



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

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

SEP 25 2012

**ACTION MEMORANDUM**

**SUBJECT:** Request for a Time-Critical Removal Action at the Royster Guano Site  
Columbia, Richland County, South Carolina

**FROM:** Richard J. Jardine, On-Scene Coordinator *RJJ*  
Emergency Response and Removal Branch

**THRU:** A. Shane Hitchcock, Chief *ASH*  
Emergency Response and Removal Branch

**TO:** Franklin E. Hill, Director *F. Hill*  
Superfund Division

**SITE ID #:** B4W2

**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 and document approval of the proposed time-critical removal action described herein for the Royster Guano Site (the Site) located in Columbia, Richland County, South Carolina. The Site poses 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. The Site is a residential community across Commerce Drive from a former super phosphate facility that operated in the 1930s. The total project ceiling for this time-critical removal action, if approved, will be \$1,504,200 of which \$1,113,500 will be funded through the Regional Removal Allowance.

**II. SITE CONDITIONS AND BACKGROUND**

CERCLIS ID: SCN00410863  
Removal Category: Time-Critical Removal Action

**A. Site Description**

**1. Removal Site Evaluation**

A Removal Site Evaluation (RSE) was conducted in response to a request from the South Carolina Department of Health and Environmental Control (DHEC). The Site identified for this proposed removal action is located in a residential community that was unknowingly

developed atop an area that was contaminated by the former Royster Guano super phosphate facility.

Around May 2012, pursuant to a property action at a Brownfields site on industrial property on Commerce Drive, the SEACO Asphalt facility discovered high lead and arsenic concentrations on their property. Further investigation by SEACO and the South Carolina DHEC determined that the SEACO facility occupies an area formerly operated by the former Royster Guano super phosphate facility. DHEC quickly screened the properties, including a number of residential properties, with an X-ray fluorescence field instrument. DHEC's screening indicated that contamination was present on nearby properties. Therefore, DHEC requested the U.S. Environmental Protection Agency assist with further assessment of the residential properties, and if appropriate, consider a removal action for those properties that exceed human health risk limits.

The levels of lead and arsenic detected by DHEC screening varied from background to over 27,000 parts per million (ppm) for lead and 11,000 ppm for arsenic, depending upon sample location. The highest values were located on the industrial property and not on the residential properties. The EPA and DHEC combined resources to conduct an investigation at the Site beginning on August 3, 2012, and ending on August 10, 2012. The EPA screening values on the residential properties ranged from approximately background to 3,000 ppm for lead and 800 ppm for arsenic. Of the 51 parcels in this development, all but 3 granted access to the EPA and were screened or sampled. Most properties had no lead or arsenic levels above the Region 4 Removal Management Levels (RML) of 400 ppm for lead and 39 ppm for arsenic. Approximately 15 properties had significant lead contamination at the surface to two feet. After a review of Site conditions and data generated from the RSE, the Emergency Response and Removal Branch (ERRB) concluded that the Site meets the criteria as set forth in 40 CFR 300.415 (b)(2) for a time-critical removal action.

## **2. Physical Location**

The Site identified for this removal action is located along Howe Street, Easy Street, and Commerce Drive in Columbia, Richland County, South Carolina. The geographic coordinates are 33.978106 ° N, -81.009329° W.

## **3. Site Characteristics**

The surrounding land use to the north is residential. The area to the south is industrial. Groundwater flow has not been determined for this Site, but it is expected to follow the surface topography which is very flat. The community was built in a former detention pond that had been drained over 50 years ago. Surface water drainage in the neighborhood is very slow and problematic.

According to observations by DHEC personnel, during periods of heavy precipitation, the storm water runoff flows from the industrial area into the Edisto Court Community via Howe Street. The storm water flows slowly and ponds on Easy Street or flows half way down Easy Street to a drainage structure that flows subsurface. Several yards have standing water during rainfall events.

Although several yards are well maintained with thick grass, some are sparsely vegetated. Activities such as lawn mowing in the thinly grassed area liberate copious amounts of airborne dust and dirt. Some yards have large bare spot areas. These bare spots are prime locations for direct soil contact or potential fugitive emissions that could be inhaled.

**4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant**

Lead and arsenic are hazardous substances as listed in 40 CFR § 302.4, and referred to in Section 101(14) of CERCLA, as amended. Human exposure to lead and arsenic contaminated soil at the Site poses a significant threat to public health. Ingestion and inhalation are the primary pathways for human exposure. Continued exposure to the soil contaminated with concentrations of lead and arsenic exceeding the RMLs may pose chronic health effects to persons living in the community.

**5. NPL Status**

The Site is not listed on the National Priority List (NPL).

**6. Maps, pictures and other graphic representations**

Pictures and other graphics can be found on [epaossc.org/roysterguano](http://epaossc.org/roysterguano).

**B. Other Actions to Date**

**1. Previous Actions**

There have been no documented removal actions undertaken at the Site. DHEC has taken an early lead in identifying the extent of contamination along the industrial corridor and within the Edisto Court Community.

**2. Current Actions**

Currently there are no government or private actions taking place at the Site.

**C. State and Local Authorities' Roles**

**1. State and local actions to date**

The State has conducted numerous screening and sampling events within the Edisto Court Community as well as the suspected area of origin within the industrial properties nearby. Additionally, DHEC has provided blood and urine screening to determine current uptake of the metals into the community members. Further, DHEC has convened several public meetings to discuss relevant issues with the public, including the spread of contamination and ongoing industrial operations.

The Columbia City Councilman has facilitated communications and awareness among residents of the Edisto Court Community.

## **2. Potential for continued state/local response**

The EPA will continue to coordinate with state and local government officials throughout the removal action. DHEC is considering both voluntary and enforcement actions at the industrial facilities nearby to reduce or eliminate exposures to industrial workers or the Edisto Court Community.

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

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The arsenic and lead contamination present on Site poses the following threats to public health or welfare as listed in Section 300.415 (b)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP):

**Section 300.415 (b)(2)(i) *Actual or potential exposure to nearby human populations, or the food chain from hazardous substances pollutants or contaminants;*** the elevated levels of arsenic and lead contamination presents a high probability of exposure to persons who live in the community. Many residential yards have limited vegetative cover which provides a direct contact threat with the residents. Additionally, there are many children in this community who play in multiple yards and may be more vulnerable to the soil contamination.

**Section 300.415 (b)(2)(iv) *High levels of hazardous substances or pollutants or contaminants in the soils largely at or near the surface, that may migrate;*** The analytical results of soil samples collected by DHEC and the EPA revealed lead and arsenic in the top few inches of soil. Air borne dust exposures may occur when residents conduct routine activities such as cutting the grass. Many yards are very thinly grassed and the lawn mowers produce visible emissions of dust/dirt that blow onto neighboring yards or in the street. The lead and arsenic found in these yards migrated from the former phosphate facility possibly via storm water runoff and air emissions. Other than the surface streets, there is little protection to prevent further migration of the contaminants.

**Section 300.415 (b)(2)(v) *Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;*** Drought conditions may contribute to the potential for air-borne migration of surface soils. Wind action during dry conditions can lead to migration of fine-grained particles from contaminated surface soil. Storm water run-off may cause migration of the contaminated surface soils.

**Section 300.415 (b)(2)(vii) *The availability of other appropriate federal or state response mechanisms to respond to the release;*** There are no other federal agencies available to respond. The State of South Carolina has requested the EPA's assistance with the removal action at the Edisto Court Community and has indicated it lacks the resources necessary to deal with the threat.

## **IV. ENDANGERMENT DETERMINATION**

Actual or threatened releases of hazardous substances 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 EPA proposed actions include the following:

- a. Survey properties to establish current grade and property boundary locations;
- b. Inventory existing plants, grasses, and outbuildings on each property;
- c. Excavate the top 12 inches of soil exceeding the RMLs from each property;
- d. Backfill with clean soil, shape to original contours, and lightly compact;
- e. replace/repair any damaged concrete, piping, fencing, outbuildings, etc.;
- f. Provide temporary on-site storage of contaminated soils generated during removal and decontamination activities, pending further waste characterization and profiling/treatment/reuse/recycling;
- g. Conduct in-situ/ex-situ screening and/or collect samples for laboratory analysis as necessary;
- h. Perform on-site treatment of characteristically hazardous waste, if appropriate;
- i. Arrange for off-site transportation and disposal/treatment of contaminated soil according to applicable regulations;
- j. Maintain site security and limit access during implementation of the removal action;
- k. Conduct all removal actions pursuant to an EPA approved Health and Safety Plan;
- l. Relocate residents if absolutely necessary; and
- m. Re-establish vegetation.

#### **2. Contribution to Remedial Performance**

The proposed removal action is warranted to address the threats discussed in Section III, which meet the NCP Section 300.415 (b) (2) removal criteria. The removal action contemplated in this Action Memorandum would be consistent with any remedial action.

#### **3. Applicable or relevant and appropriate requirements (ARARs)**

In accordance with the NCP at 40 CFR § 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.

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 CFR. §300.5. See also 40 CFR. §300.400(e)(1) & (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. On-site response actions must comply, to the

extent practicable, with 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.

As provided in CERCLA Section 121(d)(3) and the Off-site Rule at 40 CFR. §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.

On September 12, 2012, representatives from the EPA R4 Superfund Division met with DHEC to discuss the recommended removal action and the need to move forward as quickly and efficiently as possible. The EPA identified clean-up parameters as stated in this Action Memorandum and specifically requested identification of any State ARARs for the EPA's consideration prior to initiation of the on-site response action. DHEC concurred with the EPA's approach and stated that they had no additional ARARs for consideration at this time. The EPA and DHEC will continue to coordinate and consult with each other throughout this removal action.

#### **4. Project Schedule**

Upon approval of this Action Memorandum and funding for this proposed removal action, initial removal activities will begin within one month. This removal action will take approximately 22 weeks of on-site work to complete, plus additional time to establish vegetation dependent upon weather conditions.

#### **B. Estimated Costs**

THIS COST INFORMATION  
IS TEMPORARILY REDACTED

RICK JARDINE, OSC

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

If this response action is significantly delayed or not taken, the public will continue to be exposed to contaminant levels exceeding the RMLs. In addition, the likelihood of off-site migration increases, potentially exposing more of the public and contaminating more of the environment.

## VII. OUTSTANDING POLICY ISSUES

No outstanding policy issues have been identified at this time.

## VIII. ENFORCEMENT

Enforcement activities have been initiated and are ongoing. It is expected that this Site will be conducted as a fund-lead removal action. See Attachment 1, "Enforcement Addendum" for more detail.

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 \$2,317,829 using the following formula:

$$(\text{Total Extramural Costs} + \text{Total Intramural Costs}) + (40.97\% (\text{Total Extramural Costs} + \text{Total Intramural Costs})) = \text{Estimated EPA Costs, or } (\$1,504,200 + 140,000) + ((40.97\% * (\$1,504,200 + 140,000))) = \$2,317,829^1$$

## IX. RECOMMENDATION

This decision document represents the selected removal action for the Royster Guano Site in Columbia, Richland County, South Carolina, 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.

Conditions at the Site meet the NCP section 300.415(b) criteria for a removal action. This removal action is anticipated to be fund-lead, with a total project ceiling, if approved, of **\$1,504,200**, of which approximately **\$1,113,500** will be funded by the Regional Removal Allowance. I recommend your approval of the proposed removal action.

APPROVED: \_\_\_\_\_

Franklin E. Hill, Director  
Superfund Division

DATE: 9/25/2012

DISAPPROVED: \_\_\_\_\_

Franklin E. Hill, Director  
Superfund Division

DATE: \_\_\_\_\_

### Attachments:

Enforcement Addendum

Photographs

Figures

<sup>1</sup>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 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.