United States Environmental Protection Agency
Region IV
POLLUTION REPORT

Date: Tuesday, July 7, 2009
From: Diedre Lloyd

Subject: Removal Site Evaluation
Springdale Apartments
2510 Jackson Avenue, Memphis, TN
Latitude: 35.1606000
Longitude: -89.9736000

POLREP No.:	1	**Site #:**	A4XZ
Reporting Period:		**D.O. #:**	
Start Date:		**Response Authority:**	CERCLA
Mob Date:		**Response Type:**	Time-Critical
Demob Date:		**NPL Status:**	
Completion Date:		**Incident Category:**	Removal Assessment
CERCLIS ID #:	TNN00410331	**Contract #**	
RCRIS ID #:			

Site Description

On November 25, 2008, the Tennessee Department of Environment and Conservation (TDEC) requested that the Emergency Response and Removal Branch (ERRB) of the Environmental Protection Agency (EPA) conduct a removal assessment for the north area of the Springdale Apartments Site (the site) due to elevated pesticide contamination levels discovered during previous site assessments for the site to determine if an ERRB removal action is warranted.

The site covers ~ 10 acres located at 2510 Jackson Avenue, Memphis, Shelby County, Tennessee and is situated within a mixed residential, commercial and industrial neighborhood. The site has been partially developed under a joint development venture with Springdale Memphis LP (Ambassador Management) which is owned by Stephen Turgeon and the Health, Educational and Housing Facility Board of the City of Memphis, Tennessee (HEHFB). When the site was referred to the ERRB it was divided into two sections designated "North Side" which is ~ 3.5 acres and "South Side" which is ~ 7 acres. The south side of the property consists of ten occupied multi-family apartment (rental property) buildings. The north side of the property, which was the portion referred by TDEC, is surrounded by a chain link fence, which serves the dual purpose of separating the surrounding community from the contaminated media and secondarily serves as the demarcation separating the north side from the south side. The north side consists of several unoccupied apartment buildings in various stages of construction ranging from a poured slab to completed framing, stubbed plumbing and roof. The previous site assessments have documented high concentrations of pesticides, metals, volatile organic compounds, polyaromatic hydrocarbons, and polychlorinated biphenyls in several studies conducted over a period of years from 1994 to present.

This site's historic usage has included an auto salvage yard and parts sales operation located primarily on the south side, which is the likely source of PAH's, volatile organic compounds (VOCs), lead, and total petroleum hydrocarbon (TPH) contaminants found onsite. Velsicol Chemical Corporation along with Buckeye Cellulose and other chemical manufacturers have historically discharged process wastes into Cypress Creek. During the late 1960s to the early 1970's, the City of Memphis Department of Public Works dredged and channelized Cypress Creek and stockpiled the sediments along adjacent properties and as a result may have introduced contaminants to the site.

Previous Investigations:

Numerous investigations have been conducted for this site and have ranged from several full reports by private consultants to a verbal agreement for an Institutional Control Operation and Maintenance Plan (ICOMP) which was voluntarily entered into by the developer, Springdale Memphis LP and TDEC along with raw data, map submissions and numerous trip reports submitted by TDEC personnel.
The following is a list of reports that have been forwarded to EPA by TDEC:

- Phase 1 Environmental Site Assessment and Partial Phase II Investigation – December 1994 – Pickering Environmental;
- Phase 1 – Environmental Site Assessment – February 2003 – Pickering Environmental;
- Phase 1 – Interim Action Plan – Springdale Creek Apartments – August 2004 – EnSafe;

• Springdale Fact Sheet: Community Update: Springdale Apartments – August 2005 – TDEC/MSCHD;
• South-Side Remedial Action Report – Springdale Creek Apartments - February 2006 – Ensafe;
• Air Monitoring Report – Springdale Creek Apartments – August 22, 2007 – Ensafe;
• South-Side Institutional Control, Operation and Maintenance Plan (ICOMP) – September, 2008 – Ensafe (for Springdale LP –developer);
• Exposure Investigation Report – Cypress Creek Sub-Area III – November 7, 2008 – Tennessee Department of Health (TDH);
• Springdale Creek – North Side, Data CD – Soil Gas Survey Report – February 3, 2009 – Ensafe.

Based on previously reported analytical results from the above mentioned reports/investigations, there is substantial reason to suspect that prior activities on the property resulted in a release of contamination at concentrations above EPA's Removal Action Levels (RALs).

Fence Repair:

When TDEC referred the site to ERRB, concerns were expressed about breaches along the fence line that enclosed the north side of the property. TDEC found evidence that vagrants and animals had been onsite in the abandoned buildings and TDEC was also concerned about the potential the abandoned buildings and property present as an attractive nuisance for children in the surrounding community which include the 10 apartment buildings inhabited by families which include small children along with the adjacent elementary school (Springdale Elementary) the nearby homes within the community.

EPA personnel, Diedre Lloyd (OSC) and Terra DuBois (Attorney), spoke with the Springdale Memphis LP developer and the HEHFB of Memphis, TN on January 28, 2009 to request site access and to also request that the site be secured by repairing the existing fence, specifically stabilizing the leaning portion of the fence along the west side of the site and enclosing the crawlspaces along the fence boundary separating the north and south sides of the site. Both parties agreed to have the fence repairs completed by February 20, 2009. TDEC submitted a trip report that documented the repairs had been completed in a satisfactory manner.

Planned Removal Actions

Removal Site Evaluation:

On March 22-25, 2009, OSCs Lloyd and Spurlin mobilized the Superfund Technical Assessment and Response Team (START) contractor to collect discrete and composite soil samples and analyze the samples collected in order to determine if the further investigation or immediate action by ERRB was warranted. Though the primary contaminants of concern during this investigation were chlorinated pesticides which include Aldrin, Dieldrin and Endrin, additional analyses which included pesticides, herbicides, polyaromatic hydrocarbons (PAHs), polychlorinated bi-phenyls (PCBs), arsenic and lead were also requested.

Composite Soil Samples:

The location of 21 5-point composite surface soil samples was determined based on data from previous site investigations. The samples were collected from 0-6 inches at selected locations across the north side of the site and were analyzed for pesticides. Ten of the twenty-one composite soil samples were also analyzed for lead and arsenic. Selected composite soil samples and in-situ ground locations along the southern fence line were also screened using the XRF; however, none of the samples exhibited contaminant levels above the XRF's detection levels. Pesticide contamination was detected in 17 of the 21 composite soil samples at concentrations ranging from 3.41 mg/kg to 1,470 mg/kg. The highest contaminant levels exhibited in the composite soil samples were collected near the fence line that separates the north and south sides. Sample SDP-SS-01 exhibited the highest pesticide contamination level of 1,352 mg/kg Endrin Metabolites (RAL of 187 mg/kg) and is located directly adjacent to the fence line that separates the north side from the nearest occupied Building (#10) on the south side. SDP-SS-01 also exhibited the highest pesticide contamination for dieldrin with a concentration of 69 mg/kg (RAL of 3.03 mg/kg) and aldrin concentration of 50 mg/kg (RAL of 2.86 mg/kg).

Discrete Soil Samples:

Twenty discrete soil samples were collected from five locations at four depths (0-1 foot, 1-2 feet, 2-3 feet and 3-4 feet). The soil sampling locations were also determined based on data from previous site investigations. The samples were analyzed for pesticides, herbicides, polyaromatic hydrocarbons (PAHs), polychlorinated bi-phenyls (PCBs), arsenic and lead. Pesticide contamination was detected in all five discrete soil boring locations at concentrations ranging from 4.28 mg/kg to 2,615.9 mg/kg. Herbicide contamination was also detected in three of the five soil boring locations at concentrations ranging from 510 mg/kg to 28,900 mg/kg. Discrete soil samples SDAP-SB-01-2 and SDAP-SB-01-3 exhibited the highest pesticide contaminant concentrations. Aldrin was detected in concentrations of 309 mg/kg (RAL of 2.86 mg/kg) in SDAP-SB-01-3. Dieldrin was detected in concentrations of 225 mg/kg (RAL of 3.03

mg/kg) along with endrin metabolites which were detected in concentrations of 2,249 mg/kg (RAL of 187 mg/kg) in SDAP-SB-01-2.

Planned Removal Actions:

The RSE was conducted to identify conditions that would trigger a removal action by the EPA ERRB to remove or minimize potential threats to human health and/or the environment. For this evaluation, the maximum concentrations were compared to EPA established RALs.

The pesticides aldrin, dieldrin and endrin are hazardous substances as defined by §101 (14) of the Comprehensive Environmental, Response, and Compensation and Liability Act (CERCLA) definition and are co-mingled with the herbicides 2 methyl-4-chlorophenoxyyacetic acid (MPCA) and 2-methyl-4,6-dichlorophenoxy acetic acid (MCPP). The pesticides and herbicides pose a threat to the human population with the possibility of exposure to humans within the community which includes sensitive populations such as children and the elderly in the multi-family apartment housing on the south side of the site and an elementary school on adjacent property. Direct contact, ingestion, and inhalation of pesticides and herbicides are the primary pathways of exposure. Continued exposure of pesticides in surface soils may cause chronic health effects to the surrounding community. Site conditions meet the requirements for initiating a time-critical removal action according to criteria listed in §300.415(b)(2) of the National Contingency Plan (NCP):

§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 is a multi-family apartment building located on the property and there is also an elementary school adjacent to the site.

§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". High levels of pesticide and herbicide contamination well above the ERRBs RALs have been identified through the analyses of multiple soil samples. The property is situated in an upgradient direction along Spring Creek which eventually feeds into the Mississippi River via the Wolf River thereby posing a strong threat for contaminant migration to nearby waterways. The potential for fugitive dust to be inhaled due to surface soil contamination along with the threat of direct exposure from surface soil contamination also pose a threat to the surrounding community which includes sensitive populations of children and the elderly.

§300.415 (b)(2)(v): "Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released". The property is situated in an upgradient direction along Spring Creek which feeds into the Mississippi River via the Wolf River thereby posing a strong threat for contaminant migration to nearby waterways. The potential for fugitive dust to be inhaled due to surface soil contamination along with the threat of direct exposure from surface soil contamination also pose a threat to the surrounding community which includes sensitive populations of children and the elderly.

§300.415 (b)(2)(vii): "The availability of other appropriate federal or state response mechanisms to respond to the release". There is no viable responsible federal or state party and the State funds of Tennessee are insufficient to conduct a removal action at this time.

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