



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION 1
 1 CONGRESS STREET, SUITE 1100
 BOSTON, MASSACHUSETTS 02114-2023

Superfund Records Center
 AGENCY: Centredale
 BREAK: 29
 OTHER: 458/465

CONTAINS ENFORCEMENT-SENSITIVE INFORMATION

MEMORANDUM



SDMS DocID 458465

DATE: July 16, 2009

SUBJ: Request for a Removal Action at the Centredale Manor Restoration Site, North Providence, Bristol County, Rhode Island - **Action Memorandum**

FROM: Ted Bazenas, On-Scene Coordinator
 Emergency Response and Removal Section II

THRU: Steven R. Novick, Chief
 Emergency Response and Removal Section II

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TO: James T. Owens III, Director
 Office of Site Remediation and Restoration

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of the proposed removal action at the Centredale Manor Restoration Site (the Site or CMRP), which is located in North Providence, Bristol County, Rhode Island. Hazardous substances, present in soil, surface water, sediment and groundwater at the Site, if not addressed by implementing the response actions selected in this Action Memorandum, will continue to pose a threat to human health and the environment. EPA has negotiated an Administrative Order on Consent for implementation of the actions described herein. In the event that the Potentially Responsible Party (the Respondent) does not perform the actions as directed in the Order, EPA is prepared to undertake the work on a fund-lead basis, pending availability of funding. There are no nationally significant or precedent-setting issues associated with this Site, and there has been no use of the OSC's \$200,000 warrant authority.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID# : RID981203755
SITE ID# : 016P
CATEGORY : Time-Critical

A. Site Description

1. Removal site evaluation

There have been several previous investigations at the Site by EPA Removal Program and the Remedial Program and several removal actions documented in a series of Action Memorandums. Please refer to previous Action Memorandums of May, 1999; September, 1999; June, 2000; September, 2003; and June, 2005. (note: all references in this document to "*previous Action Memorandums*" include all of these documents.)

On January 31 and February 05, 2008 groundwater monitoring wells were installed at the site as part of the Remedial Investigation/Feasibility Study (RI/FS) for the EPA Remedial Program. Samples of the soil borings were analyzed and revealed elevated levels of dioxin in surface and subsurface soils. EPA has determined that dioxin is migrating to the adjacent Woonasquatucket River. Though dioxin is not soluble in water, migration may be facilitated by elevated levels of volatile organic compounds found in the same samples.

EPA has evaluated this data and other data found in the Interim Final Remedial Investigation, June 2005. A Preliminary Assessment (PA) was initiated by OSC Bzenas on March 26, 2009 and updated on June 26, 2009. The Site Investigation Closure Memorandum dated July 13, 2009 documents the determination that a Removal Action is appropriate at this Site.

2. Physical location

The Site encompasses the soil, surface water, sediment and flood plain of the Woonasquatucket River from the bridge at Route 44 in North Providence, downstream to the Lyman Mill Dam, including all contaminated areas within this area and any other locations where contamination from this area has come to be located; and the Brook Village and Centredale Manor Apartment properties which are located at 2072 and 2074 Smith Street in North Providence, Providence County, Rhode Island. The geographic coordinates for the Site are 41° 51' 29.5" north latitude and 71° 30' 28.5" west longitude.

Please refer to the previous Action Memorandums for additional information.

3. Site characteristics

The Centredale Manor Site encompasses the following:

- The Brook Village Apartment property (Brook Village), located at 2072 Smith Street, North Providence, Providence County, Rhode Island

- The Centredale Manor Apartment property (Centredale Manor), located at 2074 Smith Street, North Providence, Providence County, Rhode Island

- The flood plain of the adjacent Woonasquatucket River, as defined in the Federal Emergency Management Agency Flood Insurance Rate Map of the 100 year flood plain, from Route 44 southerly, up to and inclusive of the Allendale Dam and its associated structures, including the tailrace of the Allendale Dam, in North Providence, Providence County, Rhode Island.

Brook Village and Centredale Manor are zoned for residential occupancy and encompass a total of 9.7 acres of land. Centredale Manor was constructed in 1983. It is an eight-story apartment building for elderly and handicapped. There are two paved parking lots located to the north and west of the building.

Brook Village was constructed in 1977. It is an eleven-story apartment building for elderly and handicapped residents. A series of parking lots extend to the south of the building. The area around both buildings is landscaped with grass ground cover.

Both properties are privately owned and are currently active apartment buildings, providing subsidized housing for several hundred elderly residents.

The approximate area population is :

1,091 people within ¼ mile
3,334 people within ½ mile
13,516 people within 1 mile

Also within 1 mile of the site are two other elderly care facilities, three public schools, three private day schools, and six daycare facilities.

According to the EPA Region 1 Environmental Justice Mapping Tool, the Site is not in an environmental justice area.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

The compound 2,3,7,8-tetrachlorodibenzo-p-dioxin (dioxin or TCDD) is a hazardous substance as defined in Section 101(14) of CERCLA and is listed at 40 CFR 302.4. Analytical data from the samples collected at this area of the Site indicate dioxin concentrations up to 33ppb in surficial and sub-surface soils. The conceptual site model describes migration of dioxin facilitated by VOCs such as

tetrachloroethylene and trichloroethylene, via groundwater to the surface water of the Woonasquatucket River.

Dioxin has also been identified in samples collected from surface soils in wetlands and flood plain areas downstream of the Site. These areas will be addressed in the long term remedy for the Site. The past use of the Site as a chemical manufacturing company and a barrel reclamation facility is not inconsistent with the presence of dioxin. EPA has established that hexachlorophene was manufactured at the Site; dioxin is a well-documented byproduct of hexachlorophene production.

5. NPL status

The Site and associated impact areas were added to the National Priorities List on March 06, 2000.

B. Other Actions to Date

1. Previous actions

EPA and RIDEM have undertaken several previous actions at the Site including time-critical removals, non-time-critical removals and remedial actions to characterize the extent of contamination, remove contaminated soils from adjacent residential properties, construct earthen caps over contaminated areas, and reconstruct a dam on the Woonasquatucket River. Please refer to previous Action Memoranda and the Administrative Record for additional information.

2. Current actions

The EPA and the United States Army Corps of Engineers have been conducting a RI/FS for the Centredale Manor Restoration Project Superfund Site since 2000. Several studies have been performed to characterize the nature and extent of contamination in soil, groundwater, sediment, surface water and biota at the site. As warranted by the data collection and evaluation efforts, several areas warranting removal actions were identified. This removal action will address a source of loading and/or leaching of contaminants from the source area into the Woonasquatucket River.

EPA has released the Interim Final Remedial Investigation Report in June 2005, followed by Interim Final Baseline Human Health Risk and Ecological Risk Assessment Reports, and Interim Final Preliminary Remedial Goals Report in November 2005. A report on the FS is expected in the summer of 2009. The FS will evaluate a range of remedial alternatives to address remaining soil, sediment

and groundwater contamination at the site, including Allendale and Lyman Mill reaches of the Woonasquatucket River which pose an unacceptable risk to human health or the environment.

C. State and Local Authorities' Roles

1. State and local actions to date

EPA has held Dialogue Group meetings with interested stakeholders, including the Towns of North Providence and Johnston, the Woonasquatucket River Watershed Council, the Audubon Society, the Natural Resources Trustees, and the Potentially Responsible Parties (PRPs). These meetings provide a forum to exchange ideas, make the involvement process accessible and give stakeholders input into EPA's cleanup selection process.

Representatives from the Town of North Providence, Brook Village and Centredale Manor properties have been advised of this Removal Action and the property managers have discussed ways in which they can accommodate the displacement of residents' vehicles and assist in the dissemination of information to their residents.

Since the first Removal Actions in 1999 and subsequent designation of the Site to the National Priorities List, the State of Rhode Island has been a partner with EPA in making decisions related to investigations and cleanup actions at the Site.

2. Potential for continued State/local response

EPA and RI DEM will continue to coordinate site activities in regard to state regulations. RI DEM is coordinating wetlands issues with its state counterparts.

North Providence local government and elected officials have pledged the Town's assistance and cooperation in providing local information and personnel when appropriate. The Town will continue to provide access to meeting rooms, historical documents and other support services. EPA may seek other non-monetary contributions to support the Removal Action from the Town of North Providence

The Brook Village and Centredale Manor property managers have stated their willingness to continue to assist EPA in keeping their residents well informed throughout the Removal Action. Such assistance will include meeting notifications, access to meeting rooms, and helping to communicate the accommodations made for residents with displaced vehicles.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

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

The primary contaminant, dioxin, is migrating from contaminated soils via groundwater to the Woonasquatucket River where humans, animals and the food chain may be negatively impacted. Unless addressed through these actions, sediments throughout the river floodplain will continue to accumulate dioxins

Actual or potential contamination of drinking water supplies or sensitive ecosystems [§300.415(b)(2)(ii)];

The Woonasquatucket River and its associated floodplain is a sensitive ecosystem that will continue to be negatively impacted by the migration of dioxins into sediments and the food chain.

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

The primary contaminant, dioxin, is migrating from contaminated soils largely at or near the surface via groundwater to the Woonasquatucket River where humans, animals and the food chain are negatively impacted.

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

If the Respondent fails to complete these actions, there are no other available funds from the State of Rhode Island or other sources to address this ongoing release.

Contaminant specific information

Dioxin¹ has been identified at the Site at levels up to 140ppb in soils samples collected in 2000. Samples collected from the groundwater impact area in 2008 have identified dioxin in soil up to 33ppb.

¹ Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services, Public Health Service, *Toxicological Profile for Chlorinated Dibenzo-p-dioxins (CDDs)*, December, 1998

Dioxin occurs as a contaminant in the manufacturing process of certain chlorinated organic compounds, especially chlorinated phenols such as hexachlorophene, and herbicides such as 2,4,5-trichlorophenoxyacetic acid (2,4,5-T). Use of hexachlorophene and 2,4,5-T is currently restricted in this country. Currently, dioxins are primarily released to the environment during combustion of fossil fuels (coal, oil, and natural gas) and wood, and during the incineration processes (municipal and medical waste, and hazardous waste incineration). Uncontrolled burning of many materials that contain chlorine, such as plastics, wood treated with PCP, pesticide-treated wastes, other polychlorinated chemicals, and even bleached paper, can produce dioxins.

Dioxin has a tendency to persist in the environment. It can bind to soil particles and bioaccumulate in the food chain, especially in foods such as meats, dairy products, and fish. Dioxin can enter the human body through ingestion, inhalation, and dermal absorption. Human exposure to very high levels of dioxin causes a skin condition called chlor-acne and is suspected of causing immunological problems and liver impairment.

The EPA considers dioxin to be a probable human carcinogen. Dioxin has been shown to cause biochemical alterations; thyroid, reproductive and immune toxicity; and cancer in animals. It is suspected of causing cancer in humans.

Animal studies have shown that dioxin is highly toxic although there are a wide variety of responses among the various species tested. Adverse health effects in animals tested include reproductive and developmental toxicity, hepatotoxicity (liver), immunotoxicity, and carcinogenicity.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.²

²In accordance with OSWER Directive 9360.0-34, an endangerment determination is made based on relevant action levels, cleanup standards, risk management guidance, or other relevant information published and relied upon by the State of Rhode Island.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

Impacts to the Woonasquatucket River and groundwater can be effectively reduced by excavation and disposal of contaminated soils in the area near the eastern bank of the river at the southern end of the Brook Village parking lot. The subsequent installation of an impermeable cap will prevent percolation of precipitation through underlying soils and further mitigate the migration of any residual contamination. The cap also provides a physical barrier that minimizes the possibility of direct exposure to residual levels of dioxin in soils. The excavation/cap area will be approximately ¼ acre in surface area and impact approximately 150 feet of the eastern bank of the Woonasquatucket River.

Specific removal activities will include the following:

- conduct a site walk with the cleanup contractor;
- install steel sheeting on the riverbank to control surface water
- perform limited excavation to the specified lines and grades as negotiated in the Administrative Order and described in the Work Plan, pending EPA approval, sufficient to remove primary source dioxin contaminated soils
- conduct dewatering and water treatment as necessary
- provide off-site disposal of primary dioxin contaminated source soils
- backfill and re-grade excavations to existing grades and slopes
- install an engineered impermeable cap to control percolation of precipitation and prevent direct contact with any remaining contaminated soils
- install groundwater/pore water monitoring points near the groundwater/surface water interface
- conduct at least one round of ground water/ pore water sample collection and analysis to evaluate the effectiveness of the engineered impermeable cap
- construct erosion control armoring on the river bank
- repair any response-related damages, including landscaping, pavement and walkways

The Respondent has a proposal and schedule for these specific actions that include a work plan, a safety plan, a traffic management plan, and other plans as needed. The EPA OSC will review all aspects of the proposal and provide comments before approval.

2. Community relations

EPA and the RIDEM have committed to a series of meetings, letters and press releases to ensure that the residents of the two elderly housing complexes and all of North Providence are kept informed and up to date on activities at the Site.

3. Contribution to remedial performance

The cleanup actions proposed in this Action Memorandum will mitigate the remaining primary source of dioxin migration to the Woonasquatucket River. The FS will consider several alternative remedies for addressing contaminated sediments, none of which can be implemented until the migration of dioxin into the river and sediments has been mitigated to minimize re-contamination. The actions have been developed in concert with the EPA Remedial Program to be consistent with long term remedies and will not impede any future response actions.

3. Description of alternative technologies

Alternative technologies have been employed in investigation of the extent of contamination and migration of organic contaminants in groundwater.³

5. Applicable or relevant and appropriate requirements (ARARs)

Federal ARARs:

40 CFR Part 262 Standards Applicable to Generators of Hazardous Waste:

Subpart B - The Manifest

262.20 : General requirements for manifesting
262.21 : Acquisition of manifests
262.22 : Number of copies of manifests
262.23 : Use of the manifest

Subpart C - Pre-Transport Requirements

262.30 : Packaging
262.31 : Labeling
262.32 : Marking

Subpart D - Recordkeeping and Reporting

262.40 : Recordkeeping

40 CFR Part 264 Hazardous Waste Regulations - RCRA Subtitle C:

268-270 : Hazardous and Solid Waste Amendments Land Disposal Restrictions Rule

40 CFR Part 300.440 Procedures for Planning and Implementing Off-Site Response Actions (Off-Site Rule)

³ United States Geologic Survey, September , 1999. *Distribution of Selected Volatile Organic Compounds Determined with Water-to-Vapor Diffusion Samplers at the Interface Between Groundwater and Surface Water, Centredale Manor Site, North Providence, Rhode Island.*

State ARARs:

The OSC will coordinate with State officials to identify additional State ARARs, if any. In accordance with the National Contingency Plan and EPA Guidance Documents, the OSC will determine the applicability and practicability of complying with each ARAR which is identified in a timely manner.

6. Project schedule

Mobilization to the Site is expected to occur in August, 2009. Field excavation and construction activities are expected to be completed within three months. Site restoration and documentation may require several additional months. All activities are to be completed within one year from mobilization.

B. Estimated Costs

The OSC's independent estimate for the costs associated with this action are summarized below and provided in the event that EPA must initiate or complete the removal action in lieu of the Respondent. This action memo addendum does not obligate funds from the removal budget. Actual funding will be dependent on funds available at the time of the request and other factors.

COST CATEGORY		CEILING
REGIONAL REMOVAL ALLOWANCE COSTS		
ERRS Contractor		\$1,500,000.00
Interagency Agreement		\$ 0.00
OTHER EXTRAMURAL COSTS NOT FUNDED FROM THE REGIONAL ALLOWANCE		
START Contractor		\$60,000.00
Extramural Subtotal		\$1,560,000.00
Extramural Contingency	10%	\$156,000.00
TOTAL, REMOVAL ACTION CEILING		\$1,716,000.00

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Dioxin contamination will continue to migrate to the Woonasquatucket River, perpetuating contamination of the sediments and floodplains. Unacceptable risks to human health from contact with these media will remain unaddressed.

VII. OUTSTANDING POLICY ISSUES

Until the agency's reassessment of the toxicity of dioxin is complete, EPA/ OSWER Directive 9200.4-26, Memorandum - Approach for Addressing Dioxin in Soil at CERCLA and RCRA Sites, April 13, 1998 provides guidance for setting starting points for remediation goals at dioxin sites. The proposed actions are consistent with the guidance document. OSWER concurrence for this Nationally Significant Removal Action was signed on May 05, 1999.

There are no other precedent-setting policy issues associated with this site.

VIII. ENFORCEMENT ... For Internal Distribution Only

See attached Enforcement Strategy.

The total EPA costs for this removal action based on full-time accounting practices that will be eligible for cost recovery are estimated to be \$1,716,000 (extramural costs) + \$ 80,000 (EPA intramural costs) = \$1,796,000 X 1.361 (regional indirect rate) = \$2,444,356⁴.

IX. RECOMMENDATION

This decision document represents the selected removal action for the Centredale Manor Restoration Project Site in North Providence, Rhode Island, developed in accordance with CERCLA, as amended, and is not inconsistent with the National Contingency Plan. The basis for this decision will be documented in the administrative record to be established for the Site.

Conditions at the Site meet the NCP Section 300.415 (b) (2) criteria for a removal action due to the following:

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

Actual or potential contamination of drinking water supplies or sensitive ecosystems [§300.415(b)(2)(ii)];

⁴Direct Costs include direct extramural costs \$1,716,000 and direct intramural costs \$80,000. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site specific costs [36.1% x \$ 1,796,000] consistent with the full 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.

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

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

Other situations or factors that may pose threats to public health or welfare of the United States or the environment [§300.415(b)(2)(viii)].

I recommend that you approve the proposed removal action. The total removal action project ceiling if approved will be \$1,796,000.

APPROVAL: _____



DATE: _____

7-17-09

DISAPPROVAL: _____

DATE: _____

SCOPE OF WORK

This Scope of Work is provided for the Centredale Manor Restoration Project in North Providence, Rhode Island

Preface

EPA has determined that the Respondent have the ability to promptly and properly prevent, mitigate, or eliminate the threats posed by hazardous substances at the Site. Therefore, EPA has issued a Administrative Settlement Agreement and Order on Consent (Order) to the Respondent with this attached Scope of Work (SOW).

As described previously in the Order, EPA has undertaken Removal Actions at the Site to prevent exposure and control migration of dioxin contamination at the Site. This scope of work addresses the Removal Activities which are proposed in the Action Memorandum for the Centredale Manor Restoration Project, dated July 16, 2009.

The Order and SOW compel the Respondent to develop a **work plan (plan)** for implementing the specific actions described below. The components of this work plan (also called a "deliverable") must be submitted to EPA for approval before implementation. The work plan shall consist/describe of the components listed below:

GENERAL COMPONENTS

1. All actions taken by the Respondent shall not be inconsistent with the National Contingency Plan (NCP), found in Title 40, Part 300 of the Code of Federal Regulations (40 CFR 300)
2. The Respondent shall communicate freely with the On-Scene Coordinator (OSC) prior to and during development of plans and deliverables, and throughout the implementation of approved plans. At a minimum, **weekly** progress meetings will be scheduled throughout the implementation of the Order.
3. **Site Security** - The plan shall provide for on-site security during construction and thereafter. The effectiveness of signs, fences, and barriers will be evaluated during the construction phase to determine if they adequately restrict access. If not deemed to be sufficient by the OSC, additional fencing, the placement of security guards or other measures may be warranted. Site security shall be maintained until EPA determines that the threats posed by conditions at the Site are eliminated or substantially mitigated.
4. **Project schedule** - The plan will provide a detailed project schedule, including completion dates for interim activities. Out of respect for the residents, noisy equipment (such as dump trucks or bulldozers) will not be operated before 0800hrs. **Daily, weekly and project work schedules** will be provided to the OSC.

5. **Site-Specific Health and Safety Plan (HASP)** - The Respondent shall develop and implement a HASP for all activities to be conducted at the Site in accordance with the NCP §300.150, and OSHA 1910.50. The HASP shall be developed to protect all on-site personnel and the general public. Private employers are responsible for the health and safety of their own employees. Nothing contained in this SOW or the Order shall relieve the Respondent of this liability. The HASP shall be provided to EPA for review and approval within 7 days of the effective date of the Order.
6. **Traffic Management Plan** - The Respondent shall develop a traffic management plan to provide for safe and efficient movement of response related vehicles entering and exiting the site, as well as on site traffic control. The traffic Management Plan shall be provided to EPA for review and approval within 7 days of the effective date of the Order.
7. **Quality Assurance Plan (QAP)** - The Respondent shall develop a QAP to be used in conducting all field and laboratory analysis. The QAP shall ensure that analytical results generated are of known quality. The QAP will be consistent with the Region 1, EPA-New England *Compendium of Quality Assurance Project Plan Guidance*. At this time, no sample collection is expected. However this section will apply if sample collection becomes necessary. The QAP shall be provided to EPA for review and approval within 7 days of the effective date of the Order.
8. **Completion of Work Report (CWR)** - Upon completion of the tasks in this Order and SOW, the Respondent shall submit a CWR summarizing the work performed. At a minimum, the CWR will provide an estimate of the Respondent's costs incurred; identify all required activities and certify that each has been completed in accordance with the approved plans; include original photographs with written descriptions; include analytical results of any environmental samples collected during the period of performance, in both tables and on site maps; include 'as-built' drawings of any structures or features constructed; contain a chronology of onsite activities; identify subcontractors and their roles. The CWR shall be provided to EPA for review and approval within 30 days of the completion of the other tasks in this Order and SOW.

SPECIFIC ACTIONS

9. Install steel sheeting on the riverbank to control surface water
10. Perform limited excavation to the specified lines and grades, as negotiated in the Administrative Settlement and Order on Consent, sufficient to remove primary source dioxin contaminated soils
11. Conduct dewatering and water treatment as necessary
12. Provide off-site disposal of primary source dioxin contaminated soils
13. Backfill and re-grade the excavation to existing grades and slopes
14. Install an engineered impermeable cap compliant with RCRA regulations to control percolation of precipitation and prevent direct contact with any remaining contaminated soils

15. Install groundwater/pore water monitoring points near the ground water/ surface water interface
16. Conduct at least one round of ground water/pore water sample collection and analysis to evaluate the effectiveness of the engineered impermeable cap
17. Construct erosion control armoring on the riverbank
18. Repair any response related damages including landscaping, pavement and walkways
19. Obtain all necessary local, state or federal permits for construction, except as specifically exempted by the OSC.

20. **Other specific actions**

At any time prior to or after the completion of the work specified in this SOW, EPA may determine that additional tasks are necessary in order to achieve the objectives of the Order, the SOW and CERCLA.