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THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
invites
PUBLIC COMMENT
on a
POST-DECISION PROPOSED PLAN FOR THE REMEDIATION
of the
102nd STREET LANDFILL SITE
located in
NIAGARA FALLS, NEW YORK

The U.S. Environmental Protection Agency (USEPA) and the New York State Department of Environmental Conservation (NYSDEC) will hold a Public Meeting to discuss a Post-Decision Proposed Plan for the remediation of the 102nd Street Landfill Site (Site).

The meeting will be held on Wednesday, December 14, 1994, at 7:00 P.M. at the Red Jacket Inn located at 7001 Buffalo Avenue in Niagara Falls, New York.

The Post-Decision Proposed Plan describes significant changes to the Record of Decision (ROD) issued by the USEPA with respect to the Site, and concurred on by the NYSDEC, in September 1990.

The 1990 ROD selected, as a remedy, the capping of the landfill, the construction of a circumferential slurry wall to encapsulate the landfill (and any NAPL plumes 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 Niagara River. In 1993, the USEPA 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 USEPA 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. Any sediments with lower levels of contaminants which would remain outside the slurry wall, would be dredged and placed beneath the cap.

As described in the Post-Decision Proposed Plan, the USEPA is now recommending that all of the contaminated sediments be dredged and placed beneath the cap, rather than incinerating the highly contaminated sediments.

The USEPA and the NYSDEC welcome the public's comments on the proposed modification to the selected remedy as identified above.

The USEPA and the NYSDEC will approve the proposed modification after considering all comments submitted during the public comment

period. The public comment period will begin on Friday, December 2, 1994 and will continue through Wednesday, January 25, 1995.

The Post-Decision Proposed Plan is being mailed to all known, interested parties. In addition, all documentation relating to the USEPA's original analyses made prior to the issuance of the September-1990 Record of Decision, as well as supporting documentation related to the Post-Decision Proposed Plan, are available with the rest of the administrative record file at the USEPA's Public Information Office located at 345 Third Street in Niagara Falls.

The public may comment in person at the public meeting and/or may submit written comments until January 25, 1995, to Paul J. Olivo, Project Manager, at the address listed below. Mr. Olivo may also be reached at (212)-264-6477. In addition, messages may be left for him at the USEPA's Niagara Falls Public Information Office at (716)-285-8842.

U.S. Environmental Protection Agency
Region II
26 Federal Plaza - Room 737
New York, New York 10278

Superfund Post-Decision Proposed Plan

102nd Street Landfill Site
Niagara Falls, New York



EPA
Region II

December 1994

PURPOSE OF POST-DECISION PROPOSED PLAN

This Post-Decision Proposed Plan describes proposed significant changes to the Record of Decision (ROD) issued by the United States Environmental Protection Agency (EPA) with respect to the 102nd Street Landfill Site (the "Site"), and concurred on by the New York State Department of Environmental Conservation (DEC) in September 1990.

The 1990 ROD 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 Niagara River (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. Any 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 Post-Decision Proposed Plan, the EPA is now recommending that all of the contaminated sediments be dredged and placed beneath the cap, rather than incinerating the highly contaminated sediments.

COMMUNITY ROLE IN SELECTION PROCESS

The EPA relies on public input to ensure that the concerns of the community are considered in selecting an effective

remedy for each Superfund site. This Post-Decision Proposed Plan is being distributed to solicit public comments regarding proposed changes to the remedy selected in the 1990 ROD.

The public comment period will begin on Friday, December 2, 1994 and will continue through Wednesday, January 25, 1995. A public meeting will be held during the public comment period at the RED JACKET INN located at 7001 Buffalo Avenue in Niagara Falls, New York, on Wednesday, December 14, 1994 at 7:00 P.M. in order to discuss the basis for the proposed amendment to the Record of Decision. For further information, please contact Michael J. Basile (716)-285-8842, or Paul J. Olivo (212)-264-6477.

All written comments should be addressed to:

Paul J. Olivo, Project Manager
Emergency and Remedial Response Division
U.S. Environmental Protection Agency
26 Federal Plaza, Room 737
New York, New York 10278

BACKGROUND AND SITE HISTORY

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 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

MARK YOUR CALENDAR !!!

These are the dates to remember:

December 2, 1994 through January 25, 1995
Public comment period on this Post-Decision Proposed Plan

December 14, 1994, Wednesday, at 7:00 P.M.
Public meeting at the RED JACKET INN, 7001 Buffalo Avenue, Niagara Falls, New York

The administrative record file, containing the information upon which this proposed amendment is based, is available at the following locations:

U.S. Environmental Protection Agency
26 Federal Plaza, Room 2900
New York, New York 10278
(212) 264-8770

Hours: Monday - Friday: 9:00 a.m. - 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. - 4:30 p.m

approximately 4,600 tons of benzene, chlorobenzene, chlorophenols and hexachlorocyclohexanes (HCHs).

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 DEC 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 DEC, 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.

SUMMARY OF THE REMEDIAL INVESTIGATION

During the RI/FS process, the Companies collected samples of ground water, on-site and off-site soils, offshore sediments, and (recently) storm sewer discharge, analyzing them for chemical contamination. Hydrogeologic and special sampling for the presence of non-aqueous phase liquid (NAPL) contamination was also performed.

The RI/FS reports present detailed data on contaminant levels for a total of 69 chemicals of concern for the Site. Site contaminants generally fall into several broad groups: trace metals (such as mercury), chlorinated single ring aromatics (such as tetrachlorobenzene), chlorinated phenols (such as trichlorophenols), hexachlorocyclohexanes (including lindane), polychlorinated biphenyls (PCBs), polychlorinated dioxins (especially 2,3,7,8-TCDD), and dibenzofurans. Ground-water flow beneath the Site is generally towards the River or the Little Niagara River. The RI/FS sampling procedures confirmed the presence of NAPL on the Site. No site-related contamination in the bedrock aquifer was observed, despite large contaminant concentrations in the overburden water table.

Some soils just outside the perimeter of the Site contain elevated levels of dioxin and mercury. In addition to contaminated areas around the Site's perimeter, some soils north of Buffalo Avenue and south of the LaSalle Expressway (off-site soils) were found to contain Site-Specific Indicator (SSI) contaminants at levels above Survey Levels. Survey Levels are concentrations of contaminants that can be confidently stated to have originated on the Site; the Survey Levels are also used as cleanup thresholds for remedial action.

Landfill materials currently pose indirect threats to human health and the environment since contaminants are migrating from the landfill off-site in ground water. Contaminated embayment sediments pose environmental risks to fish and wildlife and also serve as a source of surface-water contamination. The storm sewer provides a conduit for contaminant migration from the Site, although it is currently a less significant migration pathway than direct discharge of ground water into the embayment.

The principal threats posed by contamination for the Site were addressed by the remedy selected in the September 1990 ROD. Numerous potential alternatives for remediating the threats posed were evaluated in the Feasibility Study. Each of the final-candidate remedial alternatives is described in detail in the FS report which is available in the administrative record file.

SCOPE AND ROLE OF ACTION

This is a proposed amendment to the September 1990 ROD. After the ROD was signed, the EPA commenced negotiations with the Companies for them to undertake the remedial design and remedial action. 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. In the present 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 ROD is to contain the NAPL plumes with 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.

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.

Therefore, due to the change in costs, incineration of the highly contaminated sediments is no longer considered to be cost-effective, and the EPA is proposing that the ROD be amended to eliminate the incineration contingency.

SUMMARY OF REMEDIAL 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 DEC 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 OUTLINED IN THIS POST-DECISION PROPOSED PLAN

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 proposed modified remedy in this Post-Decision Proposed Plan, 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

COMPARISON OF EXISTING REMEDY (ALTERNATIVE I) TO PROPOSED REMEDY (ALTERNATIVE II)

During the detailed evaluation of remedial alternatives, each alternative is assessed against the following nine evaluation criteria: overall protection of human health and the environment; compliance with applicable or relevant and appropriate requirements; long-term effectiveness and permanence; reduction of toxicity, mobility, or volume; short-term effectiveness; implementability; cost; and state and community acceptance.

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 treatment 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.

It was determined in the analysis for the September 1990 ROD that the original remedy will comply with federal and state ARARs. By changing only the volumes and types (contaminated versus highly contaminated) of sediments to be dredged and placed upon the landfill, there will be no substantive variation from the original analysis which held

GLOSSARY OF EVALUATION CRITERIA

Overall Protection of Human Health and the Environment: This criterion addresses whether or not a remedy provides adequate protection and describes how risks are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

Compliance With ARARs: This criterion addresses whether or not a remedy will meet all of the applicable or relevant and appropriate requirements of other environmental statutes and requirements or provides grounds for a waiver.

Long-Term Effectiveness: This criterion refers to the ability of a remedy to maintain protection of human health and the environment, once cleanup goals have been achieved.

Reduction of Toxicity, Mobility or Volume through Treatment: This criterion refers to the anticipated performance of the treatment technologies a remedy may employ.

Short-Term Effectiveness: This criterion considers the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period until cleanup goals are achieved.

Implementability: This criterion examines the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.

Cost: This criterion includes capital, and operation and maintenance costs.

State Acceptance: This criterion indicates whether, based on its review of the Post-Decision Proposed Plan, the state concurs, opposes, or has no comment on the proposed remedy.

Community Acceptance: This criterion will be addressed in the Record-of-Decision Amendment following a review of the public comments received on the Post-Decision Proposed Plan.

that the original remedy did comply with all federal and state ARARs.

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 would control or reduce the mobility of the contaminants either through incineration or encapsulation. For incineration, the toxicity and the volume of the sediments will be reduced through destruction. In the case of the modified remedy, there will be no reduction in the toxicity or the volume of the contaminated sediments, but there will be control of the contaminants 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 proposed 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 proposed modified remedy and the existing remedy may encounter some technical problems with regard to sediment control, dewatering, and berm installation. However these types of problems are distinctly 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 proposed alternative, also in 1994 dollars, is \$39,429,000.

8.- State Acceptance:

The State of New York (DEC) concurs on the selection of

the proposed modified remedy.

9.- Community Acceptance:

All aspects of community acceptance of the proposed modified remedy will be assessed and published in the amended Record of Decision. This will be done following a review of the public comments as received by the EPA in response to the release of this Post-Decision Proposed Plan.

CONCLUSION

The EPA has decided that the remedy selected in the September 1990 ROD, as such ROD would be amended by the terms of this Post-Decision Proposed Plan, remains fully protective of human health and the environment, and continues to meet all applicable, or relevant and appropriate requirements. The DEC concurs in this decision.