



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III

1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029

SEP 27 2017

**SUBJECT:** Request for Funding for a Removal Action at the  
W & G Electroplating Site

**FROM:** Neeraj (Raj) Sharma, On-Scene Coordinator  
Western Response Branch (3HS32)

*Fran Burns for RS*

**TO:** Karen Melvin, Director  
Hazardous Site Cleanup Division Response (3HS00)

**THRU:** Fran Burns, Chief  
Western Response Branch (3HS32)

*Fran Burns*

Bonnie Gross, Associate Director  
Office of Preparedness and Response (3HS30)

*Fran Burns for BG*

## I. PURPOSE

The purpose of this Action Memorandum is to request and document approval for a time-critical Removal Action to mitigate the release or threatened release of hazardous substances at the W & G Electroplating Site (Site) in Boothsville, WV. EPA conducted a removal site evaluation at the Site in accordance with Section 300.410 of the National Contingency Plan (NCP) and identified a release of hazardous substances, notably hexavalent chromium, into the environment. Based upon information obtained from the removal site evaluation and a review of that information by the On-Scene Coordinator (OSC), a Removal Action is necessary to mitigate threats posed by the release and/or substantial threat of release of hazardous substances from the Site and to protect public health, welfare, and/or the environment.

To mitigate the threat, Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, (CERCLA) funding in the amount of \$300,000 is requested of which \$200,000 is from the Regional Allowance.

## II. SITE DESCRIPTION AND BACKGROUND

### A. Site Description

The W&G Electroplating Site is located off Route 73, one-half mile south of Boothsville, Taylor County, West Virginia. The Site is the location of a former facility (Facility), which was primarily involved in replating hydraulic arms and cylinders for heavy construction and mining

equipment. The Site consists of approximately one acre of land situated on a floodplain of Booths Creek, 8.5 miles from its confluence with the West Fork River. The Site is bordered to the west by Booths Creek, to the east by Route 73, and to the north and south by commercial properties (see Figure 1).

## **B. Site Background**

The Site operated from 1976 until 2000. Throughout this time, W&G Electroplating operated a hard chrome plating process for the repair of hydraulic arms and cylinders at the Facility. The hard chrome plating process was performed in three steps:

1. The old chrome finish was removed by grinding, stripping with muriatic acid, or reversing the current in the plating bath.
2. The parts were cleaned with lacquer thinner.
3. The parts were replated.

Grinding operations generated dust composed of chrome, steel, and grit from the polishing belt. Historically, the dust was vented to the outside of a building at the Facility via an exhaust fan and accumulated on the ground surface outside the building resulting in chromium contamination in the soil. Additionally, the plating sump inside the building became compromised and plating solution containing chromium was released to the subsurface soil, groundwater, and Booths Creek.

On June 20, 1990, upon request by the West Virginia Department of Natural Resources, the U.S. Environmental Protection Agency (EPA) began an assessment and a Removal Action (1990 Removal Action) at the Site. The 1990 Removal Action was completed on August 19, 1991. The action resulted in the removal of 270 tons of chromium contaminated soil and concrete, eleven drums of contaminated septic sludge, nine drums of muriatic acid waste, one drum of chromic acid waste, three drums of lead dross, and 39,455 gallons of chromium contaminated groundwater. The 1990 Removal Action also installed a groundwater recovery and batch treatment system. EPA conducted batch treatment of groundwater collected on-Site from October 1991 through July 1996. The West Virginia Department of Environmental Protection (WVDEP) then took over batch treatment and maintenance of groundwater collection in 1996.

On September 30, 2014, the Associate Director of EPA Region III's Office of Preparedness and Response received a call from WVDEP's Emergency Response Chief. He stated that the groundwater system was in disrepair and was being shut down due to lack of funding, and requested that EPA once again assume responsibilities for the Site. He noted that hexavalent chromium levels were still high in the sump behind the Facility, approximately 3,500 ppb.

Upon assuming responsibilities for the Site, the OSC began an assessment to determine the current state of the Site. Sampling events took place in March 2015, July 2015, October

2015, December 2015, and August 2016. One geophysical survey (July 2016) was conducted by EPA's Emergency Response Team (ERT). During the sampling events, EPA collected samples which included some or all of the following matrices: groundwater from the Site sump, groundwater from borehole (push point) locations, surface water, pore water, and soil.

### **C. Quantities and Types of Substances Present**

The removal site evaluation completed in 2017 indicates that a significant presence of hexavalent chromium exists in the perched groundwater between the Facility and Booths Creek, and in the portion of Booths Creek adjacent to the Site. In Booths Creek, a concentration of 355 parts per billion (ppb) of hexavalent chromium was measured in one location in July 2015. The highest level measured in the creek was in December 2015, when a concentration of 963 ppb was found. The EPA aquatic life criteria for hexavalent chromium are 16 ppb and 11 ppb for acute and chronic exposures, respectively.

All surface concentrations in soil were below EPA's Removal Management Level (RML) of 630 parts per million (ppm).

In groundwater, hexavalent chromium levels in the on-Site sump has ranged from 3,500 to 5,440 ppb. A pore water sample of 1,150 ppb, measured in July 2015 in the groundwater at the edge of the creek, indicates that contaminated groundwater in the shallow aquifer on the Site is the likely cause of hexavalent chromium found in the creek.

Chromium is a hazardous substance as defined in Section 101 (14) of CERCLA, 42 U.S.C. § 9601 (14), and is listed as such in 40 C.F.R. § 302.4.

### **D. State and Local Authorities**

WVDEP has requested EPA assistance, and has provided background information regarding this Site. The OSC has been and will continue to coordinate all Site-related activities with WVDEP.

## **III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT**

Section 300.415 of the NCP lists the factors to be considered in determining the appropriateness of a Removal Action. Paragraphs (b) (2) (i), (iii), (iv), and (vii) of Section 300.415 directly apply as follows to the conditions as they exist at the Site.

- A. 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."

Sampling has shown that hexavalent chromium is emanating from the groundwater beneath the Site to Booths Creek, and exceeds the chronic level set to be protective of aquatic life. Hexavalent chromium is a hazardous substance. It is considered carcinogenic and corrosive to



tissue. Studies show exposure to hexavalent chromium in the water column does result in chromium accumulation in fish tissue. Species of smallmouth bass, largemouth bass, and sauger have been caught in Booths Creek. All of these species, as well as crayfish whose tails are consumable, are expected to be native to Booths Creek at various times of the year, and can be expected to accumulate chromium if exposed to the hexavalent form in the water column. Since Booths Creek is used for fishing, there is the potential for direct human contact with contaminated water and ingestion of contaminated fish.

- B. 300.415 (b) (2) (ii) “Actual or potential contamination of drinking water supplies or sensitive ecosystems.”

Though it is not believed that groundwater beneath the Site or Booths Creek is being used for drinking water, biologist Kathleen Patnode with the U.S. Fish & Wildlife Service observed a very limited number of macroinvertebrates, indicating that hexavalent chromium in the creek is likely causing toxicity to aquatic biota. The concentration of hexavalent chromium in the creek exceeds the chronic level set to be protective of aquatic life.

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

WVDEP has stated that it lacks the resources to continue the response actions and has requested EPA assistance.

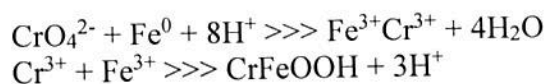
#### IV. ENDANGERMENT DETERMINATION

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

#### V. PROPOSED ACTIONS AND ESTIMATED COSTS

The proposed action is to construct a Permeable Reactive Barrier (PRB) with Zero Valent Iron (ZVI) to prevent hexavalent chromium from entering Booths Creek.

EPA anticipates that the proposed PRB (see Figure 2) will be approximately 140 feet long, 2 feet wide, and will be installed in the overburden down to the top of bedrock. The ZVI in the PRB reduces the hexavalent chromium to a much less toxic trivalent form, which precipitates out of solution. The chemical reaction is as follows:



The resulting CrFeOOH is the precipitate that is produced, which is bound in the soil. Almost all

of the hexavalent chromium should be converted to the trivalent form. Sampling at multiple locations adjacent to the Site in Booths Creek is proposed to ensure the effectiveness of the PRB.

**A. Proposed Actions**

1. Mobilize personnel/equipment to/from the Site;
2. Conduct clearing and grubbing to ease movement and staging of equipment and materials around Site;
3. Establish Command Post and support facilities;
4. Provide for safety of public during non-working hours by securing the hazardous substances from the public using covers, fencing, and/or caution tape;
5. Install temporary erosion and sedimentation controls to minimize the potential for migration of hazardous substances from the Site;
6. Dig a trench for the PRB. Construct PRB using ZVI/sand mixture, and cover with filter fabric. Backfill then seed as appropriate.
7. Construct approximately five (5) shallow wells in overburden along 2 transects to monitor PRB effectiveness over time. Wells would be placed downgradient of the PRB, put into the PRB, and placed upgradient of the PRB. The existing sump would serve as an additional upgradient monitoring location.
8. Sample and consolidate or otherwise prepare hazardous substances removed pursuant to Items No. 6 and 7 above, for off-Site transportation and arrange transportation off-Site. Preparation activities may include marking, labeling, placarding, sampling, pumping, bulking, consolidating, drumming, or treating wastes to ensure they are transported safely and consistent with Resource Conservation and Recovery Act (RCRA) Part 262 and U.S. Department of Transportation requirements;
9. Dispose off-Site all hazardous substances removed pursuant to Items No. 6 and 7, and other hazardous substances collected during the above activities, in accordance with Section 121(d)(3) of CERCLA and 40 C.F.R. § 300.440;
10. Sample designated locations in Booths Creek approximately nine (9) and 12 (twelve) months following completion of PRB to ensure effectiveness of the Removal Action, i.e., ensure that levels are below 11 ppm in the creek; and
11. Assess the need to implement post-removal site controls to protect the integrity of the PRB, and to notify potential future owners of the presence of the PRB. GPS Coordinates of the PRB will be taken to record in a land restriction document, to be implemented if necessary. Coordinate with State and local government to implement post-removal site controls to protect the integrity of the PRB.



## **B. Contribution to Remedial Performance**

The Site is not on the National Priorities List (NPL). The actions proposed in this funding request will not interfere with any remedial actions that may occur in the future and any actions will be consistent with the requirement of Section 104(a)(2) of CERCLA, 42 U.S.C. § 104(a)(2), which states that a removal action should contribute to the efficient performance of any long term remedial action with respect to the release or threatened release concerned.

## **C. Compliance with ARARs**

The proposed Removal Action will comply with Federal and State applicable or relevant and appropriate requirements (ARARs) to the extent practicable considering the exigencies of the situation. On August 29, 2017, the OSC contacted WVDEP to request State (WV) ARARs. The WVDEP contact in question is aware of the scope of work to be completed for this removal action. All federal and state ARARs will be considered during this removal action.

## **D. Estimated Costs**

Extramural Costs	
Regional Allowance Costs (This cost category includes estimates for ERRS contractors, subcontractors, letter contracts, orders for services, notices to proceed, alternative technology contracts, and inter-agency agreements with other Federal Agencies.)	\$ 200,000
Other Extramural Costs Not Funded from the Regional Allowance START Contractor	\$ 50,000
Subtotal, Extramural Costs	\$ 250,000
Extramural Costs Contingency (20% of Subtotal, Extramural Costs)	\$ 50,000
<b>TOTAL REMOVAL ACTION PROJECT CEILING</b>	<b>\$ 300,000</b>

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

If the actions described in this Action Memorandum are not conducted, the release and/or threat of release of hazardous substances or pollutants or contaminants will continue to exist at the Site. Without immediate actions to mitigate the release and potential release of hazardous substances or pollutants or contaminants at the Site, potential threats posed to human and ecological receptors may increase.

The OSC has coordinated with WVDEP officials regarding the actions anticipated at the Site. WVDEP agrees with EPA's decision to take an action at this Site. A time critical removal action conducted by EPA is vital to ensure that the threat posed by the Site is mitigated in a timely manner.

## **VII. OUTSTANDING POLICY ISSUES**

There are no outstanding policy issues pertaining to the W & G Electroplating Site.

## **VIII. ENFORCEMENT STATUS**

The OSC has provided the EPA Removal Enforcement Section with information available to pursue any and all enforcement actions pertaining to the W & G Electroplating Site. See attached Confidential Enforcement Addendum.

The total cumulative EPA costs for this Removal Action, based on full cost accounting practices that will be eligible for cost recovery are estimated below as:

Direct Extramural Cost:	\$ 300,000
Direct Intramural Costs:	\$ 30,000
SubTotal	\$ 330,000
Indirect Costs (89.4% of above)	\$ 295,020
Estimated EPA Costs for the Removal Action:	\$ 625,020

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 625,020<sup>1</sup>.

## **IX. RECOMMENDATION**

This Action Memorandum represents the selected Removal Action for W & G Electroplating in Boothsville, West Virginia, developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based on the Administrative Record for the Site.

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<sup>1</sup> Direct Costs include direct extramural 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 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.


By signing this Action Memorandum, you are also hereby establishing the documents listed below as the Administrative Record supporting the issuance of this Action Memorandum, pursuant to Section 113 (k) of CERCLA and EPA Delegation No. 14-22.

1. "W&G Electroplating Site: Removal Evaluation Sampling Events", January 9, 2017
2. Memo from Kathleen Patnode, Biological Technical Assistance Group, 8/3/17

Because conditions at W & G Electroplating meet the Removal Action requirements of the NCP, I recommend your approval of the proposed Removal Action. The total Removal Action Project Ceiling, if approved, will be \$300,000. Of this, an estimated \$200,000 comes from the Regional Removal Allowance. Please indicate your approval or disapproval below.

Action by the Approving Official:

I have reviewed the above-stated facts and based upon those facts and the information compiled in the documents described above, I hereby determine that the release or threatened release of hazardous substances at and/or from the Site presents or may present an imminent and substantial endangerment to the public health or welfare or to the environment. I concur with the recommended removal action as outlined.

APPROVED:  Date SEP 27 2017  
Karen Melvin, Director  
Hazardous Site Cleanup Division  
EPA Region 3

ATTACHMENTS: A. Enforcement Confidential Memo  
B. Overview Map of Site  
C. Map showing location of Proposed Permeable Reactive Barrier





### Legend



W & G Electroplating Site

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



TDD No. TL03-15-02-001  
START Contract No. EP-S3-10-04

Figure 1 - Site Overview Map  
W&G Electroplating Site  
Booths Creek, Taylor County, West Virginia



Map By:  
MAD

Date Modified:  
08/07/2017

Scale: 1:1,000



Source:  
Online Services for ESRI - World Imagery  
US Streams (U.S. Census Tiger Lines 2011)





