

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

MAY 17 2002

SUBJECT: Request for a Removal Action
Standard Chlorine Site
Delaware City, New Castle County, DE

FROM: Abraham Ferdas, Director
(Hazardous Site Cleanup Division (3HS00))

TO: Marianne L. Horinko, Assistant Administrator
Office of Solid Waste and Emergency Response (5101)

THRU: Elaine F. Davis, Acting Director
Office of Emergency and Remedial Response (5201)

ATTN: Thomas R. Scheckells, Director
Region 3/8 Accelerated Response Center (5204G)

ISSUE

The attached Action Memorandum pertains to the Standard Chlorine Site (Site), an inactive chemical manufacturing facility, located in Delaware City, New Castle County, Delaware. The On-Scene Coordinator (OSC) responded to this location on May 2, 2002, at the request of and to assist the Delaware Department of Natural Resources and Environmental Control (DNREC) in an evaluation of the facility pending a shut down of operations due to financial distress. The owner/operator of the chemical manufacturing facility, Metachem Products, LLC, is now in bankruptcy. Metachem Products, LLC, was in the business of manufacturing chlorinated benzene compounds, e.g., dichlorobenzene, for wholesale. The facility was in the business of mixing chlorine and benzene, which remain at the Site, in order to manufacture monochlorobenzene, dichlorobenzene isomers, trichlorobenzene isomers, tetrachlorobenzene, and hydrochloric acid as a byproduct.

Millions of pounds of chemicals remain at the inactive facility in more than 140 storage tanks and vessels, more than 50 rail cars, within hundreds of drums and other small containers, and within soil piles and an impoundment (part of a National Priorities List (NPL) Site). Some of the tanks and containers show evidence of releases and are in poor condition (e.g., evidence of deteriorated seams). Additionally, an unknown amount of chemical wastes is also located in roll-off containers, tanks, and within trenches, drains, catch basins and sumps which drain the chemical production area.

Contaminated drainage enters a Waste Water Treatment Plant (WWTP) for treatment before discharge to the Delaware River. In the absence of WWTP operations or other measures, the Site will discharge contaminated liquids to the environment.


Conditions at the Site meet the criteria set forth in Section 300.415 of the NCP supporting the need for a Removal Action. Additionally, the Region finds that conditions at the Site described above and within the attached Action Memorandum constitute a public health threat warranting time-critical attention; and no other person or agency with authority can respond in a timely manner to complete the actions, although DNREC has and is expected to continue to assist the OSC. Region III has approved the attached Action Memorandum in the amount of \$1,967,900, of which \$1,868,200 is from the Regional Removal allowance. On May 14, 2002, the Acting Assistant Regional Administrator provided verbal approval for the expenditure of \$200,000 against the total estimated Removal Action project ceiling of \$1,967,900. This allocation will enable Region III to properly stabilize the facility and complete actions necessary to protect public health and welfare, and to minimize releases of hazardous substances to the environment.

Attachment: Action Memorandum

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

MAY 17 2002

SUBJECT: Request for Removal Action at the
Standard Chlorine Site
Delaware City, New Castle County, Delaware

FROM: *for* Michael Towle, On-Scene Coordinator 
Removal Response Section (3HS31)

TO: Abraham Ferdas, Director
Hazardous Sites Cleanup Division (3HS00)

I. ISSUE

The purpose of this Action Memorandum is to request funds to conduct a Time-Critical Removal Action at the Standard Chlorine Site located along Governor Lea Road just north of Delaware City, New Castle County, Delaware. The Site is the location of a chemical manufacturing facility which was last owned and operated by Metachem Products, LLC, and which produced chlorinated benzene compounds including monochlorobenzene (chlorobenzene) and various dichlorobenzene, trichlorobenzene and tetrachlorobenzene isomers. Immediate response actions at this Site are necessary to address threats to human health and welfare and the environment posed by the presence of millions of pounds of various raw materials, chemical products, production byproducts, and wastes containing numerous hazardous substances which remain at the inactive facility. Hazardous substances and chemicals at the Site include benzene, chlorine, monochlorobenzene (chlorobenzene), dichlorobenzene, trichlorobenzene, tetrachlorobenzene, hydrochloric acid, ethylene glycol, and caustic solutions of sodium hydroxide (above a pH of 12.5). Polychlorinated biphenyl (PCB) compounds are also present at the Site as they are generated by one of the chemical reactions conducted at the facility. The hazardous substances are located within approximately 200 tanks, vessels, and railcars as well as within hundreds of drums, bags, totes, and other storage boxes. Hazardous substances are also present in the solid and semi-solid materials contained in numerous trenches, sumps, catch basins, pipes, and drains in the chemical production facility. Hazardous substances, including dichlorobenzene, are also present in the soils, sediment, and ground water that are part of a Site included on the National Priorities List (NPL) which is the subject of a remedial action being implemented under a Record of Decision dated March 9, 1995.

Benzene, chlorine, monochlorobenzene (chlorobenzene), various dichlorobenzene isomers, 1,2,4-trichlorobenzene, and 1,2,4,5-tetrachlorobenzene, hydrochloric acid, PCBs and caustic

solutions (above a pH of 12.5) are hazardous substances pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and are listed at 40 C.F.R. § 302.4. Other chemicals, oils, and materials are also present at the Site including lime slurry, ethylene glycol, solutions containing the hazardous substances mentioned above, diesel fuel, no.2 fuel oil, and kerosene. The Site is the location of the inactive chemical production facility, several drum storage areas, a dichlorobenzene packaging unit, railcar loading areas, two soil piles containing chlorinated benzene compounds from a previous release at the facility, an impoundment of contaminated sediment, and a Waste Water Treatment Plant (WWTP) as well as several structures related to these areas and facilities. The company most recently conducting manufacturing operations at the Site, Metachem Products, LLC (Company), has filed under Chapter 11 of the U.S. bankruptcy code and is expected to shortly convert its petition to a Chapter 7 filing. The production facility is surrounded by a fence, but contaminated soil piles, an impoundment, and over 30 railcars are located outside of the fenced area. The OSC understands that the Company has agreed to pay certain employees to maintain a security presence at the Site until May 20, 2002. The Site is immediately adjacent to several chemical production or processing facilities employing hundreds of workers. Residential communities are about three miles away. Site runoff enters tributaries of Red Lion Creek which drains into the Delaware River. Discharges of hazardous substances from the Site are minimized only by the limited presence of Company personnel and operation of the facility's WWTP. The potential for vandalism, fire, or other uncontrolled events at the facility, as well as storm events and/or the cessation of electrical service, water service, or operations at the WWTP, could result in a release of hazardous substances into the environment threatening trespassers, nearby workers, and aquatic receptors.

The On-Scene Coordinator (OSC) has completed an initial Removal Site Evaluation at this facility and finds that conditions at the Site pose threats that meet the criteria for Removal Action set forth in Section 300.415 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). These threats are further described in Section III of this Action Memorandum. Although the owner of the facility initiated actions to remove hazardous substances from process vessels and certain pipelines and to properly treat or store those chemicals, these operations are now inactive. The facility owner claims it does not have funds to complete response actions at the Site, continue security at the Site, and operate the Waste Water Treatment Plant. CERCLA funding in the amount of \$1,967,900, of which \$1,868,200 are from the Regional Removal allowance, is necessary to mitigate the threats identified in this Action Memorandum. On May 14, 2002, the Acting Assistant Regional Administrator provided verbal approval for the expenditure of \$200,000 against the total estimated Removal Action ceiling of \$1,967,900.

II. BACKGROUND AND SITE CONDITIONS

A. Site Description

The OSC responded to the Site on May 2, 2002, along with emergency response officials from the Delaware Department of Natural Resources and Environmental Control (DNREC) to evaluate conditions at the Site to initiate a Removal Site Evaluation in the face of imminent bankruptcy.

Manufacturing of chlorinated benzene chemicals began at the facility in 1966 when it was owned and operated by Standard Chlorine of Delaware, Inc. The facility includes over 100 tanks and process vessels, thousands of feet of piping, drum storage areas, a warehouse, a dichlorobenzene flaking and packaging unit, railroad sidings and tank car unloading areas, contaminated soil piles, an impoundment containing contaminated sediment, a Waste Water Treatment Plant (WWTP), and numerous other structures. The Site is located in a rural area of Delaware, but is nearly surrounded by other chemical production and processing facilities. Red Lion Creek and its tributaries, which drain to the Delaware River, are located within 1000 feet to the north and west of the Site.

The chemical production facility was most recently owned and operated by Metachem Products, LLC. The facility produced a variety of chlorinated benzene compounds including monochlorobenzene (chlorobenzene), various dichlorobenzene and trichlorobenzene isomers, tetrachlorobenzene when it was in market demand, and hydrochloric acid. These products were the result of chemical processing and distillation after the mixture and reaction of the facility's basic raw materials, which are chlorine and benzene. Chlorine was supplied via a pipeline from an adjacent chemical production facility and benzene was transported by tanker and stored on-site.

Metachem Products, LLC, claims that the loss of a significant component of its customer base and other economic factors caused financial distress in 2002. The Company notified the government that due to its financial situation, it would declare bankruptcy, cease operations, and seek to abandon the facility while millions of pounds of chemicals were stored therein.

The facility also includes a Waste Water Treatment Plant (WWTP) that treats and then discharges liquids to the Delaware River. Two surface water/runoff discharges also exist at the facility. Each of these discharges is permitted under the NPDES program. Sludge produced by the WWTP is a hazardous waste pursuant to RCRA and is currently stored on-Site in roll-off containers.

B. Quantities and Types of Substances Present

During the Removal Site Evaluation, the Company provided the OSC and DNREC officials with available inventory information. The OSC's observations of May 7 and 8, 2002, and the Company's inventory indicate that tens of millions of pounds of various chlorinated benzene compounds as well as hundreds of thousands of pounds of other chemicals remained at the facility in various storage containers and tanks, process vessels, rail cars, drums, and in other locations (e.g., product bags, roll off containers, trenches, sumps, drains). Additionally, tons of contaminated soil and sediment are stockpiled on the NPL Site. The Company is still preparing a final inventory of materials remaining at the Site; thus, the final volume of chemicals and wastes and hazardous substances located at the Site is significant, but not known.

Hazardous substances at the Site include more than two million pounds of liquid benzene, 36 million pounds of chlorinated benzene materials, 150,000 pounds of caustic solutions, and 150,000 pounds of hydrochloric acid in storage tanks and process vessels alone. Additional quantities of hazardous substances are located in railcars, drums, and other storage containers. Hazardous substances at the Site include benzene, chlorine, monochlorobenzene (chlorobenzene), various dichlorobenzene isomers, 1,2,4- trichlorobenzene, and 1,2,4,5-tetrachlorobenzene, hydrochloric acid, PCBs, and caustic solutions (above a pH of 12.5).

C. National Priorities List Status

After a significant spill of dichlorobenzene in 1986 contaminated soil, sediment, and ground water, the Standard Chlorine Site was placed onto the National Priorities List (NPL). The NPL Site includes the area of the stockpiled contaminated soil and an impoundment into which contaminated sediment was placed. Additionally, ground water wells pump contaminated ground water and deliver it for treatment through facilities formerly operated by Metachem Products, LLC. The ground water pump and treat system is not functioning at this time. The contaminated soil and sediment is located outside of the fenced area of the Metachem property.

D. State and Local Authorities' Roles

The Delaware Department of Natural Resources and Environmental Control (DNREC or the Department) is working along with the OSC to evaluate quickly changing Site conditions. DNREC is actively assessing the Site, meeting with Company officials, and has prepared to assume security at the Site for a limited time should the Company cease its presence. The OSC coordinates activities with the Department and the Department has requested the OSC assist with development and implementation of stabilizing actions should the Company cease its presence at the Site and discontinue stabilization and cleanup operations and/or WWTP operations.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT

Section 300.415 of the NCP, 40 C.F.R. § 300.415, identifies factors to be considered in determining the appropriateness of a removal action. Paragraphs (b) (2) (i), (iii), (iv) (v), (vi) and (vii) apply to the need for response at the Standard Chlorine (Metachem) Site as follows.

§ 300.415 (b)(2)(i) "Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;"

Millions of pounds of chemicals, wastes, and hazardous substances including benzene, chlorine, monochlorobenzene (chlorobenzene), dichlorobenzene, trichlorobenzene, tetrachlorobenzene, hydrochloric acid, ethylene glycol, PCBs, and caustic solutions are located within various containers and media at the Site. Observed releases of hazardous substances, e.g., trichlorobenzene and dichlorobenzene, into drains and trenches at the Site flow to the WWTP at the facility where they are treated and then discharged. The end of operation of the WWTP, threatened by the shut down of the facility, will lead to the uncontrolled discharge of hazardous substances from the Site to tributaries of Red Lion Creek and the Delaware River as rain events fill and overwhelm the facility's drainage network. Some tanks at the Site show evidence of weakened integrity and some drums are in poor condition (deteriorated) or have released their contents. Runoff of hazardous substances from the Site would migrate to tributaries of Red Lion Creek and the Delaware River threatening the aquatic environment since chlorinated benzene compounds at the Site are considered pesticide compounds and are toxic. Failure of tanks or release of hazardous substances in a fire would threaten hundreds of workers either on-Site or at nearby facilities. Many of the products at the Site liberate hazardous substances, e.g., hydrochloric acid or chlorine, when they decompose in heat. At least one major spill from a tank at this Site in the past has resulted in significant environmental

damage and cleanup costs.

A plume of contaminated ground water, also covered by the NPL activities, exists beneath the Site and threatens discharge to Red Lion Creek. A ground water pump and treatment system operated while the facility was in operation.

Benzene, a flammable liquid located in two storage tanks, and mixed in several process vessels is a human carcinogen. Benzene may produce leukemia and lymphoma by inhalation. Chlorine gas is mixed with benzene to produce many other chemicals at the facility. These chemicals are located in an assortment of tanks and vessels.

Chlorine, a non-flammable poison gas, is located in a supply pipeline and pipes feeding reactor vessels. Chlorine is a respiratory irritant to humans and may form corrosive hydrochloric acid in the presence of moisture.

Monochlorobenze (chlorobenzene) is a colorless flammable liquid and a poison. Deleterious human reproductive effects may occur by the inhalation route and repeated exposure may cause liver and kidney damage. Monochlorobenzene is toxic to aquatic life.

Dichlorobenzene (DCB) predominantly exists in two isomers at the facility. Ortho-DCB is a clear liquid which is a poison and a pesticide. The liquid can be flammable. Para-DCB is a white crystalline solid which is a poison and a pesticide. The solid can be flammable. Dichlorobenzene isomers are irritating to the eyes and potentially carcinogenic. Chronic exposure through inhalation of vapor can lead to liver and potentially kidney damage in humans. Dichlorobenzene is toxic to aquatic animals, e.g., fish.

1,2,4 - trichlorobenzene is a liquid (melting point about 64 degrees Fahrenheit) and a poison. Exposure to vapors causes irritation to human eyes and skin. Chronic exposure may lead to liver, lung and kidney damage. 1,2,3-trichlorobenzene is a white solid and is also irritating to eyes. Chronic exposure may also lead to liver and kidney damage. Trichlorobenzene compounds are toxic to aquatic organisms.

1,2,4,5 tetrachlorobenzene is a solid and, like trichlorobenzene compounds, irritating to the eyes. The chemical may be absorbed through the skin and chronic exposure may lead to human liver and kidney damage. Processing of tetrachlorobenzene at the Site produces PCBs which are toxic and a skin irritant.

§ 300.415 (b)(2)(iii) "Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;"

The hazardous substances at the Site exist within about 140 tanks and vessels, more than 50 rail cars, and hundreds of drums and other small containers. Some of the tanks, drums, and containers observed by the OSC have released or threaten to release their contents. Drums were observed by the OSC to have split open, show deterioration at seams, or to lack secure tops or bungs. Dichlorobenzene compounds were observed by the OSC to have been discharged from a pump, and

trichlorobenzene compounds were observed by the OSC to have released from drums and other packages. Numerous spilled materials from tanks, pumps, and lines are located within the trenches and drains which lead to the WWTP. If the WWTP were not operated, then the hazardous substances would discharge from the Site as rain events overwhelm the Site's drainage system.

§ 300.415 (b)(2)(iv) "High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;"

Thousands of tons of soil and sediment contaminated by spills of chlorinated benzene compounds are currently stockpiled at the Site. The soils exist in two covered piles and the sediments exist in an impoundment located on the NPL Site. These contaminated materials are located outside of the fenced facility. In the absence of maintenance of the soil pile covers and impoundment water level by the facility owners, the hazardous substances in these piles and impoundment may be released to the environment.

§ 300.415 (b)(2)(v) "Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;"

An unknown quantity of hazardous substances and contaminated solids are located on the pads beneath the tanks and process areas and in the trenches, sumps, catch basins and drains which lead to the WWTP. These hazardous substances would be treated by the WWTP during normal operations. In the absence of the WWTP's operation, these hazardous substances would be discharged from the Site as rain events overwhelm the Site's drainage system. Additionally, erosion of the soil piles or eventual filling of the impoundment would also result in the release of hazardous substances from the Site. Storm events would be responsible for increasing the potential for a release of hazardous substances from the Site.

§ 300.415(b)(2)(vi) "Threat of fire or explosion;"

Many of the chemicals (e.g., benzene and monochlorobenzene) stored at the Site are flammable. Many of the chemicals also liberate toxic compounds (e.g., hydrochloric acid and chlorine) during decomposition. The facility has a fire suppression system, but service is likely to be cut off in the near future due to lack of payment to the water supplier. A fire at the Site poses a threat to workers at adjacent facilities. Runoff water from fire fighting efforts poses a threat to Red Lion Creek and the Delaware River. Local fire officials have indicated that they would be able to fight a fire in the interior of the facility only with the assistance of knowledgeable facility personnel.

§ 300.415 (b)(2)(vii) "The availability of other appropriate federal or State response mechanisms to respond to the release;"

The State of Delaware and other response organizations involved in the evaluation of the Standard Chlorine Site have requested that the EPA OSC assist in actions to stabilize Site conditions and minimize the potential for a release of hazardous substances.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response actions outlined in this funding request, may present an imminent and substantial endangerment to the public health, welfare, or the environment.

V. PROPOSED ACTIONS AND COSTS

The actions proposed in this Funding Request are intended to contain, secure, treat or remove hazardous substances, pollutants, contaminants, chemicals, and wastes located at the Site in order to minimize the potential for a release of hazardous substances which threatens human health or the environment.

A. Proposed Actions

1. Mobilize personnel and equipment.
2. Provide 24-hour security to minimize or prevent potential exposure to hazardous substances at the Site.
3. Provide fire suppression services and/or equipment to minimize the potential for a release of hazardous substances during a fire.
4. Prepare and/or maintain temporary and secure storage or containment for hazardous substances, pollutants or contaminants generated during the Removal Action or otherwise located at the Site (existing facility storage may be utilized). Move hazardous substances to secure storage areas in order to minimize the potential for a release of hazardous substances from the Site.
5. Remove hazardous substances from surface pads, trenches, catch basins, drains, sumps, and other subsurface components of the drainage system influent to the WWTP to minimize the migration of hazardous substances to the WWTP or towards off-Site discharges. These hazardous substances may be placed into containers and in the secure storage areas identified above.
6. Provide for containment and treatment, as needed, to ensure that liquid drainage and other runoff from the Site meets substantive requirements of the NPDES permit established for the facility, at a minimum. Containment may include erosion and sedimentation controls.
7. Contain onsite hazardous substances in soil, sediment, ground water, and other media to minimize any releases of hazardous substances to the environment. Containment may be accomplished by various techniques, including but not limited to ensuring adequate soil cover or reducing liquid levels to minimize the potential for overflow of water from the impoundment holding contaminated sediment.

8. Ensure that tanks, vessels, railcars, containers, pipes, lines, equipment, or piles provide for containment of hazardous substances onsite to minimize the potential for any releases of hazardous substances to the environment. Remove hazardous substances from tanks, vessels, railcars, containers, pipes, lines, equipment, or piles of suspect integrity, or from those containers which contain liquid and which the OSC determines contain hazardous substances which threaten release to the environment due to inadequate integrity, maintenance, or security.
9. Conduct necessary treatment of hazardous substances removed from tanks, vessels, railcars, containers, pipes, lines, trenches, drains, sumps, catch basins, and equipment in accordance with RCRA standards to facilitate disposal of hazardous substances off-Site in accordance with 40 C.F.R. § 300.440 and Section 121(d)(3) of CERCLA.
10. Dispose off site hazardous substances removed under 7, 8 or 9 above in accordance with 40 C.F.R. § 300.440 and Section 121(d)(3) of CERCLA.
11. Move, remove, or dispose of non-hazardous debris impeding removal actions identified above.
12. Conduct continuing assessment of railcars, tanks, vessels, containers, soil, sediment, and other media in order to verify contents, inspect integrity, and minimize the potential for releases of hazardous substances.
13. Coordinate with State and Local authorities on removal and post-removal activities and conditions intended to, among other things, ensure the continued integrity of the controls installed during the Removal Action. Additionally, coordinate with trustee or other designated representative responsible for removing assets or chemicals from the Site.
14. Demobilize personnel and equipment.

B. Contribution To Remedial Performance

The proposed Removal Action is not expected to be inconsistent with or hinder any Remedial Actions at the Site. The OSC will coordinate Removal activities with the EPA Remedial Project Manager and DNREC. The Removal Action is expected to facilitate and contribute to future Remedial Actions by minimizing releases of hazardous substances into the environment which would require future remedial actions. Removal of chemicals from the Site will reduce the potential for migration of hazardous substances into the ground water. Security and containment activities at the Site will enable the OSC to monitor and maintain soil piles and impoundment levels. The OSC will coordinate with the Remedial Project Manager regarding operation of ground water pump and treat systems to minimize the migration of hazardous substances in the ground water.

C. Compliance With ARARs

The proposed Removal Action will comply with applicable or relevant and appropriate environmental and health requirements (ARARs), to the extent practicable considering the exigencies of the situation. The OSC has requested that DNREC officials identify and provide proposed State ARARs by May 30, 2002. The OSC will identify substantive discharge requirements (e.g., NPDES) imposed upon the operating facility. The OSC will also coordinate with EPA personnel regarding RCRA and TSCA issues. Since RCRA wastes are present at the facility, the OSC will ensure that substantive requirements of RCRA are met to the extent practicable considering the exigencies of the situation.

D. Estimated Costs

The proposed distribution of funding is as follows:

Extramural Costs:

Regional Removal Allowance Costs:

ERRS (includes 10% contingency)	\$1,868,200
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Other Extramural Costs Not

Funded from the Regional Allowance:

START (includes contingency)	\$ 99,700
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Total, Removal Action

Estimated Project Ceiling:	\$1,967,900
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VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If the actions described in this Action Memorandum are not conducted, hazardous substances, including benzene, chlorine, monochlorobenzene (chlorobenzene), dichlorobenzene, trichlorobenzene, tetrachlorobenzene, hydrochloric acid, PCBs, and caustic solutions may be released into the environment. This potential release poses a significant threat to human health and welfare and the environment. Without actions to reduce the potential for direct contact with hazardous substances at the Site and actions to reduce the potential for releases from the Site into Red Lion Creek and the Delaware River, potential threats posed to human and aquatic receptors may increase as the potential for trespassers, vandalism or overwhelmed facility drainage systems increases and the facility deteriorates.

VII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues pertaining to the Standard Chlorine Site. EPA is coordinating with the U.S. Department of Justice regarding bankruptcy issues.

VIII. ENFORCEMENT STATUS

The OSC has provided the EPA Removal Enforcement Section with information available to pursue any and all enforcement actions pertaining to the Standard Chlorine Site. See attached Confidential Enforcement Addendum.

The total EPA costs for this Removal Action based upon full-cost accounting practices that will be eligible for cost recovery, as modified by certain bankruptcy stipulations, are estimated below as follows¹:

Direct Extramural Costs:	\$1,967,900
Direct Intramural Costs:	\$ 432,000
Indirect Costs (29%):	\$ 695,971
Estimated EPA Costs for Removal Action:	\$3,095,871

IX. RECOMMENDATION

Because conditions at the Standard Chlorine Site meet the criteria for a Removal Action as set forth in Section 300.415 of the NCP, 40 C.F.R. § 300.415, I recommend your approval of funding of the Removal Action described herein. Your approval will establish an estimated Total Removal Action Project Ceiling of \$1,967,900, of which \$1,868,200 are from the Regional Removal Allowance. You may indicate your approval or disapproval by signing below.

Approved *K. H. [Signature]* Date 5/17/03
for DSO

Disapproved _____ Date _____

Attachment: Confidential Enforcement Addendum

¹ As required by OSWER 9360.0-42, this footnote is included herein: Direct Costs include direct extramural costs and direct intramural costs. Indirect Costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgement interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a Removal Action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.