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THE TORONTO HARBOUR COMMISSIONERS

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in reply refer to file no. 1611-P-4-A

TO BE DELIVERED

April 11, 1989

Ms Sarah Miller
243 Queen Street West
4th Floor
Toronto, Ontario
M5V 1Z4

Dear Ms Miller:

The Toronto Harbour Commissioners will be reconsidering their position on The Improved Lakefill Quality Control Programme at their April meeting.

The following documents are enclosed for your information and comment:

1) Report from Dr. Gibson, Acting Medical Officer of Health to City Services Committee dated February 16, 1989.

2) Letter from W.A. McLean, General Manager, M.T.R.C.A. to City Services Committee dated March 1, 1989.

The Commissioners would be pleased to receive any written comments you may have on the enclosures. Your comments, if any, must be received on or before Thursday, April 20, 1989 if they are to be considered by the Commissioners.

Yours very truly

B.I. Guest, P.Eng.
Director of Property Operations

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atts.

the metropolitan toronto and region conservation authority

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1989.03.01.

The Chairman and Members
City Services Committee
City of Toronto
City Hall
Toronto, Ontario
M5H 2N2

Dear Chairman and Members:

Re: Lakefill Quality

Thank you for the notice of your meeting on Friday, March 3/89 concerning this subject. Unfortunately the meeting conflicts with a previously arranged meeting of our Board and, therefore, we are unable to attend. We do, however, want you to be aware of the Authority's interest in this matter and the initiatives that have been taken to improve the controls on the quality of material used in waterfront lakefilling.

The MTRCA is the agent for the Minister of the Environment for the Improved Lakefill Quality Control Program. The Program has been fully implemented. All material entering waterfront lakefill sites must be accompanied by a bill of lading issued by MTRCA. Material from small, untested sites is subject to inspection by Authority staff at the site in addition to an inspection by T.H.C. staff at Leslie Street. Random sampling of material entering the site has commenced. Chemical testing of material prior to excavation at all sites generating more than 200 m^3 of material is being done. MTRCA staff reviews the test results prior to issuing bills of lading. Seriously contaminated sites are brought to the attention of MOE. Statistics concerning the origin of the material are being compiled which will be beneficial in future evaluation and improvements to the program.

We have the following comments with respect to the specific recommendations in the report from the Department of Public Health.

1. We believe that rejection of material from small sites will cause unnecessary additional costs on many public and private construction projects.

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At some times of the year the volume of material from these kinds of projects will be very significant. Between January 1 and March 1, 1989, at Leslie Street, the total volume of this type of material was 2,662 truckloads. In summer, it will be much higher. The volume of material from small sites rose from 10% in January to 15% in February. There are few alternative disposal sites and MTRCA is concerned that if the material is simply rejected from lakefills that it will often be disposed of in ravine and valley areas where it may pose more serious environmental impacts.

2. The MTRCA maintains a list of inland sites which may require fill. The list is compiled from adds in construction newspapers or from word of mouth in the construction industry. We do not attempt to estimate volumes or direct material to any particular inland sites. Many of the inland sites are restricting access and we do not believe that simply banning all untested material from Leslie Street is an adequate solution. We understand that Metro Toronto is banning all surplus fill as of June 1, 1989 from sanitary landfill sites. Privately owned sites are increasingly concerned about contamination that might affect future development potential. In summary, material from small sites may not be accepted at any appropriate sites in the near future. The City of Toronto will need to deal with surplus material generated within the City. The Authority believes that careful inspection and placement of the material at selected locations at Leslie Street or other lakefill locations is a reasonable approach in the short term, until broader solutions to waste management are found.

3. The Authority has previously been advised that stockpiling locations for the volume of material generated by public and private projects in the small site category are not available.

4. The Authority would be pleased to work with a City committee to investigate a policy for re-use of surplus construction material generated in the City. We believe that the new lakefill program is a major improvement, but that further improvements can be made.

5. We are advised that for other considerations such as protection of public utilities, avoidance of settlement and other maintenance considerations, that the industry is generally headed toward less utilization of native soils and more use of selected backfill. This practice generates more surplus material.

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6. The new lakefill quality control program has been developed in consultation with MOE and approved by MOE as a reasonable interim program.

7. MTRCA has maintained liaison with the City Works Department and the Department of Public Health throughout the development of the new program. We are pleased to continue that liaison.

Thank you for the opportunity to comment. The Authority is committed to continued efforts to control the quality of material used to create unique and valuable new waterfront parks through re-use of surplus excavated material.

Yours truly,

W. A. McLean
General Manager

BED/ap

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* "Lakefill Quality Control Program" *
* Year End Report for 1988 *
* (October 1 to December 31) *
* *

1988 Year End Report for the Improved Lakefill Quality Control Program:

Introduction:

The Improved Lakefill Quality Control Program (I.L.Q.C.P.) has been designed to provide a consistent Metro-wide guideline for the assessment of fill quality. The program which will begin full implementation on Jan. 1, 1989, is a more comprehensive version of its predecessor, the Lakefill Quality Assurance Program which was first implemented by the Ontario Ministry of the Environment in 1982. Under the Lakefill Quality Assurance Program, all material proposed for lakefill and originating from the Designated Control Area (D.C.A.) in south Toronto was to present detailed bulk chemical analysis, the results of which were to be compared to the M.O.E.'s Open Water Disposal Guidelines. The current I.L.Q.C.P. has expanded on this chemical analysis system by requiring all projects which propose to dispose of 200m3 of fill material or more at a lakefill location, to provide detailed chemical analysis results. In addition, the new program also requires that all truck loads of material generated at "small project" sites (i.e. those generating less than 200m3 of fill) be tested by a photoionization probe which will indicate possible contaminants in the material. Access to the lakefill location will be denied if the probe reading is found to be in excess of a yet to be determined p.p.m. reading.

The Improved Lakefill Quality Control Program also differs from it's parent program in that all truck loads of fill material must present a M.T.R.C.A. certified "bill of lading" indicating that the job site location has been approved for lakefill disposal. The "bill of lading" system offers the M.T.R.C.A. a mechanism by which it can;

i.) monitor the origin of all fill material
ii.) audit all projects to ensure compliance with the conditions of their approval

Program Phase In - Oct. to Dec. 1988.

The Improved Lakefill Quality Control Program represents a considerable change in the practices of the construction community and consequently, the M.T.R.C.A. began a 3 month program "phase in" on Oct. 1, 1988 in order to introduce the program to the construction community without causing confusion and delays. During this "phase in" period the percentage of fill carrying trucks which presented and M.T.R.C.A. bill of lading rose from about 10% in early Oct. to well over 80% in late Dec. The presentation of a bill of lading was not mandatory during this time however, and a significant number of loads did gain access without a bill during this period. Bills of lading were issued to a number of large on going projects without the submission of chemical testing results for the purpose of educating the major developers and haulers on the

Program Phase In - Oct. to Dec. 1988 (cont'd).

dynamics of the application procedure for the bills of lading. No photoionization probing was performed on "small project" sites in this time period and this is reflected in the small number of rejected loads contained in this report. It is the goal of the M.T.R.C.A. to be collecting one bill of lading for every truck load of fill on Jan. 1, 1989, and to significantly step up the following aspects of the I.L.Q.C.P.;

a.) On Site Inspections of "small projects."
b.) Auditing for compliance with the program.
c.) Performing pre-approval project site inspections for all Group A small sites (i.e. between 5 and 20 loads).

Fill Volume Statistics for Oct. 1 to Dec. 31, 1988

*These volumes refer to fill loads presenting "Bills of Lading" only!

LARGE PROJECTS:

The total volume of "open water" quality fill material received from large projects was 319,890m3.

The total volume of "protected" quality fill material received from large projects was 42,250m3.

SMALL PROJECTS:

The total volume of "open water" fill received from small projects was 10,840m3.

The total volume of "protected" fill received from small projects was 5,760m3.

*Note - During our phase in period small project sites were issued "Bills of Lading" classified for open water disposal. This was necessary at the Leslie St. Lakefill site due to the Harbour Commissions pre Jan. 1, 1989 policy that only bills of lading marked "open water could be accepted into the spit location. The M.T.R.C.A. recognized that the period between Oct. 3, 1988 and Dec. 31, 1988 was strictly a "phase in" period and that the purpose of this phase in period was to inform the entire construction community of the various processes involved in the program. Hence, given the fact that: a.) The T.H.C. would accept only open water material. b.) Presentation of a bill of lading was not mandatory in this time period. c.) The program was in a "phase in" stage designed more to inform the construction community rather than cause an abrupt cessation of lakefill disposal by all small projects; the M.T.R.C.A. deemed it acceptable to issue and accept "open water" bills of lading from small project sites despite the fact the program manual lists all small project material for protected or confined areas only. This practice was continued for small projects at Sam Smith park; however all material at Sam Smith after Oct. 3 was placed in a "protected" area and therefore the records of "bills of lading" received have been changed to list all small project bills submitted at Sam Smith as protected rather than "open water" as they were in reality. The justification of course lies in the fact that all of this material was deposited in a "protected" area.

Rejected Material

The total volume of material refused entry to any lakefill location on the basis of environmental suitability for the period Oct. 1 to Dec. 31 1988 was 3,410m3. This material was rejected by the following 2 methods;

i.) 20m3 was rejected at the lakefill location after inspection of the trucks contents. In these cases "Bills of Lading" were initially issued and the inspectors report (in the form of the L.L.S.A.C. sheet) is attached.

ii.) 3,390m3 was rejected at the application stage: In these cases, material was deemed unsuitable by an Environmental Control Technician after reviewing the "Application for Bill of Lading" and/or the accompanying chemical analysis.

*Note - The total volume rejected figure above is actually quite mis-leading due to great volumes of material taken to landfill locations for which the M.T.R.C.A. was not furnished with an accurate volume for the landfill quality material. Therefore, the actual volume of rejected material should be substantially higher.

Introduction to Appendix A & B

This contains detailed listings of all projects which gained admittance to the Leslie St. Spit or Colonel Sam Smith lakefill sites upon presentation of an M.T.R.C.A. "Bill of Lading" between Oct. 1 and Dec. 31 1988. The information detailed on the following pages is organized horizontally in the following manner; The M.T.R.C.A.'s project number is given in addition to the address of the specific fill generating project in question. The Fill Site is defined as either S.S. for Sam Smith park or L.S. for the Leslie St. Spit. The date listed represents the date that the "Bills of Lading" were presented at the lakefill site. The number of loads (bills) received from each project in a given day are listed under the appropriate fill site destinations (e.g. Prot. = Protected, Conf. = Confined and Open = Open Water).

CITY OF TORONTO
DEPARTMENT OF PUBLIC HEALTH

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February 16, 1989

To: City Services Committee

Subject: Lakefill Quality at the Leslie Street Spit

Origin: City Services Committee, December 16, 1988
(c34csc89001:526)

RECOMMENDATIONS:

1. That City Council request the Toronto Harbour Commissioners to accept only fill that has been shown (by laboratory testing) to pass the Lakefill Quality Guidelines at the Leslie Street Spit, and any other lakefill sites with which they are involved.

2. That City Council request the Toronto Harbour Commissioners and the Metropolitan Toronto and Region Conservation Authority to direct material not shown (by laboratory testing) to pass the Lakefill Quality Guidelines to the inland sites on the list of landfill sites maintained by the Conservation Authority, and not to other lakefill sites.

3. That City Council request that the Commissioner of Public Works, the Metropolitan Commissioner of Works and the Toronto Harbour Commissioners consider providing temporary stockpiling areas where material from small sites may be stored, pending laboratory testing and rehandling to final disposal sites depending on the test results.

4. That City Council establish a committee, to report jointly to the Neighbourhoods Committee and the Board of Health, to investigate and make recommendations regarding an environmentally sound, comprehensive disposal policy for all excavated material generated in the city.

5. That City Council request the Commissioner of Public Works to report on the feasibility of altering his policies regarding the backfilling of small road and utilities works so as to reduce the amount of fill requiring off-site disposal.

6. That City Council request that an environmental assessment be completed before lakefill quality criteria at any lakefill site are relaxed.

7. That City Council request that the Toronto Harbour Commissioners and the Metropolitan Toronto and Region Conservation Authority solicit and consider comments from all interested City departments before making policy decisions regarding materials to be accepted for disposal at the Leslie Street Spit.

BACKGROUND:

On December 16, 1988, City Services Committee had before it a report (December 9, 1988) from the Commissioner of Public Works entitled "Lakefill". City Services Committee adopted the Commissioner's recommendation "that City Council should request the Toronto Harbour Commissioners to change their landfilling procedure in order that they can provide additional protected and confined areas to permit the continuous disposal of fill not suitable for open water disposal". This recommendation applies to the Leslie Street Spit, where the Toronto Harbour Commissioners coordinate extensive lakefilling operations.

City Services Committee also requested that the Acting Medical Officer of Health report to the Executive Committee on this matter. At its meeting held on January 3, 1989, the Executive Committee recommended that the reports from the Commissioner of Public Works and the Acting Medical Officer of Health be referred back to City Services Committee for the purpose of receiving a report from the Acting Medical Officer of Health and the hearing of deputations.

COMMENTS:

1. Previous Policy Decisions

At its meeting on May 2, 1988, City Council adopted Report 10, Clause No. 23 from Neighbourhoods Committee and requested that the Commissioner of Public Works "report on the additional costs associated with testing and disposal of excavated materials from Department of Public Works road and sewer projects".

City Council also requested that the Acting Medical Officer of Health and the Commissioner of Public Works, in consultation with

the Commissioner of Planning and Development, "investigate options for environmentally sound disposal of all types of fill generated within the City of Toronto".

The recent report (December 9, 1988) from the Commissioner of Public Works, entitled "Lakefill", which was considered by City Services Committee at its meeting held on December 16, 1988, provides information about these additional costs. However, the report from the Commissioner of Public Works also made significant recommendations regarding the disposal of fill generated in the City of Toronto:

- That City Council request the Toronto Harbour Commissioners to change their procedures to provide 'protected' and 'confined' areas to accommodate fill known to be contaminated, and untested fill from small excavations;

- That City Council request that the Ontario Minister of the Environment and the Metropolitan Toronto and Region Conservation Authority support this request.

Staff in my Department have been working with staff in the Department of Public Works, and in consultation with staff in the Planning and Development Department, to prepare a report on the environmentally sound disposal of all types of fill, as requested by City Council on May 2, 1988. The recommendations of the Commissioner of Public Works should to be viewed in this broader context. Thus, I would like to take this opportunity to comment on the Commissioner's recommendations and to preview the report on environmentally sound disposal of fill, which will be going to Neighbourhoods Committee shortly.

At its meeting on May 2, 1988, City Council adopted the recommendation that after August 1, 1988 the Toronto Harbour Commissioners be requested to accept only fill approved by the Ontario Ministry of the Environment (OMOE) as being acceptable for lakefill disposal at the Leslie Street Spit. The criteria used to judge acceptability would be the OMOE Lakefill Quality Guidelines. The Lakefill Quality Guidelines list maximum concentrations at which certain chemical parameters may occur in fill that is to be disposed of in the open water of Lake Ontario.

The Toronto Harbour Commissioners subsequently adopted a policy whereby no fill would be allowed entry to the Leslie Street Spit, unless it was shown to be acceptable under the Lakefill Quality Guidelines. Fill from small sites was to be accepted, without laboratory testing, until January 1, 1989. (Small sites are deemed to be those that generate less than 200 cubic metres of fill.) However, at an emergency meeting on December 20, 1988, the

Toronto Harbour Commissioners decided to accept material that does not meet the Lakefill Quality Guidelines at the Leslie Street Spit. This material will be placed in protected areas that are at the water's edge, but are away from direct contact with wave and current action.

Protected disposal areas accommodate fill that does not meet Lakefill Quality Guidelines, but that passes the leachate test used to define 'hazardous wastes' (as described in Regulation 309). Confined disposal areas, which the Toronto Harbour Commissioners do not provide at the Leslie Street Spit, would accommodate fill that fails the leachate test but that would be judged acceptable in terms of the OMOE restricted land disposal criteria for dredged material.

At their meeting on December 20, 1988 the Toronto Harbour Commissioners also decided to accept fill from small sites that has not received laboratory testing. Truckloads of fill from small sites would be subject only to sight and smell assessment by staff at the gate to the Leslie Street Spit, and to scanning by an electronic 'sniffer'. The effectiveness of these measures has been questioned. These decisions were taken by the Toronto Harbour Commissioners before City Council had an opportunity to discuss the matter, and before I had an opportunity to report my concerns to City Council.

Had the Toronto Harbour Commissioners not changed their policy on December 20, 1988, developers and contractors working on small sites would be subject to the same policy that applies to larger sites. Under this policy, the driver of each truckload of fill must produce documentation that the fill has been tested in a laboratory and accepted as clean by the Metropolitan Toronto and Region Conservation Authority (MTRCA), in light of a site history provided by the developer. Because laboratory testing and site history audits are expensive, developers and contractors generally do not have them done for small sites. The same is true of municipal works departments and utilities companies, which generally work on small sites.

2. Environmental Concerns

The potential environmental impact of material from small sites is likely to be disproportionate in relation to the total volume of fill received at the Leslie Street Spit. This is because the Department of Public Works (and utilities companies) work mainly with soils close to the surface. Surface soils are more likely to be contaminated by unacceptable concentrations of toxic chemicals (e.g., lead from automobile and industrial emissions) than sub-surface soils.

To deposit such potentially contaminated soil at the Leslie Street Spit untested is not advisable environmentally, even if it is all placed in a 'protected' area. The designated protected area on the Leslie Street Spit is located in, and adjacent to the embayment at the southeast extremity of the Spit. Although fill placed there would not be subject to direct wave or current action, toxic chemicals and metals in contaminated soil placed there could still be subject to dissolution in water. This could further degrade the quality of Toronto's waterfront, which has been designated as an "area of concern" by the International Joint Commission, due to chemical and bacterial contamination.

In its draft "Proposed Lakefill Policies", dated September 14, 1988, the OMOE states that "Embayments created by lakefilling operations increase habitat for some aquatic species and tend to have higher densities of organisms than adjacent areas. Hence, they bring biota in contact with the contaminants.... To protect against bioaccummulation as well as other adverse effects, a logical approach would be to require that sediments in embayed semi-protected areas meet the Open-Water Disposal Guidelines". These Guidelines are essentially the same as the Lakefill Quality Guidelines, and will be exceeded by much of the fill to be placed in the 'protected' area on the Leslie Street Spit.

Even if contaminants in soil placed in protected areas are not available for dissolution in water, they still may be available for uptake by the roots of trees and by other plants, and may come into direct contact with people visiting the Leslie Street Spit, or the planned Tommy Thompson Park. It would not be advisable to have part of the Park constructed from contaminated soil. The Parks and Recreation Department and the Planning and Development Department may have additional concerns regarding eventual use of the areas designated for the disposal of contaminated fill.

The Toronto Harbour Commissioners' most recent Annual Operating Plan for completion of the Leslie Street Spit, dated October 1988, outlines the plans for lakefilling operations from 1988 to 1991. It does not suggest what measures could be taken to limit exposure of humans, animals and plants to contaminated fill placed at protected disposed areas. This may have been because the Annual Operating Plan was prepared in light of the earlier decision by the Toronto Harbour Commissioners to accept only fill shown to comply with the Lakefill Quality Guidelines. However, it is unclear what, if any, environmental measures are being considered or implemented now that contaminated fill is to be accepted at the Leslie Street Spit.

3. Alternative Disposal Sites

An alternative to disposal of contaminated fill along the Lake Ontario shoreline is disposal inland. Much of the fill that fails the Lakefill Quality Guidelines, and is consequently directed to protected disposal areas, could probably be deposited on the surface at inland sites. This is because the OMOE Clean-up Guidelines for Soils, which may be applied to fill considered for inland disposal, establish levels for individual parameters that are generally higher than those of the Lakefill Quality Guidelines.

The MTRCA maintains an updated list of landfill and lakefill locations, which can be considered as a list of alternative disposal sites. Haulers of material that is unacceptable for lakefilling are directed by the MTRCA to inland sites on this list. Haulers of material from small sites could be directed to the same alternative disposal sites. The most recent updated list, dated January 11, 1989, lists 17 inland sites in and around Metropolitan Toronto.

A potential inland location in central Toronto is the western portion of the Railway Lands, where the volume of fill from the Skydome excavation is not sufficient to raise the grade an average of three metres, as planned. Another possible site is the St. Lawrence Square housing project, which may also require the grade to be raised. This option is one of several under consideration.

A further possibility would be to place fill in pits and quarries, once quarrying operations have been ceased. The Ontario Ministry of Natural Resources has licensed 151 pits and quarries in the Metropolitan Toronto area. There are also more than 300 never-licensed, unused pits and quarries in the area. It is likely that many of these could accommodate fill. Because most of the fill dumped in a quarry would be covered by substantial depths of other soil, quarries could accommodate material that should not be placed near the surface. Clearly, groundwater studies would have to be done before any such filling of quarries could be undertaken.

In the short term, it may be feasible to designate temporary stockpiling areas where material from small sites, that has not received laboratory testing, may be placed pending testing and rehandling to final disposal sites appropriate to test results. These may be inland, on publicly or privately owned or leased land in heavy industrial areas.

CONCLUSION:

The City of Toronto needs a comprehensive soil disposal policy that will direct clean and contaminated soil to environmentally appropriate, disposal sites. This would require coordination of the activities and interests of the Toronto Harbour Commissioners, the MTRCA, the Department of Public Works, the Department of Public Health, the Parks and Recreation Department and the Planning and Development Department, the Metropolitan Toronto Works Department, utilities companies, contractors and developers, and soils consultants. These agencies and private bodies have some involvement with lakefilling, and should be involved in the development of possible approaches to the environmentally sound disposal of excavated material.

An effective approach to achieving coordination of all concerns would be to establish a committee to report jointly to the Neighbourhoods Committee and the Board of Health. The committee could begin by considering the report to the Neighbourhoods Committee, now being prepared by the Acting Medical Officer of Health and the Commissioner of Public Works in consultation with the Commissioner of Planning and Development, regarding alternative disposal sites for excavated material. The committee could also seek the assistance of the OMOE in identifying alternatives to lakefill disposal sites.

Coordination would take several months to achieve, but in the meantime there are a number of options:

- Locations away from the Leslie Street Spit, such as those on the MTRCA's list of landfill sites, would provide sufficient capacity for the more contaminated fill that will be generated during the winter, when little excavation work is undertaken by works departments and utilities companies;

- It may be feasible to locate stockpiling areas for fill from small sites on land owned or leased by the City or by Metropolitan Toronto in industrial areas, or on vacant land owned by the Toronto Harbour Commissioners in the Port Industrial Area;

- It may be feasible for the Department of Public Works to alter its policies regarding the backfilling of small road and utilities works so as to reduce the amount of fill requiring off-site disposal significantly (perhaps by 30 to 40 percent).

Given the environmental concerns regarding lakefilling, it would be appropriate that an environmental assessment be completed

before lakefill quality criteria at any lakefill site are relaxed. It would also be appropriate that, in future, the Toronto Harbour Commissioners and the Metropolitan Toronto and Region Conservation Authority be requested to solicit and consider comments from all interested City departments before making policy decisions regarding materials to be accepted for disposal at the Leslie Street Spit.

Brian L. Gibson, M.D.

Brian L. Gibson, M.D., FRCPC,
Acting Medical Officer of Health

BM/ht