



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

OCT 11 2016

Mr. Larry Hughes
Kentucky Department for Environmental Protection
200 Fair Oaks Lane
Frankfort, KY 40601

Dear Mr. Hughes:

We are pleased to provide a copy of the Action Memorandum for the Wiley Property Site (the Site) located in Hartford, Ohio County, Kentucky. If you have any questions or comments concerning this document or the continuation of the removal activities at this Site, please contact the On-Scene Coordinator at the following address:

Art Smith, OSC USEPA
600 MLK Jr. Place
Ramano L. Mazzoli Federal Building
Room 172A
Louisville, KY 40202

Sincerely,

James W. Webster, Chief
Emergency Response, Removal & Prevention Branch

Enclosure

cc:	Dawn Taylor	Anita Davis
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ACTION MEMORANDUM

SUBJECT: 12-Month Exemption Request for a Removal Action at the Wiley Property Site
Hartford, Ohio County, Kentucky

FROM: Art Smith, On-Scene Coordinator
Emergency Response, Removal and Prevention Branch

THRU: James W. Webster, Chief
Emergency Response, Removal and Prevention Branch

TO: Franklin E. Hill, Director
Superfund Division

I. PURPOSE

The purpose of this Action Memorandum pursuant to Section 104 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) is to request an exemption to the 12-month statutory limit on a removal action in order to continue response activities at the Wiley Property Site (the Site) located in Hartford, Ohio County, Kentucky. 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)(2) criteria for removal actions. A 12-month exemption request is necessary to complete the removal of contaminated soils where arsenic concentrations at the surface exceed the U.S. Environmental Protection Agency's Removal Management Levels (RML) for residential areas.

II. SITE CONDITIONS

(Note: Please refer to the June 22, 2016 Action Memorandum for additional site background information, which is provided as Attachment A).

Site ID (SSID): B45H
CERCLIS ID: KYN000403430
NPL Status: Non-NPL
Removal Category: Time-Critical Removal

In September 2014, the Kentucky Department for Environmental Protection (KDEP) performed an initial visual investigation at the Site, based on complaints filed by a former resident. They confirmed a source area where a white unknown substance was located in an area devoid of vegetation and approximately 30 feet in diameter. Samples were collected in October 2014 by KDEP, and analysis of the samples collected from this area revealed total arsenic at levels up to 525,000 milligrams/kilogram (mg/kg). The Toxicity Characteristic Leaching Procedure (TCLP) was performed on the sample with the highest total arsenic level, and the result came back as 618 milligrams/liter (mg/L) leachable arsenic. Additional investigation and sampling conducted in October 2014 by KDEP documented that the arsenic contamination had migrated downhill a distance of approximately 120 feet to the north and west of the source area.

On November 14, 2014, the KDEP Superfund Branch formally requested that the EPA conduct a Removal Site Evaluation (RSE) at the Site. On March 24, 2015, the Region 4 Superfund Technical Assessment and Response Team (START) contractor mobilized to the Site to collect samples. The purpose was to confirm the 2014 KDEP findings and to explore the potential for additional migration pathways at the Site. Also, a subset of samples were run for arsenic speciation in an attempt to identify the specific arsenic compound at the Site. The sample collected from the source area was analyzed for total arsenic, and the analysis revealed the concentration of arsenic to be 747,000 mg/kg. The arsenic speciation determined that the arsenic is an arsenite compound (As+3).

Based on this information, the On-Scene Coordinator (OSC) completed the RSE under 40 CFR Section 300.410 and concluded that the Site meets the National Contingency Plan (NCP) criteria for a time-critical removal action.

On October 13, 2015, the OSC mobilized to the Site with Emergency and Rapid Response Services (ERRS) contractor CMC, Inc. to begin a time-critical removal action under his \$50,000 programmatic authority. Actions taken at that time were focused on consolidation and stockpiling of the arsenic compound in the source area. The area was fenced, and signs warning of the arsenic hazard were posted at the Site. The OSC and ERRS contractor demobilized from the Site on October 16, 2015, marking completion of the first phase of the removal action.

On July 5, 2016, the ERRS contractor mobilized to the Site to begin the second phase of the removal action, which was approved in the June 22, 2016 Action Memorandum. The approved tasks consists of the following:

- Remove stockpiled waste materials and dispose of at an approved hazardous waste management facility.
- Excavate soils on the residential property to an approximate depth of 1.5 feet below land surface (BLS) where arsenic concentrations at the surface are at 68 mg/kg or above and dispose of at a permitted off-site facility.
- Excavate soils on the non-residential property to an approximate depth of 1.5 feet BLS where arsenic concentrations at the surface are at 420 mg/kg or above and dispose of at a permitted off-site facility.

- Excavate sediments along an 800-foot segment of the dry creek bed draining the Site along its northern boundary. Excavation will be carried out along this segment until a residual arsenic concentration of 50 mg/kg and compliance with the Water Quality Criteria (WQC) of 0.340 mg/l for acute toxicity is achieved.
- Backfill excavated areas on the residential property with clean soil to re-establish vegetative cover and re-grade the areas to promote positive drainage.
- Re-establish vegetative cover on the non-residential property and re-grade the area to promote positive drainage.

As of September 16, 2016, approximately 2,570 cubic yards (c.y.) of arsenic-contaminated soils have been excavated and stockpiled awaiting disposal. An estimated additional 2,600 c.y. will require excavation and disposal. About half of this additional volume will come from the excavation of sediments from the dry creek bed forming the northern boundary of the Site.

According to the NOAA National Centers for Environmental Information, July 2016 was the wettest ever for the month of July in Western Kentucky, with recorded precipitation over 11.75 inches. For this Site, the impacts have caused delays in beginning excavation work due to the unusually wet conditions. In particular, the normally dry creek bed has been saturated due to flooding in the low-lying areas of the Site. The arsenic levels in this area were characterized as a “significant risk to small home range wildlife” by the EPA Region 4 Superfund Division, Scientific Services Section. An exemption to the 12-month statutory limit on CERCLA removal actions is required to complete the response measures at this Site.

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

Conditions at the Site may present a threat to public health or welfare, and meet the criteria for initiating a removal action under 40 CFR Section 300.415(b)(2) of the NCP. The following factors from Section 300.415(b)(2) of the NCP form the basis for the EPA’s determination of the threat presented, and the appropriate actions to be taken:

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.

Although the home is not presently occupied, the extremely high total arsenic concentrations in the source area constitutes a potential human exposure pathway. Furthermore, there are limited controls on access to the Site, and the threat of direct contact with the arsenic compound and potential exposure to animals and the food chain is significant.

According to the EPA Air Toxics website (<http://www.epa.gov/ttnatw01/hlthef/arsenic.html>), “Acute (short-term) high-level inhalation exposure to arsenic dust or fumes has resulted in gastrointestinal effects (nausea, diarrhea, abdominal pain); central and peripheral nervous system disorders have occurred in workers acutely exposed to inorganic arsenic. Chronic (long-

term) inhalation exposure to inorganic arsenic of humans is associated with irritation of the skin and mucous membranes and effects in the brain and nervous system. Chronic oral exposure to elevated levels of inorganic arsenic has resulted in gastrointestinal effects, anemia, peripheral neuropathy, skin lesions, hyperpigmentation, and liver or kidney damage in humans. Inorganic arsenic exposure of humans, by the inhalation route, has been shown to be strongly associated with lung cancer, while ingestion of inorganic arsenic by humans has been linked to a form of skin cancer and also to bladder, liver and lung cancer. The EPA has classified inorganic arsenic as a known human carcinogen.”

In order to be protective of both human health and the environment, the OSC solicited input from the EPA Region 4 Office of Technical Services (OTS). The following cleanup criteria has been developed for this time-critical removal action:

Residential Property:

Areas found to have arsenic concentrations at the surface at 68 mg/kg or above will be excavated to a depth of 1.5 feet below land surface (BLS) and backfilled with clean soil.

Non-Residential Property:

Areas found to have arsenic concentrations at the surface at 420 mg/kg or above will be excavated to a depth of 1.5 feet BLS.

These cleanup goals for soil removal are based on limiting the excess cancer risk associated with potential exposure to arsenic to a probability of less than 1 in 10,000 people. (1×10^{-4}).

In addition, there is a segment of the dry creek bed along the northern boundary of the Site that is significantly contaminated with arsenic. In order to be protective of species inhabiting this area, an 800-foot segment will be excavated to an average residual arsenic concentration of 50 mg/kg in creek sediments. The parallel goal will be to remove arsenic-contaminated creek sediments such that the WQC of < 0.340 mg/l of arsenic in surface water is attained.

The two risk memos which detail the basis for selection of the cleanup criteria for this Site are provided as Attachment B to the June 22, 2016 Action Memorandum.

300.415(b)(2)(ii): Actual or potential contamination of drinking water supplies or sensitive ecosystems.

Although there are no known private well users in the vicinity of the Site, there is documented evidence of a drinking water well on the Wiley Property. It is unknown whether the arsenic contamination has migrated downward to an extent where the drinking water supply would be impacted, but the potential is there due to the high concentrations of arsenic at the surface.

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.

The evidence of arsenic migration at the surface is documented by the discovery that arsenic wastes were discovered at distances of up to 1,800 feet away from the source area in creek sediments.

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

The arsenic deposited at the surface is in a physical state that would allow migration to other areas via runoff from significant rain events and high winds.

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

At this time, there are no other federal or state government mechanisms that are able to respond to this incident in a timely manner and with the resources needed to assume the cleanup.

IV. ENDANGERMENT DETERMINATION

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

V. EXEMPTION FROM THE 12-MONTH STATUTORY LIMIT FOR A REMOVAL ACTION

A. Emergency Exemption

1. There is an immediate risk to public health or welfare. The concentrations of arsenic in soils on both the residential and non-residential yards represent conditions where actual exposures are occurring. Although the house is no longer occupied, trespassing continues to be an issue as evidenced by fresh four wheeler tire tracks in certain areas of the Site where hazardous substances are found. Accidental ingestion is the potential threat to those who frequent the site for recreational outdoor activities (i.e., four-wheeling and hunting). Arsenic is a known human carcinogen, in addition to posing both acute and chronic health risks, as cited previously in this Action Memorandum.
2. Continued response actions are immediately required to prevent, limit, or mitigate an emergency. Excavation of contaminated soils will mitigate actual exposures which are occurring at the present time. Removal of contaminated sediments from the dry creek bed will prevent further migration of contaminants and eliminate the risk of ingestion by trespassers or foraging wildlife.

3. Assistance will not otherwise be provided on a timely basis. As cited previously, KDEP requested that the EPA Region 4 take a time-critical removal action at this Site. State and local agencies do not have sufficient funds to conduct additional site response activities in a timely manner.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

- A. Proposed Actions (See Section II of this Action Memorandum and Attachment A for a complete description of response actions already in progress at this Site)
- B. Estimated Costs (See August 22, 2016 memo re-directing funds from the extramural cost contingency for this Site)

	<u>Current Ceiling</u>	<u>Change</u>	<u>New Ceiling</u>
<u>Regional Allowance Costs</u>			
ERRS Contractor	\$1,450,000	+\$250,000	\$1,700,000
<u>Other Extramural Costs Not Funded From the Regional Allowance</u>			
START Contractor	\$ 100,000		\$ 100,000
Subtotal, Extramural Costs	\$1,550,000		
Extramural Cost Contingency (20%)	\$ 300,000	-\$250,000	\$ 50,000
TOTAL SITE CEILING	\$1,850,000		\$1,850,000

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

A delay in action or no action at this Site would increase the actual or potential threats to the public health and/or the environment.

VIII. OUTSTANDING POLICY ISSUES

None.

IX. ENFORCEMENT (See Attachment A for the Confidential Enforcement Addendum)

The total EPA costs for this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated at:

Total Removal Project Ceiling	\$1,850,000
EPA's Direct Intramural Costs	\$70,000
Subtotal	\$1,920,000
Regional Indirect Cost (55.33%)*	<u>\$1,062,336</u>
ESTIMATED <u>TOTAL</u> EPA COSTS	\$2,982,336

X. RECOMMENDATION

Conditions at the Site meet criteria for the CERCLA section 104(c) emergency exemption, and I recommend that you approve an exemption from the 12-month limit to allow a continued removal response. The total project ceiling is \$1,850,000 of which \$1,700,000 comes from the Regional Removal Allowance.

APPROVED: _____

Franklin E. Hill, Director
Superfund Division

DATE: _____

10/11/16

DISAPPROVED: _____

Franklin E. Hill, Director
Superfund Division

DATE: _____

Attachments

*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-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of the 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 total cost estimates nor deviation of actual costs from this estimate will affect the United States' right to cost recovery.