

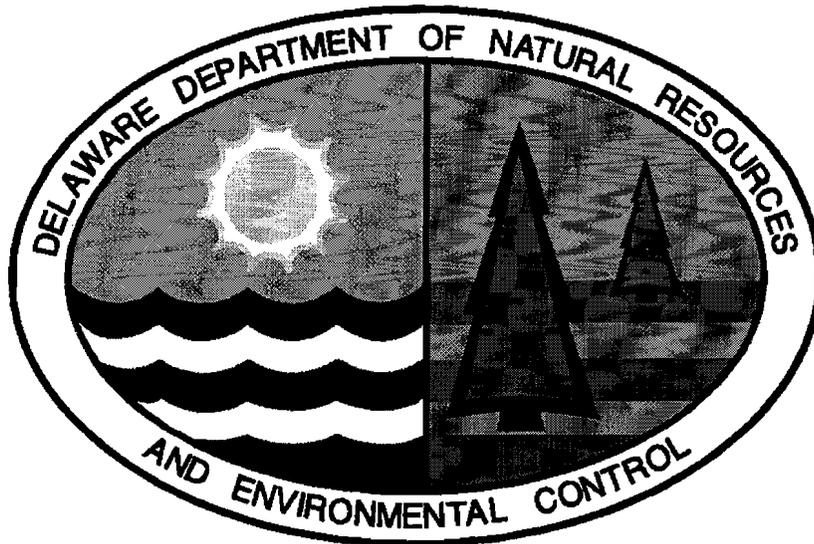
**CONTAINER CORPORATION SITE
FINAL PLAN OF REMEDIAL ACTION**

SCANNED

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Department of Natural Resources and Environmental Control
Division of Air and Waste Management
Site Investigation & Restoration Branch

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I. INTRODUCTION

In April, 1992, the Department of Natural Resources and Environmental Control (Department) reached an agreement with Container Corporation of America (CCA) to perform a Remedial Investigation of the former Container Corporation site under the Delaware Hazardous Substance Cleanup Act (HSCA). Based on this comprehensive environmental investigation, the Department has determined that remedial action measures will be required in order to minimize or eliminate any risk to public health or the environment. The Department has concluded, based on the current use of the land, that a presumptive remedy will be required for this inactive landfill site. If unremediated, unacceptable risks to human health could occur as a result of activities associated with certain potential land use scenarios.

II. ORGANIZATION AND CONTENTS OF THE FINAL PLAN

This final plan is issued under provisions of HSCA and the Regulations Governing Hazardous Substance Cleanup (Regulations). The plan presents the Department's assessment of the health and environmental risks posed by the Container Corporation site and outlines a final plan for remedial action.

The Department has provided public notice and opportunity to comment on the proposed plan in accordance with Section 12 of the Regulations. The Department has reviewed and considered all of the comments received and offers this final plan of remedial action which designates the selected remedial action. The proposed plan, the comments received from the public, responses to the comments, the final plan, and the basis for the plan will constitute the remedial decision record.

The contents of a proposed plan of remedial action are discussed in the Regulations, Section 8. This plan contains a description of the site, analytical results, conclusions of the remedial investigation, a discussion of remedial action objectives and the risk posed by the site, and a remedial action plan for the site.

III. SITE DESCRIPTION AND HISTORY

The former Container Corporation of America site (CCA) consists of 17.5 acres of land located on the eastern bank of Brandywine Creek (See Figure 1). The southern portion of the property is now occupied by the Brandywine Park Condominium complex and Brandywine Park. The site is bordered on the north by vacant land, Alapocas Run, and Alapocas Woods Park. The site is bordered on the east by the Friends School and residential properties. The western property is bordered by the Brandywine Creek and on the opposite side of the creek by industrial properties.

Approximately 600,000 tons of stone were quarried between 1883 to 1888 just upstream from the mill site along the Brandywine Creek, including the now abandoned quarry on the former CCA property.

The latest available report of the quarry's operational history indicates that the quarry was still in active operation in 1932. Historical topographic information reveals that the railroad spur running through the site was abandoned between 1954 and 1967. It may have been during this period that the quarry ceased operation. Information concerning on-site chemical storage, waste generation and disposal practices was not encountered during the historical review by the CCA's environmental consultant.

From 1934 to 1939, Delaware Paper Mills, Inc., occupied the 17.5 acre parcel to manufacture cardboard boxes. In 1939, CCA leased the site from Delaware Paper Mills, Inc. Over the years, until sometime in the early 1980s, CCA produced various paper products at the mill. The DNREC site inspection report of February, 1986, indicated CCA used the abandoned quarry as a landfill for various debris.

In 1984, the CCA site was purchased by Augustine Mill Associates for construction of the Brandywine Park Condominiums.

In July, 1985, the Department conducted a site visit in response to a local environmental group expressing concern over the planned residential use of the property. The Department staff observed stained soils, stressed vegetation, and an unspecified number of corroded cans, drums, and chemicals.

In February, 1986, the Department conducted a site inspection of the former CCA property and in July, 1986, a private environmental firm and the Department conducted a follow-up site inspection which included the excavation of eight test pits. As a result of the investigations, elevated levels of heavy metals (chromium, copper, lead) as well as low levels of PCB and pesticide contamination were detected in soil samples collected at the abandoned quarry. Because of the results of the site inspections, the Department initiated action under HSCA.

IV. REMEDIAL INVESTIGATION

CCA contracted an environmental consultant to conduct the remedial investigation at the former CCA site and the adjacent "cove" area under the direction of the Department. A geophysical survey was conducted in January, 1993. The purpose of the geophysical survey was to determine the presence or absence of magnetic anomalies. Magnetic anomalies may indicate the presence of buried chemical drums.

Based on the results of the geophysical survey, excavation test pits were strategically located to determine the nature and extent of contamination of soil/debris located in the area of the former quarry. Further, the sampling and analysis plan required surface water sampling of the Brandywine upstream, midstream, and downstream proximal to runoff areas from the quarry. Sediment samples were also taken from the same creek locations.

Sediment sample results taken from the Brandywine indicate the presence of semi-volatile organic compounds. The on-site sediment sample taken from a depressed area, which

collects surface runoff and sediment from much of the site, revealed benzo(a)pyrene at a level of 1.3 ppm, benzo(a)anthracene at 1.4 ppm, and benzo(b)fluoranthene at 2.3 ppm. This on-site sample, although referred to as a sediment sample, is actually a surface soil sample and may be directly compared to EPA's risk-based screening standards for residential soils. The Benzo(a)pyrene level exceeds Delaware's 1×10^{-5} cleanup standards and therefore could pose an unacceptable risk to human health. All of these compounds were detected in the three sediment samples taken from the Brandywine which indicates that the CCA site may be impacting the creek sediment.

Surface water samples were analyzed for metals, pesticides and PCBs. Pesticides and PCBs were not detected in surface water samples. Naturally occurring metals were detected. Based on the analytical results, existing environmental conditions at the former CCA site do not pose any threat to the surface water quality in the Brandywine Creek.

While the excavation test pits did not reveal any buried drums, subsurface soil sample results revealed the presence of semi-volatile and volatile organic compounds, pesticides, and PCBs at relatively low levels. The highest level of PCB contamination was detected at 4.1 ppm which exceeds EPA's residential soil screening standard by one order of magnitude. The maximum level of total semi-volatiles compounds was 12.45 ppm and the highest pesticide sample was at 1.27 ppm. The soil sample results also detected numerous metals, with five metals (arsenic, beryllium, copper, lead, and zinc) at seemingly elevated concentrations.

V. FACILITY REMEDIAL ACTION OBJECTIVES

In accordance with the Regulations, the Department assessed site risks by establishing remedial action objectives based on current and potential land use and cleanup levels that are protective of human health and the environment.

Remedial Action Objectives:

- To assess the site based on its current use as an open space and potential future use as a nature area permitting public access for passive, non-intrusive activities.
- To restrict intrusive activities to minimize disturbances and exposure to buried materials and to ensure that any utility corridors, roadways, post-holes, or other activities are performed utilizing proper chemical hazard and waste disposal precautions.

VI. RISK ASSESSMENT SUMMARY

Data collected from the CCA site were compared to the risk-based screening levels for soils developed by the United States Environmental Protection Agency, Region III and the Department's risk threshold of 1×10^{-5} . The comparisons clearly indicate that the site poses unacceptable exposure scenarios to unrestricted uses. With this in mind, and based on the site's historical use as an industrial landfill, the Department has considered the current practices for

remedy selection at landfill sites. The EPA has established, and the Department supports, the presumptive remedy to minimize or eliminate risk posed by abandoned landfill sites. The Department has determined that the presumptive remedy would permit existing passive land use activities (e.g., nature trail, right-of-way) and such uses would not pose any unacceptable risk scenarios provided the appropriate remedy and landfill closure requirements were implemented.

VII. FEASIBILITY STUDY

Upon completion of the RI, and after establishing remedial action objectives and determining any risks posed by the facility, the Department may require a feasibility study (FS) to evaluate the various options available to remediate a site. For some categories of sites with particular commonalties, the Environmental Protection Agency (EPA) has developed presumptive remedies. Presumptive remedies are based on historical patterns of remedy selection and the preferred technologies typically implemented at sites with similar characteristics.

In the case of landfills, the EPA's Office of Solid Waste and Emergency Response has developed a presumptive remedy policy entitled "EPA's Presumptive Remedy for CERCLA Municipal Landfill Sites." The Department has reviewed this policy and concurs with EPA's approach and philosophy of utilizing established remedies for categories of sites with similar characteristics (e.g., landfills). To this end, the Department herein adopts EPA's presumptive remedy for municipal landfills as the FS for the CCA site. The Department has determined that this established FS, and this approach, will streamline the remedial process and, at the same time, provide protectiveness to public health, welfare, and the environment.

The Department has placed on file "EPA's Presumptive Remedy for CERCLA Municipal Landfill Sites" and a supporting document entitled "Conducting Remedial Investigations/ Feasibility Studies for CERCLA Landfill Sites."

VIII. PUBLIC PARTICIPATION

The Department has provided the appropriate public participation as described in Section 12 of the Regulations. The Department actively solicited written comments and suggestions on the proposed plan by providing public notice and conducting a public hearing.

The public hearing to discuss the Proposed Plan of Remedial Action was held on Thursday, September 1, 1994, at the Department's New Castle office. The public comment period closed on November 18, 1994.

In June, 1996, the Department approved a design change. In order to accommodate the design change, the Container Corporation Site Final Plan of Remedial Action has been modified. Notice of the modification was published in the Wilmington News Journal on Sunday, July 14, 1996, and a public comment period was established. The public comment period closed on August 5, 1996. No comments were received from the public.

IX. REMEDIAL ACTION PLAN

In view of the presumptive remedy policy developed for landfill sites, and when considering existing passive land use scenarios and the requirements contained within the Regulations Governing Solid Waste, the following remedial actions will be required to ensure long-term protectiveness to public health, welfare, and the environment:

- The rubble piles near the center of the site and the cove area are to be spread-out and incorporated into the fill beneath the cap. Any other requirements regarding grading (i.e., positive slope for proper drainage) must be considered and met.
- Installation of a Geosynthetic Clay Liner (GCL) and a protective layer. The GCL and/or protective layer must be of such character that it can be compacted to minimize percolation of water through the cover, does not crack excessively when dry, and is free of putrescible materials and large objects.
- The final cover will be overlain with a six (6) inch layer of topsoil or material approved by the Department capable of supporting vegetation. The layer of topsoil shall be seeded to provide vegetation to stabilize the cover and prevent soil erosion and dust.
- Grading of the final cover and topsoil layer, after allowing for settlement and subsidence, shall be sloped to promote positive drainage which will eliminate any pooling of water on the covered area.
- Development of an operation-and-maintenance plan to assure long-term integrity and effectiveness of the cap.
- Possible installation of monitoring wells may be required as part of the mandates of the Regulations Governing Solid Waste.
- The former CCA site will be deeded as a landfill. The covenant will be executed by the property owner and recorded with the registrar of deeds for the county in which the facility is located.
- No disturbances to the landfill or cap may be done without receiving prior approval from the Department.

As indicated in Section VIII Public Participation, a design change led to a modification of this Final Plan of Remedial Action. Specifically, the second bullet item contained in Section IX Remedial Action Plan has been changed.

The original text read as follows:

“Installation of a final cover with a minimum thickness of two (2) feet after compaction. The cover material must be of such character that it can be compacted

to minimize percolation of water through the cover, does not crack excessively when dry, and is free of putrescible materials and large objects.”

The text now reads as follows:

“Installation of a Geosynthetic Clay Liner (GCL) and a protective layer. The GCL and/or protective layer material must be of such character that it can minimize percolation of water through the cover, does not crack excessively when dry, and is free of putrescible materials and large objects.”

It is important to note that this is the only change made to the Final Plan of Remedial Action.

X. DECLARATION

This Final Plan of Remedial Action for the Container Corporation of America is protective of public health, welfare, and the environment and is consistent with the requirements of the Delaware Hazardous Substance Cleanup Act.



10/2/96

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