United States Environmental Protection Agency
Region IV
POLLUTION REPORT

Date: Friday, September 5, 2008
From: Lynnette Sholar

To: Jim Webster, US EPA Region IV Jim McGuire, USEPA R4 ERRB

Subject: Removal Site Evaluation POLREP
VCC Columbia Phosphate
NW Corner of Catawba and Gadsden St., Columbia, SC
Latitude: 33.9872000
Longitude: -81.0364000

POLREP No.:	1	**Site #:**	A4WN
Reporting Period:	7/7/2008 - 8/18/2008	**D.O. #:**	
Start Date:		**Response Authority:**	CERCLA
Mob Date:	7/7/2008	**Response Type:**	Time-Critical
Demob Date:		**NPL Status:**	Non NPL
Completion Date:		**Incident Category:**	Removal Assessment
CERCLIS ID #:	SCN000410253	**Contract #**	
RCRIS ID #:			

Site Description
The VCC Columbia Site (the "Site") was a superphosphate manufacturing facility that was located on the northwest corner of what is now the intersection of Catawba and Gadsden Streets in Columbia, Richland County, South Carolina. Sanborn maps from 1893 and 1898 indicated two separate facilities, Globe Phosphate and Columbia Phosphate, separated by Gadsden Street. Acid chambers are visible at both facilities in 1893 and 1898. The 1904 Sanborn maps indicate ownership of both facilities to be Virginia Carolina Chemical (VCC). The 1919 Sanborn maps indicate Columbia Mill buildings are vacant and probably will be removed.

Currently the Site is a cluster of 5 buildings surrounded by a mix of residences and other businesses. The Site is bordered by a rail line to the north, to the east by Gadsden St., to the South by Catawba St., and to the west by a steel recycler. To further expand the boundaries, to the south is a park with a ball field and playground and a city of Columbia transportation depot. Drainage from the Site is to the southwest towards the ball field. The current use of the Site is industrial however future use is most likely residential.

South Carolina Department of Health and Environmental Control (DHEC) screened the Site on April 10, 2007. DHEC used in-situ sampling techniques utilizing the XRF technology. Results of their sampling revealed elevated levels of lead above 1,000 ppm and arsenic above 100 ppm in several of their samples. The Site was then referred to the Environmental Protection Agency (EPA) Region 4 Site Assessment Section and then to Emergency Response & Removal Branch (ERRB) for analysis for a possible time-critical removal action.

Current Activities
ERRB, Science & Ecosystem & Support Division (SESD), & Superfund Technical Assessment & Response Team (START) mobilized to the Site the week of July 7th to conduct a Removal Site Evaluation (RSE).

Sampling activities were conducted with a Geoprobe at locations chosen by EPA & SESD. A total of 28 samples were collected and analyzed insitu with XRF. A confirmation sample was also taken from each core and sent to the lab for RCRA metals analysis. XRF readings at the Site ranged from 413 mg/kg to 12,600 mg/kg for Lead and ranged from 17.8 mg/kg to 1,960 mg/kg for Arsenic.

Planned Removal Actions
Arsenic and lead are both hazardous substances, listed in the Title 40 of the Code of Federal Regulations (CFR) Section 302.4, as referred to in Section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended. Arsenic and lead contaminated soils at the Site pose a significant threat to public health. The threat comes primarily from potential human exposure to these hazardous substances. Direct contact and ingestion of these hazardous substances are

the primary pathways of exposure. Continued release of these hazardous substances may cause potential chronic health effects to persons living nearby.

Arsenic and lead present in surface and subsurface soils onsite pose 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."

DHEC's initial investigation revealed that there is significant arsenic and lead contamination throughout the sampled areas of the Site. Further surface and subsurface sampling investigations conducted by SESD confirmed existing elevated lead and arsenic levels. EPA Region 4 Technical Services Section (TSS) recommends a Removal Action Level (RAL) of 400 ppm lead (assuming households with children) and 40 ppm arsenic for residential exposure scenarios. Concentrations exceeding these levels at the Site were confirmed through on-site XRF analysis and laboratory analysis. The maximum lead concentration detected in surface soils was 12,600 ppm, and the maximum arsenic concentration in surface soils was 1,960 ppm.

There are residences that currently surround the Site. Potential human exposure to site related contaminants may occur via inhalation of windborne dust, inadvertent ingestion of contaminated soil, and direct contact with the contaminated surface soils.

--Section 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."

Analytical results reveal that high lead and arsenic levels are present at or near the surface creating a potential for migration to off-site locations. Lead and arsenic concentrations exceeding the RALs of 400 ppm and 40 ppm, respectively, were confirmed through on-site XRF analysis and laboratory analysis.

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

As stated earlier in this POLREP, the Site sits on the downslope of a hill. During rainfall events the drainage from the Site flows to the southwest corner of the Site and then along Catawba Street towards the ball field. If the contamination is not addressed with a removal action, then contaminants will continue migrate offsite. In several areas of the Site there is evidence of washout of former slag material.

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

As stated earlier, DHEC referred the Site to EPA for consideration for a time-critical removal action. South Carolina asked to be kept informed of Site activities.

Due to the threat and/or future threat to human health from the hazardous substance, the Site achieves removal eligibility base on the removal criteria listed above.

Next Steps

Due to the significant threat posed by Arsenic and Lead to public health, RALs are historically defined to use in determining future site activities.

Estimated Costs *

	Budgeted	Total To Date	Remaining	% Remaining
Extramural Costs				
Intramural Costs				
Total Site Costs	$0.00	$0.00	$0.00	0.00%

* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost

accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

response.epa.gov/vccColumbia

POLREP #1 Last Updated 10/9/2009