



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
ONE CONGRESS STREET, SUITE 1100
BOSTON, MA 02114-2023

MEMORANDUM

DATE: May 6, 2003

SUBJ: Request for a Ceiling Increase, \$2 Million and 12-month Emergency Exemption for a Continued Removal Action at the Fisherville Mill Site, Grafton, Massachusetts - **ACTION**
MEMORANDUM

FROM: Janis K. Tsang, P.E., On-Scene Coordinator
Site Evaluation and Response Section I

A handwritten signature in black ink, appearing to read "Janis K. Tsang", is written over the "FROM" line.

THRU: David McIntyre, Chief
Site Evaluation & Response Section I

A handwritten signature in black ink, appearing to read "DM McIntyre", is written over the "THRU" line.

Arthur V. Johnson III, Chief
Emergency Planning & Response Branch

A handwritten signature in black ink, appearing to read "AV Johnson III", is written over the text for Arthur V. Johnson III.

TO: Richard Cavagnero, Acting Director
Office of Site Remediation and Restoration

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I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of an increase in the project ceiling from \$2,616,600 to \$3,044,020 to fund a continued removal action described herein for the Fisherville Mill Site, ("Site") in Grafton, Massachusetts. This memorandum also documents the approval of the request for \$2 million and 12-month emergency exemption. Hazardous substances, pollutants, and contaminants present in the 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.

II. SITE CONDITIONS AND BACKGROUND

SITE ID #: 017B

CERCLIS ID #: MASFN0102999

Category of Removal: Time-critical

LATITUDE: 42° 10' 40" North **LONGITUDE:** 71° 41' 25" West

A. Site Location and Description

See the original Action Memorandum dated April 29, 2002.

B. EPA Actions Since the April 29, 2002 Action Memorandum was Signed

- Bench scale treatability tests were conducted to evaluate the effectiveness of various doses of permanganate to destroy chlorinated VOCs in soil samples collected from the source area. The results of the bench scale tests showed that in order to achieve the treatment goal of reducing the chlorinated VOC concentration by two orders of magnitude and meet the total organic carbon (TOC) demand, an estimated dosage of 2 grams of sodium permanganate for every 500 grams of contaminated soil is needed.
- In-situ water injection testing was conducted using potable water to determine the appropriate injection method for delivering the oxidant to the source area for the treatment. The results suggested that direct-push drilling technology using Geoprobe might be used for injecting oxidant to the bedrock with minimal difficulty.
- On May 10, 2002, OSC Tsang conducted an initial site walk with Emergency Rapid Response Service (ERRS) contractor Shaw Environmental and Infrastructure, Inc. (formerly IT Corporation), Roy F. Weston Superfund Technical Assistance and Response Team (START) and MA DEP to discuss the upcoming removal action including installation of the portable dam.
- On May 24, 2002, OSC Tsang and Johanna Hunter (EPA River Navigator) met with representatives from the MA DEP, US Army Corps of Engineers (USACE) and the Grafton Conservation Commission on site to review location of the proposed portable dam.
- On May 28, 2002, OSC Tsang, Weston-START, MA DEP and USACE representatives attended a public informational meeting/hearing held by the Grafton Conservation Commission to present the removal findings and the upcoming removal activities including installation of portable dam.
- From June 21 to June 24, 2002, the temporary sandbag dam was installed across the Blackstone Canal approximately 50 feet upstream of the canal's outflow into the Blackstone River.
- From July 22 to July 24, 2002, START conducted baseline sampling of 15 monitoring wells onsite and two surface water locations. The samples were analyzed for volatile organic compounds (VOCs), metals (total and dissolved), chloride, and hexavalent chromium. ERRS subcontracted driller, Zebra Drilling (Zebra), attempted to install the injection wells using direct push method. Zebra was unable to install any of the proposed injection wells in the mill areas due to refusal prior to reaching estimated depth to bedrock. Zebra however, installed two monitoring wells on the south side of Route 122A without any difficulties. Subsequently, ERRS rebid the drilling using hollow-stem auger

and air hammer methods for the remainder of the well installation. American Drilling Services was awarded the subcontract to conduct drilling using the above-mentioned methods.

- From July 29, 2002 to August 27, 2002, a total of 99 overburden injection wells and five bedrock monitoring wells were installed by American Drilling. Two overburden monitoring wells were installed by Zebra the week prior. Concurrent to the drilling, all the injection and bedrock wells were sampled using low-flow technique field screening the groundwater samples for temperature, pH, specific conductivity, oxidation reduction potential (ORP), dissolved oxygen, and turbidity. The groundwater samples were screened for chloride by START and for VOCs on site by EPA Environmental Response Team (ERT) and Lockheed Martin Research, Engineering, Analytical Contract (REAC). VOC confirmation samples were sent to REAC laboratory in Edison, NJ. Five overburden well locations were sampled for semi-volatile organic compounds (SVOCs) and samples were sent to EPA Region I New England Regional Laboratory (NERL).
- On July 30, 2002, EPA with the cooperation of the Town of Grafton, MA DEP, CMEDA and SGWD held an informational public meeting at the Grafton Senior Center to discuss the removal plan.
- From August 15, 2002 to present, START installed two pressure transducer data loggers in sentinel wells near South Grafton Water District (SGWD) Well No. 3 to monitor the effect on groundwater elevations and movement of the contaminant plume on the peninsula during pumping of SGWD Well No. 3.
- From August 28, 2002 to September 10, 2002, EPA contractors conducted the injection of 20% of sodium permanganate solution into the newly installed 99 injection wells. At the beginning of the injection, the permanganate solution was injected into every other injection well while groundwater samples were being collected from non-injected well locations, bedrock well, and existing monitoring wells within the injection grid using disposable bailers. The permanganate concentration in the samples were measured using a spectrophotometer. The objective of screening non-injected well location during the injection were to monitor the spread of the injected sodium permanganate solution into the overburden and shallow bedrock. EPA will conduct weekly monitoring of the changes in the permanganate concentrations and ORP in selected wells weekly for the preparation of the second round of pre-injection sampling and the second planned injection in October 2002.
- On October 23, 2002, OSC Janis Tsang conducted a multi-agency meeting with various Blackstone River Corridor stakeholders to discuss the work at Fisherville Mill and along the entire river.
- From September 2002 to present, EPA/START continued to perform monitoring of the permanganate concentrations in selected wells in the injection grid.
- In November 2002, EPA/START with the assistance of EPA/ERT and REAC sampled

all IP wells and selected monitoring wells with permanganate concentrations below 1% for analysis of VOCs and chloride.

The reasons for requesting a ceiling increase, a 12-month and \$2 million statutory exemption are as follows:

1. ***Problems encountered during well installation*** - Due to field conditions, the scope of work for drilling and well installation was modified from direct push method using Geoprobe to hollow stem auger and air hammer drilling. The changes in the drilling method and scope of work increased the well installation time from 10 days to 26 days and increased the cost by approximately \$150,000. Subsequently, the pre-injection sampling cost was also increased due to the fact that the sampling could not be done under a single sampling event as originally planned.

2. ***Additional cost for post first injection groundwater sampling monitoring*** - Post injection VOC sampling was originally scheduled for approximately 8 weeks after the first injection was conducted. Due to changes in field and groundwater conditions, the permanganate has persisted longer than anticipated. Consequently, this has increased the time that elapsed between the initial injection and VOC sampling requiring more permanganate performance and oxidation-reduction potential sampling events than expected.

C. State and Local Authorities' Roles

See the original Action Memorandum dated April 29, 2002. MA DEP continued to perform monthly VOC monitoring on offsite monitoring wells. MA DEP also participated in the monthly teleconferences with EPA.

D. National Priorities List Status

The Site is not on the National Priorities List (NPL), nor is there any activity to evaluate it for the NPL.

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

A. THREATS TO PUBLIC HEALTH OR WELFARE

See the original Action Memorandum dated April 29, 2002.

B. THREATS TO THE ENVIRONMENT

See the original Action Memorandum dated April 29, 2002.

IV. ENDANGERMENT DETERMINATION

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

V. EXEMPTION FROM STATUTORY LIMITS

CERCLA Section 104(c) states that removal actions can exceed the 12-month and \$2 million statutory limits if conditions meet either the “emergency exemption” criteria or the “consistency exemption” criteria. As described below, conditions at the Site meet the criteria for the emergency exemption.

Emergency Exemption

1. There is an immediate risk to public health or welfare or the environment if actions are not taken.

The treatability study showed that a total of three injections of chemical oxidant may be needed to reduce the concentration of the total chlorinated VOC by approximately two orders of magnitude and thereby eliminating the threat to the drinking water supply. Failure to complete the injections would allow the contaminant plume to continue to threaten the nearby drinking water wells and Blackstone Canal and pose public health and environmental risk.

2. Continued response actions are immediately required to prevent, limit, or mitigate such threats.

Continuation of the removal action, including completing all of the planned injections of the chemical oxidants will be necessary to reduce the size and concentration of the contaminant plume so that the threat to the nearby drinking water supply wells and Blackstone Canal is mitigated.

3. Assistance will not otherwise be provided on a timely basis.

CMEDA, which is a quasi-state agency and a PRP through its ownership of the property, currently does not have resources to conduct the removal action or to provide financial assistance. Similarly, the MA DEP does not have sufficient funding to conduct the necessary actions at the site. No other options for assistance besides Superfund exist at this time.

VI. Proposed Actions and Estimated Costs

1. Proposed Action Description

See the original Action Memorandum dated April 29, 2002.

2. Community Relations

See the original Action Memorandum dated April 29, 2002.

3. Contribution to Remedial Performance

This Site is not being assessed for inclusion to the NPL. The future “remedial action” under the State regulations would require mitigation of risk posed by the chlorinated VOC to the public drinking water supply and further release of the contaminants to the Blackstone Canal. The implementation and completion of all injections of chemical oxidants will be consistent with the future state remedial actions.

4. Description of Alternative Technologies

None.

5. Applicable or Relevant and Appropriate Requirements (ARARs)

See the original Action Memorandum dated April 29, 2002.

6. Project Schedule

The OSC anticipates that additional injection of the chemical oxidant will commence immediately upon the approval of this action memorandum waiver request. The OSC estimates that completing all of the injections of the chemical oxidant will take approximately six to eight months, weather permitting. A twelve-month post injection monitoring activities may be conducted immediately upon the completion of all of the injections.

7. *Estimated Additional Costs for Continuing the Removal Action*

EXTRAMURAL COSTS:

Regional Allowance Costs	Current Ceiling	Proposed Ceiling
ERRS	1,300,000	1,300,000
START	400,000 ¹	500,000
USACE	10,000	10,000
EPA/ERT	225,000 ²	225,000
Subtotal	1,935,000	2,035,000
Extramural Project Contingency	45,000	245,000
Total Extramural Cost Ceiling	1,980,000	2,280,000

VII. OUTSTANDING POLICY ISSUES

None.

VIII. ENFORCEMENT

The total estimated EPA costs for the removal would be:

$$(\$2,280,000 + \$100,000) + (27.90\% \times \$2,380,000) = \$3,044,020$$

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 \$3,044,020³.

¹\$100,000 was reallocated from the contingency fund to START.

²\$185,000 was reallocated from the contingency fund to ERT/REAC.

³ 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.

**THE ENFORCEMENT ADDENDUM ATTACHED HERETO FOR INTERNAL
DISTRIBUTION**

IX. RECOMMENDATION

Conditions at the Site meet the NCP Section 300.415(b)(2) criteria for a removal and the CERCLA Section 104(c) criteria for an emergency exemption from the 12-month and \$2 million statutory limit. Therefore, I recommend approval of the extramural ceiling increase of \$300,000. The estimated project total is \$3,044,020 of which approximately \$2,380,000 is the extramural cost.

APPROVAL: _____

DATE: _____

5803

DISAPPROVAL: _____

DATE: _____