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RECORD OF DECISION AMENDMENT

102nd STREET LANDFILL

NIAGARA FALLS, NEW YORK

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II

NEW YORK, NEW YORK

DECLARATION STATEMENT
RECORD OF DECISION AMENDMENT

SITE NAME AND LOCATION

102nd Street Landfill
Niagara Falls, New York

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected modification to the original remedial action for the 102nd Street Landfill Site (the "Site"), located in Niagara Falls, New York. The original remedial action was selected in the Record of Decision (ROD) issued by the United States Environmental Protection Agency (EPA) on September 26, 1990.

The modification to the original remedy was chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision document explains the factual and legal basis for selecting the modification to the remedy for the Site.

The New York State Department of Environmental Conservation (NYSDEC) concurs with the selected modification. A letter of concurrence from the NYSDEC is attached to this document (Appendix 1).

The information supporting this remedial action decision is contained in the administrative record for the Site. The index for the administrative record is attached to this document (Appendix 2).

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from the Site, if not addressed by implementing the response actions selected in the September 26, 1990 ROD, as revised by this Record of Decision Amendment, may present an imminent and substantial threat to the public health, welfare, or the environment.

DESCRIPTION OF MODIFICATION TO THE SELECTED REMEDY

The modification to the selected remedy addresses the river sediments within the shallow embayment of the Niagara River adjacent to the Site.

The major components of the modification to the selected remedy include:

- Dredging the Niagara River sediments to the "clean line" with respect to Site-related contamination. These sediments, after dewatering, will **NOT** be incinerated, but will be consolidated on the landfill. Any NAPL found within theses sediments will be extracted, and will be incinerated at an off-site facility.

All of the other components of the original remedy as selected in the September 1990 ROD are **NOT** affected by this modification. These components are:

Capping of the Site
A synthetic-lined cap, constructed in accordance with federal and state standards, will be installed over the landfill and perimeter soils.

Consolidation of Soils
All off-site soils above cleanup thresholds, will be consolidated beneath the cap.

Erection of a Slurry Wall
A slurry wall, completely surrounding the Site's perimeter, will be constructed and keyed into the underlying clay/till geologic formation. The precise location of the slurry wall will be based upon data from geotechnical borings which have determined the extent of the NAPL plume(s). The NAPL plume(s) will be contained by the slurry wall.

Recovery and Treatment of Ground Water
Ground water will be recovered using an interception drain installed at the seasonal low-water table in the fill materials. Recovered ground water will be treated. Although the recovery of ground water does include a treatment component, the primary function of ground-water recovery in general, is to create and maintain an inward gradient across the slurry wall.

Recovery and Treatment of NAPL
NAPL beneath the Site will be recovered using dedicated extraction wells, and will be incinerated at an off-site facility.

Storm Sewer
The existing storm sewer, which crosses the Site, will be cut into pieces. The pieces will be filled with grout, and left in place on the Site. These remnants of the existing storm sewer will then be covered with fill and eventually will be covered by the cap.

(Note: The September 1990 ROD called for the slip-lining of the on-site storm sewer. In 1993, the EPA decided to re-route the storm sewer around the Site to the east rather than slip-lining it in place. This decision was embodied in an *Explanation of Significant Differences* (ESD) issued by the EPA in 1993.)

Monitoring
Post-remedial monitoring shall be performed to determine the effectiveness of the remedial alternatives which have been selected.

Restriction of Access
A 6-foot high chain-link fence will be installed around the perimeter of the cap in order to restrict access to the Site.

Institutional Controls
The EPA will recommend to local agencies that institutional controls be undertaken to ensure that future land use at the Site is restricted so as to preclude certain uses of the Site, such as restricting certain types of access to the Landfill and eliminating groundwater use for human consumption at the Site.

EXPLANATION OF FUNDAMENTAL CHANGE

The September 1990 ROD called for dredging and incinerating any highly contaminated embayment sediments if they were left outside the final positioning of the slurry wall. Any sediments with lower levels of contamination [that are still in excess of action levels] which would remain outside the slurry wall, would be dredged and placed beneath the cap. The preliminary remedial design had the slurry wall positioned in a straight-line direction, outside the two areas of highly contaminated sediments. Due to concerns raised by the natural resource trustees about the area of the embayment that would be filled in by constructing the slurry wall as currently designed, the EPA decided to evaluate modifying the design to move the slurry wall closer to the shoreline. The net effect of this re-design would be to "save" approximately three (3) acres of the embayment. As part of this evaluation, it was determined that if the slurry wall was moved and the sediments had to be incinerated, the costs had risen such that the original remedy was no longer cost effective.

Therefore, as described in this Record of Decision Amendment, *all* of the contaminated sediments in excess of action levels will be dredged and placed beneath the cap, rather than incinerating the highly contaminated sediments.

DECLARATION OF STATUTORY DETERMINATIONS

The original remedy, as revised by the selected modification, is protective of human health and the environment, complies with federal and state requirements that are legally applicable, or relevant and appropriate to the remedial actions, and is cost-effective. This modified remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for the Site. However, because treatment of the principal threats of the Site was not found to be practicable, this remedy does not satisfy the statutory preference for treatment as a principal element. Because the selected remedy will result in hazardous substances remaining on-site above health-based levels, a review will be conducted within five years after commencement of the remedial action to ensure that the selected remedy continues to provide adequate protection of human health and the environment.

Jeanne M. Fox
Regional Administrator

6/9/95
Date

TABLE OF CONTENTS

DECISION SUMMARY

RECORD OF DECISION AMENDMENT
102nd Street Landfill Site
Niagara Falls, New York

I.- INTRODUCTION

The 102nd Street Landfill Site (the "Site"), presently owned by Occidental Chemical Corporation (OCC), and Olin Chemicals (Olin), is a 22.1 acre landfill on the eastern edge of the City of Niagara Falls (the "City") and borders the Niagara River (the "River"). OCC, formerly Hooker Chemicals and Plastics Corporation, operated its 15.6 acre portion of the Site as an industrial waste landfill from approximately 1943 to 1970. Olin operated its 6.5 acre portion of the Site as an industrial waste landfill from 1948 to 1970. During these periods, OCC and Olin (the "Companies") deposited at least 159,000 tons of waste, in both liquid and solid form, into the landfill. This included approximately 4,600 tons of benzene, chlorobenzene, chlorophenols and hexachlorocyclohexanes (HCCHs).

On December 20, 1979, a complaint, pursuant to the Resource Conservation and Recovery Act (RCRA), the Clean Water Act (CWA), and the Rivers and Harbors Act of 1899 (RHA), was filed against the Companies in the U.S. District Court in Buffalo, New York, seeking injunctive relief and civil penalties for an imminent and substantial endangerment to the public health and welfare. The Site was formally listed as a National Priorities List (NPL) site on September 8, 1983.

The EPA and the Companies prepared a Work Plan for the Site in 1984, and thereafter the Companies commenced the Remedial Investigation (RI), a study of the nature and extent of contamination. The Feasibility Study (FS) Work Plan, as defined in a Stipulation and Decree entered with the U.S. District Court in Buffalo on May 15, 1989, was prepared by the EPA and the NYSDEC and agreed to by the Companies. The Work Plan provided the guidance under which the Companies conducted the FS; the FS report describes the development and evaluation of all of the remedial alternatives for the Site. Throughout the RI/FS process, the EPA, in consultation with the NYSDEC, reviewed all of the interim documentation and monitored the collection and analysis of samples from the Site.

The Site is bounded to the south by a shallow embayment of the River. A stone-faced bulkhead, constructed in the early 1970s to minimize soil erosion to the River, runs along the length of the shoreline at the Site. The embayment lies at the upstream end of the Little Niagara River which flows around the north shore of Cayuga Island before discharging into the River approximately 1.5 miles downstream from the Site. To the west of the Site is Griffon Park, which was formerly used as a landfill for municipal waste by the City. A number of recreational facilities formerly existed at

the park, including a baseball diamond and a boat ramp. Only the boat ramp remains functional. Griffon Park is bordered on the west by the Little Niagara River. Across the Little Niagara River is Cayuga Island, which is a residential community. The property to the east of the Site (the "Belden Site") is zoned "residential" with one current residence, but is otherwise an unimproved densely brushed field. A drainage ditch runs through the Belden Site, parallel to the eastern edge of the 102nd Street Site, and into the River.

The 100th Street storm sewer presently crosses the Site and discharges to the River. Ground water was observed and measured infiltrating the storm sewer both during the RI and in earlier investigations. The storm sewer carries runoff from the Love Canal area and drains Buffalo Avenue in the immediate vicinity of the Site.

In September 1990, the EPA issued a Record of Decision (the "ROD" or the "September 1990 ROD") which selected, as a remedy, the capping of the landfill, the construction of a circumferential slurry wall to encapsulate the landfill (and any NAPL plume migrating from the landfill), the installation of ground-water controls to eliminate contaminant migration from the encapsulated landfill, the slip-lining of the on-site storm sewer, and the dredging of contaminated sediments from the adjacent embayment in the River. In 1993, the EPA decided to re-route the storm sewer around the Site rather than slip-lining it in place. This decision was embodied in an *Explanation of Significant Differences* (ESD) issued by the EPA in 1993.

The ROD also called for dredging and incinerating any highly contaminated embayment sediments if they were left outside of the final positioning of the slurry wall. Sediments with lower levels of contaminants which would remain outside the slurry wall, would be dredged and placed beneath the cap.

As described in this Record of Decision Amendment (the "Amendment"), the EPA will be dredging all of the contaminated sediments out to a "clean line" where contaminants in the sediments no longer exceed action levels developed to assure protection of the aquatic environment and will be placing such sediments beneath the cap, rather than incinerating the highly contaminated sediments.

II.- HIGHLIGHTS OF COMMUNITY PARTICIPATION

The Post-Decision Proposed Plan (PDPP) for the Site was released to the public in early December 1994. The PDPP, along with all other site-related documents, are available to the public at both the administrative record and the information repository locations. A summary of the PDPP and a notice as to the availability of these documents and the administrative record was published in *The Niagara Gazette* on Friday, December 2, 1994.

The public comment period began on December 2, 1994, and ended on January 25, 1995. A public meeting was held on December 14, 1994 at the Red Jacket Inn located in Niagara Falls, New York. The purpose of the public meeting was to discuss the proposed amendment to the September 1990 ROD.

The responses to the comments received during the public comment period as well as those expressed verbally at the public meeting, are stated in the Responsiveness Summary, which is an attachment to this Record of Decision Amendment.

This decision document, meaning the Record of Decision Amendment, presents the selected remedial action for the disposition of the contaminated sediments found in the embayment adjacent to the Site, chosen in accordance with CERCLA as amended by SARA, and, to the extent practicable, the NCP, 40 CFR Part 300. The decision as made for the Site, is based upon the administrative record. An index for the administrative record is included as an attachment to this document. This Record of Decision Amendment will become a part of the administrative record file.

The administrative record file, containing the information upon which the modification to the original remedy is based, is available at the following locations:

U.S. Environmental Protection Agency
290 Broadway - Records Center
New York, New York 10007-1866
212-637-3000
Hours: Monday - Friday: 9:00 a.m. to 4:30 p.m.

U.S. EPA Public Information Office
Carborundum Center - Suite 530
345 Third Street
Niagara Falls, New York 14303
716-285-8842
Hours: Monday - Friday: 9:00 a.m. to 4:30 p.m.

III.- REASONS FOR ISSUING THE RECORD OF DECISION AMENDMENT

After the September 1990 ROD was signed, the EPA commenced negotiations with the Companies for their undertaking of the remedial design and remedial action phases of the project. When negotiations failed, in September 1991, the EPA issued a Unilateral Administrative Order for implementation of the remedy. The remedial design began in 1991 and was at the 65% completion stage in August 1993. With the 1993 design, the slurry wall was positioned *outside* the two areas of highly contaminated sediments. The decision to place the slurry wall outside these areas was based on several factors: the technical practicalities of a straight-line design; the fact that incineration which was the source of considerable concern to the community would not be required with a straight-line design; and an anticipated savings of the projected

cost in incineration, which in 1990 dollars, was estimated to be approximately $2 million. It should be noted that the straight-line design of the slurry wall would have impacted 6 acres of the embayment.

In August 1993, the natural resource trustees raised concerns about the area of the embayment that would be filled in by constructing the slurry wall as currently designed. These concerns of the natural resource trustees were based upon the prospective loss of irreplaceable habitat as found in the embayment. Based on these concerns, the EPA decided to evaluate modifying the design to move the slurry wall closer to the shoreline.

The Companies agreed to conduct a supplemental borings program in order to determine if the NAPL plumes had extended past the shoreline. It should be noted that the primary aim of the selected remedy is to contain the NAPL plumes within the slurry wall and thereby prevent further migration of the NAPL.

The results of the supplemental borings program indicated that the NAPL did *not* extend beyond the shoreline. This meant then that the slurry wall could be designed to run along the contours of the shoreline. The net effect of this re-design would be to "save" approximately three (3) acres of the embayment, while at the same time requiring the excavation and incineration of the highly contaminated sediments since they now would be *outside* the slurry wall.

Under the original remedy, the realignment of the slurry wall would require incineration of sediments at an approximate fifteen fold increase over the costs projected in 1990. The increase in cost is due to the following factors:

1. The original cost estimate in 1990 to incinerate 6,440 tons of highly contaminated sediments came to approximately $2 million. This figure was based on a unit cost of $200 to $300 per ton. This assumes an excavation depth of two (2) feet in order to arrive at 6,440 tons (4,600 cubic yards).

2. The anticipated cost of $2 million also was projected on the basis of incremental operational costs for the solids incinerator which OCC is obligated to build at its Buffalo Avenue Niagara Falls facility pursuant to the requirements of the Partial Consent Decree entered in U.S. District Court for the Love Canal Landfill, as well as pursuant to similar requirements for the S-Area Landfill. It was anticipated that this OCC solids incinerator would also have been available for the treatment of any sediments from the 102nd Street Site that would have required incineration pursuant to the September 1990 ROD.

3. At the present time, the schedule for construction of this incinerator has been suspended, upon notice to the Court, by an informal agreement of the parties to these Consent Decrees pending efforts by OCC to secure approval of incineration of its wastes at a facility in the State of Utah. The incineration facility in Utah has been constructed but has not yet been fully tested and permitted for commercial operation. Once it is permitted for commercial operation, it must still receive special permits and approvals for incineration of the remedial wastes such as dioxin-contaminated sediments.

4. At the present time, if incineration of the highly contaminated sediments were a requirement, it would be necessary to truck the sediments to the only facility in the United States currently permitted for the incineration of these types of waste. This facility is located in the Midwest. The cost for incineration alone at this facility would be $4,000 per ton. This does not include transport costs or preparation expenses. At $4,000 per ton, the incineration costs alone would approximate $26 million. The total costs including preparation and transport are projected to approximate $30 million.

Due to the change in costs, incineration of the highly contaminated sediments is no longer considered to be cost-effective. Therefore, the EPA decided that the September 1990 ROD must be amended to eliminate the incineration contingency.

IV.- DESCRIPTION OF ALTERNATIVES

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires that each selected remedy be protective of human health and the environment, be cost-effective, comply with other statutory laws, and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. In addition, the statute includes a preference for treatment as a principal element for the reduction of toxicity, mobility, or volume of the hazardous substances.

The costs presented below for each alternative include capital costs and operation and maintenance (O & M) costs over a ten-year period.

ALTERNATIVE I.- EXISTING REMEDY AS SELECTED IN THE SEPTEMBER 1990 RECORD OF DECISION (AS MODIFIED BY THE 1993 ESD):

Capping/ Consolidation of Soils/ Erection of a Slurry Wall/ Recovery and Treatment of Ground Water/ Recovery and Treatment of NAPL/ Embayment Sediments (Incineration Contingency)/ Re-Routing of Storm Sewer/ Post-Remedial Monitoring/ Restriction of Access/ Institutional Controls

This alternative, which is defined as the selected remedy in the September 1990 ROD, consists of a containment system for the landfill, and in the case of the embayment sediments, incineration of the highly contaminated sediments if they remain outside the final positioning of the slurry wall.

The component for the recovery and treatment of ground water relates only to the plan to create an inward gradient across the slurry wall. This will prevent the escape of any contaminants from the landfill. The final positioning of the slurry wall was determined by the approval by the EPA and the NYSDEC of the 65% remedial design.

In order to make an appropriate comparison, it must be assumed that the incineration contingency has been triggered, and that the additional incineration costs are included.

The following cost figures are from the September 1990 ROD, and hence are stated in 1990 dollars.

Estimated Capital Cost:	$22,870,000
Estimated O & M Costs:	7,210,000
Estimated Present-Worth Cost (in 1990 dollars):	30,080,000
Estimated Present-Worth Cost (in 1994 dollars):	39,429,000
Additional Cost Due to Incineration (in 1994 dollars):	30,000,000
Estimated TOTAL Present-Worth Cost (in 1994 dollars):	69,429,000
Times to Implement -	
Remedial Design:	1 year
Remedial Action:	5 to 7 years

ALTERNATIVE II.- MODIFIED REMEDY AS SELECTED IN THIS RECORD OF DECISION AMENDMENT

Capping/ Consolidation of Soils/ Erection of a Slurry Wall/ Recovery and Treatment of Ground Water/ Recovery and Treatment of NAPL/ Embayment Sediments/ Re-Routing of Storm Sewer/ Post-Remedial Monitoring/ Restriction of Access/ Institutional Controls

This alternative, which is defined as the selected remedy in the Record of Decision Amendment, consists of all of the features found in the remedy selected in the September 1990 ROD, except that the incineration contingency has been eliminated, and the slurry wall will be moved shoreward and run along the general contours of the shoreline. The primary purpose of the September 1990 ROD (containing the NAPL plumes) will still be maintained.

The increased costs of constructing the slurry wall along the contours of the shoreline and the dredging of additional volumes of sediments, will be offset by the cost savings due to the reduced size of the cap.

Estimated Capital Cost:	$22,870,000
Estimated O & M Costs:	7,210,000
Estimated Present-Worth Cost (in 1990 dollars):	30,080,000
Estimated Present-Worth Cost (in 1994 dollars):	39,429,000

Times to Implement-	
Remedial Design:	1 year
Remedial Action:	3 years

V.- EVALUATION OF ALTERNATIVES

In accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), a detailed analysis of each alternative is required. The detailed analysis consists of an assessment of the two alternatives against each of nine evaluation criteria and a comparative analysis focusing upon the relative performance of each alternative against those criteria.

The following "threshold" criteria must be satisfied by any alternative in order to be eligible for selection:

1. *Overall protection of human health and the environment* addresses whether or not a remedy provides adequate protection and describes how risks posed through each exposure pathway (based on a reasonable maximum exposure scenario) are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

2. *Compliance with ARARs* addresses whether or not a remedy would meet all of the applicable (legally enforceable), or relevant and appropriate federal and state environmental statutes and requirements (*i.e.*, those that pertain to similar situations encountered at a Superfund site so that their use is well suited to the Site) or provide grounds for invoking a waiver.

The following "primary balancing" criteria are used to make comparisons and to identify the major trade-offs between alternatives:

3. *Long-term effectiveness and permanence* refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met. It also addresses the magnitude and effectiveness of the measures that may be required to manage the risk posed by treatment of residuals and/or untreated wastes.

4. *Reduction of toxicity, mobility, or volume via treatment* refers to the remedial technology's expected ability to reduce the toxicity, mobility, or volume of hazardous substances, pollutants or contaminants at the site.

5. *Short-term effectiveness* addresses the period needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation periods until cleanup goals are achieved.

6. *Implementability* refers to the technical and administrative feasibility of a remedy, including the availability of the materials and services needed.

7. *Cost* includes estimated capital and operation and maintenance costs, and the present-worth cost.

The following "modifying" criteria are considered fully after the formal public comment period on the Post-Decision Proposed Plan is completed:

8. *State acceptance* indicates whether, based on its review of the RI/FS and the Proposed Plan, the State supports, opposes, and/or has identified any reservations with the preferred alternative.

9. *Community acceptance* refers to the public's general response to the alternatives described in the Proposed Plan and the RI/FS reports. Factors of community acceptance to be discussed include support, reservation, and opposition by the community.

A comparative analysis of the alternatives based upon these evaluation criteria follows. The comparative analysis focuses upon the essential difference in the two alternatives: the incineration of dredged sediments versus the reconsolidation of the dredged sediments within the slurry wall and beneath the capped landfill.

1.- Overall Protection of Human Health and the Environment:

Both remedies (existing and modified) are considered to be protective of human health and the environment. Both remedies will require the same type of dredging operations. However, the proposed Alternative II will require the dredging of a greater volume of sediments. The relative volumes of the sediments to be dredged, more in the case of the modified remedy, will have no impact on the analysis within this criterion.

The consolidation of dredged sediments within the slurry wall and beneath the landfill cap will effectively isolate the sediments from the environment. It should be noted that thousands of tons of waste material will remain within the landfill following closure and final capping. These wastes will be physically contained by

the slurry wall and cap; these wastes will be hydraulically contained by the ground-water pumping and treating components of the remedy. Monitoring is required to ensure that these physical and hydraulic systems are effective in containing the wastes in the landfill.

2.- Compliance with Applicable, or Relevant and Appropriate Requirements (ARARs):

Applicable or relevant and appropriate requirements (ARARs) are those federal or state environmental and public health regulations that apply to remedial activities at a site.

In the September 1990 ROD, the EPA had determined that the original remedy would comply with federal and state ARARs. During the subsequent design phase in 1993 for the implementation of the remedy, the federal and state natural resources trustees raised concerns that the remedy, as then designed, would result in the loss of approximately six acres of irreplaceable habitat in the embayment area. The trustees requested that the design be reassessed to determine if it would be feasible from an engineering perspective to modify the design so that any such habitat losses would be minimized. A reassessment was conducted as described in more detail in Section III. above. The modification of the remedy as selected in this Record of Decision Amendment was the direct result of this reassessment process. The modified remedy will avoid the destruction of somewhat more than half of these six acres of habitat. The modified remedy will more fully comply with the ARARs identified in the 1990 ROD for minimizing the loss of habitat as well as for implementing the remedy in a manner consistent with state coastal plans as required by the Coastal Zone Management Act (CZMA). The evaluations required by the CZMA as well as by the cultural resource reports required by the National Historic Preservation Act (NHPA) are currently being developed.

In all other respects, the analysis contained in the September 1990 ROD that the remedy complies with all federal and state ARARs substantially remains unchanged for the modified remedy.

3.- Long-Term Effectiveness and Permanence:

Incineration of highly contaminated sediments offers greater permanence because the contaminants are actually destroyed. However, if the sediments are placed on the landfill, completely encapsulated within the slurry wall and the cap, and if long-term monitoring controls are properly implemented, there should be an equivalent degree of effectiveness with either alternative.

It should be noted that the estimated mass of contaminants within these sediments would increase the total mass of contaminants already in the landfill by less than 1%.

4.- Reduction of Toxicity, Mobility, or Volume:

Both alternatives will control or reduce the toxicity, mobility, and volume of the contaminants through treatment (*i.e.*, groundwater treatment and NAPL incineration) and encapsulation of landfill residuals. With the original ROD remedy, the toxicity and the volume of the sediments would be reduced through incineration. In the case of the modified remedy, there will be no reduction in the toxicity or the volume of the contaminated sediments, but the contaminated sediments will be immobilized through encapsulation.

5.- Short-Term Effectiveness:

Any alternative involving incineration will be least effective over the short term due to the anticipated delays in procuring the availability of an incinerator. In the case of the modified remedy, once the incineration contingency is removed, the prospects over the short term will improve significantly.

Any dredging work associated with the removal of sediments from the River can have short-term impacts on the River due to the release of contaminated sediments into the River. However, prior to the initiation of any dredging work, a berm will be constructed beyond the area of contamination so as to effectively retain any loosened sediments, thereby preventing their transport into the River proper from the embayment.

6.- Implementability:

In comparing the two remedies, there are significant problems in terms of implementing the incineration contingency mainly because of the lack of availability of a local incinerator and the fact that there is only one incinerator nationwide which has both the capability and all required permits, approvals, and authorizations to handle dioxin-containing sediments.

Both the modified remedy and the original remedy may encounter some technical problems with regard to sediment control, dewatering, and berm installation. However these types of problems are manageable with existing technology.

7.- Costs:

The present-worth cost for the existing remedy, in 1994 dollars, with the incineration contingency operative, is $69,429,000.

The present-worth cost for the modified remedy, also in 1994 dollars, is $39,429,000.

8.- State Acceptance:

The State of New York (NYSDEC) has concurred on the selection of the modified remedy.

9.- Community Acceptance:

The community's reaction to the modified remedy as received during the public comment period, as well as at the public meeting, is contained in the Responsiveness Summary which is included as a part of this decision document.

In general, the public appeared to be receptive to the EPA's decision to modify the selected remedy.

VI.- SELECTED REMEDY

Based on consideration of the requirements of CERCLA, the detailed analysis of the alternatives, and the comments received during the public comment period, the EPA has determined that Alternative II is the most appropriate remedy for the Site.

As described above, Alternative II, which is the remedy selected in this Amendment, consists of all the features found in the remedy selected in the September 1990 ROD, except that the incineration contingency has been eliminated, and the slurry wall will be moved shoreward and will run along the general contours of the shoreline. The primary purpose of the September 1990 ROD (containing the NAPL plumes) will still be maintained.

VII.- STATUTORY DETERMINATIONS

Under its legal authorities, the EPA's primary responsibility at Superfund sites is to undertake remedial actions that achieve adequate protection of human health and the environment. In addition, Section 121 of CERCLA establishes several other statutory requirements and preferences that the selected remedy must meet. Section 121 of CERCLA specifies that when complete, the selected remedial action for the Site must comply with ARARs established under federal and state environmental laws unless a statutory waiver is justified. The selected remedy, also, must be cost-effective and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Finally, the statute includes a preference for remedies that employ treatment that permanently and significantly reduce the volume, toxicity, or mobility of hazardous wastes as their principal element. The following sections discuss how the selected remedy meets these statutory requirements.

Protection of Human Health and the Environment:

Since both the original remedy and the modified remedy will necessitate the same type of dredging operations, the modified remedy will have no impact within this statutory determination, and thus is protective of human health and the environment.

While the modified remedy will require the dredging of a greater total volume of sediments since the slurry wall will be repositioned along the shoreline, this again should have no impact on the overall protection of human health and the environment since the contaminated sediments will, in both cases, be encapsulated within the slurry wall and beneath the cap.

Compliance with Applicable, or Relevant and Appropriate Requirements (ARARs):

The original analysis with respect to ARARs, as contained in the September 1990 ROD, held that the original remedy did comply with all federal and state ARARs.

Since the modified remedy will change only the volumes and types of sediments to be dredged, *i.e.*, a greater total volume will be dredged, which will consist of both contaminated and highly contaminated sediments, there should be no substantive variation from the original analysis which found a positive compliance with all federal and state ARARs.

Cost-Effectiveness:

Cost-effectiveness is a critical component used in the balancing of the evaluation criteria. Superior cost-effectiveness was therefore a factor which eventually led to the selection of the modification as opposed to the unmodified original remedy.

The present-worth cost for the original remedy, in 1994 dollars, with the incineration contingency operative, is $69,429,000.

The present-worth cost for the selected modification, also in 1994 dollars, is $39,429,000.

Utilization of Permanent Solutions and Alternative Treatment Technologies (or Resource Recovery Technologies) to the Maximum Extent Practicable:

There is no change in this statutory determination when the original remedy is compared to the selected modification.

The EPA and the NYSDEC believe that the original remedy as well as the selected modification, represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a cost-effective manner at the Site.

Preference for Treatment as a Principal Element:

There is no change in this statutory determination when the original remedy is compared to the selected modification.

In the case of the original remedy as well as the selected modification, the preference for treatment as a principal element is *not* satisfied since treatment of the principal threat (the landfill residuals) was found to be distinctly impractical.

However, the material containing the highest concentrations of contaminants, meaning the recovered NAPL, will still be treated through off-site incineration.

APPENDIX 1

Concurrence Letter from the NYSDEC

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-7010

MAY 12 1995

Michael Zagata
Commissioner

Mr. William J. McCabe
Deputy Director
New York/Caribbean Programs
Emergency and Remedial Response Division
U.S. Environmental Protection Agency
290 Broadway, 20th Floor
New York, New York 10007-1866

Re: 102nd Street Landfill (Site #932022, 932031)
Amended Record of Decision

Dear Mr. McCabe:

The State has reviewed the draft Amended Record of Decision (AROD), dated May 1, 1995, for the remediation of sediments at the 102nd Street Landfill. The draft AROD eliminates the requirement to incinerate sediments dredged from the "hot spot" areas, instead allowing reconsolidation of the "hot spot" sediments within the landfill containment and under the final cap. The State comments on a previous draft AROD were submitted by the State on March 31, 1995 and have been adequately incorporated into the AROD.

The New York State Department of Health has also reviewed the draft AROD and concurs with the recommended changes. As such, the State agrees with the AROD as amended and recommends that it be executed as soon as possible.

The State recognizes and supports the EPA decision to retain the 200 ug/kg cleanup level for mercury in the sediments of the embayment as set forth in the 1990 Record of Decision. In light of this decision, the State requests EPA's commitment to make rehabilitation of the embayment habitat a high priority for this project. The final remedial design for this site must include a comprehensive mitigation plan to return habitat that will be affected by the sediment dredging to its current condition, that is one which supports the fish and wildlife currently within the habitat. The mitigation plan must have clearly defined performance objectives and must include both an aggressive planting plan and a long term requirement for replanting should performance objective not be met or maintained.

The mitigation plan must be accompanied by a pre-construction inventory to accurately define the habitat vegetation species composition and the percentage of areal coverage and plant density for each species in the embayment. The pre-construction inventory must be completed this year while the vegetation is showing and readily identified. Further, design and implementation of the dredging of the sediments must not impact any more of the habitat than is absolutely necessary.

Thank you for the opportunity to review the draft AROD. We are prepared to assist in any way that we can with EPA's efforts to complete a comprehensive habitat rehabilitation program.

Sincerely,

Michael J. O'Toole, Jr.
Director
Division of Hazardous Waste Remediation

cc: G. Anders Carlson, NYSDOH
C. Petersen, USEPA
K. Lynch, USEPA
P. Olivo, USEPA
N. Spiegel, NYSDOL

APPENDIX 2

Index for the Administrative Record

102 STREET LANDFILL
NIAGARA FALLS, NEW YORK
ADMINISTRATIVE RECORD FILE
INDEX OF DOCUMENTS

SITE IDENTIFICATION

Background - RCRA and Other Information

P. 1 - 57A — A Computer Print Out of 102nd Street Landfill Documents. May 18, 1990.

REMEDIAL INVESTIGATION

Sampling and Analysis Plans

P. 58 - 164 — Report: Site Operations Plan (Task 4), Draft, 102nd Street Landfill site, prepared by Olin Chemicals Group- Occidental Chemical Corporation, June 1984.

P. 165 - 177 — Report: Addendum No. 1, Site Operations Plan, 102nd Street Landfill Site, prepared by Woodward-Clyde Consultants, May 28, 1985.

P. 178 - 203 — Report: Addendum No. 2, Site Operations Plan, 102nd Street Landfill Site, prepared by Olin Chemical Group- Occidental Chemical Corporation, June 13, 1985.

P. 204 -243 — Letter to Mr. Paul J. Olivo, U.S. EPA, and Mr. Murray E. Sharkey, Department of Environmental Conservation from D. L. Cummings, Olin Chemical Group, and J. A. Cull, Occidental Chemical Corporation, re: Assessment of Chemical Monitoring Program. November 30, 1987. The Quality Assurance Plans & Analytical Protocols for the Assessment Chemical Monitoring program is attached.

Sampling and Analysis Data/Chain of Custody Forms

P. 244 - 341	Report: 102nd Street Landfill, Hydrogeologic Evaluation, prepared by GTC Geologic Testing Consultants LTD., June 1, 1984. References are listed on P.
P. 343 - 374	Memorandum to R. L. Comboy, from E.A. Dietz, Occidental Chemical Corporation, re: Results from Determination of Organic Vapors Trapped on Charcoal Tubes- 102nd Street Air Monitoring of Worker Exposure. November 21, 1985. The results are attached.
P. 375 - 393	Report: Monitoring Well Inspection, 102nd Street Landfill, Niagara Falls, New York, prepared by Woodward-Clyde Consultants, January 10, 1986.
P. 394 - 498	Report: Geologic and Well Construction Logs, 102nd Street Landfill Remedial Investigation Niagara Falls, New York, prepared by Geotrans, Inc., May 15, 1986.
P. 499 - 546	Report: OCC NAPL Analysis, Part I, 102nd Street Landfill Site, prepared by Occidental Chemical Corporation, September 12, 1986.
P. 547 - 677	Report: Monitoring Well/Borehole Stratigraphic & Instrumentation Logs, 102nd Street Landfill Remedial Investigation, Niagara Falls, New York, prepared by Occidental Chemical Corporation. Date is unknown.
P. 678 - 920	Report: Information Report No. 2, 102nd Street Landfill, Remedial Investigation, Niagara Falls, New York, prepared by Olin Chemicals Group and Occidental Chemical Corporation, June 1987.
P. 921 - 947	Report: Quality Assurance Evaluation of Site Specific Parameters Extended Survey- Groundwater, First Iteration, 102nd Street Landfill, prepared by unknown, September 8, 1987.

P. 948 - 998	Letter to Mr. Alan A. Fuchs, Department of Environmental Conservation, and Mr. Paul J. Olivo, U.S. EPA, from Mr. David L. Cummings, Olin Corporation, and Mr. Jay A. Cull, Occidental Chemical Corporation, re: Quality Assurance Evaluation. September 29, 1987. The Quality Assurance Evaluation, Chlorobenzoic Acid Data on First and Third Iteration Samples Extended Survey-Groundwater and Bulkhead Investigation Report, September 1987, is attached.
P. 999 - 1078	Report: OCC NAPL Analyses, Part 3, 102nd Street Landfill Site, prepared by Occidental Chemical Corporation, October 16, 1987.
P. 1079 - 1094	Letter to Mr. Paul J. Olivo, U.S. EPA, and Mr. Alan A. Fuchs, Department of Environmental Conservation, from Mr. David L. Cummings, Olin Corporation, and Mr. J. A. Cull, Occidental Chemical Corporation, re: Quality Assurance Evaluation. October 26, 1987. The Quality Assurance Evaluation, General Parameters for extended Survey of Groundwater, Fifth Iteration Report, October 29, 1987 is attached.
P. 1095 - 1211	Letter to Mr. Paul J. Olivo, U.S. EPA, and Mr. Alan A. Fuchs, Department of Environmental Conservation, from Mr. Alan F. Weston, Occidental Chemical Corporation, re: Quality Assurance Data Review. November 4, 1987. The Quality Assurance Data Review, 102nd Street Landfill Soil, and Sediment Analysis, Rounds 4 and 5 is attached.
P. 1212 - 1248	Letter To Mr. P. J. Olivo, U.S. EPA, and Mr. Murray E. Sharkey, Department of Environmental Conservation, from Mr. D. L. Cummings, Olin Chemical Corporation, and J. A. Cull, Occidental Chemical Corporation, re: Supplementary NAPL Investigation. December 11, 1987. The Supplemental NAPL Investigation Report is attached.

P. 1249 - 1300 — Letter to Mr. Paul J. Olivo, U.S. EPA, and Mr. Thomas R. Christoffel, Department of Environmental Conservation, from Mr. D. L. Cummings, Olin Chemicals Group, and Mr. J. A. Cull, Occidental Chemical Corporation, re: Niagara River Borehole Drilling Program. March 31, 1988. The Niagara River Borehole Drilling Program Report, March 18, 1988, is attached.

P. 1301 - 1400c — Letter to Mr. Paul J. Olivo, U.S. EPA, and Mr. Thomas R, Christoffel, Department of Environmental Conservation, from Mr. Alan F. Weston, Oxychem, re: OCC NAPL Analyses, Part 4. April 14, 1988. A revised version of Analytical Report 29 and the OCC NAPL Analyses, Part 4 are attached.

P. 1401 - 1425 — Letter to Mr. Paul J. Olivo, U.S. EPA, and Mr. Thomas r. Christoffel, New York State Department of Environmental Conservation, from Ms. L. M. Miller, Olin Corporation, and Mr. Alan F. Weston, Occidental Chemical Corporation, re: Quality Assurance Evaluation. April 18, 1988. The Quality Assurance Evaluation of Site Specific Parameters, Extended Survey, Groundwater, Sixth Iteration, November 1987 report is attached.

P. 1426 - 1433 — Report: Quality Assurance Evaluation of Chlorobenzoic Acid, Off-Site Wells, Groundwater, February 1988-April 1988, 102nd Street Site Investigation, prepared by Olin Chemicals Group, April, 1988.

P. 1434 - 1485 — Letter to Mr. Paul J. Olivo, U.S. EPA, and Mr. Thomas R. Christoffel, New York State Department of Environmental Conservation, from Mr. David L. Cummings, Olin Corporation, and Mr. Jay A. Cull, Occidental Chemical Corporation, re: Revision 1 of the Niagara River Borehole Drilling Program. May 6, 1988. The Niagara River Borehole Drilling Program, Revision 1, May 5, 1988, is attached.

P. 1486 - 1510	Letter to Mr. Paul J. Olivo, U.S. EPA and Mr. Thomas R. Christoffel, New York State Department of Environmental Conservation, from Ms. Lorraine M. Miller, Olin Corporation, and Mr. Alan F. Weston, Occidental Chemical Corporation, re: Quality Assurance Evaluation. May 9, 1988. The Quality Assurance Evaluation of General Parameters for Extended Survey-Groundwater, Sixth Iteration- November 1987 report is attached.
P. 1511 - 1557	Letter to Mr. Paul J. Olivo, U.S. EPA, and Mr. Thomas R. Christoffel, New York State Department of Environmental Conservation, from Mr. David L. Cummings, Olin Corporation, and Mr. Jay A. Cull, Occidental Chemical Corporation, re: Assessment Chemical Monitoring Program. May 25, 1988. The Response to EPA/State. April 21, 1988 Comments and the Quality Assurance Plans and Analytical Protocols for the Assessment Chemical Monitoring Program report is attached.
P. 1558 - 1593	Letter to Mr. Paul J. Olivo, U.S. EPA, and Mr. Thomas R. Christoffel, New York State Department of Environmental Conservation, from Mr. David L. Cummings, Olin Corporation, and Mr. Jay A. Cull, Occidental Chemical Corporation, Re: Revision of Supplementary NAPL Investigation. June 3, 1988. The Supplemental NAPL Investigation, Revision 1, 102nd Street Landfill, Remedial Investigation report, June 3, 1988, is attached.
P. 1594 - 1622	Letter to Mr. Paul J. Olivo, U.S. EPA, and Mr. Thomas R. Christoffel, from Mr. Alan F. Weston, Occidental Chemical Corporation, and Ms. L. M. Miller, Olin Corporation, re: Quality Assurance review of Soil, Sediment, and Sewer bedding data. June 6, 1988. The Quality Assurance data, May 18, 1988, is attached.

P. 1623 - 1633	Letter to Mr. Paul J. Olivo, U.S. EPA, and Mr. Thomas R. Christoffel, New York State Department of Environmental Conservation, from Ms. Lorraine M. Miller, Olin Corporation, and Mr. Alan R. Weston, Occidental Chemical Corporation, re: Quality Assurance Evaluation. June 14, 1988. The Quality Assurance Evaluation of Chloraobenzoic Acid Extended Survey-Groundwater, Sixth Iteration, November 1987 report is attached.
P. 1634 - 1646	Letter to Mr. Paul J. Olivo, U.S. EPA, and Mr. Thomas R. Christoffel, New York State Department of Environmental Conservation, from Ms. Lorraine M. Miller, Olin Corporation, re: Quality Assurance Evaluation- General Parameters for Off-Site Wells. June 24, 1988. The Quality Assurance Evaluation of General Parameters for Off-Site Wells- Groundwater, February 1988-April 1988 report is attached.
P. 1645 - 1664	Letter to Mr. Paul J. Olivo, U.S. EPA, and Mr. Thomas R. Christoffel, New York State Department of Environmental Conservation, from Ms. Lorraine M. Miller, Olin Corporation, re: Quality Assurance Evaluation. June 24, 1988. The Quality Assurance Evaluation of Site Specific Parameters, Off-Site Wells, Groundwater, February 1988, April 1988 report is attached.
P. 1665 - 1677	Report: <u>102nd Street Landfill Site Project, Quality Assurance Report, NAPL Analysis Parts 3 and 4</u>, prepared by Occidental Chemical Corporation, William E. Lesoux, Quality Assurance Officer, September 1, 1988.

P. 1678 - 1716 — Letter to Mr. Paul J. Olivo, U.S. EPA, and Mr. Thomas R. Christoffel, New York State Department of Environmental Conservation, from Mr. David L. Cummings, Olin Corporation, and Mr. Jay A. Cull, Occidental Chemical Corporation, Re: Revision 2 of the Supplemental NAPL Investigation report. December 20, 1988. The Supplemental NAPL Investigation Revision 2 report, December 1988, is attached.

P. 1717 - 1857 — Report: Final Report Assessment Chemical Monitoring Program, prepared by Woodward-Clyde Consultants, June 27, 1989.

P. 1858 - 1869 — Report: Air Quality Impacts Modeling Analysis, Excavation Under Alternative OU1, 5C, prepared by Sirrine Environmental Consultants, July 1990.

Work Plans

P. 1870 - 1936 — Report: Work Plan for the Remedial Investigation 102nd Street Landfill Site, Niagara Falls, New York, prepared by unknown. June 1984. References are cited at end of report.

P. 1937 - 2145 — Report: Project for Performance of Remedial Response Activities at Uncontrolled Hazardous Substance Facilities- Zone 1, prepared by NUS Corporation, Superfund Division. March 28, 1985.

P. 2146 — Work Chart: 102nd Street Remedial Investigation Schedule, Prepared by CRA, work tasks graphed against time schedule, Revision. November 26, 1985.

Remedial Investigation Reports

P. 2147 - 2250 — Report: 102nd Street Landfill Site, Remedial Investigation, Environmental Health and Safety Plan, prepared by Occidental Chemical Corporation and Olin Corporation. March 1, 1985.

P. 2251 - 2257 — Report: Resident Engineering Services, 102nd Street Spoils cell Construction, Niagara Falls, New York, prepared by Woodward-Clyde Corporation. Date Unknown.

P. 2258 - 2710 Report: Remedial Investigation Final Report, Volume 1- Text, 102nd Street Landfill Site, Niagara Falls, New York, prepared by Conestoga-Rover & Associates, and Woodward-Clyde Consultants. July 1990. A copy of report is attached.

P. 2711 - 2874 Report: Remedial Investigation Final Report, Volume 2- Appendices & Plans, 102nd Street Landfill Site, Niagara Falls, New York, prepared by Conestoga- Rover & Associates, and Woodward-Clyde Consultants. July 1990. A copy of report is attached.

Correspondence

P. 2875 - 2881 Letter to Mr. Paul J. Olivo, U.S. EPA, and Mr. Thomas R. Christoffel, New York State Department of Environmental Conservation, from Mr. Alan F. Weston, Occidental Chemical Corporation, re: Response to the EPA/State November 21, 1988, on the Quality Assurance Plans and Analytical Protocols for the Assessment Chemical Monitoring Program. December 12, 1988. The response and the report is attached.

FEASIBILITY STUDY

Feasibility Study Work Plans

P. 2882 - 2932 Report: 102nd Street Feasibility Study Work Plan. December 6, 1988.

Feasibility Study Reports

P. 2933 - 3057 Report: Feasibility Study Final Report, 102nd Street Landfill Site, Volume I, July 1990.

P. 3058 - 3214 Report: Feasibility Study Final Report, 102nd Street, Volume II and Appendices, July 1990.

Proposed Plans

p. 3215 - 3233 Superfund proposed plan. Includes announcement of propsed plan, site background, scope of response action, summary of site risks and a summary of alternatives for the 102nd Street Landfill Site, Niagra Falls, New York. July, 1990. Three operable unit plans are attached.

ENFORCEMENT

Endangerment Assessment

P. 3234 - 3392 Report: Baseline Human Health Risk and Environmental Endangerment Assesment for the 102nd Street Landfill, prepared by Gradient Corporation. May 25, 1990.

P. 3393 - 3568 Report: Baseline Human Health Risk and Environmental Endangerment Assesment for the 102nd Street Landfill, Appendices, prepared by Gradient Corporation. May 25, 1990.

P. 3569 - 3772 Report: Evaluation of Potential Contaminant Releases and Human Health Risk Associated with Excavation and Incineration of the 102nd Street Landfill, July 11, 1990.

P. 3773 - 3932 Report: Baseline Risk Assessment - Final Report, prepared by Sirrine for OCC and Olin, July 1990.

Consent Decrees

P. 3933 - 3945 Stipulation. Signed By Court on June 26, 1984. A fact sheet and site location is attached.

P. 3946 - 3960 Stipulation and Decree. Date unknown. Letter to Judge John T. Curtin, United States District Court, from Mr. Bruce S. Gelber, U.S. Department of Justice, re: Stipulation and Decree, February 9, 1989, is attached.

Correspondence

P. 3961 Letter to Mr. Robert M. Cohen, GeoTrans Inc., Mr. David Bass, Gradient Corporation, and Mrs. Mary Ann Storr, U.S. EPA Public Information Office, from Mr. Paul Olivo, U.S. EPA, re: Notice of Lodging and Proposed Stipulation and Decree. February 17, 1989.

NATURAL RESOURCES TRUSTEES

Findings of Facts

P. 3962 - 4009 Report: Biological Indicators of Environmental Contaminants in the Niagara River, prepared by the U.S. Fish and Wildlife Service, May 1990.

PUBLIC PARTICIPATION

Community Relations Plans

P. 4010 - 4033 Report: Community Relations Plan, 102nd Street Site, Niagara Falls, Niagara County, New York, prepared by NUS Corporation. February 1985.

Public Notices

P. 4034 Invitation for public comment. Released by the US EPA as appears in the Niagara Gazette, July 25, 1990, p. 4B.

P. 4035 Invitation for public comment. Released by the US EPA as appears in the Buffalo News, July 25, 1990, p. D - 4.

P. 4036 Public Service Announcement released by John Anderson, U.S. EPA, Public Information Office, re: Availability of representatives of the New York State Department of Environmental Conservation. Date unknown.

Public Meeting Transcripts

P. 4037 - 4096 Transcript of a public meeting held at the Red Jacket Inn, Niagara Falls , New York, on August 15, 1990.

Fact Sheets and Press Releases

P. 4097 - 4101 News Release from the US EPA, Region II, Re: $30 Million clean up remedy, July 26, 1990.

Correspondence

P. 4102 Letter to 102nd Street Site Mailing List, from U.S. EPA, re: Results of EPA dioxin screening and field activities being taken at the site. September 13, 1985.

P. 4103	Letter to 102nd Street Site Mailing List, from Mr. Kevin Lynch, U.S. EPA, and Mr. Alan Fuchs, New York State Department of Environmental Conservation, re: Progress of Remedial Investigation at site. December 9, 1985. A copy of letter is attached.
P. 4104	Letter to Concerned Citizen, from Mr. Matthew J. Forcucci, U.S. EPA, re: Documents available for public review. September 12, 1986.
P. 4105	Letter to Concerned Citizen, from Ms. Mary Ann Storr, U.S. EPA, re: Documents available for public review. August 31, 1987.
P. 4106	Letter to Concerned Citizen, from Ms. Mary Ann Storr, U.S. EPA, re: Documents available for public review. September 30, 1987.
P. 4107	Letter to Concerned Citizen, from Ms. Mary Ann Storr, U.S. EPA, re: Documents available for public review. October 30, 1987.
P. 4108	Letter to Concerned Citizen, from Ms. Mary Ann Storr, U.S. EPA, re: Documents available for public review. November 25, 1987.
P. 4109	Letter to Concerned Citizen, from Ms. Mary Ann Storr, U.S. EPA, re: Documents available for public review. November 30, 1987.
P. 4110	Letter to Concerned Citizen, from Ms. Mary Ann Storr, U.S. EPA, re: Documents available for public review. December 31, 1987.
P. 4111	Letter to Concerned Citizen, from Ms. Mary Ann Storr, U.S. EPA, re: Documents available for public review. December 31, 1987.
P. 4112	Letter to Concerned Citizen, from Ms. Mary Ann Storr, U.S. EPA, re: Documents available for public review. January 19, 1988.
P. 4113	Letter to Concerned Citizen, from Ms. Barbara C. Taylor, U.S. EPA, re: Documents available for public review. February 29, 1988.
P. 4114	Letter to Concerned Citizen, from Ms. Barbara C. Taylor, U.S. EPA, re: Documents available for public review. March 17, 1988.

102nd STREET LANDFILL SITE
ADMINISTRATIVE RECORD FILE
INDEX OF DOCUMENTS
UPDATE*

RECORD OF DECISION

Record of Decision

P. 4124 - 4196 Report: Declaration Statement, Record of Decision, 102nd Street Landfill Site, (Operable units One, Two, and Three).

* Administrative Record File Update Available 10/8/90.

102nd STREET LANDFILL SITE
ADMINISTRATIVE RECORD FILE
INDEX OF DOCUMENTS
UPDATE

RECORD OF DECISION

Correspondence

P. 4285-4289 Letter to Mr. Paul J. Olivo, Project Manager, New York/Caribbean Superfund Branch II, Emergency and Remedial Response Division, U.S. EPA, from Messrs. David L. Cummings, Manager, Environmental Remediation, Olin Corporation, and Alan F. Weston, PhD, Manager, Analytical Services, Special Environmental Programs, re: 102nd Street Landfill Site, Niagara Falls, NY - Offshore Slurry Wall Alignment, August 17, 1994. (Attached are: Figure 1: Plan of Slurry Wall Alignment, and Figure 2: Typical Cross Section Through Slurry Wall Alignment, August 15, 1994.)

Reports

P. 4290-4359 Report: Addendum - Predesign Field Activity Report; Supplemental Offshore Boring Program, 102nd Street Landfill Site, Niagara Falls, New York, prepared by Fluor Daniel, Inc. on behalf of Occidental Chemical Corporation and Olin Corporation, August 17, 1994.

APPENDIX 3

Responsiveness Summary

RESPONSIVENESS SUMMARY

RECORD OF DECISION AMENDMENT
102nd Street Landfill Site
Niagara Falls, New York

1.- Overview

The U.S. Environmental Protection Agency (the "EPA") established a public comment period which ran from December 2, 1994 through January 25, 1995 so as to allow interested parties to comment upon the EPA's Post-Decision Proposed Plan (PDPP) for the modification of the remedy originally selected for the 102nd Street Landfill (the "Site").

The EPA also held a public meeting on Wednesday, December 14, 1994, at the Red Jacket Inn located at 7001 Buffalo Avenue in Niagara Falls, New York. The purpose of the public meeting was to review the PDPP, to present the EPA's preferred modification to the original remedy as defined in the September 199u Record of Decision, and to solicit, record, and consider all comments received from interested parties during the course of the actual meeting.

This responsiveness summary describes the comments and concerns raised by concerned citizens during the comment period with respect to the proposed modification to the original remedy, as well as the EPA's responses to those comments and concerns. All comments summarized in this document were given full consideration in terms of selection of the modification to the original remedy as stated in the Record of Decision Amendment. The New York State Department of Environmental Conservation (NYSDEC) also concurs with the selected modification.

2.- Background on Community Involvement and Concerns

The Site initially became an issue of public concern in December 1970, when the Buffalo District of the U.S. Army Corps of Engineers (COE) notified Occidental Chemical Corporation and the Olin Corporation (the "Companies") that no further construction or landfilling could occur until a bulkhead was installed along the shoreline. Although the bulkhead was completed in 1973, no further landfilling at the Site occurred after construction of the bulkhead. A series of investigations regarding sub-surface conditions at the Site led to the filing of a complaint in December 1979, in the U.S. District Court in Buffalo, New York, by the United States of America, on behalf of the Administrator of the EPA, against the Companies seeking injunctive relief and civil penalties for an imminent and substantial endangerment to the public health and welfare. In November 1980, a complaint pursuant to the New York State Conservation Law and the state's common law

of public nuisance, was filed by the State of New York (NYS) seeking civil penalties. These lawsuits are still pending contingent upon the final remediation of the Site.

During the public comment period in 1990 concerning the proposed remedy for the Site, the citizens' comments and concerns focused on issues of incineration of contaminants from the landfill and the public's access to the shoreline following completion of the remedy. More recently, beginning in 1993, federal and state natural resource trustees requested the EPA to consider a realignment of the slurry wall in the embayment in order to avoid the destruction of wetland/embayment habitat resources.

The 1990 ROD called for the dredging and incinerating of any highly contaminated embayment sediments if they were left outside of the final positioning of the slurry wall. Any sediments with lower levels of contaminants which remained outside the slurry wall, would be dredged and placed beneath the cap. Therefore, the proposed realignment of the slurry wall would not only necessitate a modification to the existing remedial design, but would also affect the incineration contingency as contained in the original remedy.

3.- Summary of Questions and Comments Received During the Public Meeting and the Responses of the EPA

At the public meeting which was held on December 14, 1994, the major issues discussed and concerns expressed by the community regarding the Site were as follows:

A.- Comment:

A resident stated his general concern about the final use to which the land encompassing the Site might be put. He asked: "Will there be a park, or is it just going to be dead land?"

Response:

The remedial plan includes a flat area at the shoreline of the embayment area that will provide access to the Niagara River. Plans are now being considered for the design and construction of a walkway around the Site. The walkway will be situated such that a person can walk from the boat launch area, along the water's edge, and then back out to Buffalo Avenue along the eastern side of the Site. The boat launch will continue to remain operational in its present location, however there may be some reduction, although minor, in the size of the ballfield located on Griffon Park.

The cap covering the actual landfill will be mounded with a certain number of peaks to it. The EPA plans to have the area landscaped to shield the public's view of the mound from Buffalo Avenue as well as from Cayuga Island.

The landscaping plan, in general, will provide for trees to be planted around the circumference of the Site. In the run along Buffalo Avenue, however, there may be some space restrictions due to the proximity of the landfill cap and the need for setback of trees from the road to maintain highway safety. To the extent that trees cannot be planted in the Buffalo Avenue area, the landscaping plan will require lower-growing shrubs, which will also shield the view of the landfill mounds.

B.- Comment:

The same resident asked if remediation of the Site would also include the dredging of the Little Niagara River.

Response:

When the EPA investigated the extent of contamination at the Site, no site-related contamination was found in the sediments of the Little Niagara River. Therefore the prospective dredging of the Little Niagara River was going to be treated as a matter separate from the remediation of the 102nd Street Landfill. See Comment E and Response thereto, below.

C.- Comment:

A reporter from the Buffalo News asked: "What is a slurry wall?"

Response:

A cofferdam is constructed outside the perimeter of the landfill and the slurry materials (soils and bentonite, a cement-like substance) which are less permeable than surrounding soils are backfilled behind the cofferdam. The slurry is keyed into the relatively impermeable clay layer beneath the landfill. In this manner, the relative impermeability of the slurry and clay layer, coupled with the hydraulic containment achieved through ground-water pumping, effectively achieves a total encapsulation of the hazardous wastes within the landfill.

D.- Comment:

A resident stated, in part rhetorically, that he did not see any benefit to spending approximately $40 million when the land could not be put to any beneficial post-remediation use.

Response:

There would be a benefit from preventing hazardous materials in the landfill from entering the Niagara River: human health and the environment will be protected.

In accordance with CERCLA, the evaluative criteria also derived from CERCLA were used to arrive at a balanced decision that will assure the protection of human health and the environment.

An unrestricted post-remediation use would have required the excavation of the entire landfill and the incineration of its contents. While it would have been technically possible to incinerate the entire landfill, approximately 160,000 tons of hazardous wastes contained in additional tons of soil and debris, any such decision would not have been cost effective. The cost of incinerating the entire landfill would have been over $500 million. Furthermore, excavation would also present the risk of exposing the community to the materials in the landfill that were being excavated. The selected remedy represented the EPA's balancing of these evaluative criteria.

E.- Comment:

The same resident inquired about the piles of (dirt-like) materials being transferred to the Site. He wanted to know what the materials were.

Response:

In order to give the cap the necessary support and structure, approximately 200,000 cubic yards of clean (non-hazardous) fill material which will be placed beneath the cap. No hazardous wastes were or will be transferred to the Site due to the EPA's insistence on a strict routine of pre-testing and data-verification for all fill materials destined for the Site. The use of available (but clean) fill materials will be a significant cost-saving factor, when compared to the cost of procuring clean fill from a standard point-of-sale source.

As discussed in Paragraph B, above, the dredging of Little Niagara River sediments is not part of the remediation of the landfill. The analyses of samples that indicated that these sediments had not been contaminated by the 102nd Street landfill, also demonstrated that these sediments could be utilizable as clean fill for the construction of the landfill cap. All parties (OCC, the City of Niagara Falls, EPA, and the NYSDEC) were in agreement that it made good sense to explore the issue of dredging the Little Niagara River sediments at the same time as the dredging of sediments was being conducted for the 102nd Street remediation. The presence of the dredge in the immediate area, and the ability to use the Little Niagara River sediments as fill material in the construction of the 102nd Street cap, represented a cost-efficient opportunity for dredging the Little

Niagara River. OCC has recently reached an agreement with the City by which OCC will voluntarily extend its dredging operations for the 102nd Street landfill remediation to include the dredging of the Little Niagara River sediments. The EPA and the NYSDEC have approved the use of these sediments for fill in the construction of the landfill cap.

F.- Comment:

A citizen asked if the increased cost of incineration was due at all to Occidental's (OCC's) plan to not pursue the siting of an incinerator, meaning at OCC's nearby plant.

Response:

No final decision had been made on the source of incineration for materials from the landfill. Because of permitting issues, OCC is no longer pursuing the siting of an incinerator on OCC's plant property. The current efforts by OCC to find an alternative to the siting of an incinerator on its plant property will take additional time to effectuate. The only currently available source (out-of-state) for incinerating the sediments would be prohibitively expensive in comparison to the alternative of siting an incinerator at OCC's plant. The original cost estimates for incineration of contaminated sediments from the landfill were based upon the siting of an incinerator on OCC's plant property.

4.- Summary of Written Comments Received During the Public Comment Period and the Responses of the EPA

There was only one written comment, a letter from the Companies, which was submitted during the public comment period. The letter is summarized below.

Letter dated January 25, 1995 from the Companies

Comment:

The Companies concurred with the EPA's recommendation to place the dredged sediments under the cap within the slurry wall. The Companies concurred since the incineration of the sediments in their opinion, would be extremely cost-ineffective when consideration is given to the fact that the mass of contaminants in the sediments represents a minute fraction of the contaminants at the Site, and the cost to incinerate these sediments would be extremely high. In addition, there is apparently only one facility nationwide which may be able to incinerate the sediments, but it has severe capacity limitations. The Companies concluded that containment of the sediments within the slurry wall and under the cap was the appropriate course of action.

APPENDIX 4

1990 Record of Decision