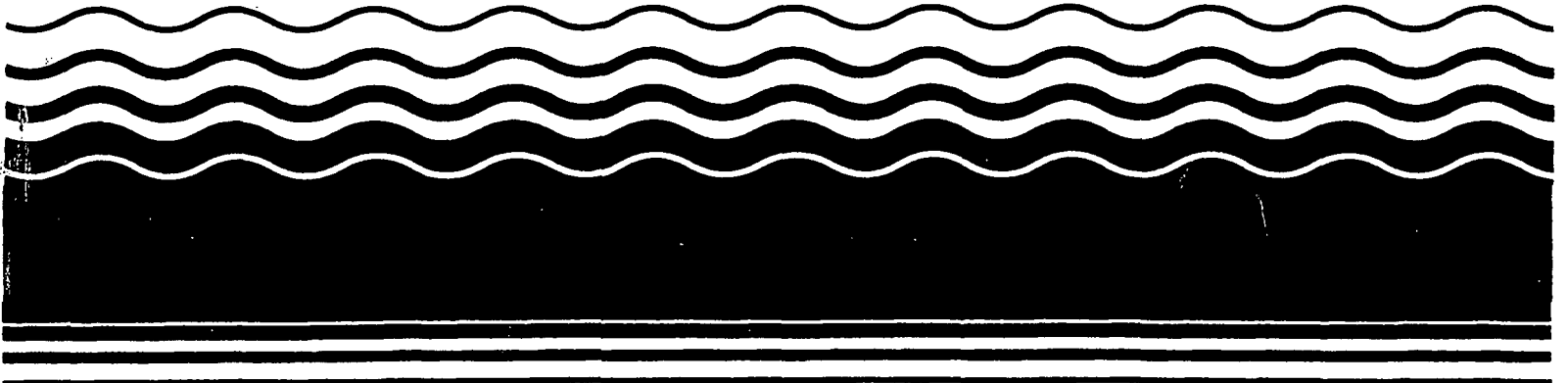


**PB97-963129
EPA/541/R-97/086
July 1998**

**EPA Superfund
Explanation of Significant Difference
for the Record of Decision:**

**Volney Municipal Landfill
Town of Volney, NY
8/7/1997**



Explanation of Significant Differences

VOLNEY LANDFILL SITE

TOWN OF VOLNEY
Oswego County, New York

EPA
Region 2

August 1997

INTRODUCTION

In accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 117(c) and Section 300.435(c)(2)(i) of the National Oil and Hazardous Substances Contingency Plan, if after the adoption of a final remedial action plan, there is a significant change with respect from the final plan, an explanation of the significant differences and the reasons such changes were made must be published.

The 1987 Record of Decision (ROD) for the Volney Landfill site called for, among other things, supplemental capping of the landfill side slopes, installation of a more extensive leachate collection system, installation of a slurry wall, performance of treatability studies to determine if leachate treatment/disposal should be on- or off-site, implementation of the on- or off-site treatment/disposal alternative, and long-term monitoring.

Following a re-sampling of the site in 1988, EPA issued a Post-Decision Document (PDD) in 1989. This document called for a re-evaluation of the slurry wall and a determination as to whether the leachate should be treated/disposed of on- or off-site. Pre-remedial design (pre-RD) studies were conducted to address these issues, as well as questions that arose concerning the hydrogeology at the site and the finding that a Resource Conservation and Recovery Act (RCRA)-listed hazardous waste sludge had been disposed of at the landfill.

The pre-RD studies, which were recently completed, concluded that utilizing intermittent ground-water extraction and treatment, on an as-needed-basis (after initial pumping), in combination with the existing leachate collection system, would be more appropriate than expanding the existing leachate collection system and continuously collecting large volumes of relatively dilute leachate. The studies also determined that a slurry wall is not cost-effective in combination with intermittent ground-water extraction, and the collected leachate should be treated off-site. Further, it was determined that the RCRA regulations related to the hazardous waste sludge which was disposed of at the landfill should be waived.

This Explanation of Significant Differences (ESD) will become part of the Administrative Record file for the site. The entire

Administrative Record for the site, which includes the remedial investigation (RI) report, feasibility study (FS) report, ROD, PDD, and other relevant documents are available for public review at the following location:

Fulton Public Library
160 South First Street
Fulton, NY 13069

Hours: 10:00 am - 5:00 pm (Monday, Friday, and Saturday)
10:00 am - 8:00 pm (Tuesday - Thursday)

The Administrative Record file and other relevant reports and documents are also available for public review at the EPA Region II office at the following location:

U.S. Environmental Protection Agency
290 Broadway, 18th floor
New York, New York 10007

Hours: 9:00 am - 5:00 pm (Monday - Friday)

The change to the selected remedy is not considered by EPA and the New York State Department of Environmental Conservation (NYSDEC) to have fundamentally altered the remedy selected in the ROD. The remedy remains protective of human health and the environment and complies with federal and state requirements that were identified in the ROD.

SUMMARY OF SITE HISTORY, CONTAMINATION PROBLEMS, AND SELECTED REMEDY

The 85-acre Volney Landfill, presently owned by Oswego County, is located in a rural area of the Town of Volney, New York. Landfilling operations were conducted in a 55-acre unlined disposal area from 1969 to 1983. (The landfill has been inactive since 1983.) Most of the waste materials disposed of at the landfill consisted of residential, commercial, institutional, and light industrial wastes; however, approximately 8,000 drums from Pollution Abatement Services, a hazardous waste incineration facility located in Oswego, New York, were approved for disposal at the landfill by NYSDEC. While the approval applied only to discarded drums containing known and limited chemical residues, it was later reported that approximately 50 to 200 of these drums

contained liquid waste of unknown volume and composition. The physical condition and locations of these drums in the landfill are unknown.

In March 1979, NYSDEC entered into a consent order with the current owner of the landfill, Oswego County, after ground-water quality standards were contravened in monitoring wells near the site. The consent order required ground-water monitoring, leachate disposal evaluation, and the development of a landfill closure plan. Measures to close the landfill, which included capping the landfill top with a liner and soil, capping the side slopes with compacted soil, installing a gas collection system, and installing a leachate collection system, were undertaken between 1979 and 1985. Off-site leachate disposal and ground-water monitoring have been performed since the completion of the closure activities.

In October 1984, the Volney Landfill site was included on the Superfund National Priorities List.

A source control RI/FS was conducted from 1985 to 1987 by NYSDEC, and a ROD was signed by EPA on July 31, 1987. The selected remedy included, among other things, supplemental capping of the landfill side slopes, installation of a more extensive leachate collection system, installation of a soil-bentonite slurry wall, treatment of the collected leachate, treatability studies to evaluate whether the leachate should be treated on- or off-site, implementation of the on- or off-site treatment/disposal alternative and long-term monitoring.

After the signing of the ROD, it was learned that a quality assurance/quality control review of the analytical data associated with the RI had not been performed. EPA re-sampled the site in 1988 and, based upon the sample results, concluded that hazardous substances were present in the ground water, surface water, sediments, and leachate. On September 29, 1989, EPA issued the PDD, which reaffirmed the remedy selected in the ROD. In response to comments received during the public comment period, the PDD also called for a re-evaluation of the cost-effectiveness of the slurry wall called for in the ROD and a concurrent decision concerning on- or off-site leachate treatment. Studies conducted from 1989 to 1990 provided information about off-site leachate disposal and updated the construction costs for the site remedy. The studies concluded, however, that before any final decisions related to the slurry wall or leachate treatment could be made, additional testing was needed to resolve several critical issues concerning the site hydrogeology (i.e., possible artesian conditions, ground water flow issues, and no reduction in leachate collection volume since the 1985 capping of the landfill).

The decision related to selecting a method for leachate treatment and disposal was further complicated by a subsequent EPA finding that a RCRA-listed F019 waste sludge had been disposed of in the landfill by the Miller Brew-

ing Co. (Miller) from 1976 to 1978¹. RCRA would require that wastes which were derived from RCRA-listed waste (including leachate which had been in contact with listed waste) would also have to be treated as a RCRA-listed hazardous waste, irrespective of the level of hazardous constituents in the leachate. In September 1991, Miller requested that EPA reconsider the RCRA-F019 classification for its sludges that were disposed of in the landfill.

EPA concluded that additional data gathering at the site was necessary to resolve the issues concerning the site hydrogeology and to address the F019 RCRA-listed waste issue, which could significantly affect future leachate disposal requirements and costs.

An Administrative Order on Consent was signed in June 1993 for the performance of a pre-RD study by a group of Potentially Responsible Parties.

The data gathering related to the pre-RD study was conducted from 1994 to 1996, resulting in the completion of a Design Data Evaluation Report in June 1997. The Design Data Evaluation Report presented several new findings related to the hydrogeology and the nature of contamination at the site:

- the ground water at the perimeter of the site is characterized by intermittent increases in contaminant concentrations, with no consistent or definable contaminant plume leaving the perimeter of the landfill, while the leachate is somewhat dilute compared to leachate from other, younger, landfills;
- approximately 50% more leachate (i.e., 6.77 million gallons per year) is generated from the site than was reported in the RI;
- a sand and gravel unit (instead of the low permeability lodgement till reported in the RI) was found in the southeast area of the site, which would necessitate doubling the leachate collection system piping to 7,600 feet;
- the Volney Landfill occupies a topographical high, which makes the site optimally suited for achieving maximum reductions in leachate through capping and through surface water controls;
- a protective separation is present between the bottom of the landfilled waste and the water table (eliminating the waste as a direct source of ground-water contamination once the landfill is capped); and

¹In November 1980, the wastes from the coating of aluminum cans (such as Miller's process) were regulated as a RCRA-listed hazardous waste.

natural attenuation appears to be occurring between the landfill perimeter and downgradient residential wells, thereby protecting these wells.

DESCRIPTION OF SIGNIFICANT DIFFERENCES AND THE BASIS FOR THOSE DIFFERENCES

In an attempt to address the outstanding issues so as to appropriately refine the remedy selected in the ROD, the SPRDS developed and evaluated seventeen remedial alternatives. The alternatives evaluation included comparisons of different combinations of remedial components (i.e., leachate drains versus extraction wells, slurry wall versus no slurry wall, on- versus off-site leachate treatment/disposal, and hazardous versus nonhazardous leachate treatment/disposal). All of the alternatives that were evaluated utilized the same supplemental side slope cap. Based upon this evaluation, it was concluded that:

- utilizing intermittent ground-water extraction and treatment, on an as-needed-basis (after initial pumping), in combination with the existing leachate collection system, would be more appropriate than expanding the existing leachate collection system and continuously collecting large volumes of relatively dilute leachate;
- a slurry wall is not cost-effective in combination with intermittent ground-water extraction; and
- the collected leachate should be treated off-site.

Further, it was concluded that the RCRA regulations related to the hazardous waste sludge which was disposed of at the landfill should be waived. Summarized below is the basis for these conclusions.

Since selecting an appropriate method of leachate treatment/disposal would be significantly influenced by whether or not the leachate would have to be handled as a RCRA-listed hazardous waste, the F019 issue is addressed first.

F019 ISSUE - RCRA REGULATIONS WAIVER

As noted above, EPA determined that RCRA-listed F019 waste sludges had been disposed of in the landfill by Miller. A review of analytical data related to five different batches of leachate collected from the landfill from 1992 to 1996 (approximately 150,000 gallons/batch) did not, however, show either F019 constituent (hexavalent chromium or cyanide). In addition, based upon information provided to EPA by Miller in 1996, EPA has determined that one of the two F019 hazardous waste constituents, cyanide, was probably never used in the Miller plant process. EPA has also concluded that the other constituent, hexavalent chromium, would likely have been converted to trivalent chromium by Miller's wastewater treatment process. Therefore, trivalent chromium, not the more toxic hexavalent

chromium, would have been the primary chromium component in the sludge delivered to the landfill from 1976 to 1978.

Based on these considerations, EPA determined that the RCRA regulations applying to this matter should be "waived" on the basis of "equivalent standard of performance" pursuant to Section 121(d)(4)(D) of CERCLA, and §300.430(f)(1)(ii)(C)(4) of the National Oil and Hazardous Substances Pollution Contingency Plan. Use of this waiver is intended where the standard of performance can be equalled or exceeded through the use of another standard. Invoking this waiver will also result in a more cost-effective remedy. This waiver will not, however, relieve Oswego County from continued responsibility pursuant to CERCLA to test the leachate as a CERCLA waste and dispose of it as hazardous, if the data so warrant.

DESCRIPTION OF THE SIGNIFICANT DIFFERENCES

A review of ground-water data collected from monitoring wells located at the perimeter of the landfill shows a relatively low frequency of organic contamination, characterized by intermittent increases in contaminant concentrations. In addition, there is no definable contaminant plume at the perimeter of the landfill. Further, pre-RD study data indicate that natural attenuation is occurring in a sizable buffer zone between the landfill perimeter and the downgradient residential wells. In addition, natural attenuation appears to have been protecting the residential wells for a significant period of time. Based upon these findings, EPA has concluded that it would be more appropriate to collect the contaminated ground water (in combination with the existing leachate collection system), on an as-needed-basis (based upon criteria established during the design phase), to match the intermittent elevated contaminant concentrations, rather than expanding the existing leachate collection system and continuously collecting large volumes of relatively dilute leachate.

EPA has also determined that the installation of a slurry wall and leachate collection drain system to isolate and collect leachate will not offer a significant protective benefit in comparison to its cost, because once the landfill's side slopes are capped, it is estimated that over 99% of the surface water infiltration will be eliminated. For the same reason, leachate collection by extraction wells which are pumped intermittently would be more cost-effective than a leachate collection drain system.

With respect to leachate treatment and disposal, EPA has concluded that off-site treatment and disposal of nonhazardous leachate is more cost-effective than on-site treatment and disposal.

DESCRIPTION OF MODIFIED REMEDY

The selected remedy, as modified by this ESD, includes supplemental capping of the landfill side slopes, continued leachate collection from the existing leachate collection system, intermittent ground water extraction on an as-needed-basis (after initial pumping), off-site leachate and ground-water treatment, and long-term monitoring.

SUPPORT AGENCY COMMENTS

NYSDEC supports the modified remedy due to its environmental, public health, and technical advantages over the remedy selected in the 1987 ROD and 1989 PDD.

AFFIRMATION OF STATUTORY DETERMINATIONS

Considering the pre-RD study information that has been developed and the changes that have been made to the selected remedy, EPA and NYSDEC believe that the modified remedy remains protective of human health and the environment, complies with federal and state requirements that are applicable or relevant and appropriate to this remedial action or provides justification for a waiver, and is cost-effective. In addition, the modified remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this site.

EPA and NYSDEC also believe that the RCRA regulations related to the hazardous waste sludge which was disposed of at the landfill should be waived.

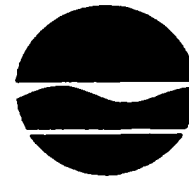
PUBLIC PARTICIPATION ACTIVITIES

EPA and NYSDEC rely on public input to ensure that the concerns of the community are considered in selecting an effective remedy for each Superfund site. To this end, this ESD is being made available to the public for review and comment. Comments and questions should be directed to:

Jack O'Dell
Remedial Project Manager
Central New York Remediation Section
U.S. Environmental Protection Agency
290 Broadway, 20th Floor
New York, New York 10007-1866

Telephone: (212) 637-4256
Telefax: (212) 637-3966
Internet: Odell.Jack@epamail.epa.gov

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



John P. Cahill
Commissioner

AUG 12 1997

Mr. Richard Caspe
Director
Emergency and Remedial Response Division
United States Environmental
Protection Agency, Region II
290 Broadway
New York, New York 10007-1866

Dear Mr. Caspe:

RE: Site No. 7-38-003
Volney Landfill Site
Volney, Oswego County

The New York State Departments of Environmental Conservation and Health have reviewed the August 1997 Explanation of Significant Differences (ESD). The ESD calls for collection and treatment of contaminated groundwater on an as needed basis and addresses the FO19 issue. The Health Department, in its July 24 concurrence letter (copy enclosed), has raised a concern regarding the potential off-site migration of contaminated groundwater and a need to implement measures to prevent off-site migration. It is my understanding that this issue will be addressed during the remedial design phase.

The State concurs with the content of the ESD and recommends that it be approved.

Sincerely,

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

Enclosure

cc: G. A. Carlson - NYSDOH
M. McCabe - NYSDOH
J. O'Dell - USEPA, Region II

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

DATE: AUG -5 1997

SUBJECT: Explanation of Significant Differences for the Volney Landfill Superfund Site

FROM: Richard L. Caspe, P.E., Director
Emergency and Remedial Response Division

TO: Jeanne M. Fox
Regional Administrator

Attached is an Explanation of Significant Differences (ESD) for the Volney Landfill Superfund site.

This ESD modifies the previously-selected remedy, which consists of supplemental capping of the landfill side slopes, installation of a more extensive leachate collection system, installation of a slurry wall, performance of treatability studies to determine if leachate treatment/disposal should be on- or off-site, implementation of the on- or off-site treatment/disposal alternative, and long-term monitoring.

Based upon the results of pre-design studies, we propose to modify the remedy to include supplemental capping of the landfill side slopes, continued leachate collection from the existing leachate collection system, intermittent ground water extraction on an as-needed-basis (after initial pumping), off-site leachate and ground-water treatment, and long-term monitoring.

Please indicate your approval of the modified site remedy by signing below.

If you have any questions related to the ESD, please call me at extension 4390.

Attachment

Approved:



Jeanne M. Fox
Regional Administrator

8/7/97
Date