



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

ACTION MEMORANDUM

SUBJECT: Ceiling Increase for Time-Critical Removal Action at the Knoxville College Site in Knoxville, Knox County, Tennessee

FROM: Kevin Eichinger, On-Scene Coordinator
Emergency Response and Removal Branch *KME 7/9/2014*

THRU: James W. Webster, Chief
Emergency Response and Removal Branch *JW 7/9/2014*

TO: Randall Chaffins, Acting Director
Superfund Division

I. PURPOSE

The purpose of this Action Memorandum is to document the verbal approval of a ceiling increase for continuation of a removal action at the Knoxville College Site (the Site) located in Knoxville, Knox County, Tennessee. The Site continues to pose a threat to public health and the environment that meets the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) section 300.415(b) criteria for removal actions. Site activities were commenced under the attached Emergency Action Memorandum signed June 6, 2014. A ceiling increase above the On-Scene Coordinator's (OSC) Warrant Authority was needed in order to continue activities at the Site and to further mitigate the threats to human health and the environment. This ceiling increase brought the total project ceiling to \$500,000 of which \$400,000 will be funded through the Regional Removal Allowance.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID: TNN000401009
Site ID: B43S
Removal Category: Time-Critical Removal Action

A. Site Description

1. Removal Site Evaluation

Knoxville College reportedly discontinued their science program in 2007. Since that time, vandalism and theft have led to the destruction and degradation of many of the containers stored in the A.K. Stewart Science Center located in the college campus. The Tennessee Department of Environment and Conservation (TDEC) performed a site reconnaissance on June 5, 2014, and immediately contacted the Environmental Protection Agency, Region 4 Emergency Response

and Removal Branch (ERRB) to report the conditions. Thousands of bottles of hazardous chemicals, including acids, bases, oxidizers, organic peroxides and cyanides are abandoned at the site. Radioactive sources and asbestos are also present in the building.

Container sizes range from five-gallon buckets to milliliter-sized containers. Many containers have no labels, or the labels are illegible. Several containers are broken or otherwise destroyed. Flammable and corrosive liquids are spilled onto the floor. Vandals have thrown containers from upper windows onto the ground causing the bottles to break and spill. Elevated mercury levels were detected throughout the facility. Three radioactive sources were found unsecured in the building.

The building is dilapidated, with leaks in the roof and a flooded ground floor. There is no security; the windows are broken, and the doors are not functional. Entry into the building is unrestricted.

2. Physical Location

The Site is located at 901 Knoxville College Drive, Knoxville, Knox County, Tennessee. The geographic coordinates of the Site are latitude 35.970870° north and longitude 83.943343° west.

3. Site Characteristics

Knoxville College is located in a residential neighborhood with homes directly across the street from the science building. There are numerous unsecured and dilapidated structures on the campus that show evidence of trespassers. The A.K. Stewart Science Center is a three-story brick structure located in the center of the campus. Currently, the College is utilizing one building for education and administrative purposes.

4. Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant

There are numerous containers of hazardous waste, including some extremely hazardous substances that are unsecured. Many containers are broken, and rain infiltration threatens to wash spilled contaminants from the building and into the environment. Continued vandalism and theft in the building will only exacerbate the problem. The nature of some of the chemicals present pose toxic, flammable and reactive threats to anyone entering the building.

NPL Status

The Site is not on the National Priorities List (NPL)

5. Maps, Pictures and Other Graphic Representations

Maps, pictures and other graphics have been posted on the Site webpage at www.epaosc.org/knoxvillecollege; printed materials can be made available upon request.

B. Other Actions to Date

1. Previous Actions

There were no previous federal actions at the Site prior to initiation of an emergency response action on June 5, 2014.

2. Current Actions

The EPA and Superfund Technical Assessment and Response Team (START) contractor, Tetra Tech, mobilized to the Site on June 5, 2014. The OSC met with the President of the College and discussed the situation. The President stated that the College does not have the financial resource to address the situation or to secure the facility. The President granted the EPA access to the facility and signed an access agreement. The facility manager confirmed that power has been disconnected to the building. The EPA requested that the College have the natural gas disconnected as well.

On June 6, 2014, the EPA, START and Emergency and Rapid Response Services (ERRS) contractor completed multiple Level B entries into the building to assess the situation and to determine the magnitude/threat. Crews observed and documented thousands of chemical containers ranging in size from five-gallons to milliliter size containers. Many of the chemical containers were noted to be damaged, leaking and unlabeled. Crews observed flammable, combustible, oxidizers, toxic, air reactive, corrosive, biological, and radioactive materials as well as incompatible storage conditions. Crews also detected elevated mercury levels throughout the building. Crews observed suspect friable asbestos-containing building materials (ACBM) on the floor throughout the buildings. Three radioactive sources were found in a ground floor laboratory; no elevated radiation levels were detected. ERRS secured the ground floor windows and damaged doors.

By June 8, 2014, equipment, supplies, and personnel had mobilized to begin removal and mitigation of hazardous substances. A Health and Safety Plan (HASP) was developed to address safety issues for planned tasks. An EPA Community Involvement Coordinator (CIC) was mobilized to assist with outreach and dissemination of information efforts to the residents in the surrounding neighborhood. Throughout the preparation period and into the response phase, the EPA has closely interacted and coordinated with TDEC, the Tennessee Emergency Management Agency (TEMA) and the City of Knoxville.

On June 9, 2014, crews and equipment began to establish work zones, establish air monitoring stations and finalize work plans. Staging, lay-down and decontamination corridor areas were constructed. Entries in Level C PPE were conducted to assess the building and establish response strategies. Overnight security has been provided to ensure that the building and response

equipment would not be tampered with.

On June 10, 2014, the EPA's START contractor established interior and exterior air monitoring stations with remote web-based logging and alert capabilities. Air samples were also collected to determine whether asbestos was present. ERRS crews cleared debris and moved suspected ACBM to provide safe access to chemicals and other hazardous materials that would be removed. Six additional radiation sources were discovered. The EPA Environmental Response Team (ERT) provided consultation on chemical processing strategies and radiation source management.

On June 11, 2014, crews removed and segregated chemicals (approximately 1,800 bottles, 200 of which are presently unidentified) from all 15 rooms on the second floor and began bulking "like" materials. Additional reactive materials and radioactive materials were discovered. Afterwards, a radiation and mercury vapor survey was conducted; mercury vapor levels were still elevated, and a mitigation strategy will be developed.

On June 12, 2014, crews continued to clear debris and moved suspected ACBM to provide safe access to chemicals and other hazardous materials on the ground and first floor. An additional radioactive chemical was found on the second floor as well as another explosive nitro-compound. Chemicals that were consolidated from the rooms and laboratories on the second floor were containerized into shipping containers. Crews started consolidating chemicals from rooms and laboratories on the first floor. Mercury removal and mitigation equipment was mobilized to the Site.

C. State and Local Authorities' Roles

1. State and Local Actions to Date

TDEC enlisted the support of EPA Region 4. The Knox County EMA and Knoxville Fire Department were on-scene and agreed that in the event of a fire, the building would be allowed to burn. Any additional response actions will be coordinated through TDEC.

2. Potential for Continued State/Local Response

TDEC has been present during the emergency response action to provide technical assistance. However, TDEC has indicated that it does not currently have sufficient funds to conduct the necessary response measures in a time-critical manner. The EPA will continue to coordinate activities with TDEC.

III. THREATS TO PUBLIC HEALTH, WELFARE OR THE ENVIRONMENT

EPA Region 4 OSC Eichinger initiated an emergency response under his delegated warrant authority on June 5, 2014, to address the risk of fire, explosion and release of hazardous substances into the environment. There are numerous containers of hazardous waste, including some extremely hazardous substances that are unsecured. Many containers are broken, and rain infiltration threatens to wash spilled chemicals from the building into the environment. Continued vandalism and theft in the building will only exacerbate the problem. The nature of chemicals present poses toxic, flammable and reactive

threats to anyone entering the building.

Section 300.415 of the NCP lists factors to be considered in determining the appropriateness of a removal action. Paragraphs (b)2) (i), (iii), (v), (vi), and (vii) directly apply to the Site:

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.

There are numerous containers of hazardous materials, including some extremely hazardous substances that are unsecured. Continued vandalism and theft in the building will lead to greater exposure and mixing of chemicals, either intentionally or accidentally, may lead to fire or the release of even more toxic products.

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

There are thousands of containers of hazardous materials, including some extremely hazardous substances, ranging in volume from five-gallon buckets to milliliter-sized containers.

300.415(b)2)(v): Weather conditions that may cause hazardous substances or pollutants to migrate or to be released.

Rain infiltration will cause the building to further deteriorate, leading to breakage of the containers and migration of spilled hazardous substances and contaminants outside the building into the surrounding environment.

300.415(b)2)(vi): Threat of fire or explosion.

Many of the chemicals are flammable, and some have already spilled or were intentionally spilled onto the floor. Vandals may set fire to the chemicals, either intentionally or accidentally, through incompatible reactions.

300.415(b)2)(vii): The availability of other appropriate federal or state response mechanisms to respond to the release.

Conditions at the Site exceed the local and state resource capabilities. At this time there are no State mechanisms that are able to respond to this incident with the resources needed to assume the cleanup.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances and/or pollutants 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, welfare or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed Action Description

The requested additional funding outlined in this Action Memorandum will support operations to secure and dispose of hazardous substances that are present at the Site. Anticipated removal activities for the Site include, but are not limited to, the following:

1. Secure the Site to limit trespassing or other unauthorized entry;
2. Conduct an inventory of hazardous materials stored at the Site;
3. Stabilize hazardous materials pending testing and disposal;
4. Segregate hazardous materials into hazard categories;
5. Sample for hazard categorization and disposal profiling;
6. Consolidate, re-package, over-pack, and lab-pack materials;
7. Dispose, treat and/or recycle materials at an off-site location;
8. Conduct additional cleanup activities that may include demolition, excavation of contaminated soils and/or decontamination of personnel and equipment, as necessary, to provide a safe and efficient work environment;
9. Conduct air monitoring for employee and community protection; and,
10. Continue coordination with local and state agencies.

2. Contribution to Remedial Performance

The proposed actions will, to the extent practicable, contribute to the efficient performance of any long-term remedial action at the Site.

3. Applicable or Relevant and Appropriate Requirements (ARARs)

In accordance with the NCP at 40 C.F.R. § 300.415(j), on-site removal actions conducted under CERCLA are required to attain applicable or relevant and appropriate requirements (ARARs) to the extent practicable considering the exigencies of the situation or provide grounds for invoking a CERCLA waiver under Section 121 (d)(4). In determining whether compliance with ARARs is practicable; the lead agency may consider appropriate factors, including (1) the urgency of the situation; and (2) scope of the removal action to be conducted. Additionally, under 40 C.F.R. 300.405(g)(3), other advisories, criteria or guidance may also be considered (so-called To-Be-Considered or TBC) when conducting the removal action. The site-specific ARARs and TBC for this time-critical (or non-time critical) removal action, which the EPA deems compliance is practicable, are described in this section.

TDEC has been present and worked in close coordination with the EPA during the course of the emergency response action beginning on June 5, 2014. To date, the State of Tennessee has not identified any State ARARs for the EPA's consideration during the course of the response action.

ARARs include only federal and state environmental or facility siting laws/regulations and do not include occupational safety or worker protection requirements. Compliance with OSHA

standards is required by 40 C.F.R. § 300.150. ARARs are typically divided into three categories: (1) chemical-specific; (2) location-specific; and (3) action-specific.

Under CERCLA Section 121(e)(1), federal, state or local permits are not required for the portion of any removal or remedial action conducted entirely on-site as defined in 40 C.F.R. § 300.5. See also 40 C.F.R. §§ 300.400(e)(J) & (2). On-site means the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action. Response actions conducted on-site must comply with the substantive but not administrative requirements of ARARs. Off-site activities such as transportation and disposal of wastes are required to comply with all applicable requirements, including the administrative portions.

Wastes that are transferred off-site or transported in commerce along public right-of-ways will meet the Hazard Materials Regulations requirements at 49 C.F.R. Part 171-180. In the event the remediation wastes are hazardous and/or PCB wastes, then applicable transportation requirements specified in RCRA and/or TSCA regulations will be met. These include packaging, labeling, marking, manifesting, and placarding etc., requirements for hazardous materials. In addition, as provided in CERCLA Section 121(d)(3) and the Off-site Rule at 40 C.F.R. 300.440 et seq. the off-site transfer of any hazardous substance, pollutant or contaminant generated during the response action will be sent to a treatment, storage or disposal facility that is in compliance with applicable federal and state laws and has been approved by the EPA for acceptance of CERCLA waste.

4. Projected Schedule

The emergency response began on June 5, 2014, under the OSC's warrant authority. Foregoing unexpected delays, all removal activities listed in section V.A.1. of this memorandum will be complete within three months of the date of approval of this Action Memorandum.

B. Estimated Costs

Extramural costs:	Current Ceiling:	Proposed Increase:	Proposed Ceiling:
<u>Regional Allowance Costs:</u>			
ERRS	\$200,000	\$133,000	\$333,000
<u>Other Extramural Costs Not funded from the Regional Allowance:</u>			
START	\$50,000	\$50,000	\$100,000
<u>Subtotal Extramural Costs:</u>	\$250,000	\$183,000	\$433,000
Extramural Costs Contingency (20%)			\$67,000
TOTAL REMOVAL ACTION PROJECT CEILING:	\$250,000		\$500,000

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 the site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgment 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.

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

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

VII. OUTSTANDING POLICY ISSUES

None.

VIII. ENFORCEMENT

Enforcement activities have been initiated and are ongoing. Knoxville College has stated that they are the property owners and former operators of the Site but are financially unable to perform the removal action.

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 \$731,300 using the following formula:

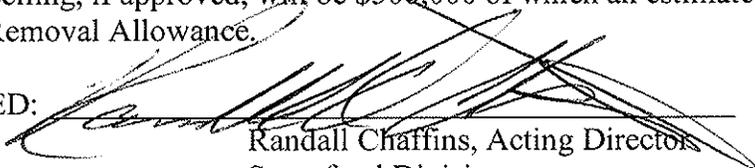
$(\text{Total Extramural Costs} + \text{Total Intramural Costs}) + (45.26\% \times (\text{Total Extramural Costs} + \text{Total Intramural Costs}))$ or $(\$500,000) + (45.26\% \times (\$500,000)) = \$731,300^1$.

IX. RECOMMENDATION

This decision document represents the selected removal action for the Knoxville College Site in Knoxville, Knox County, Tennessee developed in accordance with CERCLA as amended, and not inconsistent with the NCP. This decision is based on the Administrative Record for the Site.

Conditions at the Site continue to meet the NCP Section 300.415(b) criteria for a removal action. I recommend your approval for the proposed action to allow continued removal response. The total projected ceiling, if approved, will be \$500,000 of which an estimated \$400,000 comes from the Regional Removal Allowance.

APPROVED:


Randall Chaffins, Acting Director
Superfund Division

DATE:

7/9/14

DISAPPROVED: _____

Randall Chaffins, Acting Director
Superfund Division

DATE: _____

Attachment: Emergency Response Action Memorandum June 6, 2014
