on cancer and adverse pregnancy  
20 outcomes were listed as 'in progress' with no  
21 results as yet.)

22 "Yet, on the basis of these three  
23 studies; one on pregnancy outcomes, one which  
24 looked for hematologic abnormalities and abnormal  
25 levels of liver enzymes, and one on

1  
2 construction workers rather than residents;  
3 The Thomas Report makes the following sweeping  
4 claims on Pages 15 and 22."

5 It now quotes from the Thomas  
6 Report.

7 "It is clear enough from the  
8 available data that no acute cases of intox-  
9 ication by chemical pollutants have been  
10 observed within any part of the Love Canal  
11 community, 'wet or dry. That is, no clusters  
12 of cases of acute liver disease, or kidney  
13 disease, or pulmonary manifestations, or hemo-  
14 litic anemia or agranulocytosis, and certainly  
15 no peripheral or central nervous system syn-  
16 dromes...this was clear enough from the outset  
17 ...no cases of chloracne were found, and there  
18 appeared to be no excess of cases of cancer,  
19 asthma, epilepsy, liver disease, or hematolo-  
20 gical abnormalities."

21 Then there is a footnote, wich  
22 reads:

23 "In the list of studies at the  
24 end of the report, the statement "no instances  
25 of chloracne and no excess of cancer, asthma,

1  
2 or epilepsy were found among these area  
3 residents' is listed as a conclusion of the  
4 report by Vianna et al. on adverse pregnancy  
5 outcomes. However, the Vianna Report has no  
6 information at all about chloracne, cancer,  
7 asthma, or epilepsy.

8 "Many area residents broke out in  
9 rashes that were thought to be acne, but they  
10 were unable to get the Department of Health  
11 physicians to examine them."

12 To go on with the report:

13 "These conclusions were so sur-  
14 prising that Dr. Adeline Levine, a  
15 Sociologist at the State University of New York  
16 at Buffalo, who has been studying the Love Canal  
17 situation since the summer of 1978, wrote to  
18 Dr. Thomas requesting some factual information  
19 about the data.

20 "His answer was a refusal, hardly  
21 an appropriate response to a scientific  
22 colleague.

23 "We (the panel) have decided that  
24 the report stands on its own without further  
25 comment or amplification at this time."

1  
2 "Dr. Levine then used the Freedom  
3 of Information Act and found out more about  
4 the workings of the Thomas Committee.

5 "(1) The Thomas Committee was sub-  
6 ject to the Open Meeting Law and the Freedom of  
7 Information Act of the State of New York. How-  
8 ever, they did not announce their meetings  
9 publicly, they did not have open meetings, and  
10 they did not keep minutes, as required by these  
11 laws.

12 "The Thomas Panel met only five  
13 times (June 5, 13, 20; July 2, 21, 1980).

14 "Dr. Thomas was present at every  
15 meeting; Dr. Upton attended three meetings  
16 and the other panelists four. However, present  
17 at every meeting was staff helpers from New  
18 York State. At one meeting the New York staff  
19 outnumbered the panelists. Edward Dowling  
20 attended every meeting and he took care of  
21 agendas, distributed materials and provided  
22 clerical support. Edward Dowling is the  
23 Associate Director of the New York State Health  
24 Planning Commission, a commission that advises  
25 the Health Commissioner in matters of vital

1  
2 concern to the four panel members who were  
3 administrators of New York State medical insti-  
4 tutions.

5 "The Health Commissioner can veto  
6 major capital expenditures by hospitals, can  
7 decide how many beds should be allowed, and the  
8 amounts of allowable reimbursement by insurance.

9 "Also present at four of the five  
10 meetings, and at the fifth, Dr. Janerich attended  
11 in his place, was Dr. Peter Greenwald, Director  
12 of Epidemiology for the Department of Health.

13 As one panel member, Dr. Doherty, explained to  
14 me, none of the panel members were biostatisticians  
15 or edpidemilogsists, so they needed to  
16 have a technical consultant.

17 Apparently, the panel members did not see any  
18 conflict of interest in having Peter Greenwald  
19 review his own work and also the work of those  
20 on the opposite side of the controversy.

21 "At the first meeting of the  
22 panel, in addition to Dr. Greenwald and Edward  
23 Dowling were several other people connected with  
24 health issues in New York State.

25 "Dr. Axelrod, Commissicner of

1  
2 Health, Gov. Hugh Carey, Dr. Kevin Cahill,  
3 Special Assistant to the Governor for Health  
4 Affairs, and Dr. Jeffrey Sachs, Assistant  
5 Secretary for Human Resources. At the final  
6 meeting when the draft report was reviewed,  
7 Drs. Cahill and Sachs were again present. On  
8 this occasion, Mr. Dowling took notes during the  
9 meeting and summarized these in a memo the next  
10 day. Of twenty-eight comments on the final  
11 draft, twelve are by Dr. Cahill. The panel  
12 members had very little to say and their com-  
13 ments were mostly technical.

14 "It is apparent from materials  
15 received by Dr. Levine that more changes in the  
16 document were made after the final meeting. One  
17 panel member, Dr. Upton, said he did not see the  
18 final draft before it was released. Perhaps  
19 this explains why two of the three panel members  
20 that I talked to personally were surprised when  
21 I asked them to document the claims of no  
22 disease."

23 I must now go to the footnote  
24 section on Page 22, where it reads:

25 "Some of my scientific colleagues

1  
2 knew Dr. Arthur Upton and arranged for me to  
3 have a meeting with him on January 13th, 1981.  
4 When I asked him for the data to support the  
5 claims of no cases of chloracne and no excess  
6 of asthma, epilepsy, kidney disease or lung  
7 disease, he was genuinely surprised that the  
8 report contained those statements. He said he  
9 had not seen the final draft of the report  
10 before its release and had attended only three  
11 of the meetings. Dr. Upton arranged for me to  
12 meet with him and Dr. Thomas on January 27th, 1981

13 "Again I asked for data to support  
14 these conclusions. Dr. Thomas agreed to provide  
15 me with the data and a total list of studies  
16 the panel had reviewed. He also agreed to call  
17 the people who served on the panel together in  
18 an informal way to review any additional inform-  
19 ation I wished to give the panel. Dr. Thomas  
20 promised that if errors had been made, a public  
21 statement correlating those errors would be  
22 made. Subsequent to this meeting, Dr. Thomas  
23 wrote me saying that he decided it would not  
24 be productive to have a meeting. He has never  
25 given me the data nor even the list of studies.

1  
2 "I tried one last avenue of  
3 approach. Dr. Richard Doherty, who served on  
4 the panel, had been a guest in my home on  
5 several occasions and he lived in Rochester,  
6 New York, only an hour's drive from Buffalo.  
7 I talked to him twice, asking him to allow me to  
8 let me examine his files on Love Canal. Dr.  
9 Doherty refused, saying that there was no  
10 purpose to that since the panel had not seen  
11 any data from New York State on kidney disease,  
12 asthma, epilepsy, lung disease or peripheral  
13 and central nervous system syndromes.

14 "Dr. Doherty pointed out that all  
15 the report claimed was that there were no  
16 studies that addressed those diseases. When I  
17 pointed out that the sentence on Page 15 saying  
18 'It is clear enough from the available data...'  
19 was quite different from 'no evidence of...'  
20 he merely shrugged his shoulders and said the  
21 Committee meant to say 'no evidence of''

22 It seems apparent to me, and I  
23 may be misreading it, but I don't think so,  
24 it seems apparent to me that there are serious  
25 deficiencies in the documentation upon which



1  
2 the Commissioner of Health is relying when he  
3 makes the statement contained in the report that  
4 you read to the Committee this afternoon;

5 Therefore, if you'd be kind  
6 enough, I will submit to you copies of these  
7 allegations that are made in the statement that  
8 I just read, and some additional, which I did  
9 not read, and we would be very grateful if you  
10 would, at your earliest opportunity, provide us  
11 with detailed responses to those claims.

12 MR. HUFFAKER: You could help me a  
13 good deal if you would start with the items you  
14 are most interested in, so I don't have to respond

15 CHAIRMAN HINCHEY: We will give you  
16 all the information that we want responses to.

17 We will not give you any  
18 extraneous materials. We will just give you  
19 that material which we want answers to, and  
20 we would be obliged if you would comply with  
21 that request.

22 MR. HUFFAKER: I don't know  
23 whether I am familiar with that piece of paper  
24 or not, so if I get the whole thing --  
25

1  
2 CHAIRMAN HINCHEY: I don't know  
3 that you do either, but somebody in the Depart-  
4 ment of Health does, and you are here represent-  
5 ing the Department of Health.

6 MR. HUFFAKER: That is right.

7 CHAIRMAN HINCHEY: And we would  
8 be grateful if you cannot provide the answers  
9 directly, that you see to it that the appro-  
10 priate peson in the Department of Health directs  
11 his attention to it.

12 MR. HUFFAKER: I understand.

13 I hope when you send it to me,  
14 that it will be the whole thing, so I can  
15 read it in the proper context --

16 CHAIRMAN HINCHEY: Yes, absolutely.

17 I know you want to catch a plane,  
18 thank you very much for your attendance.

19 \* \* \*  
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1  
2 CHAIRMAN HINCHEY: Is there a  
3 representative of Dr. Barry Commoner present?

4 MR. MARTIN: I am here to read  
5 the testimony that Dr. Commoner has submitted.  
6 He gave us permission to edit the testimony  
7 for him. I have done so in the interest of  
8 brevity, and also, there is some repetition of  
9 what you've heard before.

10 As you are probably aware, Dr.  
11 Commoner is a reknowned scientist and former  
12 Presidential candidate.

13 He is the Director of the Center  
14 for the Biology of Natural Systems at Queens  
15 College, in New York.

16 You have the full text of his  
17 testimony, and I have abbreviated just a few  
18 parts of it, and deleted a few parts which you  
19 have.

20 His statement is as follows:

21 The Environmental Protection Agency  
22 has recently completed a detailed study "to  
23 provide an environmental data base on which  
24 decisions could be made regarding the habit-  
25 ability of residences in the Love Canal

1  
2 Emergency Declaration Area."

3           The Declaration Area is a zone  
4 surrounding three sides of the Canal and the  
5 houses adjacent to it. The average distance  
6 between the Canal and the residences in the  
7 Declaration Area is about fifteen feet. At  
8 issue is whether or not these residences are  
9 habitable.

10           Central to this issue is the  
11 determination of the likelihood that substances  
12 in the Canal area, many of which are toxic, have  
13 migrated into the Declaration Area, or will  
14 do so in the future.

15           The EPA study involved the col-  
16 lection and analysis of approximately six  
17 thousand environmental samples, to determine  
18 the distribution of toxic chemical substances in  
19 the area immediately adjacent to the Canal,  
20 in the Declaration Area, and in a Control area.

21           (The latter is defined as  
22 "...sufficiently distant from the former Canal  
23 as to be free from potential contamination  
24 related directly to Love Canal," and not located  
25 near other deposits of toxic chemicals.)

1  
2 From these data, the EPA report  
3 reaches the following conclusion:

4 "A review of all of the environ-  
5 mental monitoring data collected at Love Canal  
6 also revealed that no evidence was obtained  
7 which demonstrated that residential portions  
8 of the Declaration Area exhibited measurable  
9 environmental contamination that was directly  
10 attributable to the presence of contaminants  
11 that had migrated from the former Canal."

12 A crucial set of data regarding  
13 the possible migration of chemicals, from Love  
14 Canal to the Declaration Area is contained in  
15 Table 9 of the EPA Report (Volume I). This  
16 table reports the results of analyses for  
17 thirty-four organic compounds in sumpwater  
18 from sites in the Canal, the Declaration Area,  
19 and the Control Area.

20 From this table, the EPA Report  
21 concludes that "Direct Love Canal-related  
22 environmental contamination...was confined to  
23 the Canal Area," thus leading to the conclusion  
24 that such contaminants have not migrated into  
25 the Declaration Area..

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Dr. Irwin D.J. Bross, in a preceding letter, examined the data of Table 9 and points out that "The critical test of the migration hypothesis occurs when the Canal area is positive [i.e., a given chemical is detected there] in either the Declaration Area or Control Area, but not both) is also positive. If the Canal Area is positive and the Declaration Area is positive (while the Control Area is negative), this would support the hypothesis that there is migration of the chemical from the dumpsite."

Bross shows that of the list of thirty-four substances, five occur in all three areas (i.e. they are generally distributed and therefore not evidence of migration from the Canal) fourteen are found only in the Canal Area (and therefore have not migrated) while all of the remaining fifteen were present in the Canal Area and the Declaration Area, but absent from the Control Area.

On logical grounds, Bross concludes that these fifteen substances have migrated from the Canal area to the Declaration Area.

#18  
1  
2 This letter considers whether  
3 Bross' conclusions conform with the require-  
4 ments of diffusion, one of several physical  
5 mechanisms that could mediate the migration  
6 of substances from the Canal Area to the  
7 Declaration Area. One of the factors that  
8 governs the rate of diffusion of a substance  
9 (in this instance, presumably in soil water and  
10 soil air) is its molecular weight.

11 As a first approximation, the  
12 diffusion coefficient is proportional to the  
13 reciprocal of the cube root of a substance's  
14 molecular weight, and there is a footnote  
15 explaining more about that on the last page.

16 If Bross' classification of the  
17 Love Canal substances into those which have  
18 migrated into the Declaration Area and those  
19 which have not is valid (we will refer to these  
20 compounds as migrating and non-migrating respect-  
21 ively), then the following should obtain:

22 (a) migrating substance should be  
23 more prevalent in the Canal area than in the  
24 Declaration Area; and

25 (B) There should be an inverse

1  
2 relationship between the size of the diffusion  
3 coefficient (as determined from the reciprocal  
4 of the cube root of the molecular weight),  
5 and the proportion of substances present in the  
6 Canal which also appear in the Declaration Area.

7                   If the two classes of compounds  
8 delineated by Bross do not represent migrating  
9 and non-migrating substances mediated by  
10 diffusion, then the distribution of diffusion  
11 coefficients within the two classes should be  
12 approximately equal.

13                   The foregoing hypothesis has been  
14 tested as follows:

15                   Examination of the list of com-  
16 pounds showed that all but one of them (beta-BHC)  
17 the frequency of occurrence was significantly  
18 greater in the Canal Area than in the Declara-  
19 tion Area, thus conforming to requirement (A)  
20 above.

21                   Of the remaining twenty-eight  
22 compounds, fourteen were classified by Bross  
23 as migrating and fourteen as non-migrating. We  
24 have employed the Mann-Whitney (Wilcoxin)  
25 Non-parametric Rank Sum Test to test the null



1  
2 hypothesis that the median diffusion coefficients  
3 for these two classes are equal.

4 The alternative hypothesis is that  
5 the median diffusion coefficient for the  
6 migrating class is greater than the median  
7 diffusion coefficient for a non-migrating class,  
8 thus implying a one-tailed test.

9 The results show a U value of  
10 52 for the migrating class, which indicated  
11 rejection of the null hypothesis at the  $p=.025$   
12 level of significance.

13 Thus, the median diffusion  
14 coefficient of the migrating class of compounds  
15 is significantly greater than the median dif-  
16 fusion coefficient for the non-migrating class.

17 A graphical treatment of the  
18 diffusion coefficients exhibited by the two  
19 classes may yield a more informative view of the  
20 data, which is the next to the last page of the  
21 testimony.

22 The compounds in both cases were  
23 divided into four equal intervals of increasing  
24 diffusion coefficients.

25 If diffusion rate played no role

1  
2 in migration, I would expect the ratio of non-  
3 migrating substances to migrating substances  
4 to be about one:one in all four intervals of  
5 diffusion coefficient (i.e. Bross' classifi-  
6 cation should be independent of diffusion  
7 coefficient).

8 In contrast, if Bross' classifi-  
9 cation of the substances into non-migrating and  
10 migrating groups is related to the substance's  
11 diffusion coefficients, then the foregoing  
12 ratio should decline with increasing diffusion  
13 coefficient.

14 Although the sample size in each  
15 interval is too small for reliable statistical  
16 interpretation, Figure I indicates that this  
17 ratio does, in fact, decline as the diffusion  
18 coefficient decreases.

19 This indicates that Bross' classi-  
20 fication conforms to the expectation that the  
21 migration of these two classes of compounds  
22 reflects their relative diffusion coefficients.  
23 These considerations corroborate Bross' conclusion  
24 that the data of Table 9 in the EPA Report show  
25 that substances have migrated from the Love

1  
2 Canal Area to the Declaration Area, in contra-  
3 diction to the conclusion reached by the EPA  
4 report.

5 If, as indicated by these consid-  
6 erations, a number of the substances that  
7 occur in the Canal Area have migrated into the  
8 Declaration Area, and this process is at least  
9 in part governed by the substance's rates of  
10 diffusion, contamination of the Declaration  
11 Area will decrease in time.

12 This suggests that new tests ought  
13 to be made to determine whether, in keeping with  
14 this conclusion, additional substances present  
15 in the Canal area have appeared in the  
16 Declaration Area in the period since the last  
17 tests, which were made in 1980.

18 It also suggests that any con-  
19 clusion regarding the habitability of residences  
20 in the Declaration Area ought to be withheld  
21 until the probable future level of contamination,  
22 due to migration from the Canal area, has been  
23 thoroughly evaluated.

24 Submitted by Dr. Barry Commoner  
25 for this date.

1  
2 CHAIRMAN HINCHEY: It is very  
3 detailed, and in some places difficult to  
4 follow, frankly, but the conclusions are quite  
5 interesting.

6 We thank both you and Dr. Commoner  
7 for submitting that testimony, and for coming  
8 here and reading it.

9 ASSEMBLYMAN PILLITTERE: I have  
10 one very, very simple question:

11 I have an understanding of what  
12 you are talking about.

13 MR. MARTIN: Good, I should  
14 have stated at the beginning, I don't have  
15 the statistical or chemical background to  
16 field questions on this, nor to explain the --

17 ASSEMBLYMAN PILLITTERE: Maybe  
18 you could answer my question anyway.

19 In Bross' testimony, on Page 3,  
20 he states that Barry Commoner did the analysis of  
21 the molecular weight, and Commoner's statement  
22 on Page 3 infers that Bross did the work for mole-  
23 cular weight analysis.

24 Who did the work?

25 MR. MARTIN: My impression is,

1  
2 and this is entirely an impression, that Dr.  
3 Commoner did that.

4 I base that on some previous  
5 work that I had read of Dr. Commoner's which  
6 is very similar to this.

7 ASSEMBLYMAN PILLITTERE: Commoner  
8 says that Bross did, and Bross says that  
9 Commoner, ~~did~~ and they both say the same thing.

10 Okay, it is corroborative.

11 Thank you very much.

12 \* \* \*

13 (The following is a footnote  
14 to the testimony of Dr. Barry Commoner:)

15 The rate of diffusion of a compound  
16 is given by Ficks First Law of Diffusion: The  
17 amount of solute  $ds$  diffusion across the area  $A$ ,  
18 in a period of time  $dt$  is proportional to the  
19 concentration gradient  $dc/dx$  at that point:  
20  $ds/dt = -da dc/dx$ . The proportionality constant  
21  $D$  is the diffusion coefficient, which is a  
22 function of the size, shape and weight of the  
23 molecule and the frictional resistance offered  
24 by the viscosity of the solvent.

25 The use of

$1/\sqrt{MW}$

1  
2 to estimate the diffusion coefficient of the  
3 compound in question is a necessarily rough  
4 approximation of actual diffusion rate for two  
5 reasons:

6 First, at Love Canal there is no  
7 reason to assume that the concentration  
8 gradients for all of the compounds are  
9 equal; in fact, this is improbable.

10 Second, the approximation that the  
11 diffusion coefficient is inversely proportional  
12 to the cube root of the molecular weight is  
13 most appropriate for spherical macromolecules,  
14 and most of the compounds at Love Canal do not  
15 fall into this class.

16 Clearly, mechanisms in addition  
17 to diffusion are involved in the migration of  
18 the compounds of Love Canal, for example,  
19 isomers of dichlorobenzene appear in both  
20 migrating and non-migrating classes. However,  
21 the purpose of this letter is only to demonstrate  
22 that there is at least one physical mechanism,  
23 diffusion, which is consistent with Bross'  
24 classification of compounds at Love Canal into  
25 migrating and non-migrating groups.

(2) Beyer, William H. (ed.):

Handbook of Tables for Probability and

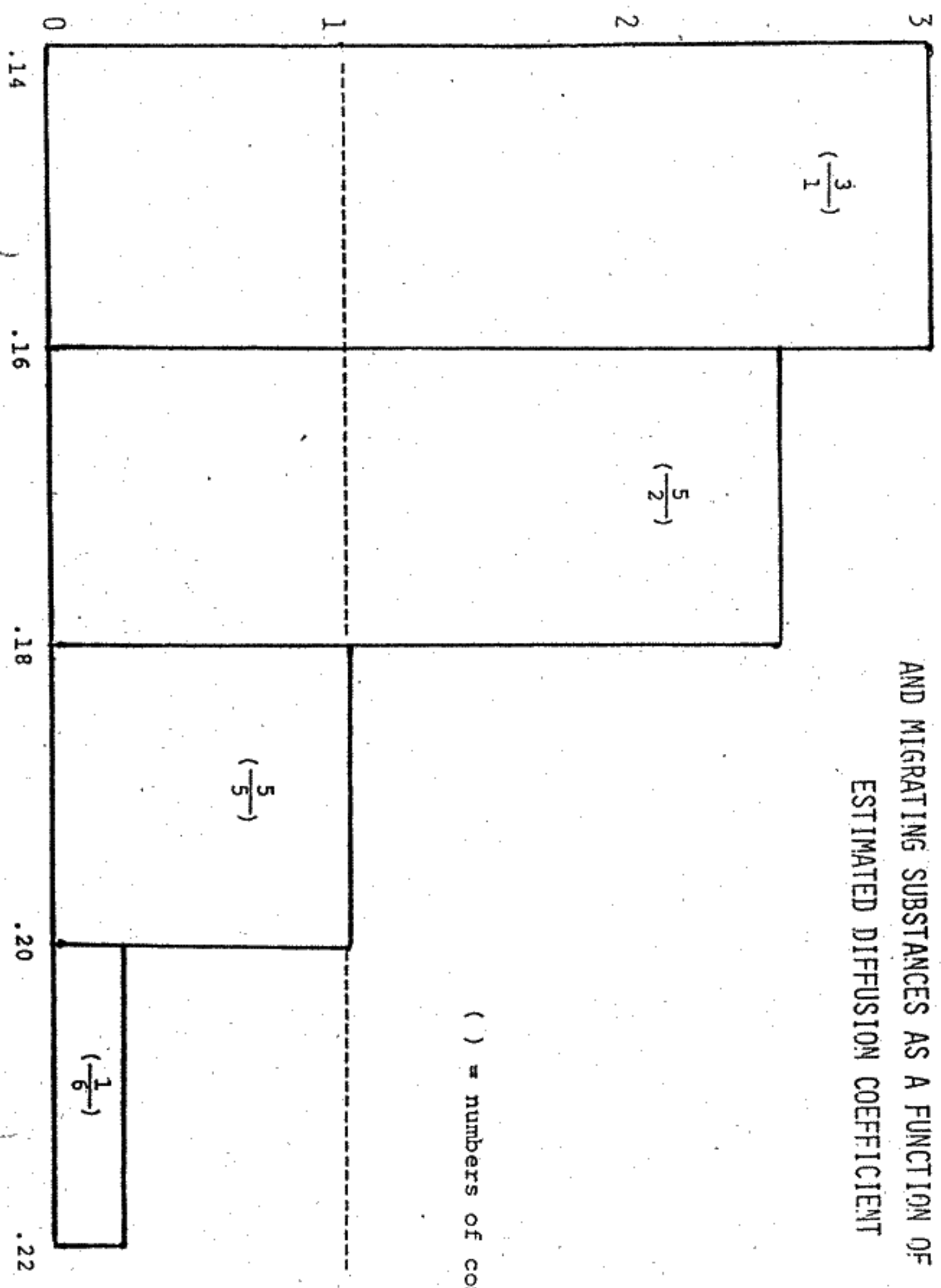
Statistics, Chemical Rubber Co., Cleveland, Ohio

1966, Pages 310-316.

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Number of Migrating Substances



RATIO OF NUMBER OF LOVE CANAL NON-MIGRATING AND MIGRATING SUBSTANCES AS A FUNCTION OF ESTIMATED DIFFUSION COEFFICIENT

( ) = numbers of compounds



1  
2 CHAIRMAN HINCHEY: Our next  
3 speaker will be Mayor Michael O'Laughlin, Love  
4 Canal Revitalization Agency.

5 MAYOR O'LAUGHLIN: While I'm  
6 talking, I'd like to refer to a map of the Love  
7 Canal area, which you will see here on the wall.

8 In here is the rectangular shape  
9 of the Love Canal, which is Ring 1 and Ring 2.

10 The one which has the contaminated  
11 area, and the area next to it, has been referred to  
12 earlier in the day.

13 The little yellow dots, the golden  
14 dots in there are the homes of the Love Canal  
15 Revitalization Agency, which they have pur-  
16 chased and now own because they purchased them  
17 through the State and Federal funds.

18 The heavier blue dots are where  
19 the residents now live throughout the area,  
20 and the smaller dots, which are along here,  
21 are vacant lots which are not purchased by the  
22 Agency.

23 So if it gets a little boring,  
24 and I don't think it is too long, you can  
25 glance over there and sort of analyze what is

1  
2 going on.

3 This is the Creek that has been  
4 referred to in the sewer problem in the  
5 area.

6 We appreciate, we in the Love  
7 Canal area, and the Agency, appreciate the  
8 opportunity to appear here and make you aware  
9 of our purpose, and to inform you of our accomp-  
10 lishments, and to convey to you the message that  
11 our Agency is committed to the revitalization of  
12 Love Canal

13 The Agency was created by the New  
14 York Legislature on June 18, 1980, when then-  
15 Gov. Hugh Carey came to Niagara Falls and  
16 signed into law Chapter 259 of the Laws of  
17 1980.

18 The Love Canal Area Revitalization  
19 Agency is charged by law with the obligation  
20 of stabilizing and revitalizing the area around  
21 the Love Canal. In appropriating the State  
22 funds and creating this Agency, the State  
23 Legislature recognized the existence of sub-  
24 standard and unsanitary conditions which create  
25 the potential for the area to become blighted.

1  
2 The legislation (Chapter 732 of  
3 the Laws of 1979 and Chapter 259 of the Laws of  
4 1980), specifically directed the development of  
5 a program of stabilization and revitalization to  
6 arrest the blight in that area.

7 During Governor Carey's visit, he  
8 met with area officials, toured the Love Canal  
9 and the plan for revitalizing the community.  
10 The plan called for assisting persons who wished  
11 to leave the area, a guarantee of property  
12 equity to those who wanted to remain, and  
13 incentives for potential residents who might want  
14 to locate in the Love Canal area.

15 The State provided five million  
16 dollars in funds and negotiated with the  
17 Federal Emergency Management Agency for an  
18 additional fifteen million dollars in grant and  
19 advance funds to be used in the relocation of  
20 eligible homeowners.

21 Using this funding, LCARA undertook the  
22 relocation process which allowed those qualified  
23 residents to leave the area if that was their  
24 choice. It was and is a completely voluntary  
25 relocation program.

1  
2 At about the same time, the U.S.  
3 Environmental Protection Agency undertook the  
4 most comprehensive environmental testing program  
5 that had ever been done to establish once and for  
6 all the facts about environmental quality of  
7 the Love Canal community.

8 You know, we all like to be number  
9 one, from football coaches to Super Bowl, and  
10 everything else, and Niagara Falls became  
11 number one unwillingly, as being the site for  
12 the Love Canal problem.

13 The Love Canal Area Revitalizat-  
14 ion Agency, waited, as did the community,  
15 as the weeks and months went by. Resident  
16 relocations continued and the Agency provided  
17 security and minimal maintenance for the area  
18 and the homes acquired.

19 By July of 1982, when the EPA  
20 released its findings, LCARA had purchased, or had  
21 under contract, four hundred twenty-two homes  
22 and had assisted two hundred renters in  
23 relocating away from the Love Canal.

24 Rather than begin revitalization  
25 immediately, LCARA listened to and solicited

1  
2 comments and criticisms of the EPA Report.

3 In the seven months since the release of the  
4 report, there has been U.S. Congressional  
5 inquiries into the report and many critical  
6 opinions, but nothing new has emerged.

7 The findings are the same as they  
8 were seven months ago.

9 The Agency has moved very cautious-  
10 ly and very thoroughly, has listened to the  
11 residents, as well as to people across the  
12 country and across the world, and given them  
13 all an opportunity to help them influence the  
14 the Agency's decisions as they go.

15 Nothing has been done irrationally  
16 or explosively. It has been a very steady,  
17 thoughtful process.

18 As I say, the findings are the  
19 same as they were seven months ago. During that  
20 seven months, a few more residents have chosen  
21 to move but most, buoyed by the EPA results,  
22 are looking forward to the restoration of the  
23 area around them.

24 The legislative mandate to this  
25 Agency is to stabilize and revitalize the Love

1  
2 Canal neighborhood, and, unless there are compel-  
3 ling reasons to the contrary, we must proceed  
4 to do so.

5 Do such reasons exist?

6 The results of the EPA study  
7 clearly show that there is no reason to delay  
8 revitalization any longer.

9 Decisions with respect to environ-  
10 mental contamination and health problems in the  
11 area must be left to government agencies who  
12 are best equipped to deal with such questions.  
13 The Love Canal Area Revitalization Agency is an  
14 industrial development agency whose members  
15 should be making decisions on neighborhood  
16 Revitalization, not on technical questions of  
17 environmental conservation and health effects.

18 For answers to these questions,  
19 we must turn to agencies which are qualified  
20 to answer them. In the EPA study, we find a  
21 rather clear answer to these technical questions.

22 The EPA has stated that the  
23 Declaration Area or Ring 3 of the Love Canal  
24 area is no more contaminated than any other  
25 area of the City of Niagara Falls or, for that

1  
2 matter, any other industrialized urban area  
3 in the United States.

4                   Although in that study, the U.S.  
5 Department of Health and Human Services has  
6 stated that the Love Canal area is as habitable  
7 as the Control Areas with which it was compared.

8                   CHAIRMAN HINCHEY: Mayor

9 O'Laughlin, forgive the interruption,  
10 but I know that your testimony was written  
11 prior to your arriving here today.

12                   I know you did not do this this  
13 afternoon or this morning. Do you still  
14 believe the words you are reading today?

15                   Do you still believe them at this  
16 very moment?

17                   MAYOR O'LAUGHLIN: I do, and I will  
18 tell you why, and maybe we will disagree from  
19 here on.

20                   The EPA report is the greatest  
21 study, it has taken into account outstanding  
22 personnel across the country, schools, learned,  
23 former school teacher-type personnel, people who  
24 have been experienced in the field, and I think  
25 that today some characters were assassinated,

1  
2 unwittingly, by people who spoke, and I do not  
3 question the integrity of these people.

4           Some have questioned that.

5           I think these people are making  
6 an honest determination, and they have their own  
7 reputation, their own degrees, their own careers  
8 to live by, with which they have to substantiate  
9 what they have said in the past.

10           Most of the people who have worked  
11 have not been people who work for the government  
12 full time.

13           They are contractors and the like  
14 who are hired out because they have this abil-  
15 ility, this specialty, and when they bring back  
16 the reports, if each has their own job to do,  
17 one is to analyze, and the other is to bring  
18 over the medical people, and the Bureau of  
19 Standards, and the others make the determination  
20 from the data that has been presented to  
21 them, and when they came to the findings, the  
22 examination first of the air, and the soil,  
23 deep and shallow, and the water, there was  
24 from those conclusions nothing much different  
25 than what Dr. Heath, representing the CDC had



1  
2 to come to the conclusion, that there was not  
3 an environmental impact of air different than the  
4 rest of the City, the rest of the area;

5 Therefore, likewise soil, and  
6 likewise water.

7 So when it came to the fourth  
8 conclusion, which was the medical conclusion,  
9 they based it on the findings that they had  
10 previously made.

11 Now, the question that arose, is  
12 this data satisfactory, has been questioned  
13 here, and I was sorry that I was called out, I  
14 didn't hear some people, but regardless, up to  
15 now we have invited everyone possible to attack  
16 EPA, to make their determinations that this is  
17 not a valid report, and even Mr. Abrams,  
18 who has been our most persistent detractor, you  
19 might say, has not really attacked the EPA  
20 Report.

21 His is a different reason, and  
22 when the people coming up now shortly, in March,  
23 and also in May, the technical assistants, sent by  
24 Senators Moynihan and D'Amato, come up here  
25 during that period, to again check the validity

1  
2 and the type of testimony that has been present-  
3 ed, that will be coming out.

4 We have already initiated, we have  
5 hired consultants to initiate a survey of the  
6 area, which would include the environmental  
7 impact, the SEQRA requirements, and in addition,  
8 we have Malcolm Pirnie, who was making the  
9 studies, and Mr. Nosenchuck's examination of the  
10 settlement area and the sewers and the work they are  
11 doing, going on presently, and those reports will  
12 be back.

13 All of those should come together  
14 about the 1st of June.

15 If all of those come together the  
16 1st of June, and there is nothing substantial to  
17 contradict the report of the Environmental  
18 Protection Agency, again our Agency has to look  
19 at and say, who else is there?

20 We have looked at them all, and  
21 when you examine each one, as they criticize, the  
22 statisticians, I don't see him here, Dr. Bross,  
23 he is the statistician, a Doctor of Statistics,  
24 he knows how to use statistics, but in going  
25 over this, the people have not successfully, at

1  
2 least that we can find, been able to say that  
3 these tests have not been complete, and not been  
4 validated, and the medical people have to make  
5 the determination from that.

6 Now, it certainly was a monumental  
7 step for the medical people in taking the  
8 position that they did.

9 I think it would have been much  
10 easier to say, what the hell, it is only a  
11 small piece of land, let's put a fence  
12 around it and call it dead.

13 It would have been an easier  
14 position to take.

15 CHAIRMAN HINCHEY: Yes.

16 MAYOR O'LAUGHLIN: Easier, yes.

17 Is it right or not?

18 Let's pose a couple of questions.

19 If they are saying, everyone  
20 agrees that the chemicals are there, but let's  
21 say, we don't want this guy to move into here  
22 because it is potentially contaminated, then  
23 why should we let that guy remain there? He  
24 has lived there all his life, and he's still  
25 there.

1  
2 On the other hand, why shouldn't  
3 you tell the guy across the way, across the  
4 street, why did they pick this area, and say  
5 this is it?

6 It was the most irrational way  
7 for rational people to come in here and argue  
8 about that I can conceive of.

9 That area was picked out not by  
10 scientists, not by medicine, it was picked out  
11 because the people wanted some tax abatement.

12 Now, is that -- wait a minute,  
13 it was picked out because of tax abatement.

14 The Canal was the problem, but  
15 when they went to designate the area, the  
16 Legislature allowed a five-year tax abatement  
17 program.

18 How is the line drawn for that?

19 It was arbitrary. It was amended  
20 to move.

21 Not by scientific or medical  
22 reasons, but because the Legislature felt that  
23 they wanted to help the people here or there, or  
24 wherever, but when you come down to saying you  
25 can't repopulate it, you can't move back,

1  
2 what is anymore different about this guy on  
3 93rd Street, accompanied with the guy behind  
4 him on 92nd Street?

5 Why should we say you can't move  
6 on this street, but you sure can move right  
7 behind them?

8 Scientific reasons?

9 I haven't been able to find one.

10 I don't believe there is a  
11 scientific reason why the guy can move in here  
12 but he can't move in there.

13 Do you want to hold a status quo  
14 to an error that was done in the first place?  
15 Perhaps that is it.

16 But it was a logical way to set the  
17 line. When the medical people came in, and the  
18 State made their first declaration, it didn't  
19 say that all these places were under the aegis  
20 of that dictum that Dr. Whalen set, and later  
21 Dr. Axelrod reaffirmed.

22 They didn't say that all of that  
23 pertains to those.

24 Now, we hear people say some very  
25 harsh things.

1  
2 Maybe they think I am saying  
3 harsh things, but I am not sure whether they  
4 were aware at the beginning of this how  
5 these things were set.

6 Yet, we are now arguing on an  
7 error.

8 We are not arguing this problem.  
9 We are talking about up here, and when we  
10 hear people say why not have incremental in-  
11 flux, I think that is what they are talking  
12 about.

13 I think that they are talking --  
14 saying that some of these should never have  
15 been included in the first place. I'm also  
16 thinking that they don't see where there is that  
17 much difference in living over there, near Hyde  
18 Park, than there is over here on 92nd Street.

19 When they are saying -- and  
20 this is a tough statement, but when they are  
21 saying even here, they are saying, they gave  
22 the rendition, and they say throughout the  
23 report, they are not saying that it is simon-pure  
24 clean, but I don't recall them ever saying that,  
25

1  
2 but what they are saying is that it compares  
3 here with another part of our City of Niagara  
4 Falls, or other urban areas.

5 So if you go out and say you found  
6 smattering of chemicals, or whatever over  
7 here, you'll probably find them in Hyde Park  
8 also.

9 You'll also probably find them on  
10 North Avenue also.

11 CHAIRMAN HINCHEY: You'll probably  
12 find them in a number of places.

13 MAYOR O'LAUGHLIN: You are  
14 laughing, you might criticize or joke about it,  
15 but the fact is, that that is the way it is.

16 We have a city that has been a  
17 chemical city, and if the sense of the past was  
18 such, so be it.

19 We are making every effort to make  
20 sure that they are cleaned up, and work with  
21 the DEC and these other organizations.

22 So we stand here, we as an agency,  
23 as I say, I know there are some members there,  
24 they were here earlier, which have been very  
25 concerned about the very kinds of decisions we

1  
2 have to make.

3 We have been looking at where is  
4 the most reliable set of facts, that is where we  
5 come to these things, where is the most reliable  
6 set of facts, who had the best status, the best  
7 record to come out and tell us this is it.

8 The EPA has marshalled the best  
9 people in the country to do it, and if they have  
10 referred to the CDC, who is our primary top  
11 eschelon of medical science, and if they refer  
12 also to our local people in the State here,  
13 and they turn to us who are not scientists and  
14 say this is habitable, it is the same as other  
15 parts of the City, why should we turn around and  
16 say they are liars?

17 Now, if you or anyone else says  
18 that EPA, or can prove that there is not, that  
19 the credibility of Dr. Heath and the others is  
20 such, and the credibility of the Health Depart-  
21 ment is such, and the credibility of our own  
22 medical department in the City is such, then  
23 we will deal with that.

24 We agreed with EPA also, that  
25 there were three steps, the capping, and the



1  
2 work that is going on now, that you are all  
3 familiar with.

4 The New York State health -- you  
5 see, out there, remember, it is sixteen acres.

6 There is more holes being dug out  
7 there, past and present, than if they ever  
8 really turn the water underneath, we will have  
9 the greatest plume in the Love Canal area, and  
10 we can bring tourists from all over to see it,  
11 because if they are digging another three  
12 hundred holes to monitor, and everyone else  
13 comes in, Malcolm Pirnie is digging another three  
14 hundred, and they have thousands there by the  
15 EPA, there won't be any soil left out there,  
16 outside the area.

17 But it goes on there.

18 The area has always been an accept-  
19 able neighborhood in which to live. The people  
20 who have lived there, the two hundred families  
21 that are represented, who still live there, that  
22 poses a problem too.

23 The two hundred families, and some  
24 are here now, anyhow, they have been here  
25 because they have not recognized this as a

1  
2 threat to their health or their safety.

# 19  
3 If any agency really feels  
4 strongly, and this goes for Mr. Abrams as well,  
5 that they are threatened by a life-taking  
6 element there, they should be arguing and  
7 fighting to have those people removed.

8 They have never taken that step!

9 No one has ever taken that step!

10 That tells me that they can't  
11 feel too strongly that it is a suspect area.

12 The second link is that the  
13 repopulation has already gone on.

14 People who have rented houses,  
15 rented them to somebody else, and they have moved  
16 in.

17 They stayed, and other people moved  
18 in.

19 So in a sense, there has been --  
20 the Agency is the one that set this up, this  
21 legislation up.

22 They set it up so they would have  
23 the option if they got a decision that was  
24 negative, that it was threatening, present  
25 or future, to the people, they could say, they

1  
2 will use it some other way.

3 But they also have the option,  
4 by legislative action, to repopulate the area,  
5 if some agency, over and above them, connected  
6 with the health and environment tells them they  
7 can't.

8 I think it is EPA that should tell  
9 us or the Health Department that should tell  
10 us we can't.

11 We heard repeatedly, they  
12 shuffled back and forth, but eventually, they  
13 all agreed, the Health Department is the one.  
14 I haven't heard the doctor's statemet until  
15 this afternoon, and the Health Department says  
16 on an incremental basis, they don't see anything  
17 that inhibits that happening.

18 I could go into the numbers.

19 There are one hundred ninety-five  
20 privately-owned properties interspersed in the  
21 area there. There is a housing area for a  
22 housing project.

23 There is a voluntary fire  
24 department, a community center, and fifty-four bed  
25 capacity senior citizen housing complex.

1  
2                   So I guess in substance, to bring  
3 it to the bottom of the page, the Agency is  
4 moving toward revitalization, slowly and conscient-  
5 iously.

6                   If there is information out there  
7 that is credible and information that dictates  
8 that they not move in, someone should come out  
9 and tell us very definitely, with proof and facts  
10 that they should not -- that there is a present  
11 threat, or impending threat to health there,  
12 because we, as an agency, are not equipped to  
13 make that kind of decision.

14                   Our method of life in this country  
15 has been with laws, and they never tell you where  
16 it is safe or good, but they tell you where you  
17 can't, and that is the position we are in.

18                   It is not the best position to be  
19 in.

20                   We have to move people until that  
21 reliable agency that has facts and skills  
22 better than ours tells us that we can't.

23                   I didn't read all of my testimony,  
24 I know it will be quite a bit different --  
25 if Mr. Abrams was here, I know it is different

1  
2 than what he said.

3 His seemed to revolve around the fact  
4 that he would take us to Court if we tried --  
5 if we did not do an environmental assesement,  
6 because as he sees it, there is an impact  
7 on the neighborhood because of the change.

8 Now, there is a question as to  
9 that, but -- the other thing is that Mr.  
10 Abrams represents a different position than  
11 the medical field. He represents a legal  
12 position which is under a heavy suit, and  
13 the medical represents the position of health  
14 and safety

15 CHAIRMAN HINCHEY: Do you have  
16 any questions?

17 ASSEMBLYMAN PILLITTERE: Yes, con-  
18 trary to what you would thing, I will not  
19 attack you.

20 Your statement, if I read the  
21 bottom line, you are saying that the revital-  
22 ization agency has not made a determination  
23 on its own, but is relying solely on EPA;

24 It has not questioned the report,  
25 but is relying solely on the EPA Report;

1  
2 Based on that report, you will  
3 proceed towards the revitalization and  
4 rehabilitation of the area;

5 Is that correct?

6 MAYOR O'LAUGHLIN: That is  
7 partially correct.

8 I would say heavily, but not  
9 solely, because we certainly would not be able  
10 to move without conference or in contradiction  
11 to the Health Department.

12 But if we say EPA has done the  
13 most substantial testing that has been done on  
14 which we base our decision, the answer is yes.

15 ASSEMBLYMAN PILLITTERE: I will  
16 change the question around then, since you  
17 won't answer that, you didn't answer the question.

18 I must ask the questions wrong,  
19 I don't know what's the matter.

20 Has the Revitalization Agency  
21 studied any reports and made a decision based  
22 on their study or has the Revitalization Agency  
23 made the decision based on the experts such  
24 as EPA?

25 MAYOR O'LAUGHLIN: Based on the

1  
2 experts.

3 I don't want to limit it just to  
4 EPA, but based on the experts. The Health  
5 Department also.

6 ASSEMBLYMAN PILLITTERE: I didn't  
7 say the Health Department because the testimony  
8 was a surprise, because they had -- if you would  
9 say the Health Department now, I could say yes,  
10 I agree with you, but this was typed before  
11 the Health Department -- they surprised me when  
12 they said --

13 MAYOR O'LAUGHLIN: When we say  
14 immediately, we are not talking about tomorrow.

15 We see it around the 1st of June,  
16 there is about four reports that are going to  
17 come together, the assessment reports, and we  
18 did not know this one was coming, but this other  
19 report referred to --

20 ASSEMBLYMAN PILLITTERE: I will  
21 not fault you for that.

22 I think my statment earlier,  
23 when I said it is difficult for anybody to  
24 believe the State government, we had the  
25 Attorey General making one complete statement

1  
2                   You had the Department of Health  
3 making a completely different statement, you have  
4 DEC making a third statement, which is somewhere  
5 in between the two, and I can appreciate your  
6 taking a position with one of the three, and  
7 now two of the three.

8                   MAYOR O'LAUGHLIN: Well, before  
9 the Revitalization Agency made any kind of  
10 commitment whether it would be repopulated or  
11 not, we looked around for something to hang our  
12 hat on.

13                   We did not proclaim that -- we  
14 didn't feel that we had the expertise to make  
15 that kind of decision alone.

16                   When the EPA was going through,  
17 we held off everything else, and we said we will  
18 not make any decision that will do anything  
19 pro or con until the EPA Report comes out.

20                   When it came out and it made the  
21 definitive declaration, that gave us something  
22 to go on.

23                   We did not even then jump onto  
24 doing something, saying that is it, tomorrow  
25 we start moving people in.



1  
2 Another thing, this is voluntary.

3 It is voluntary for people to stay  
4 and it is voluntary for people to move out.

5 You have a sign right there on  
6 your cigarette pack saying it is hazardous to  
7 your health, and people still smoke anyway.

8 So without counseling anything to  
9 anyone, people, I think, have a right to move  
10 where they want to, and if there is no agency  
11 that will put up a sign and a barricade saying  
12 you can't, then they have the right to do what  
13 they want.

14 ASSEMBLYMAN PILLITTERE: In the  
15 beginning of your testimony, you made a  
16 statement inferring that some of us attacked  
17 those who were testifying.

18 I would like to clarify, if that  
19 is the statement you made, I can clarify one  
20 important thing.

21 I personally am not here to attack  
22 anybody.

23 I think the purpose of this hearing  
24 is to hear testimony on both sides, but when you  
25 hear testimony, you like to hear testimony with

1  
2 a basis in fact.

3 MAYOR O'LAUGHLIN: Absolutely.

4 ASSEMBLYMAN PILLITTERE: And  
5 when the EPA individual make a statement that he  
6 disagreed with nine of the eleven scientists,  
7 I don't care who he is, I will attack him.

8 Now, if you make a statement saying  
9 that you are basing a decision on EPA's report,  
10 I will not attack you, because you are making a  
11 statement based on your best available data.

12 I don't want you to think that  
13 we are attacking EPA because they made  
14 their statement.

15 MAYOR O'LAUGHLIN: Having looked  
16 up some of the background of the people who have  
17 handled this, both from the medical and scienti-  
18 fic fields, I have a great deal of respect  
19 for them, and I don't think that they would  
20 jeopardize their character, their future,  
21 or the position that they hold, whether it is  
22 the Governor or not, by tilting the findings  
23 that they have made.

24 ASSEMBLYMAN PILLITTERE: That is  
25 where you and I completely disagree.

1  
2 I don't trust them one bit. I  
3 don't trust them at all, based on the data  
4 as I have seen it.

5 The other thing is, and one last  
6 question, and I will let you go as far as I'm  
7 concerned, based on the EPA Report and based on  
8 the Department of Health statements today, are  
9 you going to continue to perform the EIS as, more  
10 or less, mandated, or threatened by the  
11 Attorney General?

12 MAYOR O'LAUGHLIN: That is already  
13 started.

14 We hired a consulting firm, and  
15 they are getting -- doing two or three things,  
16 they are coming back to us with the report  
17 on how the area could be revitalized if we make  
18 that decision.

19 The condtions are the conditions  
20 that are there, and what would be the typical  
21 place when it is finished if the population goes  
22 on, and in that process of looking over the  
23 conditions of housing, streets, and so forth,  
24 they will come up with the information that will  
25 be required for the EIS.

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ASSEMBLYMAN PILLITTERE: My most logical question would be, since you believe the EPA Report, and you believe the Department of Health, and in doing so you believe the Attorney General's in error, why don't you just tell him to --

MAYOR O'LAUGHLIN: He has his job to do. He's a legal man. He is in a particular situation.

That is his job.

I don't want to say how I feel on that, I think he looks at it from a different angle than the medical doctors do.

ASSEMBLYMAN PILLITTERE: All right.

CHAIRMAN HINCHEY: Do you remember the story about the Emperor's new clothes?

MAYOR O'LAUGHLIN: Yes.

CHAIRMAN HINCHEY: I would like you to take another close look at this Emperor.

MAYOR O'LAUGHLIN: All right.

CHAIRMAN HINCHEY: You are an awfully nice guy, and I would hate to see you get stuck.

You are the end of the stick,

1  
2 and there is some dirty business associated with  
3 it.

4                   MAYOR O'LAUGHLIN: Well, if there  
5 is, Mr. Chairman, and I appreciate your remarks,  
6 but if there is some dirty business, then I  
7 think it should be brought out by the experts  
8 that can do it.

9                   The people in this Agency are  
10 not in the position to say who is the rat and who  
11 isn't. I was born and raised in Niagara Falls,  
12 and quite conversant with the problems inherent  
13 with that, and some real things have happened  
14 in that city, none the less of which was this  
15 thing in 1978 when this whole problem surfaced,  
16 and the problem has been right from the beginning  
17 so unique and so new to all agencies, Federal,  
18 State and local, and we have wrestled with it  
19 through the days of turmoil and emotion,  
20 and the lines were set under those conditions.

21                   Now we come along and we try to  
22 make decisions based on those lines which I  
23 think is a false premise to start from.

24                   Notwithstanding all the problems  
25 within here, how far do you go to take that kind

1  
2 of position?

3 As part of that, comparing one  
4 area with another, that is something we have to  
5 live with.

6 If there is a rat in the woodpile,  
7 which you seem to infer, that there is false  
8 statements or false facts that we are relying on,  
9 then we cannot -- I don't think we can operate  
10 on a suspicion; we, as an agency, have to have  
11 somebody show us that that is so, and maybe that  
12 is what your mission is.

13 CHAIRMAN HINCHEY: I really regret  
14 duty called you out of the room during Dr.  
15 Cook's testimony.

16 I guess you were here during the  
17 testimony of Dr. Bross, although maybe you  
18 weren't.

19 MAYOR O'LAUGHLIN: Yes, I was.

20 CHAIRMAN HINCHEY: Which really  
21 substantiated the testimony of Dr. Cook and  
22 other people who have had similar things to say.

23 MAYOR O'LAUGHLIN: All I can say  
24 is if they feel that way, why didn't these  
25 experts, who went through and went

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screaming after one another, why didn't they --

CHAIRMAN HINCHEY: They did.

MR. JOHN: They are doing it now.

CHAIRMAN HINCHEY: They did, from the very first, from the very first, objective people looking at this report saw its weaknesses, saw its faults, saw its fallacies, saw that it came to illogical and wrong conclusions from the very beginning, and it is only now that that situation is beginning to be seen with a sufficient degree of clarity regarding the nature of the report and its complexity, and because of the inability of people to look at documents --

MAYOR O'LAUGHLIN: But if they say one more thing, if they say this is as bad as this, and this is as good as that --

CHAIRMAN HINCHEY: Nobody is saying that

MAYOR O'LAUGHLIN: In conclusion, therefore, ergo -

CHAIRMAN HINCHEY: Nobody is saying that.

Nobody is saying that.

1  
2 MR. JOHN: What they were saying is  
3 on the number of samples taken, statistically,  
4 you could draw that inference.

5 It is just that their science,  
6 because of the number of samples that were taken,  
7 is such that you cannot draw very many conclus-  
8 ions from the data.

9 The thing that is quite  
10 apparent, everything hinges on EPA's data, the  
11 certification by NBS, the Health and Human  
12 Services decision that the thing is not not  
13 inhabitable and you are in a very awkward  
14 position because if that --

15 MAYOR O'LAUGHLIN: You are telling  
16 me!

17 MR. JOHN: -- if that EPA data falls  
18 apart on you, the Attorney General says  
19 you are liable.

20 He said that very clerly today,  
21 that there is only one agency that is going to  
22 be liable if you are selling any houses, and that  
23 is going to be the agency that sells the houses.

24 Quite frankly, you are a creation  
25



1  
2 of the State, and I don't want to get involved  
3 in any rerun of the adventures of Love Canal.

4 MAYOR O'LAUGHLIN: It was written  
5 that way intentionally, as you know.

6 The organization of the Agency  
7 isolated it from the State, because there  
8 has always been that question out there, what  
9 happens if someone moves in, and they get sick,  
10 what happens then?

11 I don't think it is going to be  
12 any different than if somebody gets sick some-  
13 where else.

14 Do you come down on Goodyear  
15 because their fumes are going across your lawn  
16 every second day?

17 It is the same suit there,  
18 you can't stop it.

19 MR. JOHN: One of the things that  
20 makes us nervous is if this area is a problem,  
21 and this is not attached to the lawsuits for  
22 Hooker and Occidental Petroleum, then we have  
23 substantially reduced their liability by saying  
24 the area is habitable.

25 CHAIRMAN HINCHEY: And we have

1  
2 substantially increased yours.

3 I assume that the City of Niagara  
4 Falls has competent counsel, and that your  
5 Corporation Counsel is a person that knows what  
6 he is doing.

7 ASSEMBLYMAN PILLITTERE: Yes.

8 MAYOR O'LAUGHLIN: Yes, we have a  
9 heavy carrier.

10 CHAIRMAN HINCHEY: I would ask  
11 you to ask them to review for you the whole  
12 question of liability, and I don't know if you  
13 were in the room during the discussion with  
14 regard to perpetuity, but that is an awfully long  
15 time, and the big boys are backing away from you,  
16 and at some point, you are going to be standing  
17 there all by yourself if things proceed along  
18 the lines that they have been going so far.

19 I would hate to see you in  
20 that position.

21 I would hate to see the City of  
22 Niagara Falls in that position.

23 I would hope that you will go, that  
24 you will proceed very cautiously from now on.

25 MAYOR O'LAUGHLIN: I have.

1  
2 CHAIRMAN HINCHEY: I know you have.

3 But you are going to have to  
4 double and triple andd quadruple the caution  
5 because you are in an awfully difficult position,  
6 and if things work out the way that  
7 EPA and, apparently, the State Health Department  
8 and others want it to work out, you may find  
9 yourself in a difficult set of circumstances  
10 sometime in the not too distant future.

11 Thank you, Mayor O'Laughlin.

12 \* \* \*

13 (The following is the remainder  
14 of the prepared testimony of Mayor  
15 Michel O'Laughlin:)

16 Concerning the conclusion of the  
17 U.S. Department of Health and Human services  
18 as to habitability, there were conditions  
19 attached thereto. These conditions, which  
20 were that appropriate measures be taken to  
21 clean up storm sewers and drainage tracts and  
22 and that the security measures and long-term  
23 monitoring be undertaken to guarantee permanent  
24 containment of the chemicals in t he Love Canal  
25 Dump.

1  
2 Evaluating both of these conditions  
3 and the context in which they were stated, it is  
4 clear that these conditions are not designed  
5 to remove existing threats to health, but to  
6 prevent future problems from arising.

7 The contamination in underground  
8 storm sewers and protected drainage tracts is  
9 sufficiently isolated so as to prevent little or  
10 no threat to most of the homes in Ring 3. The  
11 import of these two conditions is that they  
12 must be completed in order to assure long-term  
13 habitability of the area.

14 HHS is reluctant to accept rehabilita-  
15 tion of the area if there exists the possibility  
16 of future health effects arising from migration  
17 of chemicals from either the Canal or storm  
18 sewers.

19 Thus, while we are in full agreement  
20 that the measures presently being undertaken  
21 by the New York State DEC with Superfund monies  
22 are necessary and desirable to assure the  
23 long-term habitability of the area, there is  
24 nothing in these conditions which would impact  
25 on the present habitability.

1  
2 Revitalization, including rehabi-  
3 litation of the residences can be undertaken  
4 immediately while the remedial work is being  
5 accomplished. We are satisfied that the  
6 long-term containment and monitoring thereof  
7 of the Love Canal is assured by the contractual  
8 obligations of the New York State DEC in  
9 receiving the Superfund monies and their  
10 publicly-stated commitment to carry out these  
11 obligations.

12  
13 At the State level, New York  
14 State Department of Health conducted its own  
15 study of the New York State Love Canal area  
16 and that study, which was published in April of  
17 1981, does not express any concern about health  
18 effects for persons living in the Ring 3 area.

19 The New York State Department of  
20 Environmental Conservation has been heavily  
21 involved in the Love Canal area and it, too,  
22 has not issued any directive which would preclude  
23 or discourage the revitalization program which  
24 we are considering.

25 The Love Canal neighborhood was a

1  
2 viable, thriving, habitable neighborhood for  
3 many years before 1978. It was considered by all  
4 an acceptable place to live from both environmen-  
5 tal and health standpoints.

6 In the health and environmental  
7 studies which have been performed since that  
8 time, no government agency found health or  
9 environmental effects which would preclude people  
10 from continuing to live in and enjoy this  
11 neighborhood except for the Canal itself and  
12 Rings 1 and 2. We have notified each of the  
13 various agencies with health and environmental  
14 responsibilities of our intention to proceed  
15 with the revitalization program and have asked  
16 them to advise us if there is any reason why  
17 we cannot proceed.

18 None of these agencies have  
19 responded in the negative.

20 It appears therefore, that the  
21 revitalization program can proceed without  
22 fear of environmental or health problems arising.  
23 Moreover, in the absence of any directive or  
24 restraint from the government agencies, LCARA  
25 has a legal obligation to move ahead with

1  
2 revitalization of the neighborhood.

3 In short, the position of the Love  
4 Canal Area Revitalization Agency is that, based  
5 on prior experience, the area has always been an  
6 acceptable neighborhood in which to live,  
7 that no government agency with responsibility for  
8 health and environment, inspite of exhaustive  
9 testing and studies, have found any reason for  
10 people not to continue to live at that area,  
11 and that in the absence of any health and  
12 environmental problems the Agency is  
13 obligated by the statute creating it to proceed  
14 with revitalization of the neighborhood,  
15 including rehabilitation and sale of  
16 the four hundred twenty-eight existing residences  
17 which the Agency now owns or expects to purchase.  
18

19 Several remedial programs were  
20 contracted for and have gotten underway which  
21 further enhanced the containment of the dumpsite  
22 and instills confidence in the area as being  
23 adequately cared for and monitored.

24 With respect to the State Environ-  
25 mental Quality Review Act, known as SEQRA,

1  
2 LCARA will comply with that statute. Consulting  
3 planners and engineers are under contract to  
4 develop overall plans for the area's revital-  
5 ization.

6 We expect to amend that contract  
7 to provide for the preparation of an environ-  
8 mental assesement of the revitalization program  
9 to deterrmine if a full environmental impact  
10 statement is required.

11 There are one hundred ninety-five  
12 privately-owned properties interspersed among  
13 the four hundred twenty-eight homes LCARA now  
14 owns or has under contract. This consists of  
15 one hundred twenty-seven homes, plus or minus  
16 sixty vacant lots, two churches, and four  
17 commercial establishments.

18 There is also a public school,  
19 a volunteer fire department, a community  
20 center, a fifty-four unit senior citizens  
21 housing complex and two hundred fifty apartment  
22 units operated by the Niagara Falls  
23 Housing Authority, sixty-six of which  
24 are still occupied.

25 There is a lot at stake here!



1  
2           The long delays in decisive action  
3 impact upon the residents' personal lives and  
4 decisions. The housing deteriorates  
5 and the tax base erodes.

6           For what reason?

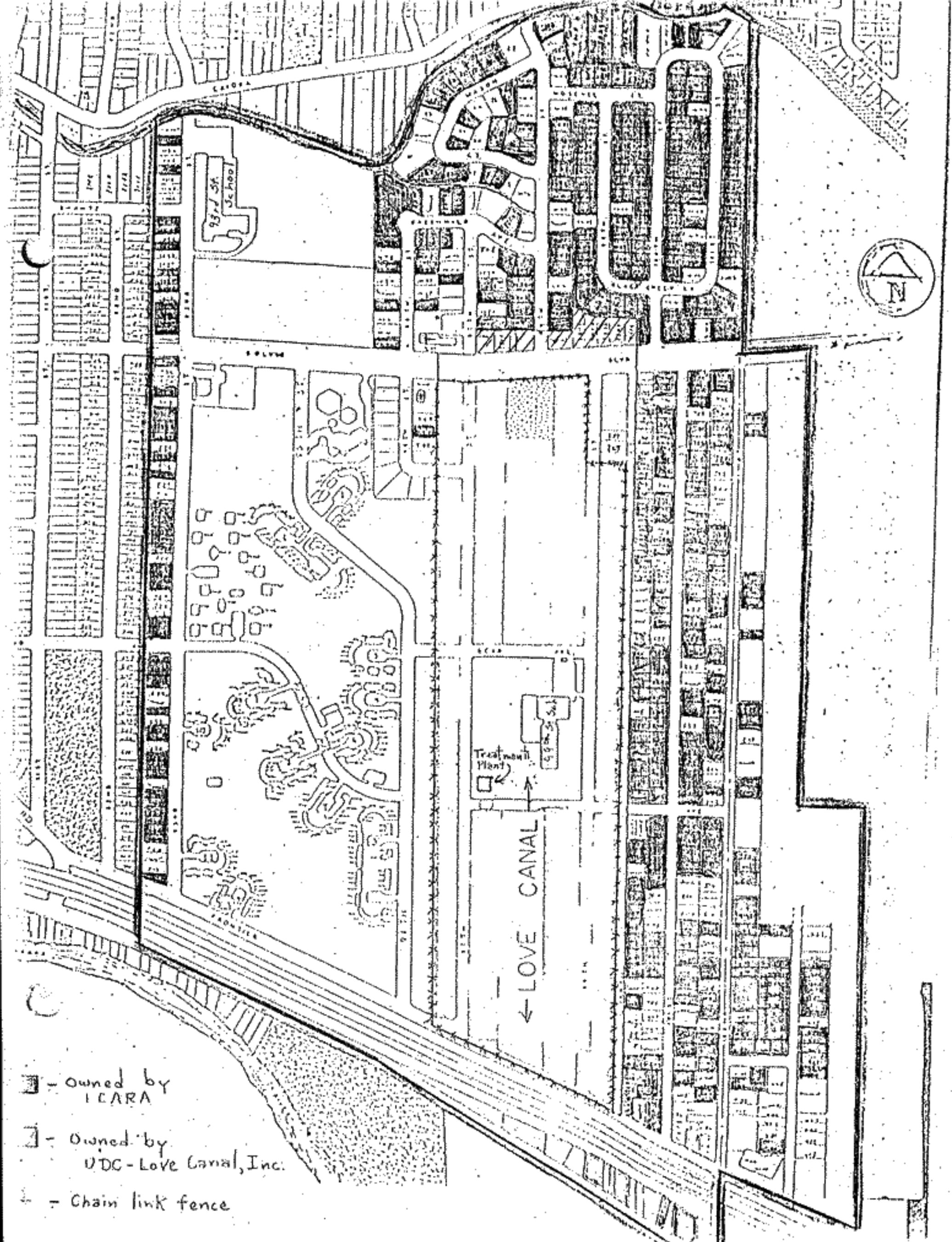
7           If it's unsafe and not livable  
8 then so be it, but that wasn't said.

9           Let's not procrastinate and posture  
10 on the backs of the remaining residents and  
11 property owners. If there is something to be  
12 said or done, say it or do it;

13           Otherwise, let us go forward  
14 together to revitalize the area as quickly  
15 and as competently as we can.

16           \* \* \*

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- - owned by ICARA
- ▤ - owned by UDC-Love Canal, Inc.
- - - Chain link fence

← LOVE CANAL

Treat Plant

93-1-3A  
School

93-1-3A

93-1-3A  
MONITOR

93-1-3A  
MONITOR

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2 CHAIRMAN HINCHEY: The next  
3 speaker will be John Lynch, from Catholic  
4 Charities.

5 MR. LYNCH: Thank you.

6 I will be brief as compared to what  
7 submitted.

8 I think such is the nature of  
9 common sense that it can be repeated.

10 CHAIRMAN HINCHEY: Yes, I will buy  
11 that.

12 MR. LYNCH: I am John Lynch,  
13 a native of Niagara Falls, New York. I am a  
14 graduate of Niagara University and has<sup>ed</sup> a  
15 Master's Degree from Rutger's University.

16 I have been employed with the  
17 Niagara County Office of Catholic  
18 Charities for the past nine years, and I've  
19 worked in various capacities with the various  
20 residents of the Love Canal neighborhood since  
21 1978.

22 I am a member of the Board of  
23 Directors of the Love Canal Area Revitalization  
24 Agency.

25 It is from that vantage point that

1  
2 I offer the following observations. I have  
3 directed my comments to:

4 The conclusion reached by the  
5 Environmental Protection Agency;

6 Additional steps needed to safe-  
7 guard the health and welfare of residents  
8 of that area.

9 I would say at the outset that I  
10 disagree in many respects, respectfully, with  
11 His Honor the Mayor about the conclusion that  
12 we, the Agency, should be reinhabiting as early  
13 as late spring.

14 In an effort to understand the  
15 implications of the Environmental  
16 Protection Agency monitoring study at Love Canal  
17 for repopulating the neighborhood, I undertook a  
18 three-month study of Volumes 1, 2 (Parts 1 and  
19 2), and 3, and the Inter-Agency Review.

20 I also talked with scientists who  
21 worked on the study and with those who have dis-  
22 associated themselves with the report.

23 Finally, I consulted with about  
24 two dozen local and national experts and leaders  
25

1  
2 in the fields of science, education, religion,  
3 health, and social service on this complex issue.

4 I approached this endeavor with  
5 four questions in mind that I believe must be  
6 established before people can move into the  
7 Emergency Declaration Area.

8 I also believe that clear answers  
9 to these questions would be helpful to a family  
10 who is considering a move into the neighborhood.

11 Taken the volumes of the EPA Report,  
12 I examined the following:

13 (1) Containment: Is the Love  
14 Canal Dump now being effectively contained by the  
15 barrier drainage system?

16 (2) Contamination: What is the  
17 extent of environmental contamination in the  
18 Emergency Declaration Area?

19 (3) What is the relationship  
20 between the chemicals found at Love Canal and  
21 the known health problems of present and former  
22 area residents?

23 (4) Is the Love Canal neighborhood  
24 safe?

25 Containment:

Volume 1 of the EPA Report states:

"The barrier drain system installed around the landfill was found to be an effective remedial measure to contain the outward migration of Love Canal contaminants..." Furthermore, Dr. John Deegan stated "The material was moving back faster than it had ever moved out."

Nowhere in the volumes are these assertions supported by further documentation. In fact, the report contains these confusing statements: "It is our opinion that the available organic and inorganic data demonstrate that chemicals have not migrated beyond the fenced-in area..." and "It is highly unlikely that groundwater migrated beyond Ring 1 houses."

Contamination:

What is the extent of environmental contamination in the Emergency Declaration Area?

Volume 1 of the EPA Report shows:

A limited pattern of environmental contamination restricted mainly to the immediate vicinity of the impacted landfill..."

"Highly selective migration

1  
2 of toxic chemicals contaminated a few Ring 1  
3 houses."

4 "Substantial residual contaminat-  
5 ion in storm sewer lines near the former Canal,  
6 and in the surface water and sediment of area  
7 creeks and rivers..."

8 No evidence that residential  
9 portions of the Declaration Area exhibited  
10 measurable environmental contamination that was  
11 directly attributable to the presence of contam-  
12 inants that had migrated from the former Canal."

13 Dr. Irwin Bross, Director of  
14 Biostatistics, Roswell Park Memorial Institute,  
15 in his analysis of the Love Canal data concludes:  
16 "...about half of the chemicals that have  
17 migrated from the dump to the Ring 1 homes have  
18 further migrated to the sumps, soil, and ground-  
19 water of the Declaration Area." And that "The  
20 data shows that the Declaration Area shows  
21 consistently more contamination than in the  
22 Control Areas."

23 Drs. Steen Aust, John Doull,  
24 Joseph Highland, Beverly Paigen, Robert Tardiff,  
25 James Wittenberger, and Mr. Robert Metcalf,

1  
2 all of the consulting team that reviewed the  
3 EPA Report for the government found the presence  
4 of organic chemicals in the Declaration Area that  
5 exceeded their presence in the Control Areas.

6 My own reading of the volume shows:

7 (A) "relatively prevalent soil  
8 contamination" in the Declaration Area  
9 (Volume 1, Page 97).

10 For a specific example of this,  
11 see Volume 3, Page 31. That map shows the soil  
12 findings for mercury. You will note that there  
13 are extensive findings of mercury contamination  
14 in the Declaration Area; many in excess of  
15 Federal standards. These findings are signifi-  
16 ficant, especially since it is known that  
17 mercury is biocumulative over time, it has  
18 affinity for the central nervous system, and is  
19 associated with chromosomal breaks.

20 Other examples exist, such as the  
21 findings for dichlorobenzene in Area 2. An  
22 apparent flaw in the EPA soil findings, however,  
23 is their failure to measure trichlorophenol.  
24 Almost two hundred tons of this was  
25 disposed at Love Canal.



1  
2 Tricholophenol is frequently  
3 contaminated with dioxin. EPA sampled only four  
4 soil sites for dioxin in the Declaration Area.

5 No 2, 3, 7, 8, TCDD was found  
6 in any of these. New York State, however, found  
7 dioxin, (three hundred eighty parts per trillion  
8 in one of the sites (02026) that was also  
9 sampled by EPA (see 1981 Department of Health  
10 Report).

11 (B) "The extent of indoor air  
12 contamination in the Declaration Area was  
13 significantly greater than at Control sites for  
14 o-chlorotoluene, o-dichlorobenzene," and chloro-  
15 benzene." (Volume 1MP.127).

16 (C) "...low-level, widespread  
17 contamination in the bedrock aquifer was likely  
18 present...at substantial distances from Love  
19 Canal." (Volume 1, Page 86)

20 What is the relationship between  
21 the chemicals found at Love Canal and the known health  
22 problems of former and present area  
23 residents?

24 Volume 1 of the EPA report states:

25 "It should be made clear that the

1  
2 biological monitoring program was neither  
3 designed nor intended to provide insight into the  
4 health or ecological effects of those contaminants  
5 that might be found in biota." (Page 152) "The  
6 results from the biological monitoring  
7 program were found to be of limited value."  
8 (Page 155)

9                   Nevertheless, Dr. Clark Heath  
10 stated at a briefing on July 14th, 1982 that  
11 "health effects were not demonstrated." And Dr.  
12 Deegan claimed on August 16th, 1982 that the  
13 Department of Health and Human Services  
14 "determined that the levels of contaminants in the  
15 soil in the Declaration Area did not pose a  
16 threat to human health."

17                   These assertions are challenged  
18 by many of the opinions found in the Inter-Agency  
19 Review. See, for example, the comments by  
20 Robert Metcalf who states, "The concentrations of  
21 key pollutants detected in the Love Canal area  
22 could cause adverse health effects beyond those  
23 in usual residential conditions in the Niagara  
24 Falls area."  
25

1  
2 Clearly, Question 3 was not  
3 answered by the EPA Report. As a result,  
4 "There now exists a major gap between health  
5 effects observed by former Love Canal residents  
6 (and a part of their medical records), and the  
7 projected 'non-effects', based primarily upon  
8 chemical testing." (From testimony submitted  
9 to the U.S. Senate and House hearings, August  
10 4th, 1982 by the Ecumenical Task Force of the  
11 Niagara Frontier.)

12 Is the Love Canal neighborhood  
13 safe?

14 The volumes of the EPA Report do  
15 not address this question directly. Instead,  
16 HHS states that, "The Love Canal area, outside  
17 of Area 11, is as habitable as the  
18 Control Areas with which it was compared."  
19 Dr. Richard Dewling of EPA stated (July 14,  
20 1982) that the question of safety was not an  
21 issue for science but is "a personal judgement."

22 Others disagree.

23 Dr. Bross, Director of Bio-  
24 statistics, Roswell Park Memorial Park Insitutes  
25 states, "Safety may or may not be accurately

1  
2 assessed in a given situation but it is not  
3 a matter of opinion. There are either excess  
4 risks or not."

5 The Environmental Defense Fund in  
6 testimony prepared for the Love Canal hearings,  
7 (August 9th, 1982), indicates that habitability  
8 has an absolute meaning. "The absolute sense of  
9 habitability implies safety within an under-  
10 stood framework of acceptable risk, based on  
11 assessment of actual and potential health  
12 hazards associated with defined conditions of  
13 environmental contamination."

14 Congressman John LaFalce in his  
15 statement prepared for the Love Canal hearings,  
16 (August 9th, 1982), points out that the EPA  
17 intended to have both an exposure assessment and  
18 a risk assessment prepared based upon the enviro-  
19 nmental monitoring data. "A draft exposure  
20 assessment and the risk assessment were cancell-  
21 ed in late July of 1982, after HHS issued its  
22 habitability assessment on July 13, 1982."

23 Some scientists clearly state that  
24 the area is not safe. Robert Metcalf of the  
25

1  
2 Institute for Environmental Studies, University  
3 of Illinois, one of the EPA consultants, states  
4 that, "People living in these areas (2, 3, 4, 6,  
5 8) will be exposed to trace chemical insults  
6 from a variety of highly chemical pollutants for  
7 generations." He strongly urges a "conservative  
8 attitude about promoting the exposure of  
9 thousands of persons, especially young children  
10 to these trace chemical pollutants over a life-  
11 time."

12 Dr. Bross states that "Human  
13 health and safety is clearly at risk, and that  
14 the prudent course of action is "rejection of  
15 the repopulation policy."

16 In conclusion, clearly, we still  
17 need to know what are the future risks asso-  
18 ciated with repopulating the Love Canal area.  
19 Dr. Steven Aust, one of ther EPA consultants,  
20 told me that there are too many doubts about  
21 EPA's data to say if it is safe or if it is not.

22 On its face, there is just as much  
23 support for the assertion t hat dangerous  
24 contamination of the neighborhood continues as  
25 saying that it has been stopped. A cloud of

1  
2 confusion remains suspended over the Love Canal  
3 neighborhood.

4 Government interaction with  
5 residents over the past four years to resolve  
6 this has only led to mistrust and animosity.

7 Families that have left the neigh-  
8 borhood, those who remain, and those who con-  
9 template moving in are entitled to clear, direct  
10 and informed communications about specific locat-  
11 ions of contaminants and their impact upon human  
12 health.

13 These families need to feel secure  
14 in their homes and in their relationships to  
15 agencies that exist to protect the environment.

16 The Love Canal Area Revitalization  
17 Agency is one such organization that has not  
18 gained the public trust. It is charged with a  
19 vague mission to revitalize a devastated  
20 neighborhood upon a sound foundation with  
21 inadequate resources to do a credible job.

22 Thus, after almost three years of  
23 work, the Agency has adopted a plan to change the  
24 image and appearance problems of the neighborhood  
25 in order to make the homes saleable. This is not

1  
2  
3 legitimate public policy but one borne of  
4 uncertainty, political conflicts, and the felt  
5 need of a small group of men.

6 To resolve the many concerns of  
7 the residents of this community, I join the  
8 Attorney General of the State in calling for a  
9 complete program to clean up areas of known  
10 contamination and to monitor the Canal  
11 in perpetuity.

12 Second, I believe it is imperative  
13 that individual residential assessments be  
14 conducted in order that decisions can be made  
15 regarding the resale of specific homes.

16 Finally, I recommend that legis-  
17 lation be formulated to establish a health  
18 registry of the residents of the neighborhood.

19 Thank you very much.

20 CHAIRMAN HINCHEY: We thank you  
21 very much.

22 There may be a question.

23 ASSEMBLYMAN PILLITTERE: I have one  
24 question.

25 You are one of a nine-member

1 organization.

2 The Mayor has expressed his opin-  
3 ion, I believe, as the opinion of the total  
4 Agency.

5 You are the Secretary of the same  
6 agency, and you expressed a completely opposite  
7 opinion from the Mayor, who is the Chairman.

8 How does the vote stand now with  
9 nine members?

10 Are you eight to one;

11 Seven to two;

12 Six to three;

13 Five to four?

14 MR. LYNCH: Seven to two, at the  
15 latest count.

16 ASSEMBLYMAN PILLITTERE: Seven  
17 with the Mayor -- I don't mean against the  
18 Mayor, I'm sorry, I really do not mean that. I  
19 did not honestly.

20 Didn't I read about six months ago  
21 or a year ago that you quit the Agency?

22 MR. LYNCH: That was Mr. Wagner.

23 ASSEMBLYMAN PILLITTERE: I'm  
24 sorry, I had the wrong -- he was on the  
25 Agency and quit?



1  
2 MR. LYNCH: Yes.

3 ASSEMBLYMAN PILLITTERE: For the  
4 same reason.

5 MR. LYNCH: A feeling that it was  
6 stacked up against us, right.

7 ASSEMBLYMAN PILLITTERE: Okay.

8 CHAIRMAN HINCHEY: Thank you for  
9 your testimony, it was very logical.

10 Thank you.

11 \* \* \*

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CHAIRMAN HINCHEY: Our next speaker will be Joann Hale.

MS. HALE: As people were talking, I had some comments that I wrote down, so it is not in my submitted testimony, but I would like to make a few extra comments.

First of all, we have heard from the expert doctors, from the Health Department, and the doctor that spoke, he is a DVM, a Doctor of Veterinary Medicine, and I was not in Love Canal to get rabies shots or I didn't stay there so I could find out about a dog's illness.

I was there for my family.

CHAIRMAN HINCHEY: Dr. Huffaker, he is the one you are referring to?

MS. HALE: Yes.

CHAIRMAN HINCHEY: The representative of the Health Department?

MS. HALE: Yes.

CHAIRMAN HINCHEY: Is a Doctor of Veterinary Medicine?

MS. HALE: Yes, dogs and cats, and in between.

Commissioner Whalen, from August, 1978, stated in his testimony -- in his

1  
2 declaration of 1978, stated that there would be a  
3 followup on residents.

4 When this doctor from the Health  
5 Department was speaking, he said there was.  
6 I think he said that there was four  
7 hundred seventy-five people included.

8 I haven't been contacted yet.

9 My home is now torn down. I have  
10 been out of the area since August of 1978, so  
11 that took care of me, I am not one of those  
12 people.

13 I doubt if he contacted anyone out of the  
14 two hundred thirteen homes, because I  
15 was not contacted, or the two hundred  
16 eleven homes that he referred to. They did  
17 contact me a year and a half ago, though, to  
18 find out if I had a sump pump in my home.

19 So that was there contact, and  
20 that does not include a health study, I don't  
21 think.

22 My sump pump seemed to be healthy,  
23 because I didn't have one.

24 Let's see, when they did do the  
25

1  
2 studies, the health studies in the summer of  
3 1978, which was when there was a thousand or so  
4 people, he might have been referring to that,  
5 although I might be wrong, I might have  
6 misunderstood him, but they lost most of our blood  
7 samples in my family.

8                   What they did not lose, got  
9 spoiled.

10                   What didn't get spoiled, they  
11 didn't know how to analyze.

12                   After that, they sent the results to  
13 my doctor, with no explanation of what these results  
14 meant. So when I went to my personal doctor  
15 at seven-and-a-half months pregnant,  
16 worrying about my unborn child, they did not --  
17 my doctor said, "I don't know what to do."

18                   That was his answer.

19                   He said at that time also, that as  
20 far as he was concerned, the State of New York  
21 Health Department could go to hell, that was  
22 his opinion.

23                   So I will start with my testimony,  
24 and then answer a lot of questions that the  
25 Doctor -- I don't know, somebody asked what

1  
2 state he worked for, because he sure didn't  
3 contact anybody that I know of.

4 ASSEMBLYMAN PILLITTERE: May I ask  
5 you one question?

6 MS. HALE: Yes.

7 ASSEMBLYMAN PILLITTERE: I'm not  
8 trying to give you a hard time, but are you  
9 contactable?

10 MS. HALE: I am in the phonebook,  
11 and I have been in numerous newspapers --

12 ASSEMBLYMAN PILLITTERE: I had to  
13 ask you that question.

14 MS. HALE: Right and I do.  
15 occasionally show up during Health Department  
16 meetings.

17 My name is Joann Hale, and I live  
18 on Grand Island. I used to live at 643 99th  
19 Street, the uninhabitable zone.

20 I have two children.

21 My oldest daughter was one-and-a-  
22 half years old when we moved to Love Canal, and  
23 my youngest daughter was conceived in Love Canal.

24 I left the area in August of 1978  
25 because of a health risk declared by

1  
2 Health Commissioner Whalen, which involved  
3 pregnant women and children under two. We  
4 were first relocated into a motel because it  
5 was thought to be a short and temporary  
6 relocation, until the area was cleaned up, and  
7 then we could be moved back in.

8 After some testing and heavy  
9 construction work, the area was supposed  
10 to be safe.

11 Then, the shock came that dioxin  
12 was found, and we would be selling our homes  
13 to the State to get away from the toxics.

14 Our physical problems prior to  
15 moving into Love Canal and after are astounding.

16 Prior to moving into the Love Canal  
17 in 1972, my husband had an appendicitis attack  
18 and we possibly suffered from a few colds and  
19 flus.

20 After moving into the Love Canal in  
21 1976, our problems began.

22 We moved into the home, I would say  
23 in like the early spring of 1976, and a few months  
24 later my daughter was admitted into the hospital  
25 for failure to thrive, which meant that she fell

1  
2 off a chromosome chart, which most doctors use,  
3 which means she was losing weight without  
4 knowing how.

5           Everybody kept saying what is this  
6 data?

7           I have data, I did not bring it  
8 because I did not realize that the Health  
9 Department man would be here, but I have a  
10 twenty-five to thirty-page report from  
11 Children's Hospital telling me that they  
12 could not tell me why she was failing to thrive,  
13 which is sometimes a fatal disease or condition.

14           I delivered my second child in  
15 October of 1975, one and a half months after  
16 moving out of the Canal Area.

17           She was born with a slight  
18 defect, this is how the Department talks, the  
19 Health Department -- almost like it was  
20 assemblyline style -- it was a defect, corrected  
21 with minor surgery.

22           In June of 1980 -- let me  
23 control myself -- I had a large tumor removed,  
24 in December of 1980 I had another large tumor  
25 removed off my right femur.

1  
2 I'm trying not to be emotional.

3 These are all facts.

4 I have testimony --

5 CHAIRMAN HINCHEY: Just take your  
6 time and relax.

7 Just take your time, don't  
8 worry about it.

9 MS. HALE: In August of 1981,  
10 three weeks after I was able to walk again, by a  
11 miracle and the grace of God, my second  
12 baby was found to have a bone infection called  
13 osteomyelitis which was common years and years  
14 ago.

15 Osteomyelitis is usually caused  
16 by a bacteria entering the body, and into the bone  
17 which produces weak blood cells, it is like  
18 an anemic type of condition.

19 How they can test for this, they  
20 take a bone marrow sample, and they culture  
21 it and usually the bacteria will grow, and they  
22 will tell you what caused it.

23 In our case, nothing could be  
24 cultured from the bone marrow sampling.

25 I did not tell the doctor or



1  
2 the hospital that we were fom Love Canal. I did  
3 not trust them.

4 I did not want to get an answer,  
5 "No, we don't know why."

6 I got it anyway.

7 I sent the information to a doctor,  
8 an independent doctor, and she said  
9 it might be because of the breakdown of the  
10 immune system.

11 I have since delivering my second  
12 child in October of 1978 been bleeding with a  
13 menstrual period for twenty-one days a month,  
14 for no reason that the doctor can find.

15 I have had female problems ever  
16 since, and three D&C's since 1979.

17 In August of 1982, my eldest  
18 daughter had a tumor removed from her eye.

19 In October of 1982, my youngest  
20 three-year-old-child had her teeth removed, and  
21 most of them capped because they decalcified in  
22 her mouth.

23 One dentist that I took her to,  
24 which is a friend of the family, said that he  
25 has never seen anything in such a young child,

1  
2 teeth in such bad condition.

3 On January 4th, 1982, my  
4 husband had a tumor removed from his right femur,  
5 and he is now on the road to recovery.

6 My eldest daughter also has eye  
7 and hand coordination problems.

8 I dread waking up in the  
9 morning because I don't know what the next day  
10 will bring.

11 I hope this ends my family's  
12 medical problems, but being exposed  
13 to dioxin, benzene, and a hundred  
14 ninety-eight more chemicals and other products,  
15 I wouldn't bet on it.

16 My hope for a good health study  
17 was killed when no one contacted us from the New  
18 York State Health Department as promised in  
19 1978 by Commissioner Whalen's declaration,  
20 I think it was called. The New York State  
21 Health Department insists that they are here to  
22 protect our health. Then they send the man  
23 that specializes in dogs and cats.

24 They sent him to us once before  
25 when we were living in the Love Canal Area,

1  
2 to talk about the health studies that would be  
3 taking place.

4 The EPA released data stating that  
5 the zone was not habitable, but anywhere beyond  
6 that is ridiculous.

7 I remember the Mayor stating that  
8 why can people move on this side of 92nd Street,  
9 well, the Mayor must have forgotten, because  
10 they did not do any testing outside and start  
11 to find out where the contamination started.

12 How they did it was this way,  
13 and wouldn't it have been easier to start from  
14 maybe fifth Street, and work their work in  
15 to find out where the boundaries are?

16 The creeks are contaminated accord-  
17 ing to EPA's own studies. The sewers have dioxin  
18 in them. The sewers lead to the Niagara River,  
19 so does the creeks.

20 So we are still giving the Love  
21 Canal toxics.

22 I feel that they -- if they  
23 revitalize and reopen the habitable zone for  
24 the sale of homes, the EPA should come up  
25 with the answer of where the spot contamination

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comes from.

They talk about spot contamination outside the area of Love Canal. But it is not Love Canal contamination.

Where did it come from?

Obviously, there must be another source.

If it is, there is a bigger problem than we ever imagined. A good health study is necessary. I feel that is one of the most important things that Congress can ever appropriate money for, if it could be an unbiased study, based upon facts.

A good environmental study on the fish and wildlife in the creeks has to be done because they did state that the crayfish in the creek have dioxin, they were found to have dioxin in the EPA study.

I feel that a genuine cleanup is most important to protect the river, the land, and the air, and most of all the people.

I also feel that the whole world is watching, either to pat the government on the back or to still declare that this is just

1  
2 another scandal that the American government lets  
3 go.

4 Can one thousand seventy families  
5 be wrong that have moved out of the area?

6 Will another generation have to  
7 live there and in ten years or so down the  
8 line have to move out because of this decision?

9 Can we close the book on revital-  
10 ization and keep the testing that might help  
11 other people elsewhere?

12 Also, in the end, can the people  
13 who make this decision sleep at night knowing  
14 that it was wrong?

15 Can you prove to me that my medical  
16 problems came from another source or that my  
17 children's children will be all right and that  
18 I will have healthy grandchildren?

19 No, you can't.

20 But you can guarantee me one thing:

21 In time to come, when the history  
22 books are written, they will state that a lesson  
23 was learned from Love Canal and there won't be  
24 any more mistakes.

25 We had no prior knowledge.

1  
2 We were the first, and you will  
3 learn from us.

4 You have the facts and the decision  
5 will be yours to make.

6 CHAIRMAN HINCHEY: I wish I knew  
7 what to say to you.

8 I don't.

9 MS. HALE: Declare it uninhabit-  
10 able.

11 CHAIRMAN HINCHEY: That is what we  
12 think ought to be done.

13 We are not in a position to do that.  
14 We can only try to bring pressure to bear to  
15 have that done, and that is, in part, what this  
16 hearing is about.

17 With your permission, I would also  
18 like to refer your situation directly to the  
19 Commissioner of Health.

20 MS. HALE: There was -- I'm sorry,  
21 before I lost my train of thought --

22 CHAIRMAN HINCHEY: Sure.

23 MS. HALE: He stated, the doctor  
24 from the Health Department, I don't want to  
25 say his name because I will mess it up,

1  
2 I tried it for a couple of hours, but he stated  
3 that people that had children were contacted  
4 after having Love Canal children. I was never  
5 contacted.

6 I personally, after delivery, about  
7 five minutes later said to my doctor, take a  
8 Bilko blood sample so that the Health Depart-  
9 ment --at that time I still trusted them fully --  
10 would do this precious testing for me. They lost  
11 that sample, which could never be returned, of  
12 course.

13 They never contacted me on that.

14 They never contacted any of the  
15 mothers that I know of that had children that  
16 year, when it was declared a disaster.

17 CHAIRMAN HINCHEY: Would you kindly  
18 give us your full address and telephone number?

19 MS. HALE: Yes.

20 I did not bring my daughter's  
21 pathology report or anything because I did not  
22 realize that there would be somebody here.

23 CHAIRMAN HINCHEY: We will do our  
24 best to have the Health Department authorities  
25 contact you directly, we will refer it directly

1  
2 to the Commissioner, if you will give us your  
3 full name and address and telephone number.

4 MS. HALE: Also, I have --

5 CHAIRMAN HINCHEY: Do you mind giving  
6 your address out loud?

7 MS. HALE: I don't care.

8 It is 331 Wallace --

9 CHAIRMAN HINCHEY: 3331 --

10 MS. HALE: Wallace Drive, Grand  
11 Island 14072, 716-773-7935.

12 CHAIRMAN HINCHEY: Repeat the  
13 number, please

14 MS. HALE: 716-773-7935.

15 CHAIRMAN HINCHEY: If you have  
16 knowledge on a similar situation, you might  
17 make that information available.

18 Thank you for coming here and  
19 testifying.

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2 CHAIRMAN HINCHEY: Our next speaker  
3 will be Debrah Cerrillo.

4 MS. POZNIAK: My name is Marie  
5 Pozniak, and I will be reading Ms. Cerrillo's  
6 testimony because of recent surgery, she is  
7 unable to be here.

8 Please let me start off by saying  
9 that I am appalled that again we, the ex-citizens  
10 of Love Canal, have repeatedly had to convince  
11 you, the politicians, doctors, scientists, the  
12 Governor, and also Dr. Axelrod, the Commissioner  
13 of Health, that there is a serious problem of being  
14 exposed to low levels of chemicals over a long  
15 period of time, and that this has created a  
16 serious hazard to our health, and the health of  
17 future residents.

18 You have continuously expected us  
19 dumb housewives of Love Canal to prove that  
20 there is a problem there.

21 I believe the tables have to be  
22 turned.

23 How about you proving to me,  
24 that the chemicals buried at the Canal have not  
25 injured me?

1  
2 I have been through extensive  
3 surgery six times for the same failing problem.  
4 I've had miscarriages, migraines, female problems,  
5 high blood pressure, and never mind all the  
6 health effects my family has had.

7 Why, after leaving that area,  
8 have most of the problems not subsided?

9 You answer me! Why not have a  
10 hearing for the people who have left here?  
11 Explain to us the reasons for their deaths at  
12 early ages, unexplained illnesses, heartbreaks  
13 that Love Canal has brought to over eight  
14 hundred families.

15 I think it's about time you give us  
16 hearings and prove to us there are no problems  
17 at Love Canal.

18 Give us some medical evidence or  
19 the results to all the health studies that  
20 were never done, or the follow-up studies.

21 Why do you suppose there weren't  
22 any done?

23 To a lay person, it looks like  
24 there was a coverup going on.

25 Maybe by not doing the testing,

1  
2 nothing could be done!

3 Is that what was meant not to  
4 happen?

5 Love Canal should have been used as  
6 a learning tool for others around the world,  
7 as the result of the health studies that should  
8 have been done away from the Canal of the  
9 ex-residents and children who were born as the  
10 result of conceptions at Love Canal.

11 All that important data has been  
12 lost.

13 Purposely?

14 Why wasn't it done?

15 Was someone afraid something might  
16 be found out?

17 If that area is revitalized, I will  
18 lose total faith in government.

19 If you care for life, or future  
20 life, don't do it.

21 (Applause.)

22 CHAIRMAN HINCHEY: Would you be  
23 interested in providing us with copies of the  
24 medical records you were referring to before?

25 MS. POZNIAK: If somebody can do it

1  
2 fine, but we are unemployed and can't afford to  
3 do it ourselves.

4 CHAIRMAN HINCHEY: We can do it  
5 right now, yes.

6 Thank you.

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2 CHAIRMAN HINCHEY: The next  
3 speaker will be Loretta Gambino.

4 ASSEMBLYMAN PILLITTERE: I got a  
5 call indicating that she was not coming, she had  
6 some bad phone calls.

7 CHAIRMAN HINCHEY: Did she call  
8 your office?

9 ASSEMBLYMAN PILLITTERE: She called  
10 my office ~~saying~~ she would not testify because  
11 she had threatening phone calls, and she would  
12 not testify.

13 CHAIRMAN HINCHEY: Alexandra Cukan  
14 from the Sierra Club, the Atlantic Chapter.

15 SISTER CUKAN: I am here from the  
16 Sierra Club, the Atlantic Chapter, and am speak-  
17 ing instead of Richard Lippes, who was called  
18 out of town.

19 I represent over twenty-three  
20 thousand members of the Atlantic Chapter  
21 of the Sierra Club who reside in the  
22 United States.

23 The Sierra Club is the oldest  
24 organization in the country and its present  
25 membership of ~~three~~ hundred forty thousand

1  
2 members continues to grow.

3           The purpose of the Sierra Club is  
4 to enhance the natural resources and human  
5 environment of the United States. The  
6 Club has had a longstanding interest in  
7 hazardous waste disposal, and Love Canal, and it  
8 is grateful for the opportunity to speak on this issue.

9           The decisions made concerning Love  
10 Canal will not only affect the residents and  
11 former residents of the area but all those who  
12 have to live with hazardous waste dumps and deal  
13 with this critical issue. The Love Canal  
14 Area Revitalization Agency has been charged with  
15 the responsibility to decide the future of the  
16 Love Canal Area.  
17

18           It is important to note that this  
19 responsibility for revitalization does not  
20 necessarily mean a program for re-sale or  
21 reoccupancy of the homes of Love  
22 Canal.

23           I have two pages here of  
24 nicely-typed words, a lot of what I had  
25 planned to say has already been said. I don't

1  
2 think I can add much more to the testimony that  
3 has already been given and say more than what  
4 has been expressed by the people themselves  
5 who have lived in Love Canal or are going to  
6 live in Love Canal.

7 I think it is pretty clear that any  
8 Government agency, whether it is going to be EPA  
9 or the Department of Health, is not going to  
10 make a statement one way or the other on the  
11 safety of the area.

12 I have been involved in this issue  
13 for the last five years. I have a Master's Degree in  
14 Environmental Science from the University of  
15 Buffalo.

16 I was responsible for putting  
17 together a program of extensive speakers  
18 concerning Love Canal in 1978, and I  
19 have sat here for seven hours now, and I have  
20 seen virtually no progress made in  
21 the last five years, including today.

22 What the people from EPA said  
23 today is exactly what the EPA said in 1978.

24 Samples get lost, and batches  
25 get spoiled.

1  
2                   The EPA has not made a statement,  
3 and will not make a statement on the safety of  
4 the Love Canal homes.    The Sierra Club  
5 has based a lot of its reputation on criticizing  
6 the work of EPA, and I guess we are going to do  
7 it again today.

8                   We have serious problems with EPA  
9 and their monitoring report. We don't see it as  
10 a valid report.

11                   It is not the kind of report that  
12 this area deserves.

13                   EPA deferred the decision  
14 whether the area is habitable to HHS, which made  
15 two very clear declarations, qualifications to  
16 their statement that there must be extensive,  
17 further remedial work to address the contamina-  
18 tion problems.

19                   They also stated that Love Canal  
20 must be constantly safeguarded against the  
21 future migration of toxic chemicals, and I said  
22 that there was a majority of the HHS experts who  
23 disagreed or had reservations about reaching  
24 this qualified statement.

25                   It is also important to note that



1  
2 the remedial work or the proposed Superfund  
3 work will not or has not achieved the total con-  
4 tainment of a cleaner Love Canal area.

5           SEQRA is very specific in requi-  
6 ring that any proposed action that might have  
7 significant effect on the environment must  
8 be subjected to both the procedural and  
9 substantive provisions of the statute.

10           The Sierra Club urges that  
11 those responsible for the area will  
12 have a significant effect on the environment  
13 and full compliance with SEQURA be made before  
14 any decisions be made for the area.

15           I don't see any government agency,  
16 like I said before, making a decision on this.  
17 It has all been deferred to the local agencies,  
18 and the local agencies are looking back to these  
19 government entities to tell them is it safe or  
20 isn't it.

21           They're not going to say.

22           I think it is time that the  
23 people responsible, and the residents,  
24 and the people involved impress upon everyone  
25 else involved that someone is going to have

1  
2 to take the responsibility for this area, because  
3 it is not going to stop.

4 We can go on probably for another  
5 three or four hours on this very issue.

6 I don't have anything else to add  
7 except to say that I certainly feel that five  
8 years from now we are not seeing the same situa-  
9 tion occur again.

10 CHAIRMAN HINCHEY: Amen to that,  
11 Sister!

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2 CHAIRMAN HINCHEY: Msgr. Graeber.

3 MSGR. GRAEBER: Good afternoon.

4 I represent the Peace and Justice  
5 Commission of the Roman Catholic Diocese of  
6 Buffalo, which is made up of clergy, women  
7 religious and laity who advise the Bishop of  
8 Buffalo on all social justice issues.

9 We have, in the past, been very  
10 involved in the Love Canal issue as has also  
11 the Catholic Charities and Bishop Head himself.

12 Our purpose was threefold:

13 (1) We are concerned that unless  
14 ecological responsibility is encouraged,  
15 permanent and severe damage can be done to our  
16 locality.

17 (2) We attempted to remind all  
18 concerned that public life and safety are of greater  
19 concern than any monetary values and  
20 industrial power and influence.

21 (3) Persons of the Love Canal area  
22 were and are members of our Catholic faith and  
23 look to their religious leaders for moral support  
24 and moral guidance.

25 At this public hearing, I would

1  
2 like to state three vital points representing  
3 religious leadership of the Roman Catholic  
4 community:

5 (1) The religious community  
6 teaches that creation is a gift from God  
7 to be shared among people in a responsible way,  
8 not to be exploited by Government or industry.  
9 Government is there to assure that this is always  
10 true.

11 (2) When there is a question of risk  
12 as in the case of the Love Canal area, truthfulness  
13 on all sides must be a constant factor.  
14 Neither government nor industry has any right  
15 to hide nor hold back the truth necessary for  
16 citizens necessary to make intelligent  
17 decisions about the risk involved.

18 When reputable scientists ask  
19 questions about government reports such as the  
20 EPA report and no answers are given, this makes  
21 it impossible for anyone in the public to make  
22 intelligent decisions. Public regulatory  
23 agencies are there first of all to protect  
24 the public well being.

25 (3) There must be a

1  
2 public participation, and that kind of parti-  
3 cipation that can make an intelligent decision.

4           The kind of risk involved in the  
5 Love Canal area must be made public after the  
6 dialogue between scientists and government so  
7 people can evaluate the risk in locating in that  
8 area.

9           If the risk is very serious,  
10 morally one cannot place his health nor life,  
11 nor the lives of his family, in such jeopardy.

12           If the risk is light, then  
13 each must make his own decision.

14           However, public dialogue  
15 concerning this matter will bring out the  
16 truths we need to know from the scientists so  
17 that the public can make a decision about the  
18 future of the Love Canal.

19           We request that these two commit-  
20 tees take the time and means necessary to  
21 bring this whole matter to a final decision  
22 once all interested parties have had their  
23 questions answered and render their decision.

24           Just to add, on my own part, I was  
25 very much involved for many months with the

1  
2 Love Canal area, and I also saw what many of  
3 the people have testified to recently, and it  
4 just seemed like government agencies were very  
5 insensitive to the seriousness of the people's  
6 lives, and what happened to people's lives and  
7 we, in the Roman Catholic community, are  
8 very upset with that.

9 We are also most upset because  
10 when people ask questions, why aren't they  
11 answered by the Federal government?

12 Thank you.

13 CHAIRMAN HINCHEY: Thank you very  
14 much, Monsignor.

15 We obviously share your concern  
16 and your beliefs; too, and we will do the best  
17 that we can to carry out your mandate.

18 MSGR. GRAEBER: Thank you.

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2 CHAIRMAN HINCHEY: Wayne D. Morgan.

3 (No response.)

4 Is Mr. Morgan here?

5 (No response.)

6 Harry H. Badorian.

7 (No response.)

8 I understand that Mr. Badorian  
9 has submitted a statement for the record, and  
10 it will be entered in the record.

11 Dr. William Scott.

12 REV. LAWRENCE: I am speaking for  
13 Dr. Scott.

14 CHAIRMAN HINCHEY: Why don't you  
15 proceed, by first identifying yourself.

16 REV. LAWRENCE: I am the Rev.  
17 Donald L. Lawrence, Pastor of the First Baptist  
18 Church of Niagara Falls.

19 Dr. William Scott of the American  
20 Baptist Churches of the Niagara Frontier has  
21 been called out of town today and has asked me  
22 to speak on behalf of our denomination.

23 Perpaps it is most appropriate that  
24 I speak because members of my congregation and  
25 their families have lived in the Love Canal

1  
2 Declaration Area. I can testify to the illness  
3 and suffering which these families experienced  
4 while living adjacent to the Canal and the  
5 improvement in the health of all and the develop-  
6 ment of the children since relocating.

7           Likewise, I can testify to the  
8 fear that the families have that someone else --  
9 quite unknowingly -- might be moved into  
10 these houses which have proved so disastrous  
11 to their health and lives.

12  
13           Our denomination has gone on  
14 record repeatedly to confirm our concern for  
15 those who have suffered in the Love Canal Area.

16           We have provided funds for the  
17 material assistance and for counseling for  
18 these families.

19           In no way do we wish to see anyone  
20 moving into the area without every assurance  
21 that the environmental hazards have been elim-  
22 inated.

23           At this point, we find the  
24 conclusions reached by the EPA study to be  
25 unconvincing.



1  
2 From a careful reading of the  
3 reports, we find that very few samples were  
4 taken outside the Love Canal area for use  
5 in comparison or to provide control data.

6 Also, we find the conclusions  
7 reached by the study to be weakened by the fact  
8 that many participating scientists themselves  
9 were not in agreement with it.

10 We were greatly encouraged when,  
11 in May of 1980, we were promised full and  
12 convincing environmental and health studies.  
13 I was present when the governmental officials  
14 stated the scope and purpose of the intended  
15 health studies.

16 It is truly regretful that these  
17 studies were not conducted and completed at that  
18 time. Now it is too late to conduct a meaning-  
19 ful health study as so many of the former  
20 residents have left the area and some of the  
21 elements to which they were exposed in the  
22 hazardous environment may no longer be so easily  
23 detected in their bodies.

24 What might have been a conclusory  
25 study is no longer feasible and we have lost

1  
2 what might have been the very best evidence  
3 available of the danger or lack of danger in  
4 the neighborhood.

5 In the absence of a health  
6 study and a conclusive environmental health  
7 study, we in the American Baptist Churches of  
8 the Niagara Frontier must plead for a con-  
9 servative approach to the situation.

10 We cannot morally allow  
11 persons to serve as human guinea pigs in  
12 a dangerous situation.

13 We will never be able to fully  
14 compensate those who unknowingly lived  
15 amidst danger in the Love Canal Area for the  
16 injuries they suffered in their health -- both  
17 physically and emotionally.

18 However, we can prevent damage to  
19 others by refusing to allow the Declaration  
20 Area homes to be sold or inhabited. This is the  
21 clearest moral choice before us.

22 It is also a practical choice.

23 The City of Niagara Falls has  
24 adjusted since 1980 to the loss of the tax base  
25 on these homes.

1  
2 The City does not have a shortage  
3 of housing and the Love Canal area has  
4 largely been evacuated.

5 It would be foolish to pour  
6 additional funds into improving the outward  
7 appearance of this area when there is a  
8 real question of whether or not it could even  
9 become a viable residential neighborhood  
10 again.

11 When we add to this the moral  
12 consideration that persons may actually be  
13 injured by the presence of the nearby dump  
14 and chemicals which have already seeped into the  
15 Declaration Area, there seems to be no good reason  
16 to pursue revitalization or repopulation of the  
17 area, and many good reasons for leaving it  
18 alone.

19 The responsibility for declar-  
20 ing the safety of an area rests not on the  
21 potential residents but on those who have the  
22 means to make responsible tests and long-range  
23 decision for the welfare of all.

24 In a frequently-flooded area,  
25 it is the government which makes the

1  
2 determination that danger prevails and no  
3 homes may be built there. Those wishing to  
4 purchase land or build are given no choice and  
5 the local community loses the opportunity to  
6 levy taxes on that land.

7                   Likewise, in the Love Canal Area  
8 there also exists a serious danger to human  
9 welfare and the government must make the  
10 determination that the site is so potentially  
11 hazardous that no one can be allowed to live there  
12 either.

13                   Our denomination went on record  
14 advocating for the evacuation of persons from  
15 the entire Love Canal Area and we were  
16 thankful when residents were granted the  
17 opportunity to sell their homes to the State  
18 and leave.

19                   If any government body were to  
20 relocate persons into that area again, we would  
21 hold them morally and legally responsible  
22 for the health and welfare of these new residents.

23                   It is an awesome thing  
24 to hold the responsibility for another person's  
25 life and health in your hands.

1  
2 Please do not take lightly the  
3 choice you now have in your hands:

4 Either to commit human beings,  
5 adults and children into the terror of unknown  
6 danger where so many have obviously suffered in  
7 the past, or to prevent anyone from suffering at  
8 all by declaring that no one will be allowed  
9 to live there.

10 This, in my opinion, is the only  
11 responsible and safe decision to make at this  
12 time.

13 Thank you for this opportunity.

14 CHAIRMAN HINCHEY: Rev. Lawrence,  
15 we thank you very much.

16 ASSEMBLYMAN PILLITTERE: Could I  
17 ask you one quick question?

18 I know how you feel about people  
19 moving back in.

20 How do you feel about those who  
21 wish to remain?

22 Do you have --

23 REV. LAWRENCE: I think they are  
24 looking for answers, and, very frankly, I think  
25 one reason the local health agency is seeking

1  
2 to move some folks back in there this summer is  
3 because they know that the time to decide is  
4 drawing near, and I think residents in the area  
5 are looking for an answer and I think that if  
6 someone can give them a clear answer or  
7 direction, we will see them moving, too.  
8

9 ASSEMBLYMAN PILLITTERE: Thank  
10 you. I get a lot of phone calls on that subject,  
11 yes.

12 Thank you.

13 REV. LAWRENCE: Thank you.

14 CHAIRMAN HINCHEY: Thank you, we

15 Reverend.

16 \* \* \*

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1  
2 next speaker will be Violet Iadicicco.

3 MS. IADICICCO: To all who  
4 are concerned, deciding which subject to address  
5 my testimony to was a little difficult, since we  
6 are directly involved in all of them.

7 Having been a resident of the Love  
8 Canal for twelve years prior to any knowledge  
9 of it, and then being very much involved in the  
10 long ordeal that followed, anything regarding  
11 the Love Canal is of great importance to my  
12 family and myself.

13 However, the question of further  
14 liability directly effects us now because we  
15 still have rental properties which have still  
16 not been purchased. Even though we were led to  
17 believe that they would be bought along with  
18 all of the other homes that any owner wanted to  
19 sell.

20 Somehow, rental properties were  
21 not included.

22 We have two of them, and our  
23 daughter has one.

24 In all conscience, we do not want  
25 to rent them out to anyone, but may be forced

1  
2 financially to do so. We have been told by  
3 people from the State to go ahead and rent them,  
4 because no one has told us not to.

5           However, the LaSalle Development  
6 still goes unrented because of possible lia-  
7 bility, the Federal government apparently  
8 doesn't feel it can rent these units out yet.

9           We have been told by the  
10 Revitalization Committee that even if we obtain  
11 releases from tenants saying they are  
12 aware that the homes are in the Love Canal, it  
13 would not absolve us from future liability.

14           We feel that we have been misled,  
15 and placed under great financial stress, ~~not to mention~~  
16 the emotional stress of thinking we were  
17 finally out of Love Canal, only to find out that  
18 we are still very much in it yet.

19           The subject of the rental proper-  
20 ties keeps getting pushed aside. We were told  
21 that at the end of the three-year waiting  
22 period, in which the homeowners could decide  
23 whether or not they wanted to sell, the rental  
24 properties would be purchased with what was  
25 left.



1  
2 Now, we are told that there  
3 wouldn't be enough funds if all the homeowners  
4 wanted to sell.

5 We are homeowners and we want to  
6 sell!

7 These homes were included in  
8 everything else except the buy-out. They were  
9 included in the appraisals;

10 They were monitored for sump pump  
11 contamination;

12 The tenants were relocated, and  
13 they were boarded up by the State.

14 They have still not be declared  
15 habitable.

16 The relocation for a year to  
17 Falcon Manor was a great expense to the govern-  
18 ment which could have been avoided if they had  
19 taken the homes and moved the families out from  
20 the start. It only added to the turmoil of the  
21 residents who were anxious to resume a normal life.

22 In my opinion, the Love Canal  
23 should have been treated like the cancer it has  
24 become. It should have been cut out, and  
25 then analyzed thoroughly, after it was no longer

1  
2 attached to any living thing.

3                   Unfortunately, it is still  
4 festering for some of us who would still like  
5 to be rid of it.

6                   If in the end, these homes can  
7 still not be purchased, and we must rent them  
8 out again, which government agency will take  
9 responsibility for the health of the future  
10 inhabitants?

11                   Please, do one or the other!

12                   Prove that the area is safe and  
13 habitable, or buy these homes and let us be  
14 free of Love Canal. I respect the rights of  
15 those people who wish to stay, that is their  
16 privilege, but we would like to be able to  
17 put it behind us.

18                   I also would like to add if a  
19 waiver signed by tenants is of no use to us,  
20 what good was the waiver that Mr. Morris signed  
21 when he moved into the Love Canal saying that  
22 he does not hold anybody liable.

23                   CHAIRMAN HINCHEY: No good to him  
24 either.

25                   MS. IADICICCO: It is no good to

1  
2 whoever is responsible.

3 They're directly across the street  
4 from the 102nd Street Dump.

5 CHAIRMAN HINCHEY: Would you point  
6 them out on that map behind you?

7 MS. IADICICCO: This is the  
8 Expressway, we are down on Buffalo Avenue,  
9 it is not even marked.

10 In a lot of things it was not  
11 mentioned, but it is part of the Love  
12 Canal designated area, and the home we lived in  
13 was right next door to them.

14 They bought that, and everything  
15 along there is boarded up, and the State  
16 boarded up the one, and I do have a tenant in  
17 now, that agreed not to raise any children  
18 there.

19 They are strictly adults.

20 They signed the paper knowing it  
21 is the Love Canal. I don't want to rent these  
22 homes, but financially, we have mortgages and  
23 taxes.

24 ASSEMBLYMAN PILLITTERE: The State  
25 boarded up the homes?

1  
2 MS. IADICICCO: When the tenant  
3 was relocated from the one, the State boarded  
4 it up.

5 ASSEMBLYMAN PILLITTERE: And the  
6 State won't buy the home?

7 MS. IADICICCO: No, because they  
8 are rentals.

9 They are classifying them as  
10 commercial --

11 ASSEMBLYMAN PILLITTERE: Are you  
12 paying taxes on the home?

13 MS. IADICICCO: Yes, and the  
14 taxes just went up, which is --

15 ASSEMBLYMAN PILLITTERE: I don't  
16 know, I'm just asking questions.

17 MS. IADICICCO: The taxes --

18 A VOICE: They're unoccupied  
19 houses.

20 MS. IADICICCO: The taxes were  
21 just raised. They are higher than they  
22 were last year, so it is unreal.

23 We don't want them. We want to  
24 sell them, but -- we thought they were  
25 going -

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ASSEMBLYMAN PILLITTERE: You are  
still making mortgage payments?

MS. IADICICCO: Yes.

CHAIRMAN HINCHEY: Thank you very  
much.

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CHAIRMAN HINCHEY: Rev. Donald  
Armstrong.

REV. ARMSTRONG: Mr. Chairman,  
I assumed that my statement would follow that  
of somebody from the Ecumenical Task Force,  
so if I could, I would like to yield my position  
to Sister Margeen Hoffman and be allowed to  
testify after her.

CHAIRMAN HINCHEY: Of course.

Sister Margeen Hoffman, from the  
Ecumenical Task Force.

SISTER HOFFMAN: My name is Sister  
Margeen Hoffman, and I'm the Executive Director  
of the Ecumenical Task Force of the Niagara  
Frontier. I have held that position since  
June of 1979, when the Ecumenical Task Force was  
formed to address the Love Canal disaster.

It is the first interfaith disaster  
response organization in the nation.

CHAIRMAN HINCHEY: Excuse me,  
Sister, do we have copies of your testimony?

SISTER HOFFMAN: No, you don't,  
and I'm going to explain why, and then I will  
give you a copy.

1  
2                   CHAIRMAN HINCHEY: That is fine,  
3 we didn't want to keep looking for it if it  
4 didn't exist.

5                   SISTER HOFFMAN: As part of my  
6 background, I am a consultant with the Church  
7 World Service and National Catholic Disaster  
8 Relief on natural disasters around the nation,  
9 and have been in several consulting positions  
10 with that, mostly on floods, hurricanes and  
11 tornados, and served as Executive Director  
12 to a Presidentially-declared disaster  
13 regarding a flood.

14                   Therefore, I speak from those  
15 two vantage points of the differences between  
16 a Love Canal-type and one which is for natural  
17 causes.

18                   As part of the problem here,  
19 because the Federal government does not have  
20 public policy or criteria that fits this type  
21 of problem, therefore, there never was a Presi-  
22 dential declaration of disaster at Love Canal;

23                   Therefore, the ordinary mechanisms  
24 and means of helping people out of these situa-  
25 tions was not put into place.

1  
2 I know that situation very well  
3 and have worked very closely with FEMA, the Red  
4 Cross, and helped to present seminars that  
5 are given with those agencies and worked with  
6 them, as my colleagues, in these other type  
7 situations, but in the Love Canal, I found  
8 myself sort of as the ugly step-sister, you  
9 might say, in opposition, because agencies had  
10 no mandate and did not know what to do, so that  
11 help was not there.

12 But at Interfaith, we went  
13 ahead and formed it anyway out of faith, on a  
14 wing and a prayer, certainly with no money.

15 I would like to read into the  
16 record the testimony of Luella Kenny, a former  
17 resident of the Love Canal, who many persons in  
18 this room know, who has spoken out on this  
19 publicly, both locally and nationally.

20 She represents hundreds of people  
21 with whom I work, she was not able to be here  
22 because she was undergoing some very serious  
23 illness in her family, her husband for the third  
24 time is back in the hospital, her mother is now  
25 undergoing surgery, and her life is in trauma.



1  
2                   The other reason I do not have my  
3 testimony typed today is because I have been  
4 spending many, many hours of this past weekend  
5 counseling another Love Canal family who suffered  
6 a tragic death of their son in an automobile  
7 accident this weekend, and as the mother said  
8 the other night, "My heart is breaking, Sister!"

9                   They were a family who moved out  
10 of Love Canal who had to stay in a little tiny  
11 room with this buying-out, at a convent in  
12 Niagara Falls for three months.

13                   They are not a poor, destitute  
14 family, but they could not live in the Love  
15 Canal, they have undergone many illnesses, the  
16 mother has suffered a mental breakdown, she even  
17 appeared on NBC, on the John Chancellor Program,  
18 and helped to produce that program and volun-  
19 teered to do it if it would help in this  
20 particular situation around the coutry.

21                   Now, they are undergoing this,  
22 and the point I wish to make, she said, "We  
23 fought so hard to save our children's lives,  
24 and now this."

25                   The point I want to make is that

1  
2 these people are psychologically impaired, many,  
3 many of them, and I have some background in this,  
4 I have done a definitive piece of research in  
5 the country, it has been published, along with a  
6 psychologist, on the psychological assessment  
7 of disaster victims, both present and post-  
8 disaster traumas.

9 To keep compounding these problems,  
10 you pile one on top of the other, with no kind  
11 of relief or recovery mechanism, is to impair  
12 these people for the rest of their lives, many  
13 of them. None of us know where the end of our  
14 particular proverbial rope is, and with this  
15 tragic accident, and the taking of the life of a  
16 twenty-two year old boy, with what this family  
17 has already undergone, it is no wonder that this  
18 mother, this woman is back on all types of drugs  
19 and tranquilizers.

20 I did a counseling session with  
21 her to prevent her from committing suicide, this  
22 was done over the wire from Niagara Falls to  
23 Las Vegas, long-distance counseling, which is how  
24 we try to handle this when people move out.

25 I guess I am up here, and I am

1  
2 pleading for some type of -- you talk about  
3 health studies, yes, but not just the physical,  
4 also that we will be able to have some kind  
5 of mechanism, and I'd be happy to help work on  
6 that, in place, maybe we can be given some  
7 resources to help look at what has been the  
8 psychological impact of this situation.

9 As you know, this was done at the  
10 Three Mile Island disaster, it was taken all  
11 the way to the Supreme Court, that they had to  
12 prove that people were not psychologically  
13 impaired by that event.

14 I will now read Mrs. Kenny's  
15 testimony.

16 My name is Luella Kenny, and I am  
17 a former resident of Love Canal. Most of you  
18 are probably familiar with my story, but I will  
19 repeat it briefly for the hearing record..

20 In 1969, my husband and I pur-  
21 chased a home at 96th and Greenwald Avenue,  
22 one-tenth of a mile from the northern perimeter  
23 of Love Canal. The home had about one acre of  
24 land.

25 The property was bounded by the

1  
2 93rd Street School playground and the  
3 junction of Bergholtz, Cayuga and Black Creeks.

4 Any outfall that drained the sewers  
5 in the northern section of Love Canal emptied  
6 into Black Creek at this juncture in our yard.

7 It was here where New York State  
8 discovered high amounts of dioxin in November  
9 of 1979, and where the EPA erected a high  
10 fence in the spring of 1980.

11 We had three sons, the last of  
12 which was born while we resided in Love Canal.  
13 The three boys enjoyed playing in the yard  
14 and in the creek area.

15 In June of 1978, our youngest  
16 son became ill. He was diagnosed as having  
17 nephrosis, a disease of the kidneys whereby  
18 protein is excreted into the urine and fluid is  
19 retained.

20 We were told not to worry because  
21 it could be treated and John would outgrow this  
22 disease by the time he was fourteen years old.

23 To quote the pediatric urologist,  
24 "It's the best disease a child can have, so  
25 don't worry about him."

1  
2 Four months later, John was dead.

3 The media was saying that because  
4 of our proximity to Love Canal, the New York  
5 State Department of Health wanted to investi-  
6 gate his death. Both my husband and I have  
7 scientific backgrounds and we have worked in our  
8 respective fields of chemistry and cancer  
9 research for over twenty years.

10 Therefore, we felt an investiga-  
11 tion was a good scientific approach that should  
12 be taken.

13 In the meantime, we felt that we  
14 should become more familiar with the research  
15 that we did on nephrosis.

16 Both of us were used to research-  
17 ing scientific ~~data~~, so we began to go through the  
18 scientific journals. We were shocked to learn  
19 that medical paper after medical paper document-  
20 ed a correlation between hydrocarbon exposure  
21 and nephrosis. These reported cases covered a  
22 ten-year span. One paper cited an occurrence  
23 in siblings which frightened me all the more.

24 Therefore, we abandoned our  
25 home in September of 1979 and led a vagabond

1  
2 existence until January of 1981 when our house  
3 was purchased by the Love Canal Area Revital-  
4 ization Agency. We experienced six burglaries  
5 during that period and we lost many of our  
6 material possessions, but what was left of my  
7 family was better and we were together.

8 I said that I wanted to be brief as  
9 far as the historical aspect of Love Canal was  
10 concerned. Therefore, I won't go into detail  
11 about the illnesses that my two older sons  
12 experienced, which have now been eliminated,  
13 nor will I begin the litany of illnesses  
14 experienced by my neighbors.

15 Suffice it to say that the pro-  
16 blems and illnesses experienced by residents of  
17 the Love Canal area were real and should be  
18 given serious consideration. The experiences of  
19 Love Canal residents should not be automatically  
20 dismissed as the fantasies of a neurotic,  
21 hysterical group of people.

22 The time has come for us to  
23 reflect upon the status of Love Canal and to  
24 make sure that we put things into their proper  
25 perspective.

1  
2 In 1978, New York State took a  
3 giant step forward when it realized that exposure  
4 to toxic substances did indeed pose a danger to  
5 people who were exposed to these poisons.

6 However, when the enormity of the problem  
7 surfaced, the officials involved became just  
8 as nervous about correcting the problem, as the  
9 victims were about having it corrected.

10 Consequently, there was a series  
11 of attempts to make it clear that the problem  
12 was being corrected, hoping the victims would  
13 remain uneducated and trusting, thereby giving  
14 an appearance that everything had been put in  
15 order.

16 For example, a media announce-  
17 ment was made in October of 1978 that because of  
18 our proximity to Love Canal, John's death would  
19 be investigated.

20 The whole investigation would  
21 have fallen by the wayside if, in February  
22 of 1979, I hadn't asked for results of this  
23 investigation.

24 Soil samples were taken from each  
25 lot in the Love Canal Area so that

1  
2 residents could be made aware of what was in  
3 their soil.

4                   Where are the results of those  
5 samples?

6                   I watched at least four samples  
7 being taken from the creek area behind my house,  
8 but everytime I called for results, the samples  
9 had been lost. They miraculously surfaced  
10 a year later when the high amount of dioxin  
11 in this area was revealed.

12                   We now know a good deal more about  
13 toxic wastes and we are also aware of the  
14 far-reaching effects of indiscriminate toxic waste  
15 disposal in the entire county. Hopefully,  
16 we can control the future disposal of toxic  
17 waste, although the forces working against that  
18 are another problem.

19                   However, what are we going to do  
20 about the enormous amount of land that has  
21 already been devastated?

22                   Citizen pressure forced the  
23 powers-to-be to allow the Love Canal victims  
24 to dispose of these uninhabitable homes. The  
25 precedent was set, so what happens now to



1  
2 residents near Hyde Park Landfill, Lake Carmel,  
3 New York, Wide Beach, New York, South Glens  
4 Falls, New York, Times Beach, Missouri,  
5 Riverside, California, Louisiana, New Jersey,  
6 Massachusetts, etc.

7           The easiest way out is to dis-  
8 credit the residents that moved from Love Canal.  
9 Just be convinced that they were hysterical and  
10 no danger existed, so if people reside in these  
11 abandoned homes, we can neatly sweep the dust  
12 under the carpet and the entire toxic waste  
13 problem will be solved.

14           Where is our value for human  
15 life?

16           We condemn other nations because  
17 of the use of chemical warfare on an enemy, yet,  
18 we are content to use this tactic on our own  
19 people.

20           I can certainly understand the  
21 feelings of the families who wish to remain in  
22 their Love Canal homes. It's not easy to turn  
23 your back and walk away from something that  
24 you have worked so hard for over the years.

25           They can certainly be thankful

1  
2 that they were not harmed, but we cannot  
3 generalize and say that the effects of toxic  
4 wastes do not cause birth defects, respiratory  
5 problems, kidney problems, and even death to  
6 exposed individuals.

7           Let us consider for a moment the  
8 effect that cigarette smoking has on the  
9 population. Research is conclusive that heavy  
10 smokers and persons exposed to secondary smoke  
11 will suffer from lung disease and heart disease.

12           Yet, many of us know heavy smokers  
13 who because of some unknown factor beat  
14 the odds.

15           Yet, the dangers of cigarette  
16 smoking are well-documented.

17           The same holds true for persons  
18 exposed to toxic wastes. The bottom line in  
19 this controversy should be human life and the  
20 value that is placed on the lives of  
21 contemporaries and our future generations.

22           Our prime concern should not be  
23 whether or not Niagara Falls' tax base has been  
24 dramatically reduced by the loss of tax revenue  
25 on these homes.

1  
2 Our prime concern should not be  
3 the residents who chose to remain in these  
4 homes.

5 Our prime concern should not be  
6 for entrepreneurs who see a chance to get cheap  
7 real estate.

8 Our prime concern should not be  
9 to entice young people who have a dream of own-  
10 ing a home turn into a nightmare.

11 Our prime concern should not be  
12 to ignore the problem of toxic waste. It cannot  
13 be swept under the carpet.

14 Our prime concern should be to  
15 continue as we started in 1978 to give an  
16 example to everyone else as to how to deal with  
17 the problems that our immediate predecessors  
18 created. Grab the bull by the horns and attack  
19 the problem.

20 Don't be wishy-washy, evasive, or  
21 cowardly!

22 That ends Ms. Kenney's present-  
23 ation.

24 The other thing that I am going to  
25 address in my testimony will be some of the

1  
2 differences between a natural disaster and  
3 a Love Canal-type of man-made technological  
4 disaster, including all phases of it, for  
5 example, the recovery stage.

6 We usually divide it into three  
7 stages.

8 First, the disaster, the emergency  
9 itself, which is very brief, lasting between two  
10 to six days;

11 The relief stage -- by the way,  
12 these have all been developed by the National  
13 Institute of Mental Health -- the relief stage,  
14 which tends to last between twenty and sixty  
15 days, or about ten times as long as the emergency  
16 phase;

17 Third, we have the recovery phase,  
18 which lasts about two hundred to four hundred  
19 days, or ten times longer than the one  
20 preceding that.

21 We also divide it into periods  
22 we call the heroic phase, a week when there  
23 is a great rallying around, where the Red Cross,  
24 and The National Guard, and neighbors  
25 help neighbors, a wonderful esprit de corps.

1  
2 A honeymoon phase, when there is  
3 hope, visible relief, FEMA comes in and the  
4 State agencies, which lasts a week to six  
5 months;

6 Then we go through a period called  
7 the disillusionment phase, which is six months  
8 to one or two years, but we go through dis-  
9 appointment, anger, resentment for the losses,  
10 the slowness or the amount of government intervention.

11 Then we have the reconstruction  
12 phase.

13 Love Canal never had an heroic  
14 phase;

15 It never really had a honeymoon  
16 phase;

17 We have only had a disillusionment  
18 phase, and we still have it.

19 You tell me, I don't know,  
20 and I have helped to write some of these  
21 manuals on disaster relief recovery in this  
22 country, the mental health disaster workers,  
23 and I don't know how to really write, how to  
24 recover from this kind of thing , because we  
25 are still in this phase, two years, three

1  
2 down the line, and I was back on Sunday night,  
3 and Monday night, till one or two in the  
4 morning with these same people, reliving and  
5 going through that same experience of loss  
6 of life.

7 In a disaster, you lose life, you  
8 lose property, your possessions, you've lost  
9 all of those things.

10 And what about the people? It is  
11 a loss, too, the people who have the rental  
12 property, your owner-unoccupied homes, they  
13 come to me all the time asking what should they  
14 do about the people who live there?

15 You ask me, I'm concerned about  
16 them, too, they have real problems too, they  
17 want to know, they have many losses also.

18 I will also address some of the  
19 psychological behavioral problems that were in  
20 that area, evidenced in children in a psycho-  
21 logically -- children who have been treated  
22 epidemiologically and also in the psychiatric  
23 clinic in Niagara Falls, with an excellent repu-  
24 tation, children were treated for behavioral  
25 problems, and I would like to go into

1  
2 that since it is related to neurotoxicity of  
3 these chemicals, and that is why these children  
4 have received psychological help.

5 There are psychologists and  
6 psychiatrists in the area who would like  
7 to do something, but they need -- we need some  
8 kind of assistance to do that, and encouragement  
9 and help to do that.

10 My background is as a planner,  
11 I received my Master's Degree from Boston College,  
12 Graduate School of Social Work from the Harvard  
13 School of Design, and I have a quote that I  
14 like to think about regarding our community  
15 and the opportunity that you have when we talk  
16 about the planning in the area.

17 I could not in good conscience  
18 go ahead with some of the designs that I have  
19 seen put forth on how to rehabilitate or re-  
20 habitate that area.

21 Pope John Paul said, "Above all,  
22 a city needs a soul if it is to become a true  
23 home for human beings."

24 You, the people, must give it this  
25 soul.

1

2

We have a saying at the Ecumenical

3

Task Force, "where there is no vision, people

4

will perish."

5

I will ask you to have that kind

6

of vision.

7

CHAIRMAN HINCHEY: Thank you,

8

Sister, we will do our best to live up to that,

9

if we can.

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2 CHAIRMAN HINCHEY: Our next  
3 speaker will be the Rev. Donald Armstrong.

4 REV. ARMSTRONG: My name is Donald  
5 Armstrong, and I live at 250 Wellington Road  
6 in Buffalo.

7 I hold the position of Minister  
8 of Metropolitan Mission for the United Church  
9 of Christ and the Christian Church,  
10 Disciples of Christ, in Westchester, New York.

11 Along with the other major  
12 religious groups on the Niagara Frontier, our  
13 denominations have been involved in seeking to  
14 address the problems brought to light by the  
15 Love Canal disaster.

16 We are very much aware that Love  
17 Canal is simply the most dramatic local example  
18 of the problem of toxic waste disposal that  
19 exists in many other communities in our  
20 area, as well as across the nation.

21 In all of our efforts to address  
22 this problem, we have looked to the Ecumenical  
23 Task Force of the Niagara Frontier as our  
24 prime agent for doing so.

25 The resources of our two

1  
2 denominations, both locally and nationally,  
3 are quite limited.

4           The Ecumenical Task Force has  
5 provided a way for us to pool our resources with  
6 those of other religious groups so as to have  
7 some appreciable effect on the issues, and,  
8 perhaps more importantly, to provide a ministry  
9 to the people most affected by the problems stem-  
10 ming from what has happened at Love Canal.

11           Since the formation of the  
12 Ecumenical Task Force, we have found them to be  
13 responsible by every criteria that is important  
14 to us:

15           They report regularly to us on  
16 their activities and their financing.

17           They provide us material and  
18 education which enable us and the people in our  
19 churches to be better informed on the effect of  
20 toxic wastes on God's Creation;

21           They have demonstrated both com-  
22 passion and effectiveness in meeting the some-  
23 times desperate needs of people affected.

24           I say all these things about  
25 the Ecumenical Task Force to make clear our

1  
2 confidence in their ministry and in their  
3 analysis of the issues related to Love Canal.

4 My own competence to make  
5 scientific judgments about scientific data or  
6 even to analyze the reports that have been  
7 done is very, very limited.

8 At this crucial time, related to  
9 questions of the future of the neighborhoods  
10 around Love Canal, I want primarily to endorse  
11 the positions of the Ecumenical Task Force that  
12 have already been presented at this hearing.

13 In commending the positions of the  
14 Ecumenical Task Force to you, I do want to  
15 venture a bit more personal expression on the  
16 issue of habitability, which is before this  
17 Committee.

18 As a religious body, we are  
19 concerned about the effect of toxic waste on the  
20 earth and the environment, of which we believe  
21 God has assigned us humans to be stewards. But  
22 our larger concern is people.

23 Insofar as I may be able to make  
24 any judgment about the studies done and  
25 not done, it seems to me that there remain

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unanswered questions about the habitability of the Declaration Area in question.

Though there may be reason to hope that people can live there in safety, we need more than hope, we need more concrete assurances than are now available.

I believe that further research and testing can be done to give us a more accurate assessment of the conditions at present and what can be expected for the future.

I believe that a thorough health study of the people who have lived in the Rings around Love Canal is essential to a thorough assessment about habitability.

The health and well-being of present and future generations are at stake, and that is cause for us to exercise extreme caution.

Very simply, we need more verifiable information than we now have.

Thank you.

CHAIRMAN HINCHEY: Thank you, Reverend, we certainly would agree with that.

\* \* \*

1  
2 CHAIRMAN HINCHEY: Rev. Vernon  
3 Bigler.

4 MR. BREWSTER: I am not Vernon  
5 Bigler, but he has asked me to share his  
6 very brief statement with you.

7 My name is James Brewster.

8 Among the parishes of the Buffalo  
9 District prior to July 1, 1981, was a church  
10 known as Wesley United Methodist Church. Its  
11 building and a parsonage are located in the  
12 Love Canal Area at 9610 Colvin Boulevard.

13 This church, on June 30th, 1981,  
14 had a membership of three hundred eighty-four  
15 members and property which was valued at well  
16 over a quarter of a million dollars. On July  
17 1, the church was officially closed by the  
18 Western New York Conference of the United  
19 Methodist Church and declared abandoned.

20 It's members have been  
21 transferred, insofar as that has been possible,  
22 to other churches. But many have not elected  
23 to affiliate with other congregations and  
24 are without a church affiliation at the present  
25 time.

1  
2 As an executive of a major  
3 denomination I remind you that we are  
4 unable to use our church resources  
5 because the Love Canal Area has been deemed  
6 unfit for habitation and not safe for use as a  
7 neighborhood. Our members have been scattered  
8 to many different neighborhoods as a result.

9 Those who remain in the Love  
10 Canal Area have felt abandoned and neglected  
11 by the church, which once gave them spiritual  
12 birth and nurture.

13 Parenthetically, I made note that  
14 most of us realize that the church has been  
15 boarded up.

16 We have worked diligently to  
17 establish relationships with our former  
18 Wesley members through other United Methodist  
19 churches in Niagara Falls and several churches  
20 in nearby areas.

21 But we have found that the  
22 disruption of their lives, the shock of the  
23 loss of home and neighborhood, the transfer  
24 from one school to another, the physical  
25 disabilities which have come and emotional

1  
2 upheaval through which they have passed, has  
3 made it nearly impossible for us to give the  
4 intimate and in-depth assistance and pastoral  
5 care and counseling which they so desperately  
6 need.

7                   In short, we have been over-  
8 whelmed by the personal tragedy of Love Canal,  
9 although we are working with what resources  
10 we can gather to minister to these former  
11 members of the Wesley Church.

12                   Our financial resources are tied  
13 up and are unavailable because we are not at  
14 liberty to sell valuable church property  
15 which we can no longer use. Insurance  
16 premiums on the property and maintenance  
17 costs further drain our resources and  
18 complicate our institutional decision-making.

19                   The uncertain stance of  
20 government agencies tends to produce defeat and  
21 cynicism in persons who look to government  
22 for aid and comfort and protection. They  
23 feel that their government, far from being their  
24 ally and protector, has become an enemy,  
25 a great bureaucracy which is more intent on

1  
2 defending itself from liability than  
3 in offering aid to a community which is victim-  
4 ized and exploited.

5           Until our government, through its  
6 various agencies, can give assurance that Love  
7 Canal is not only safe for habitation, but will  
8 be monitored into the foreseeable future for  
9 its continued habitability, it will be impossi-  
10 ble to establish a high quality of community  
11 life in the Love Canal Area.

12           The church will continue to patch  
13 up broken lives, to comfort broken spirits, to  
14 provide emergency assistance to troubled  
15 persons, but it will not be able to establish  
16 a base of ministry with stable and emotioally  
17 healthy lay persons serving and ministering  
18 as the church to a needy world.

19           We call upon this body to move  
20 with speed to bring once again to Love Canal  
21 the stability which it has a right to expect  
22 or to evict that area permanently and  
23 declare it to be forever what it has been  
24 in the past nightmarish years -- a wasteland in  
25 a nation of plenty, a symbol of the folly and



1  
2 greed of a technological society whose leaders  
3 are too timid to deal with the human problems  
4 which face them, and too impotent to prevent its  
5 unprincipled citizens from destroying the good  
6 earth which our God has given us.

7 Thank you.

8 CHAIRMAN HINCHEY: It is eloquent-  
9 ly stated, and we are very appreciative.

10 Thank you very much.

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2 CHAIRMAN HINCHEY: Our next  
3 speaker will be Bishop Edward Perry.

4 REV. DONOUGHUE: My name is Rev.  
5 Richard Donoughue, I am not the Bishop, and  
6 it is as close as I ever want to be the Bishop.

7 I am a pastor in Niagara Falls and  
8 a member of the Lutheran Church in America, and  
9 the Bishop has asked me to bring this address  
10 to this Committee, since his duties prevent him  
11 from being personally present.

12 We address the Committee fully  
13 cognizant of the separation of church and state.  
14 It is the concern of the Bishop that this  
15 Committee and the State of New York act morally,  
16 not amorally and certainly never immorally,  
17 in response to the needs of society in general  
18 and the Love Canal Area in particular.

19 We do not presume to bring the  
20 expertise to clarify the scientific data  
21 regarding the habitability of the Love Canal  
22 Area. Therefore, we will focus on the concerns  
23 which are apparent and call on the State to  
24 block every effort to repopulate this area  
25 under the present situation.

1  
2           It is in the questions that  
3 are still raised that we believe the answers  
4 for the work of this Committee and the State  
5 are to be found.

6           The conclusion of the United  
7 States Department of Health and Human Services  
8 that the Love Canal Area is habitable rests upon  
9 two conditions:

10                   (1) There must be extensive  
11 remedial work to address contamination problems  
12 which still exist;

13                   (2) The Love Canal Area must be  
14 constantly safeguarded against the future  
15 migration of toxic chemicals.

16           These will provide the framework  
17 for our observations.

18           The HHS appears to be admitting  
19 that the future of the site in question contains  
20 all the necessary risks for future potential  
21 danger to its inhabitants. To expose future  
22 residents to such risk, even though potential,  
23 would be an act of immorality.

24           We have seen in the past,  
25 and still see today, the toll taken on the

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individuals and families of Love Canal.

The physical and psychological health problems are well demonstrated. The church has had to respond to victims of suicide and divorce. The stress placed upon past residents of Love Canal can be seen.

To now place new people into this area and subject them to the same stress because of the potential future dangers of the toxic chemicals in the area would be an act of immorality.

Would the State or any government assume the responsibility for the toll physically and mentally upon future residents?

Question 5 on the reverse side of the announcement of these hearings raises the concern of the State in another way. If the area is safe, why would future liability be a concern?

Our fear is that people will purchase these homes in the future, waive their rights for action against the sellers or governments involved, and be subjected to the same problems faced by the original homeowners.

1  
2 It would indeed be an act of  
3 immorality to knowingly expose people to such  
4 danger and attempt to wash one's hands clean  
5 of the matter.

6 Behind most of the concerns  
7 raised remains an awareness that the EPA Report  
8 and the scientific evaluations of it leave all  
9 of us with more questions than answers. If the  
10 review scientists and much of the scientific  
11 community is in conflict concerning the  
12 report, if most are questioning the adequacy  
13 of the testing, the control samples, and the data  
14 interpretation, if waivers are being considered  
15 for future owners so that liability for future  
16 problems does not rest with government  
17 at any level, then the questions have  
18 determined the only direction that can be taken  
19 on the issue of habitability.

20 The obvious question we wish to  
21 raise is the actual need for this housing.  
22 In a city whose population is shrinking and  
23 aging, are these homes even needed?

24 A drive around the city of  
25 Niagara Falls points out that there is

1  
2 sufficient housing available throughout the  
3 city.

4 Is there a need to place  
5 potentially chemically contaminated homes on  
6 the housing market?

7 We believe that with so many  
8 unanswered questions, with future potential  
9 danger admitted, and with people's physical  
10 and emotional well being at stake, there is  
11 no choice but to block every effort to repopulate  
12 the Love Canal Area at this time.

13 We are sure that the members of  
14 this Committee and the State government wish  
15 to act morally. We are certain that the  
16 questions we raise in combination with the  
17 testimony of other disciplines, mark that  
18 clear course.

19 We would further suggest that the  
20 future solutions to this and all hazardous  
21 waste problems should be addressed through the  
22 unified efforts of church, government, industry,  
23 and community resources. The magnitude and  
24 complexity of the issue necessitates such  
25 cooperation.

1  
2 On behalf of Bishop Perry and  
3 myself, I wish to thank you for responding to  
4 the call for local hearings, for your concern  
5 and for this opportunity.

6 I would simply like to lay a  
7 request before the gathered panel, that they  
8 seek to arrange future meetings such as this  
9 so that those who are involved in the decision-  
10 making process and in the responsibility for  
11 perpetuity questions hear the ethical concerns  
12 of those responsible for ministry, and hear  
13 the passionate pleas of the victims.

14 This morning we were barraged with  
15 media and with much coverage.

16 This evening, after many hours,  
17 there are very few left to hear except those  
18 who are victims and those who do ministry.

19 Thank you.

20 CHAIRMAN HINCHEY: It is a very,  
21 very valid point. It is difficult for us to  
22 orchestrate things in the way we would like to.

23 REV. DONOUGHUE: I understand  
24 that.

25 CHAIRMAN HINCHEY: It was important

1  
2 for us to get the technical data out front  
3 so that we could do our best to destroy the  
4 position of the EPA; that was, very frankly,  
5 my motivation, because I knew how weak  
6 it was, and it needed to be destroyed.

7 We were, more or less, effective,  
8 I think, in doing at least that, partly.

9 REV. DONOUGHUE: I would agree.

10 CHAIRMAN HINCHEY: That was the  
11 important consideration.

12 I wish that those officials  
13 from the Environmental Protection Agency,  
14 from the State Health Department, had the  
15 care and the decency really to stay and  
16 listen to you, and I certainly wish that the  
17 media, although they are still represented here,  
18 but they certainly were not in the  
19 numbers that they were this morning.

20 Again, thank you.

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CHAIRMAN HINCHEY: Is Dr. James  
Brewster here?

MR. BREWSTER: Now, I am myself,  
yes.

Just to repeat, I am Dr.  
James N. Brewster, President of the board of  
Directors of the Ecumenical Task Force of the  
Niagara Frontier, Inc.

The Environmental Protection Agency  
Study on Love Canal was seen as critical for  
the residents of Niagara Falls. We had trusted  
that the report would provide direction and  
guidance for determining the future of the  
Love Canal Area.

Yet, even a basic unbiased view  
of the document, including the comments  
by the eleven members of the HHS Scientific  
Panel, shows that there are major problems  
with the report.

Answers to the basic question  
of habitability remain unclear. No amount  
of public relations can diminish the  
controversy.

Our hopes have been betrayed by

1  
2 this report.

3 Our trust has been misplaced and  
4 we call to question the intention and integrity  
5 of the EPA regarding its mandate of the pro-  
6 tection of the environment and human life.

7 Given the controversy,  
8 generated with the report itself, on  
9 September 14th, 1982, the Ecumenical  
10 Task Force of the Niagara Frontier demanded  
11 that there be an independent scientific review  
12 and open public hearings regarding the report.  
13 Until those conditions were met, the ETF stated  
14 it had no other recourse but to advise church  
15 members in western New York not to move into  
16 the Love Canal area.

17 Since September, the ETF has  
18 actively pursued this policy of  
19 public debate regarding the EPA Report. The New  
20 York State Council of Churches, the Statewide  
21 Catholic Conference, and several bishops and  
22 denominational executives have been extremely  
23 helpful in bringing us all to this day.

24 We thank the Assembly Standing  
25 Committee on Environmental Conservation and

1  
2 the Assembly Subcommittee on Toxic and Hazardous  
3 Substances for arranging this important hearing.

4 We trust that this hearing will  
5 shed some light upon these issues.

6 From its inception in March of  
7 1979 as the Interfaith response to the Love  
8 Canal disaster, the ETF has a long experience  
9 of personal contact with families and  
10 individuals affected by the proximity of  
11 hazardous chemicals.

12 Through our staff, board members  
13 and volunteers, the ETF has logged thousands  
14 of hours counseling and directly aiding  
15 people, most of them residents of the  
16 Love Canal Area.

17 This primary pastoral experience  
18 continues to motivate all our efforts --  
19 including our request to speak at these  
20 hearings today.

21 We urge all government agencies  
22 and officials to not do the thing that would risk  
23 putting people through the same trauma we  
24 have witnessed at firsthand for five years.

25 Positively, this means it is

1  
2 imperative to operate, and if necessary to make  
3 mistakes, on the side of human health and  
4 safety.

5           As to government and health risks,  
6 even if one were to accept at face value the  
7 conclusions of the EPA Report that the  
8 Declaration Area, outside Rings 1 and 2, is  
9 as habitable as the Control sites, one is still  
10 left with the fact that these Control sites are  
11 not across the street, or a few blocks from,  
12 what everyone acknowledges as a hazardous  
13 dumpsite which contains the highest concern-  
14 trations of dioxin yet measured. Any move to  
15 repopulate Ring 3 is to put families on the  
16 fringes of a disaster.

17           Everyone is familiar with the risk  
18 of a natural disaster posed by a volcano such  
19 as Mt. St. Helens. Because of the risk, the  
20 government wisely prevents persons from living  
21 within several miles of the volcano.

22           Similarly, all would  
23 applaud the wisdom of the government which would  
24 necessarily be cautious regarding  
25 habitation here and acknowledge potential

1  
2 disaster, such as Love Canal.

3 Our concern is with both the life  
4 of individuals and the health of government.  
5 The lives of individual human beings is of  
6 primary concern, but government is healthy only  
7 as it exhibits a genuine concern for the quality  
8 of the individual human life.

9 This concern for the individual is  
10 more critical when we consider the individuals  
11 living near the Love Canal. By industry  
12 definition, secure landfills are considered  
13 "secure" for thirty-five years, barely half the  
14 lifetime of potential residents of Love Canal.

15 Given the compromises and possible  
16 violations of the Canal's security that time  
17 may be even further lessened. We already  
18 have questions regarding the effectiveness of  
19 the Superfund remedial work and echo the  
20 concern raised regarding the long-term commitment  
21 of government to monitor the Love Canal  
22 Dumpsite.

23 Concerning the issue of waiver,  
24 another question must be raised regarding the  
25 long-term habitation of the Love Canal Area.

1  
2 Specifically, will there be a  
3 mandatory waiver when individuals purchase  
4 Love Canal homes?

5 Will residents retain their in-  
6 alienable right to initiate litigation  
7 should further developments warrant such, or  
8 will they be compelled to relinquish such right,  
9 based as it is on the principle of Common Law?

10 We know that the mandatory signing  
11 of such a waiver has been explored by the Love Canal  
12 Area Revitalization Agency. We believe, given  
13 the profound health uncertainties, echoed by  
14 critical disagreements among conscientious  
15 scientists and medical professionals, it is both  
16 unconscienable and unethical to demand the  
17 signing of such a waiver and the condition for  
18 the purchase of these homes.

19 What is, in effect, the  
20 veritable signing away of their  
21 birthright, may well condemn these new Love  
22 Canal homeowners to future years of  
23 extraordinary expense, legal maneuvring and  
24 suffering as they attempt to recapture what  
25 they have signed away in this precedent-setting

1  
2 action.

3 To demand the signing of such a  
4 waiver should be illegal as a matter of public  
5 policy and we, therefore, respectfully ask  
6 members of the Assembly to investigate  
7 and clarify the question:

8 "Will there be a waiver as  
9 condition for purchase and if so, exactly what  
10 will it contain and what are its long-term  
11 legal ramifications?"

12 We ask you for such clarification  
13 recognizing that the current economic plight of  
14 western New York could make the Love  
15 Canal financially attractive;

16 As Mr. Richard Morris, Executive  
17 Director of the Love Canal Area Revitalization  
18 Agency has stated publicly, "The advantages  
19 of buying Love Canal homes will be, in a yet  
20 unspecified break on mortgages, downpayments  
21 and interest rates."

22 It is our understanding that  
23 Mr. Morris signed such a waiver as condition  
24 for his living at 9714 Greenwald Avenue in  
25 the Love Canal Area.

1  
2 Thinking people must ask the  
3 question: If it's so safe at Love Canal, why  
4 do fathers and mothers have to sign a legal  
5 statement absolving governments of all  
6 responsibility and promising never to exercise  
7 their legal right to exercise their legal right?

8 Where does it talk about the  
9 task of science?

10 We are here today because critical  
11 scientific questions remain unexpressed and  
12 unanswered, and as such, impact directly on  
13 the EPA Report's credibility. You will have the  
14 benefit of scientific expertise that will help  
15 to clarify such discrepancies.

16 Even as a scientific novice,  
17 we see certain obvious gaps, errors, and  
18 questions.

19 I would refer to but three  
20 of these:

21 (1) Why were areas chosen for  
22 Control sites that were already known to be  
23 chemically contaminated, such as listed in the  
24 1979 Inter-Agency Task Force Report, and/or,  
25 currently the study of State lawsuits because



1  
2 of their contaminated condition?

3           The critical significance of this  
4 EPA decision rests with the HHS conclusions  
5 that "...The Love Canal Area, outside Area 2,  
6 is as habitable as the Control Area with which  
7 it was compared."

8           (2) EPA had announced its  
9 intention to have prepared both exposure  
10 assessment and a risk assessment. Why then, did  
11 they reject the submitted draft exposure  
12 assessment and subsequently answer both  
13 exposure and risk assessment in late  
14 July of 1982, after HHS had issued its habit-  
15 ability recommendation?

16           (3) Clearly, the most  
17 far-reaching and long-lived result  
18 for all of us rests on the EPA and HHS  
19 conclusion of habitability for the  
20 Declaration Area. Beyond the fact that no  
21 actual definition of "habitable" is offered,  
22 the report provides:

23           (A) No toxicology data;

24           (B) No risk/hazard analysis on  
25 long-term exposure within the Declaration Area.;

1  
2 (C) No convincing data on  
3 migration rate of chemical contaminants;

4 (D) No prediction of future  
5 concentration levels at various  
6 distances and times;

7 (E) No data of existing body-  
8 burdens of the various contaminants in areas of  
9 comparison

10 We ask, therefore, how a habit-  
11 ability estimate can be offered in the  
12 absence of these types of information?

13 To offer such a health safety  
14 estimate is extremely precarious, morally  
15 reprehensible, and clearly does not serve the  
16 best interest of our community's men, women and  
17 children, and those yet to be born.

18 CHAIRMAN HINCHEY: Is it a fact  
19 that the Control sites were taken from a list  
20 of chemically-contaminated areas?

21 MR. BREWSTER: We know that some  
22 of those sites are either close to or  
23 in some proximity to chemically-contaminated  
24 areas. I think there are persons here who  
25 could speak to that.

1  
2 I think one of them is -- one  
3 control site was Griffin Park, if I'm not  
4 mistaken, is that true -- Griffin Park, which was  
5 near the 102nd Street Dump, which is  
6 built on a landfill out to the Niagara River.

7 CHAIRMAN HINCHEY: That can be  
8 documented.

9 SISTER HOFFMAN: Dr. Beck  
10 who is on our Scientific Technical  
11 Advisory Board has investigated that quite  
12 extensively, and did an extensive  
13 paper on precisely that point, which is  
14 what you have there, there are a few sentences  
15 taken from his conclusion, and perhaps  
16 we could provide you with his entire draft.

17 CHAIRMAN HINCHEY: Yes, we will  
18 be grateful to you, if you would, that is  
19 very essential as a matter of fact, thank you.

20 SISTER HOFFMAN: I also have  
21 some other papers that have been done, and  
22 maybe they will be helpful to your  
23 Committee, and we will be glad to supply you  
24 with them, they are from highly-qualified  
25 scientists with prestigious degrees, and so

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forth.

CHAIRMAN HINCHEY: Prestigious as opposed to prestidigitators.

SISTER HOFFMAN: I will not quibble with you on that, but we do, and I was also told that Dr. Compter would have been here and would be glad to clarify the things in his paper, but before this date was set, he had agreed to testify at a hearing in Neurenberg, Germany, so we were not able to have some of our scientists here because they are not available.

We will make those things available, if you would like those.

CHAIRMAN HINCHEY: Yes, we would, we would appreciate that very much, yes.

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CHAIRMAN HINCHEY: Dr. Bell.

DR. BELL: I will type the statement, and get it to your office.

My name is Leon S. Bell, and I went to Niagara Falls as a pastor of a Black church there, and the church and I had some collision, and so I skidded off into the ministerial field, rather than associating myself with an institution.

I am happy I did, because I got a different perspective on things.

I went to Niagara Falls, not knowing it was a city at all, and I come to find out it is a tremendous, smoldering of chemical possibilities, and while I have a varied background, right now I live at 4600 Hyde Park Boulevard, about two blocks from one of the world's worse landfills, the Bloody Run, so I sort of run between Love Canal and Bloody Run.

I see that I am going to be fighting these kinds of battles for a long time to come.

I started in Linguistics, and then

1  
2 I went into the ministry, and then I got a  
3 Master's in Languages, and my Doctorate is in  
4 Philosophical Theological Ethics, and I am very,  
5 very concerned with the ethical problems raised  
6 here, and I think it may be that my general extempo-  
7 raneous talk here is going to be more in terms  
8 of some comments that I would like to make, and  
9 I think they might be a little different from  
10 what we have heard so far.

11 I am thrilled at first at the  
12 tremendous occasion that this brings today.

13 I have been hoping for a long time  
14 that we would have some sort of a hearing,  
15 whether the EPA Report had come out or not, that  
16 some hearing would be structured around the  
17 Love Canal problem.

18 I am that number two member of the  
19 detractors of the Love Canal Area Revitalization  
20 Agency, John and I have tried to hold our own.

21 Now, in connection with that there  
22 is no great surprise that John and I  
23 have a problem.

24 It came to me that some of the  
25

1  
2 problem resides in the facts revolving around the  
3 very selection of the members of that Agency.

4 I don't know whether to look  
5 to the Governor, that is, Governor Carey, or how  
6 else could it have been done otherwise, but  
7 the fact is that of the nine persons on that  
8 committee, we have, as I see it, about four  
9 or five city administrators, one  
10 insurance broker, and we had two  
11 ministers, and one in Catholic Charities.

12 Now -- and another, a lawyer, and  
13 that particular advocacy actually swings to  
14 more than just one person, since two or three are  
15 lawyers as well as administrators.

16 That particular perspective  
17 does not come as a surprise to us with the  
18 particular kinds of positions that these men  
19 hold in their daily work.

20 There is a very important science  
21 you know in which what you do is what you  
22 become, and how you act everyday in your daily  
23 affairs actually presents yourself back to you  
24 as to who you really are, and consider yourself  
25 to be.

1  
2 Obviously, that becomes the focus  
3 by which and from which you look, the instru-  
4 mentality by which you conceive yourself and  
5 how you evaluate issues.

6 There is no surprise to John and  
7 myself that the issue has been evaluated the  
8 way it has been, with the kind of people that  
9 are on our agency.

10 Now, I don't disspell, nor throw  
11 detractions upon persons that are of different  
12 professions, and I am not raising questions  
13 about professionalism. I am just wondering, and  
14 I am sure administrators had to be on our  
15 committee, but I am just wondering whether it  
16 was wise or could have been wiser had something  
17 been done about getting a medical profesional  
18 on our agency or getting someone in toxicology,  
19 or someone in social science involved.

20 I think it would have perhaps  
21 helped us a great deal.

22 Because of this also, we have a  
23 certain sort of argument about habitability that  
24 arose, and I think it also comes out of a  
25 professional perspective, or a perspective



1  
2 of particular roles which are played in daily  
3 life.

4 For example, it was a real question,  
5 and still remains a real question, that if we  
6 are assigned the responsibility of making a  
7 choice about whether to revitalize or not, it  
8 is a question which I raised really early in  
9 the game, to what extent, particularly when  
10 everybody was screaming about defects in their  
11 children and their loss of children, and  
12 bad pregnancies, and all that sort of stuff,  
13 I raised the question even then, what did  
14 revitalization mean? How did we conceive such  
15 a term?

16 We now have a general sort of  
17 conception of it in the agency, and that is,  
18 that it is industrial revitalization, that is the  
19 way it is understood to be.

20 In that industrial revitalization  
21 there is only one specific element of it, and  
22 that is to sell and resell houses, as if  
23 there was no other way of looking at  
24 industrialized revitalization.

25 I am sure there is another way of

1  
2 looking at revitalization, other than even  
3 looking at it from an industrial point of view.  
4 Those are some of the conceptualizations that  
5 we have to face, and the other one arose, which  
6 has become a very strong one, that is, to what  
7 extent are we responsible and liable for this  
8 even in conception?

9 To what extent are we scholarly  
10 enough, professional enough to make a medical  
11 decision about a medical fact?

12 After all, is not Love Canal a  
13 medical problem?

14 Since we are not doctors, and  
15 we don't have that kind of expertise,  
16 then certainly we cannot make that kind of  
17 decision. Let's leave it to somebody else.

18 So we left it to the EPA.

19 It was a very simple sort of  
20 leaving, and one of the problems that I have  
21 encountered is the whole problem of leaving  
22 it to the EPA by itself. Why didn't we also  
23 look at a comparison of documents, since  
24 there are other documents that have come  
25 out, there are many of them across

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a broad perspective of types of studies that we could have looked at.

But, of course, how would we come upon a judgment after we have done it ?

We would have to be expert in the medical field.

Now, there is, therefore, a question, and I raise these, and I'm going to say this, because I think it might be implicit for these kinds of decisions throughout the entire country, for all you know across the world, and my point of view would not be considered that far and wide, but I am simply interested in knowing, is there anything in logical reasoning that is neutral, that people can say that even though I am not a professional in this or that, or this field, I certainly can make a very sound, reasonable decision about something.

This has not come very clearly to our agency, and we have left it either to the doctors, or we have unfortunately let the ETF go walk off with it and not listen to them.

We are, therefore, left with only

1  
2 an industrial interpretation of what we are  
3 supposed to do.

4 That is an unfortunate thing to ask  
5 yourselves a question, if you construct this kind  
6 of agency again, in any other place, at any  
7 other time, do we not have to come upon the  
8 same sort of problem?

9 We sort of pushed the button, and  
10 we got the chewing gum.

11 Now, my next point is that EPA did  
12 not say that Ring 3 was habitable, nor did HHS say that  
13 it was habitable, unless and if, and only if, certain  
14 conditions were met.

15 I am, of course, repeating what  
16 Rev. Brewster and others are saying, that if --  
17 how can HHS say that, and at the same time say  
18 that they are not very clear about what I have  
19 heard, a term I have heard called perpetuity?

20 If you are not very sure about  
21 the future and what these things will produce, how  
22 can you say it is a definite, distinct condition?

23 If the development of the  
24 processes that are intrinsic within certain  
25 kinds of chemicals cannot be predicted, and,

1  
2 of course, you cannot have a risk and hazardous  
3 assessment, you cannot have an exposure assessment  
4 but if they can, then why not predict to that  
5 degree, or why not have a risk assessment to that  
6 degree?

7 If that degree is too small,  
8 then let us be clear about it.

9 Let us be honest about it, and  
10 say there are certain chemicals that are  
11 dangerous to man that are unpredictable, we  
12 absolutely cannot have a risk assessment  
13 about it, and, therefore, because we are  
14 concerned about the human welfare, let us not  
15 have people move there.

16 Now, my agency seeks to set in order  
17 conditions, and yet, not to be blamed for that.

18 We are supposed to see that these  
19 conditions are met once we believe they are  
20 right conditions.

21 We said the Superfund was supposed  
22 to address it. I think we are right in  
23 going that way. Except Superfund is incomplete  
24 and we are probably not getting enough money to  
25 finish its work, so that is also a hazardous

1  
2 condition for the future.

3 Malcolm Pirnie, the consulting  
4 firm we brought on, is a very fine corporation,  
5 I think it is going to do a good job, but we have a sense  
6 of schizophrenia with that because for me,  
7 I have problems in knowing how it is going to  
8 relate itself to SEQRA and having a proper  
9 environmental impact statement because the  
10 Mayor said in his statement that he wants a full  
11 environmental statement, which contrasts with a  
12 partial one, and I think that a full one is  
13 supposed to be done at the very start, and  
14 it doesn't seem that he wants to use the time  
15 process, and it is supposed to take place  
16 before action is done for cleanup.

17 I find it difficult to under-  
18 stand how Malcolm Pirnie is going to be  
19 utilized for a full environmental  
20 statement.

21 I want to just finally close with  
22 this -- actually, with two other  
23 points:

24 I am disturbed, and I am sorry  
25 some of them have left, with the people

1  
2 who remain in Love Canal.

3 They have been coming to our  
4 meetings. They have been screaming and crying,  
5 saying you are taking too long to revitalize.

6 We are concerned.

7 We are there.

8 I see a tremendous hypocrisy  
9 involved here. I see people who never believed  
10 perhaps that it was ever toxic, so, therefore,  
11 they stayed there, or they believed it was toxic,  
12 and they don't care.

13 They ought to just be honest and  
14 say they didn't care, or that moving is such a  
15 painful experience for them, that they just  
16 insist they don't want to do it, it is  
17 a much higher value than the protection of  
18 their health and their circumstances, and if  
19 that is not the case, I suspect that the  
20 next one is they are looking for an easy way out  
21 of getting some sort of special grant where  
22 they can have a nice new house, and they can  
23 have it cheap, at cheaper rates, etc., etc.

24 Their greed and their interest in  
25 luxury and their meanness is higher than

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anything else.

Now, they ought to at least face that ethical problem, and say so.

I think that our agency ought to be clear enough and say that this is what we are about, instead of saying they are fine, such fine, innocent human beings who are screaming at us, wanting us to hurry up.

I finally want to end on this:

I think that this country and this world has got to restate and relive its ethical morals, or forget it.

This whole world is getting completely swollen with fumes coming from chemical engineering in Japan, England, Ireland, Latin America, and I do go on tour from time to time, and I toured with some people the other day from Brazil, saying that San Paulo, Brazil is a horrifying place.

All over the world, we are just completely polluting ourselves to death, and obviously something is going to have to have to be done about our value system.

It has been raised many times



1  
2 before, and everybody knows about it. It  
3 is the category of person over property,  
4 or property over person?

5 Does the fact that we get some jobs  
6 to do and get a little bit of money and salary,  
7 not matter at all to us the fact that we go  
8 back home and we take ourselves doses of poison  
9 in order to -- and after we have spent our  
10 salaries.

11 Now, perhaps it is death over here  
12 and life over here, but somewhere we are going  
13 to have to make those decisions and stick to  
14 them.

15 It seems to me that this is an  
16 opportunity for us, it is the first real chance  
17 for us to tell the country and the world  
18 that we are going to stick to our morals, we  
19 are going to stick to ethical priorities, and  
20 we are going to do it right.

21 If the whole world decides to go  
22 down the river, that is, go down the polluted  
23 river, we are not going to guide them there.

24 It seems to me that this is a  
25 tremendous opportunity as persons, no matter

1  
2 what religion you are, if you believe in a God  
3 somewhere, it ought to have some sort of effect  
4 upon your life, and to say that this is where  
5 I am going to stand.

6 We are in a terrifying predicament,  
7 and there is something in Revelation that says  
8 that there will be a new heaven, and a new  
9 earth, and a great apocalyptic overpowering  
10 of God coming, bringing a new city down  
11 to us.

12 Well, God knows we will need it!

13 It is going to be coming out of  
14 heaven, down onto earth, to us, fresh and new.

15 I think that when it comes, we  
16 ought to present him with something a  
17 little more decent than old worn out polluted  
18 no good earth, and I think, whatever kind of  
19 condition we present to him is the kind of  
20 condition for our judgment, and it will be the  
21 final judgment, and God knows we ought to  
22 be ready then and not ashamed.

23 Whether we like it or not, it is  
24 definitely going to be us, Niagara Falls,  
25 who is going to be the first to come before

1  
2 Him.

3 Thank you.

4 (Applause.)

5 CHAIRMAN HINCHEY: I feel that we  
6 ought to end there, but there may be other  
7 speakers.  
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CHAIRMAN HINCHEY: Is Nick  
DiBellonia here?

MR. JOHN: He did call, and he  
wanted to make it, but his one comment was that  
he is a member, I guess he runs a drugstore  
or he had a drugstore in Love Canal, and he  
feels that the commercial interests have been  
totally excluded from the relocation efforts,  
and the attempt to repair people's lives in Love  
Canal.

SISTER HOFFMAN: May I respond to  
that, because he shared that experience with me.

He wants to move out of Love  
Canal, and he's torn between the values of  
staying there and helping the people.

He is the only drugstore in the  
area. The value of staying there and helping  
the people is what is weighing upon him, and he  
is losing everyday.

He knows he cannot possibly be  
financially solvent and remain. So he feels he  
will have to leave, and he regrets that.

But along with this, too, is a Rev.  
Hayes, who has a Church of God there, who

1  
2 connects right to the fense, and he has asked  
3 for help.

4 He can't get it from his  
5 denomination. His people are leaving.

6 All of these are sort of on the  
7 end of our plans for grants and donations.

8 We have to take care of the  
9 residents first, and this is one of the reasons  
10 why their problems are so immense.

11 CHAIRMAN HINCHEY: Thank you.

12 \* \* \*

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CHAIRMAN HINCHEY: Samuel

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McKutchen?

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(No response.)

5

James Kirstein?

6

(No response.)

7

James Kelly.

8

MR. KELLY: When I came in this

9

morning, I heard them on the news this morning,

10

I saw you on the T.V., which is the first I knew

11

you had this hearing.

12

I do read the papeer, and I came

13

in and signed up, I was not aware, and I put

14

on the card why I am here, but I was not

15

aware it is a Love Canal hearing, so if you

16

want to hear me, I will speak.

17

CHAIRMAN HINCHEY: Please do.

18

MR. KELLY: All right.

19

I live about three-quarters of

20

a mile from the Terrace Apartments, and as

21

you know, we have -- who knows how bad our

22

problems are, and I have a large garden at

23

the end of Kramer Street, and at the end of

24

Kramer Street there is also a storm sewer to

25

which some people think all is left of what was

1  
2 once the main drainage ditch, at least for that  
3 central section of North Tonawanda, and it took  
4 quite a bit of territory.

5 I know a man who is willing to  
6 testify, he is an older man, old enough, I  
7 suppose, in his eighties, old enough to know what  
8 he is talking about, and he also worked in what  
9 was then the Public Works Department of North  
10 Tonawanda.

11 He saw some of the openings into  
12 the earth for various reasons. He saw the  
13 quicksand and the conditions of the earth, and  
14 how they were quickly filled in.

15 This man and another friend of his,  
16 who I knew before he died, told the same story.

17 They were there, living in the  
18 neighborhood, when one night, the Terrace  
19 Company brought this black material into this  
20 huge drainage canal in which there were many  
21 fish.

22 The fish, which I forgot to  
23 mention, would come up from the Canal, the  
24 Erie Canal, and would go up into the drainage  
25 ditch back into the woods up towards Terrace,

1  
2 and they would spawn.

3 One night this blackish material  
4 was dumped into the Canal, and killed the fish  
5 overnight, and that took care of the fish in  
6 the Canal.

7 That same area was naturally  
8 low and some man in his endeavor to fill in the  
9 North Tonawanda drainage ditch, which much was  
10 done, it was a natural drainage area down  
11 through there, and you could tell, if you really  
12 look at it, that it still is the main drainage  
13 ditch, but from back at the Terrace to the  
14 east, it comes down the ditches, into the  
15 ditch along the railroads, and it goes down  
16 into various places, and I say various places  
17 because the city and the people have at one  
18 time or another filled in for a road here or  
19 filled in to build here and there, and at times  
20 most people don't know which way the water is  
21 flowing.

22 Others had checked it, and I have  
23 checked it, and if you take a little piece of  
24 glass or something and you throw it in the  
25 water, and you go back in the midst of a big



1  
2 storm, and you check the flow water, again  
3 you will find out two things:

4                   When the water is low and  
5 conditions are normal, the water will flow into  
6 the sewers and go towards the Niagara River.  
7 So you will be told by the officials that the  
8 water has drained away from the Terrace  
9 Company by the storm sewers, and it goes to the  
10 Niagara River.

11                   I would beg to differ with them.

12                   When the water gets a little  
13 high, it flows into the woods off Norwalk Road  
14 and Erie Avenue.

15                   It flows down through these  
16 woods, and it flows down, some of it flows into  
17 that ditch on Kramer Street, or the storm sewer  
18 on Kramer Street, and some of it goes in other  
19 distribution and eventually through storm sewers  
20 or natural means, or underground streams, but it  
21 ends up in the Canal, and I call it the back-  
22 door to the river.

23                   Always, when they came out, they  
24 check, is the stuff going towards the Niagara  
25 River.

1  
2 If you mention to them about  
3 going to the Canal, they don't want to hear  
4 it.

5 The other point I want to bring  
6 out, among several points, when I moved there,  
7 and I bought land, I live at East  
8 Provinceston Street in North Tonawanda, but I  
9 own property back to Kramer Street, and the  
10 back lots, over the years, my son, with a  
11 couple of his friends, we filled in what was  
12 then swampy land, and I regretted it ever  
13 since, at least I mean recently I have regretted  
14 it.

15 We filled it in, we filled a  
16 ditch that apparently, originally, fed into the  
17 big ditch, and we developed a garden there.

18 In fact, we developed a quite  
19 sizable garden, about seven thousand square  
20 feet. I mean, after getting involved with the  
21 Terrace Area Association, and doing some  
22 reading, etc., and coming to meetings like this,  
23 I finally decided, we decided we could  
24 no longer take a chance in having a  
25 garden there.

1  
2 I have developed a couple of  
3 plots this last fall up near the house so we  
4 could maybe take a chance on a few things, at  
5 least some flowers.

6 But I also believe that there is  
7 an underground creek there.

8 In 1978, a large apartment house  
9 was built alongside of my property, and the  
10 story I hear is that the contractor himself  
11 said he hit an underground stream. I know  
12 from experience, and my problems with him and  
13 the city, in trying to get something done about  
14 what he was doing, like pumping water onto  
15 my land, and this and that, and eventually put-  
16 ting a pipe across and digging a hole that  
17 children could drown in, etc., etc., with  
18 thousands of gallons of water that was pumped  
19 on my land.

20 This was in the fall of '77 and

21 '78

22 To backtrack a little, we started  
23 to develop the garden, and my son grew up there,  
24 fed on the garden, and my family fed on the  
25 garden.

1  
2 At nineteen years of age, my son  
3 went into the service.

4 At twenty years of age, he was  
5 operated on for a tumor wrapped around his  
6 thyroid, and part of his thyroid has been  
7 removed.

8 For all intents and purposes, he  
9 is functionally all right. He has to take  
10 medication everyday, I guess, and has to be  
11 checked up at the V.A. every six months.

12 Apparently, this will go on for  
13 the rest of his life.

14 The other thing is, I will have  
15 to admit that I had some problems of my own in  
16 the winter of 1977-78, and I won't go into the  
17 details, but in 1978 I guess you might say I  
18 cracked up, I had a mental breakdown or some-  
19 thing, and I haven't been the same since.

20 I don't care to go into  
21 descriptions, but I had my problems since.

22 I don't think from my past  
23 experience, and what I lived with in the past,  
24 and I have lived with a lot of trauma in the  
25 past, and as far as government agencies, are

1  
2 concerned, and government people, and people  
3 at the EPA and people that think they are like  
4 God, and they will spend two to three hundred  
5 million dollars a year on defense, defense of  
6 what, and it is coming out in the news on T.V.  
7 and talk shows, how some of that equipment  
8 works that they build.

9                   Mr. Pillittere isn't here now,  
10 I can vouch, I worked for him, with him, not  
11 for him, with him, at Bellaire Craft in the  
12 '50's, and there I went to work on the Titan  
13 IMB missiles.

14                   Along that line, I just wonder  
15 what does M stand for, and lately I see it is  
16 for Marietta, the company that I worked for.

17                   I don't have a degree from  
18 college, I am not a specialist in anything, and  
19 after what happened to me, I won't go into  
20 that, I am saying, when I went out to Marietta,  
21 without a degree and everything, some of the  
22 people did at the time, I went to work as an  
23 engineer, not as a design engineer, but what  
24 is called a maintenance analyst engineer.

25                   When I left, I was a senior

1  
2 engineer, I resigned, under the conditions I  
3 resigned, I believe I was blackballed.

4 I believe I was one of the  
5 earliest whistlers, at least before the data  
6 became well-known, and I was advised to go to  
7 the Secretary of Defense McNamara, but even then  
8 I could see from what I had seen and heard, and  
9 I never regretted it, I thought it will never  
10 work, I might as well take my family and leave,  
11 and start over again, and I did.

12 But what my problem was, I---  
13 like I said, there are those who can tell their  
14 own story, and they may disagree with me, but I  
15 was involved in the Titan IBM in an engineering  
16 struggle within the company to make a policy,  
17 and I did what I thought was right, technically  
18 I won the battle, it went before the Air Force  
19 Ballistics Systems headquarters in California.

20 But I really can't discuss this.

21 But what I am getting at, even  
22 with the so-called protection of the country,  
23 I am firmly convinced that people put money  
24 first, and your welfare second, because what  
25 I was involved in, and the problem that was

1  
2 involved, if they continued with it, raised the  
3 prospect that some of the solid propellant com-  
4 ponents that guided the Titan ICBM, in the  
5 process of being transported, and the way they  
6 were transported, they could go off like Roman  
7 Candles.

8 I think it was later proven right  
9 when some of them did, on a train out in the  
10 desert, that is the story I heard, at least.

11 I am just trying to say that there  
12 are problems over the country with this chemical  
13 time bomb, and what are we going to do about  
14 it?

15 We are being stymied and stone-  
16 walled in North Tonawanda and elsewhere, and  
17 I think the whole nation looks for guidance  
18 from Love Canal

19 Thank you.

20 A VOICE: If I may speak, I know  
21 it is late and you are tired --

22 CHAIRMAN HINCHEY: Please do.

23 MS. BUGMAN: My name is  
24 Rosemarie Bugman, and I live at 3345 Whitehaven  
25 Road, and I was not going to speak, I had this

1  
2 for Mr. Abrams, but I missed him.

3 I have a situation in my home  
4 where I am living with toxic chemicals, and I  
5 am an individual, and my problem is that I am  
6 alone in the house, with these six children and  
7 my husband.

8 The chemicals that have never  
9 been discovered by Erie County Health  
10 Department.

11 I don't have a large group  
12 behind me.

13 I have fought long and hard to  
14 have something done.

15 It came to the point where Erie  
16 County Health Department refused to allow me to  
17 remove the chemicals and to put them anywhere in  
18 a secure landfill, even though they call them  
19 background levels, and then in turn refused to  
20 commission any letter that even though these  
21 levels of chemicals, background levels, existed,  
22 that my house was safe to live in.

23 So I am stuck with my home.

24 I do not have people behind me  
25 to help me.



1  
2 I have had great assistance from  
3 the Love Canal Homeowners Association.

4 What I have presently that has  
5 been discovered to date, I will just list them  
6 for you --

7 CHAIRMAN HINCHEY: Did you tell us  
8 where you live?

9 MS. BUGMAN: 3345 Whitehaven  
10 Road.

11 CHAIRMAN HINCHEY: Where is that?

12 MS. BUGMAN: On the corner of  
13 Whitehaven, on Grand Island.

14 CHAIRMAN HINCHEY: You live on  
15 Grand Island?

16 MS. BUGMAN: Yes.

17 In my sump, I have dialdrin,  
18 alpha-BCH, beta-BCH, PCB's, toluene, and  
19 xylene, that is what they checked for and  
20 found. There were other known compounds which  
21 they did not determine.

22 They just assumed it might have  
23 been laundry waste.

24 I have very little to say except  
25 that I am stymied. I don't know where else

1  
2 to go.

3 I have been listening to what  
4 Love Canal people have been going through, and  
5 the health problems in my home are remarkably  
6 similar. My pediatrician has implored the  
7 Health Department to test periodically, and they  
8 refused.

9 They said that they have spent  
10 enough money on me, and I am an individual  
11 person, and it is a private problem, and that  
12 even though this is on several property lines,  
13 they will not speak with me anymore.

14 My calls are not returned.

15 SISTER HOFFMAN: I can  
16 verify this, she did this, she cannot seem to  
17 get help from State agencies because she is  
18 like one person, and they will not fool  
19 around with a whole Health Department with one  
20 person's house.

21 This lady has a problem, that  
22 is tough.

23 MS. BUGMAN: We don't really know  
24 exactly where some of the chemicals came from.

25 We have suspicions about PCB's,

1  
2 which at this point it doesn't matter where they  
3 came from.

4 The fact is that they are there,  
5 and I have children with asthma and diabetes.

6 CHAIRMAN HINCHEY: Do you have any  
7 notion as to the origin of the chemicals?

8 MS. BUGMAN: Well, yes and no.

9 Initially, I thought I knew  
10 when we discovered there were only PCB's, we  
11 had a suspicion, which I would rather not go  
12 into publicly. I also am living across the  
13 road from an abandoned missile site,  
14 and what we saw being emptied near our property  
15 was oil.

16 When they found the pesticide, it  
17 was determined that these things could not have  
18 come out of drums of oil, so we had a gentleman  
19 from the DOT come out and he was going to  
20 investigate if there were underground sewer  
21 chains, which I know there are, and if anything  
22 was leaching from them.

23 This has been months that this  
24 has gone on.

25 This problem was in March of 1982

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that they discovered the chemicals.

Where do I go from here?

SISTER HOFFMAN: Father Keefer is trying to help her out by having someone test, and then you have to fall back and try to -- that is how we try to do it at that level.

CHAIRMAN HINCHEY: You are having tests done?

SISTER HOFFMAN: Yes, somebody from the Testing Department.

MS. BUGMAN: They discovered something during the semester break, and he was not sure if they had taken the time to actually identify it.

I know that I have carcinogens, and I know one of the levels of PCB's was, I believe, above the OSHA standard for groundwater, so what the Health Department did, in fact, was instead of taking the groundwater level, they took the 1977 drinking water standards, which were higher because I think the groundwater levels were set after the drinking water standards, and it was lower, so they told me my groundwater level of PCB's in the sump

1  
2 was lower than the drinking water standards  
3 instead of comparing it to the groundwater when  
4 they found it, and this is the type of circum-  
5 stance that I have been going around and around  
6 and around.

7 Dr. Axelrod, I have been going  
8 to Commissioner Flacke, and I have gone to  
9 Mr. Abrams, who has been helpful, but being one  
10 person, there are priorities, and because you  
11 are working with toxic chemicals, I am hoping  
12 that someone can help me, which is all I have  
13 to say.

14 CHAIRMAN HINCHEY: Okay.

15 Is there any information that you  
16 would like to give to me privately that you  
17 have not given publicly?

18 MS. BUGMAN: Possibly.

19 CHAIRMAN HINCHEY: If there is, I  
20 will stay around for a few minutes and speak  
21 to you, if you would like.

22 MS. BUGMAN: Thank you.

23 SISTER HOFFMAN: May I ask you  
24 something?

25 Was the control -- was there a

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control sample?

MS. BUGMAN: Yes -- no, they took a control -- when we met with the Health Department officials, they did not even know they had taken a Control site sample for my house.

We knew because they sent us a test, and they didn't intend to use it.

The control test was negative.

The grease and oil --

SISTER HOFFMAN: Excuse me, was a -- when they did the sump pump samples for Love Canal, the Control site, was yours one of the sumps that was tested?

MS. BUGMAN: No, it was about a quarter of a mile down the road from me. The problem may not be as localized as we think.

I have gone to the town, the town wants me to dig my PCB's up myself, and put a three-foot-deep and four-foot-high concrete wall or build an impervious pipe, and this is in writing, and I have the letter, and test myself, and if the substances are found to be objectionable, then it would be removed according to

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EPA standards.

I am supposed to handle this.

It is really quite ludicrous. It is funny.

When I get over the emotional part, and when I don't think about my children, who are constantly ill, it is very funny.

I listened to people from Love Canal who have gone through this, and I am going through it on a much smaller scale, and I discovered that another home was evacuated about a quarter of a mile down the road from us.

I do know when the missile site was installed, that the water hookup for the water site was hooked right up with the Grand Island water system, so that we have these gravel lines, my water pipes are coming down -- I thought I knew where it came from, and I'm not quite certain now.

CHAIRMAN HINCHEY: Where does your water come from, are you on a municipal water supply system?

MS. BUGMAN: Yes, I have a sump in my basement, though.

1  
2 I'm trying to impress on the town,  
3 if all of these chemicals are sitting in my  
4 sump, I am not living in a municipality of my  
5 own, they must be in the groundwater for the  
6 Island.

7 But unfortunately, almost everyone  
8 I have dealt with, I can only liken them to  
9 ostriches, they have their heads in the sand,  
10 and they are displaying the only part of their  
11 anatomy that they know how to handle or use.

12 But in a nutshell, they have told  
13 me I am crying wolf, and I was very hysterical,  
14 especially in the beginning. I think I did lose  
15 my senses, but somebody has to help me.

16 I am sorry if I am one person, but  
17 each person in Love Canal is an individual. I  
18 don't see why I should be given less help than  
19 them.

20 CHAIRMAN HINCHEY: Thank you.

21 A VOICE: Could I add something  
22 about the North Tonawanda problem, concerning  
23 what the State is not doing --

24 CHAIRMAN HINCHEY: If we go on  
25 this late, we will be here all night.



1  
2 Is there anybody else who feels  
3 compelled to make testimony here before we  
4 adjourn?

5 A VOICE: I am sorry I am last  
6 and missed most of this.

7 CHAIRMAN HINCHEY: Your name and  
8 address, and who you are?

9 A VOICE: My name is Walter  
10 Mucala, and I live in Niagara Falls,  
11 New York, and I used to live across from Black  
12 Creek.

13 I was living there, and about  
14 six months after I sold the home, I had  
15 to replace a water heater, and the elbow going  
16 into the water heater was just about filled up  
17 with this black stuff, it was like grease,  
18 if you get it on your hands it was greasy, and  
19 it took about three days to get it off.

20 I did take one of the elbows to  
21 the Love Canal office, and Lois was supposed  
22 to have Steve take care of that, and I notified  
23 Dr. Deegan about it.

24 Now, I was contacted by Mr.  
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Gibbons, I guess, from the State Attorney General's Office, and they were supposed to look into that and they never did.

This was the water going into the tank. I left the tank in the basement when I moved away from there.

I didn't hear anymore about it.

Then they were supposed to look into that.

This is the water going into the tank and not the water going out.

This would be city water.

CHAIRMAN HINCHEY: Water going into what tank?

MR. MUCALA: The hot water tank.

CHAIRMAN HINCHEY: Your hot water tank? In other words, you took apart a piece of pipe, an elbow going into your water tank, and you discovered in that water, in that elbow, this greasy material that you described?

MR. MUCALA: Yes.

Now, I think his name was Gibbons.

SISTER HOFFMAN: Jim Gibbons,

1  
2 the Buffalo Attorney General's Office.

3 MR. MUCALA: Now, he contacted me  
4 at the time, he gave me his card, and he  
5 said he wanted to talk to me.

6 He never got in touch with me.

7 CHAIRMAN HINCHEY: Have you  
8 contacted him back?

9 SISTER HOFFMAN: They don't  
10 respond back.

11 MR. MUCALA: I am greatly  
12 concerned because I am one of the eleven with  
13 chromosome damage, and while we were living  
14 there, my daughter, everytime the sewer backs  
15 up, and we had -- I am on the lower side of  
16 98th Street, and the Black Creek would back  
17 up in the basement.

18 My wife and my daughter were  
19 down there cleaning up one day, and from that  
20 she developed a rash on her entire body.

21 It took two-and-a-half months  
22 for that to clear up.

23 She had to move out of the house.

24 No doctor would attribute any of  
25 this to Love Canal because they are afraid they

1  
2 will spend more time in court than in practicing  
3 medicine.

4 I would just like that to be on  
5 the record, and like I say, I have been active  
6 in this from the beginning, and I am as  
7 concerned as the rest of the people, but I want  
8 to know what my grandchildren are going to look  
9 like.

10 CHAIRMAN HINCHEY: We will see if  
11 we can contact Mr. Gibbons and find out what  
12 their intentions are.

13 When did this take place?  
14 When did you speak to him? How long ago was  
15 this?

16 MR. MUCALA: About a year ago.

17 CHAIRMAN HINCHEY: We will get in  
18 touch with him.

19 MR. MUCALA: I left the water  
20 tank in the basement.

21 Now, if there -

22 CHAIRMAN HINCHEY: That home is  
23 boarded up now?

24 A VOICE: Ripped off and  
25 salvaged long ago.

1  
2 MR. MUCALA: It is an old one,  
3 I don't think they would steal that.

4 I left the old one down there. I  
5 just wondered, they're looking for something,  
6 if this is something coming into the city water  
7 into the homes, I think it ought to be looked  
8 into

9 CHAIRMAN HINCHEY: Yes, sir, I  
10 certainly agree with that.

11 MR. MUCALA: Thank you.

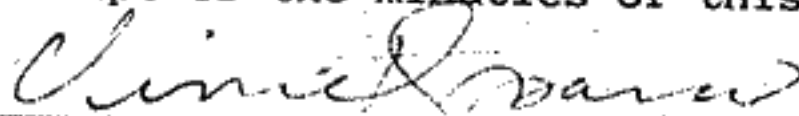
12 CHAIRMAN HINCHEY: Thank you  
13 very much.

14 That is all, Ladies and  
15 Gentlemen, thank you for your patience, your  
16 forbearance, and for your attention.

17 (Whereupon, at 8:10 p.m. this  
18 Public Hearing on the Future Uses of Love Canal  
19 adjourned.)

20 \* \* \*

21 I hereby certify that the foregoing is a true and  
22 accurate transcript of the minutes of this hearing.

23 

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VINCENT SPARACO Hearing Reporter