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SITE: Hocomonco Pond

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EPA Superfund

Explanation of Significant Differences:

HOCOMONCO POND
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WESTBOROUGH, MA
09/21/1999

**EXPLANATION OF SIGNIFICANT DIFFERENCES
HOCOMONCO POND SUPERFUND SITE
WESTBOROUGH, MASSACHUSETTS**

1. **INTRODUCTION**

A. Site Name and Location

Site Name: Hocomonco Pond Superfund Site

Site Location: Town of Westborough, Worcester County, Massachusetts

B. Lead and Support Agencies

Lead Agency: United States Environmental Protection Agency (EPA)

Support Agency: Massachusetts Department of Environmental Protection (MADEP)

C. Legal Authority

Under Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9617 (c), Section 300.435(c) of the National Contingency Plan (NCP), 40 C.F.R. § 300.435(c)(2)(1) and EPA guidance, Office of Solid Waste and Emergency Response (OSWER) Directive 9355.3-02, if EPA determines that differences in the remedial action significantly change but do not fundamentally alter the remedy selected in the Record of Decision (ROD) with respect to scope, performance, or cost, EPA shall publish an explanation of the significant differences between the remedial action being undertaken and the remedial action set forth in the ROD and the reasons such changes are being made.

D. Summary of Circumstances Necessitating this Explanation of Significant Differences

The 1985 Record of Decision (ROD) and the 1992 Supplemental Decision Document (SDD) for the Hocomonco Pond Superfund Site, specify a remedy which addresses contamination of sediments, soils and groundwater at the Site. The ROD specified that "The ground water pumping and treatment system installed to lower the ground water prior to and during the excavation of soil/waste material will be operated after the excavation, if necessary, contingent upon an evaluation of groundwater quality after soil/waste removal". Subsequently in September of 1992, the EPA prepared The Final Supplemental Decision Document entitled *Cleanup Levels For Sediments, Soils and Groundwater and Limits of*

Excavation of Sediments and Soils, Hocomonco Pond Superfund Site, Westborough, Massachusetts. This document established cleanup levels for groundwater at the Site. Page number ES-7 of the SDD states that "These Interim Cleanup Levels for groundwater may be reassessed during implementation of the selected remedy and at the completion of the remedial action to reevaluate the protectiveness of the remedy." Also, EPA Policy Directive No. 9283.1-06 states that "After a groundwater remedy is implemented, modification of the remedial action objectives may be warranted where cleanup standards cannot be achieved, due to technical impracticability from an engineering perspective." In 1994, a groundwater treatment plant (GWTP) was designed and built in an attempt to obtain the clean up levels specified in the SDD. Investigations have revealed that Dense Non Aqueous Phase Liquids, creosote, are present at the Site at depths greater than 100 feet below grade. The presence of these DNAPL's result in a limitation in achieving the groundwater clean up goals.

The EPA has determined that remediating groundwater to drinking water quality may not be achievable in certain areas of Hocomonco Pond Site. This determination is based on experience gained at this Site and at other similar sites which are contaminated with creosote in sufficient quantity and concentration to form DNAPL's. The presence of this DNAPL represents a limitation that makes groundwater remediation using available remedial technologies technically impracticable.

The EPA will be waiving the groundwater ARAR's that were established in the SDD for certain portions of the Site, under the technical impracticability waiver for ARAR's provided under CERCLA § 121 (d)(4)(C) and NCP 40 CFR §300.430(f)(1)(ii)(C)(3).

E. Availability of Documents

This ESD and supporting documentation shall become part of the Administrative Record for the Site. The Administrative Record, including its index are available to the public at the following locations and may be reviewed at the times listed:

U.S. Environmental Protection Agency
Records Center
One Congress Street
Boston, MA 02114
Monday through Friday from 10:00 a.m. to 1:00 p.m.
and from 2:00 p.m. to 5:00 p.m.

Westborough Public Library
55 West Main Street
Westborough, Massachusetts 01581
Monday through Thursday from 10:00 a.m. to 9:00 p.m.,
Friday 10:00 a.m. to 6:00 p.m. and Saturday 10:00 a.m. to 5:00 p.m.

II. SUMMARY OF SITE HISTORY, CONTAMINATION PROBLEMS, AND SELECTED REMEDY

A. Site History and Contamination Problems

The Hocomonco Pond Site ("Site") is a partially wooded area, encompassing approximately 23 acres in the Town of Westborough, Worcester County, Massachusetts. The Site is bordered on the northwest by Hocomonco Pond, a 27-acre shallow, freshwater pond. Otis Street and Smith Valve Parkway border the Site on the east and south, respectively.

The Site has had a long history of industrial use beginning in the early 1900's with ice recovery and distribution from Hocomonco Pond. From 1928 to 1946, the Site was used for wood-treating operations by Montan Treating Company and American Lumber and Treating Company. This business consisted of saturating wood products (e.g., telephone poles, railroad ties, pilings and fence posts) with creosote to preserve them. During operations, wastes were discharged to a pit referred to herein as the "former lagoon".

The former lagoon was excavated on the Site to intercept and contain spillage and waste from the wood-treating operation. As this former lagoon became filled with waste creosote, sludges and water, its contents were pumped to two depressions located east of the company's operations near the west side of Otis Street. These depressions are referred to as the "Kettle Pond". Available records indicate that no creosote was used or stored on the Site by any person who owned or occupied the Site after March 26, 1946.

After 1946, the Site was converted to an asphalt mixing plant. Discarded aggregate and asphalt are common throughout the Site. In the 1950's, Beazer East, Inc. ("Beazer") (formerly Beazer Materials and Services, Inc.; formerly Koppers Company, Inc.), purchased the stock of the company which operated the wood treating facility. The last use of the Site was a cement plant from which dry cement was distributed in bulk. Smith Valve Company purchased the property of the former operations on April 2, 1976, and operated a manufacturing plant on a separate parcel on the southwest shore of Hocomonco Pond.

In 1976, a storm sewer was installed to collect surface drainage from a roadway and to contain a small watercourse which passed through the Site. At the order of the Westborough Conservation Commission, the storm pipe was laid with open joints, and unknowingly, was placed adjacent to the former lagoon. During periods of heavy rain, water passing into this open-jointed storm drainage system allowed creosote contaminated leachate to migrate through the drain and enter Hocomonco Pond.

The highest levels of wood treating constituents in Hocomonco Pond sediments have been found near the storm sewer outlet to the pond. Creosote contaminated leachate not only affected sediments along the southern shoreline of Hocomonco Pond, but also affected the discharge stream (approximate length 2,400 feet), which is located at the southeastern portion of the pond. Stream sediments have been contaminated with creosote as far downstream as 1,100 feet.

On November 21, 1979, the Massachusetts Division of Fisheries and Wildlife investigated a fish kill at Hocomonco Pond. Another fish kill was investigated on April 16, 1982. Both fish kills were reported to be attributed to creosote from the storm drain that passes next to the former lagoon. A sample of the oily fraction of the storm drain discharge contained several contaminants, collectively known as polynuclear aromatic hydrocarbons ("PAHs"). These PAHs include: phenanthrene, naphthalene, anthracene, pyrene, and fluoranthene. Water from the storm drain contained anthracene, phenanthrene, and fluoranthene.

During the reconstruction of Otis Street by the Massachusetts Department of Public Works in 1983, it was necessary to excavate soil adjacent to Kettle Pond. As a result of the excavation, some contaminated soil was unknowingly disturbed and redistributed within the roadway embankment on the Kettle Pond side (west side) during the reconstruction work.

B. Summary Of The Remedy As Originally Described In The ROD

The Record of Decision ("ROD"), signed September 30, 1985 described each of the alternatives evaluated in remediating the contamination on the Site, and described in detail the chosen alternative for each contaminated area of the Site as follows:

Groundwater - The ROD specified that "The ground water pumping and treatment system installed to lower the ground water prior to and during the excavation of soil/waste material will be operated after the excavation, if necessary, contingent upon an evaluation of groundwater quality after soil/waste removal".

Former Lagoon - The remedial action selected included site grading, capping and relocation of the former storm drain pipe located adjacent to the east side of the former lagoon. Relocation of the storm drain was completed in January, 1990.

Kettle Pond - The remedial action selected consisted of dewatering the pond and lowering the groundwater level in the immediate area which would expose the contaminated material, "dry" soil/waste excavation, dewatering of sediments and disposal of sediments in an on-site landfill. Effluent water would be treated for discharge to surface water and recharge to the aquifer. Prior to the removal of material, sheet piling would be placed to insure the stability of Otis Street. A landfill which meets the standards and requirements of the Resource Conservation and Recovery Act ("RCRA") would be constructed on site to dispose of the waste material. Following completion of the excavation, groundwater would be treated, as necessary, to meet EPA established groundwater quality criteria.

Hocomonco Pond and Discharge Stream - The remedial action selected consisted of mechanical dredging and disposal of contaminated sediments in an on-site landfill.

Otis Street and Isolated Areas - The remedial action selected for Otis Street consisted of sealing the storm drain. The remedial action selected for the isolated areas consisted of removal of the contaminated material at these locations and disposal in an on-site landfill.

All of the above remedial actions have been initiated and completed at the Site.

A Consent Decree was entered into between the EPA, the Commonwealth of Massachusetts, and the Potentially Responsible Parties ("PRPs"), i.e., Beazer East, Inc. (formerly Koppers Company, Inc.), Chicago Bridge and Iron Company, Smith Valve Corporation, Massachusetts Department of Public Works, and the Town of Westborough. The Consent Decree was entered by the United States District Court for the District of Massachusetts on January 10, 1988. The Consent Decree required that Beazer carry out work specified in the Remedial Design/Action Plan, which is attached as Appendix I to the Consent Decree. The other PRPs agreed to make various payments to Beazer.

The Site is zoned for industrial use, and several light industries/manufacturing facilities are located within one-half mile of the Site. The closest residential area is located approximately one-half mile south of the Site. The Otis Street municipal well is located approximately 2,000 feet northwest and upgradient of the Site.

In the vicinity of the Site, the Boston-Worcester Turnpike, i.e., Route 9, and the Massachusetts Turnpike, located 1 mile and 3 miles from the Site, respectively, transport the majority of traffic east to the metropolitan Boston area, and west to the City of Worcester.

A more complete description of the Site can be found in "Hocomonco Pond Site, Westborough, Massachusetts, Remedial Investigation Report, Final" dated September 1985.

C. The Supplemental Decision Document

The 1992 Supplemental Decision Document (SDD) established the cleanup goals for water, sediments, soils and also established the limits of soil excavation at the Site. The SDD set up these cleanup levels based on the premise that groundwater plume restoration was an achievable goal. The EPA and MADEP are now changing the remedial objective from plume restoration, to plume containment based on the fact that the presence of DNAPL at the Site makes groundwater restoration technically impracticable.

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D. Summary of the 1992 ESD

EPA's issuance of the 1992 ESD was necessary because of changes in the remedy for the cleanup of contamination in Kettle Pond, as originally specified in the ROD (See section II B). The changes involve eliminating the requirement in the ROD for sheet piling and "dry" excavation of the sediments and soils in Kettle Pond, and requires "wet" excavation of the shallow contaminated material. The changes also eliminate the requirement in the ROD for

excavating, dewatering and landfilling the deeper contaminated soil beneath Kettle Pond, and require the use of other technologies such as in-situ bioremediation and soil flushing.

During the in-situ bioremediation treatment process, high precipitation of naturally occurring iron, caused a problem with the treatment process. The limitation of the in-situ bioremediation process necessitated evaluating other technologies. After reviewing other remedies, the EPA and MADEP EPA have determined that remediating groundwater to drinking water quality may not be achievable in certain areas of Hocomonco Pond Site. This determination is based on experience gained at other similar sites which are contaminated with creosote in sufficient quantity and concentration to form DNAPL's. Most of the sites where the EPA already has determined that groundwater restoration is technically impracticable have been DNAPL sites.

III. Basis for This ESD

This ESD documents the EPA's and MADEP's decision on waiving the cleanup goals for the kettle Pond area. The EPA and MADEP utilized the following EPA guidance in preparing this ESD:

- 1.) Guidance for evaluating the Technical Impracticability of groundwater Restoration, EPA/540-R-93-080, September.
- 2.) DNAPL Site Characterization, EPA/540/F-94/049, September 1994.
- 3.) Considerations in Groundwater Remediation at Superfund Sites and RCRA Facilities- Update, Directive No. 9283.1-06, May 1992.

A. Re-evaluation of Remedy Based On Analytical Data

Page ES-7 of the SDD states that "These Interim Cleanup Levels for groundwater may be reassessed during implementation of the selected remedy and at the completion of the remedial action to reevaluate the protectiveness of the remedy." At this time the EPA is reevaluating the selected remedy at the Site because EPA has determined that remediating groundwater to drinking water quality may not be achievable in certain areas of Hocomonco Pond Site. This determination is based on experience gained after issuance of the SDD and at other similar sites which are contaminated with creosote in sufficient quantity and concentration to form DNAPL's. The presence of this DNAPL represents a limitation that makes groundwater remediation using available remedial technology difficult. Most of the sites where the EPA already has determined that groundwater restoration is technically impracticable have been DNAPL sites. Available information for this Site indicates that creosote DNAPL presently exists at locations greater than 100-feet below ground surface adjacent to the Kettle Pond area of the Site.

DNAPL recovery activities are currently ongoing at the Site. The EPA and MADEP shall define the duration of DNAPL recovery based on analytical data.

The details of such a TI demonstration are contained in the documents entitled, *Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration*, dated September 1993 (EPA Publication 9234.2-25). This document outlines EPA's approach to evaluating the technical impracticability of attaining required groundwater cleanup levels and establishing alternative, protective remedial strategies where restoration is determined to be technically impracticable. Accordingly, a Technical Impracticability ("TI") Waiver is appropriate for certain areas of the Hocomonco Pond Site.

B. Technical Impracticability Evaluation

In compliance with CERCLA § 121 (d)(4) and NCP §300.430(f)(1)(i), ARAR's may be waived by EPA for any of the six reasons specified by CERCLA and the NCP if compliance with such requirements is technically impracticable from an engineering perspective.

A Site wide sampling program and evaluation was performed by the PRP's to support the Technical Impracticability Waiver. The results of these sampling events are summarized in *Report Demonstrating The Technical Impracticability of Restoring Groundwater At The Hocomonco Pond Site*, prepared by Fluor Daniel GTI dated April 1998 and in *Sediment Sampling Summary*, prepared by Ogden Environmental dated February 1999 . These reports support that it is technically impracticable to remediate groundwater to the cleanup goals that are specified in the SDD. These documents are part of the record supporting this ESD.

IV. DESCRIPTION OF SIGNIFICANT DIFFERENCES

Based upon the technical impracticability evaluation and related waiver of ground water ARARs and cleanup levels, a modification to the component of the remedy is warranted. The EPA and MADEP are changing the original remedy from plume restoration to plume containment. The EPA and MADEP consider the modified remedy to be adequately protective of human health and the environment because of the institutional controls, the long term monitoring, and continuing with DNAPL recovery activities. A description of the modification follows:

A. Ground Water Extraction and Treatment

The 1985 ROD specified that "The ground water pumping and treatment system installed to lower the ground water prior to and during the excavation of soil/waste material will be operated after the excavation, if necessary, contingent upon an evaluation of groundwater quality after soil/waste removal.

The 1992 Supplemental Decision Document establishes cleanup levels for groundwater, sediments and soils at the Site. Also, page number page ES-7 of the SDD states that "These Interim Cleanup Levels for groundwater may be reassessed during implementation of the selected remedy and at the completion of the remedial action to reevaluate the protectiveness of the remedy." In 1995 a groundwater treatment plant (GWTP) was

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designed and built to obtain these clean up levels using a groundwater pump and treat system to 1.) remove DNAPL's and treat the associated contaminated groundwater and 2.) recover contaminated groundwater near Kettle Pond, remove the contamination, then add nutrients which would cause bioremediation and then reinject the treated water until the clean up goals were met throughout the Site. The DNAPL recovery and the contaminated groundwater treatment shall continue. However, the treatment of groundwater from the bioremediation system, will be discontinued.

To date, over 31,000 gallons of pure creosote, DNAPL, have been recovered from the Site. DNAPL recovery is currently ongoing and shall continue until such time that it can be demonstrated that it is no longer technically practicable. The EPA and MADEP will review and evaluate future data and/or reports that may support the fact that DNAPL recovery is no longer effective. DNAPL recovery shall continue until the EPA and MADEP give a written approval stating otherwise.

DNAPL recovery

B. Long-Term Environmental Monitoring

Ground water monitoring (quality and water levels) along with surface water and sediment sampling will be conducted over a period of time to determine if the ground water within the Technical Impracticability Waiver area is hydraulically contained as well as to establish that the contamination levels at the Site remain at an acceptable level and will not increase in magnitude or areal extent.

LTA just applied to the TI Waiver

Based on the remedial efforts to date along with the TI data, contamination levels are expected to remain constant. However, should the contamination levels increase in magnitude or extent, based on the ongoing analysis of the long term monitoring data, additional Site work or engineering controls may be necessary to ensure that the contamination remains within the TI zone and to ensure that the remedy remains protective of human health and the environment. The EPA in consultation with the MADEP, shall determine when and if additional Site work needs to be undertaken.

C. Institutional Controls

In order to further ensure the protectiveness of the remedy, a deed restriction will be placed upon the Hocomonco Pond property which will prohibit extraction of the ground water for purposes other than the remedial action unless the extracted ground water meets or is treated to appropriate water use and/or disposal standards in effect at the time of extraction and the extraction of the ground water does not adversely affect the remedial action.

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All of the proposed modifications embodied in this ESD will protect human health and the environment, will comply with all applicable or relevant and appropriate Federal and State requirements except those waived due to technical impracticability, will provide for a longterm and permanent remedy for the Site, will reduce the mobility, toxicity, and volume of contaminants at the Site to a similar degree as the remedy outlined in the 1992 SDD, the 1992 ESD and will pose the same short-term risks as the remedy contained in the 1985 ROD.

D. *Extent of TI Zone*

The horizontal and vertical extent of the TI zone are described in detail on page 13 of the report entitled: *Report Demonstrating The Technical Impracticability of Restoring GroundwaterAt The Hocomonco Pond Site, prepared by Fluor Daniel GTI dated April 1998.*

V. SUPPORT AGENCY COMMENTS

The Massachusetts Department of Environmental Protection has participated with EPA in developing this ESD and the State is in agreement with the changes.

VI. STATUTORY DETERMINATIONS

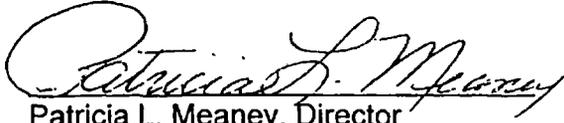
EPA has determined that the selected remedy specified in the ROD, SDD and ESD with the above-described changes, remains protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to this remedial action, and is cost-effective. Along with institutional controls, the revised remedy utilizes permanent solutions, and alternative treatment technologies to the maximum extent practicable for this Site.

VII. PUBLIC PARTICIPATION

This ESD and supporting information are available for public review at the locations identified within this document. In addition, a notice of availability of the ESD will be provided to a local newspaper of general circulation.

VIII. DECLARATION

For the foregoing reasons, by my signature below, I approve the issuance of an Explanation of Significant Differences and associated Technical Impracticability Waiver for the Hocomonco Pond Superfund Site in Westborough and the changes and conclusions stated therein.



Patricia L. Meaney, Director
Office of Site Remediation and Restoration
USEPA, Region I

9/21/99
Date