

Enforcement Confidential Materials Attached

MEMORANDUM

DATE: May 12, 2004

SUBJ: Request for a \$2 Million Exemption to Conduct a Time Critical Removal Action at the Troy Mills Landfill Superfund Site, Troy, New Hampshire **ACTION MEMORANDUM**

FROM: Athanasios Hatzopoulos
On-Scene Coordinator, Emergency Response & Removal Section II

THRU: Steven R. Novick, Chief, Emergency Response & Removal Section II
Arthur V. Johnson, III, Branch Chief, Emergency Planning & Response Branch (EPRB)

TO: Susan Studlien, Director, Office of Site Remediation & Restoration

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval for a \$2 million exemption to conduct a time critical removal action at the Troy Mills Landfill Superfund Site, Troy, New Hampshire. Under an Action Memorandum dated September 26, 2002, EPA conducted a time-critical removal to construct a system designed to intercept and retain the hazardous substances leaching from the approximately 6,000 to 10,000 drums buried on Site. These drums contain solid and liquid wastes, disposed there between 1967 and 1978.

The activities to be performed under this Action Memorandum will include the removal of the drums and the surrounding contaminated soil. Should the proposed activities selected in this Action Memorandum not be implemented, the conditions at the Troy Mills Landfill will continue to adversely impact the environment.

Investigations thus far indicate that approximately 70% of the 10,000 drums are intact, and contain product. It is anticipated that over time, the drums will eventually deteriorate, release their product, and therefore exceed the intended lifetime of the interceptor system.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS Identifier: NHD980520217

Site Identifier: 019M

Removal Category: Time Critical

SITE DESCRIPTION

1. Physical Location & Site Characteristics

The Site is located in Troy, Cheshire County, New Hampshire, along an unpaved, gravel access road originating from Rockwood Pond Road in Fitzwilliam, Cheshire County, New Hampshire. The geographic coordinates for the Site are 42° 48' 09.5" north latitude and 72° 11' 10.8" west longitude as measured from the center of the Site.

The Site is an approximately 10-acre inactive landfill. It consists of an estimated 2-acre area where approximately 6,000 to 10,000, 55-gallon drums are buried, and an estimated 8-acre inactive solid waste landfill. Historical information gathered from earlier EPA reports and by the New Hampshire Department of Environmental Services (NHDES) shows that from 1967 to 1978, Troy Mills, Inc., began using the 2-acre area as a landfill for the disposal of solid and liquid wastes generated at its off-site facility located in the Town of Troy, New Hampshire. Drummed wastes consisted primarily of plasticizers including bis(2-ethylhexyl)phthalate (DEHP); and Varsol (a petroleum-based solvent) also known as mineral spirits or Stoddard Solvent.

The Site occupies the southeastern corner of a 270-acre land parcel identified by the Town of Troy Tax Assessor as Lot No. 25 on Map Nos. 16 and 17. It is located in an area of mostly undeveloped woodlands. The Site is bordered to the north by woodlands, and an intermittent stream; to the east by a former railroad bed currently utilized as a walking, all terrain vehicle (ATV), and snowmobile trail; to the west by the gravel access road, a wetland area, and Rockwood Brook; and to the south by the eastern branch of Rockwood Brook.

Several wetland areas have been delineated by Mark Kern, EPA Region I wetland scientist. They are located along the brook between the landfill and Sand Dam Pond. The eastern and western branch of Rockwood Brook merge to form Rockwood Brook, west-southwest of the wetland area bordering the landfill. Rockwood Brook meanders in a northerly direction parallel to and west of the gravel access road. An intermittent stream, borders the inactive landfill area to the north, and discharges into Rockwood Brook.

From the Site, Rockwood Brook flows north for an estimated 3,000 to 3,500 ft, parallel to and west of the gravel access road on the 270-acre land parcel owned by Troy Mills, Inc. At a location 3,000 to 3,500 ft north of the landfill, Rockwood Brook crosses the access road, and discharges into Sand Dam Pond. This area is used by the Town of Troy for summer recreational activities.

An estimated 3,886 people reside within 4 radial miles of the Site. Approximately 3,111 people are served by public or private drinking water wells. The nearest residences and private drinking water wells are approximately 0.5 miles away from the Site. The nearest public drinking water supply well is located 2.8 miles southeast of the Site. Sensitive environments located within 4 radial miles include 2,173 acres of wetlands, a Clean Water Act (CWA) protected water body, and habitats for eight State of New Hampshire listed endangered or threatened species.

Pedestrian access to the landfill is unrestricted. Vehicle access to the landfill is partially restricted by forest and rough terrain. Access to the landfill is generally gained via an approximately 0.8-mile unpaved dirt/gravel access road connecting to Rock Wood Pond Road. In addition to the access road, access to the landfill may be gained through a former railroad bed now utilized as a snowmobile, ATV, and walking trail.

2. Removal Action Evaluation

This Removal Action Evaluation is based on EPA's Preliminary Assessment and Site Investigation (PA/SI), conducted during the months of August and September, 2002. It is further supported by EPA's January 2003 Expanded Site Inspection Report which details the previous investigations, engineering studies, and health assessments conducted at the Site by EPA, NHDES, and the New Hampshire Department of Health from 1978 to 2002.

EPA in its September 23, 2002 Closure Memorandum, determined that a time critical removal action under section 300.415 of the National Contingency Plan (NCP) is necessary and appropriate.

EPA's 2002 PA/SI

The PA/SI consisted of a geophysical survey (magnetometer and conductivity) and test pit excavations at 14 locations within the landfill. The geophysical survey revealed metal anomalies in an approximately 2-acre area of the landfill. The PA/SI also included chemical content analysis of drum products, surface waters, and soil samples from the pit excavations. The samples were analyzed for volatile organic compounds (VOCs), semi volatile organic compounds (SVOCs), inorganics, flashpoint and pH. The highest concentrations of hazardous substances detected are included in Table 1 below. All of the substances detected and listed in Table 1 are CERCLA listed hazardous substances (40 CFR Part 302 Section 302.4).

Seven test pit excavations were conducted at areas where the magnetometer survey showed metal anomalies. All of the test pits had deteriorated drums which contained liquids and/or sludge. Chemical analysis of the drum contents indicated the presence of VOCs, SVOCs, and inorganics. The drum contents also proved to be flammable after performing flashpoint tests.

In order to confirm that the drums were deteriorating and releasing product into the environment, creating a subsurface soil plume and surface water contamination, four of the remaining seven pit excavations were conducted down gradient of the drum burial

area of the landfill. These excavations did not reveal any drums. However, they had discolored soils not representative of pristine soil conditions. Chemical analysis of the soil samples collected from the four excavations indicated the presence of SVOCs, VOCs, and inorganics similar to the contents of the buried drums.

The last three test pit excavations were conducted in areas of the landfill suspected by NHDES representatives and the Town of Troy's Selectmen, to contain additional buried drums. These test pits did not reveal buried drums but contained fabric scraps at a depth of five linear feet and more.

TABLE 1

SUBSTANCE	SOIL mg/Kg	DRUM mg/Kg	DETECTED IN SURFACE WATER/SEDIMENT
SVOCs			
bis (2-ethylhexyl) phthalate (DEHP)	51	6800	490
Di-n-octylphthalate	42	600	260
Napthalene	3.3	260	1.2
Butylbenzylphthalate		160	
Diethylphthalate		4.2	
VOCs			
Trichloroethene			.85
Cyclohexane		86	
Benzene		12	
Chlorobenzene		14	
Toluene		700	
Ethylbenzene	1.4	1800	
Xylene	2.7	8600	
Isopropylbenzene	1.7	790	.88
Vinyl Chloride		21	
INORGANICS			
Aluminum (not a CERCLA hazardous waste, but found in drums, surface water/sediment)	7440	4360	yes at Rockwood Brook and Sand Dam pond
Arsenic			8.5

Manganese	446		1320
Selenium	2.4		85.9
Zinc	35.4	538	8.8
Antimony		16.1	20.8
Lead	12.6	4240	yes at Rockwood Brook and Sand Dam pond
FLASHPOINT		75°	

EPA's January 2003 Expanded Site Inspection Report

In addition to the PA/SI, the findings of the Expanded Site Inspection Report reaffirm that the drums are deteriorating and that their contents are migrating into the surrounding environment.

Analytical results of surface water and sediment samples collected between 1980 and 2002, from the wetland area abutting the landfill, indicate that approximately 0.16 miles of wetland frontage, as well as a Clean Water Act (CWA) protected water body have been impacted by the release of VCS, SVOCs, and inorganics.

Surface water samples collected from the Rockwood Brook at locations down stream of the Site, indicated the presence of aluminum as high as 500 parts per billion (ppb). Surface water samples collected from Sand Dam Pond indicated the presence of aluminum as high as 2,320 ppb and lead at 6.6 ppb.

On November 29, 2001 the owner's consultant (GeoInsight) sampled surface water locations (SW- #) downgradient of the drum disposal area. At SW-4, bis-(2-ethylhexyl)phthalate was detected at a concentration of 610,000 ppb. In Rockwood Brook at SW-5, bis-(2-ethylhexyl)phthalate was detected at 2,300 ppb. Both of these detections are above levels which suggest a potential risk of adverse effects for aquatic life. Bis-(2-ethylhexyl)phthalate has also been consistently detected at very elevated levels in monitoring well 201-S, which is upgradient and a short distance from SW-4. Bis-(2-ethylhexyl)phthalate has been documented to be one of the primary contaminants in the drums buried at the landfill.

3. Site History and General Site Use

From 1967 to 1978, Troy Mills Inc., a manufacturing facility of acrylic fabrics for the automotive industry, disposed of an estimated 6,000 to 10,000, 55-gallon drums of waste liquid and sludge containing plasticizers such as DEHP and petroleum-based solvent known as Varsol, Stoddard solvent, or mineral spirits. The drums appear to be buried in a 2-acre area of the Site and covered with clean sand from a nearby sand quarry. The remainder of the landfill (approximately 8 acres) contains discarded synthetic fabrics and other types of solid waste. Varsol contained benzene, dibromo-3-chloropropane, dichloroethene (DCE), methyl ethyl ketone (MEK), methylene chloride, naphthalene,

toluene, and other hazardous substances. Other drummed wastes included pigments (containing metals such as zinc, chromium, and cadmium), surplus mixes and tank residues of vinyl resins, and top-coating products. An average of 15 to 20 drums per week were dumped from trucks into trenches and compacted under the weight of heavy equipment. The waste drums were crushed or partially crushed in the process. It is unclear how many of the drums contain product, however investigations performed by EPA and others, estimate that approximately 70% of the drums still contain waste product.

4. Actions to Date

On October 3, 2002, EPA initiated a time-critical removal action to construct an interceptor system located downgradient of the drum burial area. This system is designed to intercept drum leakage present in the form of light, non-aqueous phase liquid (LNAPL) on the groundwater surface. In addition, the system will reduce the LNAPL impact on nearby wetlands and surface water.

5. NPL Status

The Site was proposed for listing on the National Priorities List (NPL), April 2003. The Site was placed on the final NPL September 2003.

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

A. Threats to Public Health or Welfare

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

Currently the Site contains approximately 6,000 to 10,000 buried 55-gallon drums. Analytical results of the drum contents reveal VOC, SVOC, inorganic and flammable substances. Analytical results of soil and surface water and sediment samples down gradient from the drum burial area indicate similar contaminants of the buried drums. The fact that the same substances are detected in several down gradient areas of the drum burial area indicates that the drums are releasing their product into the environment.

"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)];

The migration of the drum material can impact the nearby human population, animal or the food chain. An estimated 3,886 people reside within 4 radial miles of the Site. Approximately 3,111 are served by public or private drinking water supply wells. The nearest private drinking water supply well is located between 0.25 and 0.5 radial miles of the Site. The nearest public drinking water supply well is located 2.8 miles southeast of

the Site. Aluminum and lead found in Sand Dam Pond is considered at least partially attributable to the Site.

Sensitive environments located within 4 radial miles include 2,173 acres of wetlands, a CWA protected water body, habitats for eight State-listed endangered or threatened species. Analytical results of surface water and sediment samples collected from the abutting wetland area between 1980 and 2002 indicate that 0.16 miles of wetland frontage and a CWA protected water body has been impacted by the release of VOCs, SVOCs, and inorganics.

Pedestrian access to the landfill is unrestricted and vehicle access to the landfill is partially restricted by forest and rough terrain. Several areas of the Site are used as a snowmobile, ATV, and walking trail.

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

The drums buried at the site are subject to rupture due to age and the continuous freeze/thaw conditions caused by the weather elements. Analytical results indicate that a migration or release of hazardous substances is currently on-going.

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

EPA is the lead agency at this Site. The NHDES lacks the funds to address the problem and has requested EPA's assistance in order to address the imminent and substantial public health threat that exists at the Site.

B. Threat to the Environment

"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)];

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

Sensitive environments located within 4 radial miles of the Site include 2,173 acres of wetlands, a CWA protected water body, and habitats for eight State-listed endangered or threatened species. Analytical results of surface water and sediment samples collected from the abutting wetland area, indicate that 0.16 miles of wetland frontage and the protected water body have been impacted by the release of VOCs, SVOCs, and inorganics. Weather conditions will continue the degradation of the drums and cause release of hazardous substances into the environment.

IV. ENDANGERMENT DETERMINATION

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

V. EXEMPTION FROM STATUTORY LIMITS

CERCLA § 104(c) states that removal actions can exceed the 12-month statutory limit or the \$2 million exemption if conditions meet either the “emergency exemption” criteria or the “consistency exemption” criteria. EPA OSWER directive 9360.3-01 states that a removal action is appropriate if it meets the criteria for consistency and appropriateness.

1. Continued response actions are otherwise appropriate and consistent with the remedial action to be taken.

The Site is currently on the National Priorities List and as indicated in Section VI of this document, the activities to be performed under this removal action will include the removal of drums, free product, and to the extent practicable, the surrounding contaminated soils from the landfill.

These activities are consistent with the EPA’s Remedial Program future efforts to address soil and groundwater contamination. This removal action will serve to protect public health and the environment, by significantly reducing the potential for further release of hazardous substances found at the Site.

The removal action is also appropriate, because the drums buried at the Site are currently leaking. The ones that are intact, are subject to rupture due to age and the continuous freeze/thaw conditions caused by the weather elements.

Although EPA has constructed an interceptor system to intercept the LNAPL, this measure is only temporary. The Town of Troy and the NHDES lack the necessary resources to address the hazardous conditions. Both parties have requested EPA’s assistance in order to remove the imminent and substantial public health threat that exists at the Site.

If the activities under this removal action get delayed or do not get performed, then the current situation of the Site will continue to adversely impact public health, welfare, and the environment.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

1. Proposed Action Description

The activities to be performed under this removal action will include the following:

The removal of drums, free product, and to the extent practicable under this action, the surrounding contaminated soils from the landfill.

At a minimum the soils left in the excavation areas will have no visible staining.

All wastes are to be shipped to CERCLA compliant treatment and disposal facilities.

Sufficient soil sampling and analysis will be performed to enable assessment of the potential for leaching of residual contaminants into the ground water.

During the duration of the removal action, manned security will be provided during non working hours to control unauthorized access to the Site.

The excavated areas will be restored to promote a natural environment. The activities will include backfilling with clean material and establishing a vegetative cover.

Access roads to and from the landfill will be monitored and repaired throughout the duration of the removal action.

A traffic control plan will be initiated and implemented to ensure the safety of residents that will be impacted by the removal activities.

Based on the new Site conditions, during the removal action and after the completion of the drum and contaminated soil removal, the temporary interceptor system will be re-evaluated and modified as needed.

NHDES has agreed to provide operation and maintenance of interceptor system.

2. Community Relations

Upon approval of the Action Memorandum, the OSC will continue to coordinate with the EPA Community Involvement Office to disseminate information regarding the project to the impacted communities. EPA has been actively working with the NHDES, the Towns of Troy and Fitzwilliam, to provide citizens with regular updates, as well as create forums in which concerns may be expressed.

3. Contribution to Remedial Performance

This removal action will serve to protect public health and the environment by significantly reducing the potential for further release of hazardous substances found at the Site. Removal actions conducted at the Site will contribute and be consistent with the performance of any remedial action that may be undertaken at a later date.

As previously mentioned, the Site is currently on the National Priorities List.

The Site owner/operator will be informed that removal actions taken to satisfy EPA removal program criteria may not fulfill state requirements and there may be continued involvement by the NHDES beyond the measures addressed by this time critical removal action.

4. Applicable or Relevant and Appropriate Regulations (ARARs)

The cleanup standards, standards of control, and other substantive requirements that have been identified to-date, are listed below, and may be applicable or relevant and appropriate within the confines of EPA Publication 540/P-91/011, "Superfund Removal Procedures: Guidance on the Consideration of ARARs During Removal Actions."

29 CFR Parts 1910, 1926, and 1904: OSHA Health and Safety Regulations
Federal:Resource Conservation and Recovery Act (RCRA)
40 CFR 260-272: Hazardous Waste Management System
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 - Standards for Owners and Operators of Hazardous waste Treatment, Storage, and Disposal Facilities:
Subpart I - Use and Management of Containers
264.171 : Condition of containers
264.172 : Compatibility of waste with containers
264.173 : Management of containers
264.174 : Inspections of containers
264.177 : Special requirements for incompatible wastes
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)
49 CFR Parts 171-179 : Department of Transportation Regulations for Transport of Hazardous Materials

The OSC will request in writing that NHDES officials identify additional State ARARs as well as determine which federal and state requirements are appropriate or relevant and appropriate, and practicable with respect to the exigencies of this project.

B. Estimated Costs and Schedule

The OSC's independent government estimate of the cost associated with carrying out the proposed actions outlined above are given below. The removal action is anticipated to be completed within one year of its commencement. The drums and soil are anticipated to

be removed by the end of the 2004 construction season. The restoration activities are anticipated to be completed by the summer of 2005.

EXTRAMURAL COSTS:

ERRS (Emergency Rapid Response Services)	
Labor, Equipment, Supplies, Security (includes 20% contingency)	\$ 8,000,000
START (Superfund Technical Assessment & Response Team): (includes 20% contingency)	\$ 300,000
TOTAL REMOVAL ACTION PROJECT CEILING	\$ 8,300,000

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

In the absence of the removal action described herein, conditions at the Troy Mills Site can be expected to remain unaddressed, and threats associated with the presence of hazardous substances will continue to pose a threat of release.

VIII. OUTSTANDING POLICY ISSUES

There have been no outstanding policy issues identified to date.

IX. ENFORCEMENT

The total EPA costs for this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be \$11,049,000¹.

These costs, which are based on full accounting, will be eligible for cost recovery and are calculated as follows:

Direct Costs	\$8,700,000 (Direct extramural \$8,300,000 + Direct intramural \$400,000)
Indirect Costs	<u>\$2,349,000 (Region-specific Indirect Cost Rate 27.02% x Direct Costs \$8,700,000)</u>
Estimated EPA Costs	\$11,049,000

ATTACHED TO THIS DOCUMENT - FOR INTERNAL DISTRIBUTION ONLY
X. RECOMMENDATION

This decision document represents the selected removal action for the Troy Mills Site, in Troy, New Hampshire. It was developed in accordance with CERCLA, as amended, and is consistent with the NCP. The basis for this decision will be documented in the Administrative Record to be established for the Site.

¹ 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 costs from this estimate will affect the United States' right to cost recovery.

Conditions at the Site meet the criteria set out in the NCP due to:

"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)];

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

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

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

I recommend your approval of an exemption from the \$2 million limitation. The total ceiling if approved will be \$ 8,300,000, of which an estimated \$8,000,000 comes from the supplemental funding allocated to Region I by EPA HQs.

APPROVAL: _____ DATE: _____

DISAPPROVAL: _____ DATE: _____