U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Radiation - Garwin, Inc (former) - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region VII

Subject: **POLREP #2**
Progess - Removal Assessment
Radiation - Garwin, Inc (former)
B706
Wichita, KS
Latitude: 37.6686470 Longitude: -97.3511660

To:
From: James Johnson, On-Scene Coordinator
Date: 6/24/2011
Reporting Period: 12/14 - 12/16/2011

1. Introduction

1.1 Background

Site Number:	B706	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	CERCLA	**Response Type:**	Time-Critical
Response Lead:	EPA	**Incident Category:**	Removal Assessment
NPL Status:	Non NPL	**Operable Unit:**	00
Mobilization Date:	12/14/2011	**Start Date:**	12/14/2011
Demob Date:	12/16/2011	**Completion Date:**	4/12/2012
CERCLIS ID:	KSN000706246	**RCRIS ID:**	
ERNS No.:		**State Notification:**	6/24/2011
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category
Significant levels of radium-226 appear to be present at the former Garwin, Inc. site in excess of surficial soil cleanup levels. A residence is located at the site. This site does qualify for further response under CERCLA, including·an expanded removal assessment, if a responsible party (PRP) is not identified to participate in a state program. A PRP search will be completed by December 2011.

1.1.2 Site Description
The property located at 918 West Dooley, is attached to and partly occupied by Haivala Concrete Tools to the west, to the north it is attached to Tech-Aire Instruments, Inc. The building covers most of the property. The remaining area is covered by a concrete drive way and sidewalk, with an asphalt alley to the east. Adjoining properties include commercial businesses adjacent to the property to the north east and west, along Dooley. Continuous with the former Garwin building located to the west along Dooley is Haivala Concrete Tools located at 1330 S. Walnut. The business located to the west is Kime Plumbing, Inc., located at 910 Dooley.

1.1.2.1 Location
See above.

1.1.2.2 Description of Threat
On April 11, 2011, KDHE referred this Site to the EPA for a response action. The EPA is closely coordinating Site activities with KDHE and the Sedgwick County, Kansas Health Department. The Sedgwick County, Kansas Health Department has volunteered to coordinate Site activities with the local governing bodies.

EPA conducted field activities for a Removal Site Evaluation (RSE) in June and December of 2011. Field screening with radiation detectors and radiation analysis of soil and groundwater samples further defined the lateral, vertical and aerial extent of contamination.

The objective of this removal action is to protect public health or welfare or the environment by responding to the release of hazardous substances and pollutants or contaminants into the environment as presented by soils contaminated with Radium-226 at the Site. Contaminated soils that exceed 5 pico Curies per gram (pCi/g) plus background will be excavated and properly disposed of.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results
EPA conducted field activities for a Removal Site Evaluation (RSE) in June and December 2011(still awaiting the results of the data). Field screening with radiation detectors and radiation analysis of soil samples

further defined the lateral, vertical, and areal extent of contamination.

As prescribed by the project work scope, EPA developed a Field Sampling Plan outlining field-sampling methods. All field activities were conducted in accordance with the project Field Sampling Plan and QAPP approved June 2011.

In June 2011, EPA advanced 15 (5 background & 10 samples) Geoprobe direct-push borings on the property, for the purpose of collecting soil sample cores. Ground water samples were not collected as KDHE did not identify any areas where groundwater concerns were noted. Samples collection depth varied between 0 to 4 feet in depth.

Five (5) background locations were established along the west and south side of the Sites. The background location consistently indicated 13 – 17 microRoentgens per hour (uR/hr) and approximately 37,000 counts per minute (cpm). The entire Site property and surrounding buildings were surveyed. Radium-226 was detected in four of the five background samples taken. None of the samples were above the current joint EPA-Nuclear Regulatory Commission (NRC) screening level of 5 picocuries per gram (5 pCi/g) plus background. Background sample readings ranged from 0.49 – 1.02 pCi/g.

A general screening criterion of two times background (2x background) was used to determine potentially impacted areas of radium-226 contamination during the Ludlum screening survey. The twice background level for the survey is more sensitive to the soil screening concentration of 5.0 pCi/g plus background than the standard CERCLA background comparison of 3x background used for metals.

Radium-226 was detected in all ten of the samples taken. However, only eight soil samples were above the current joint EPA-Nuclear Regulatory Commission (NRC) screening level of 5 picocuries per gram (5 pCi/g) plus background. Sample readings ranged from 1.99 – 367 pCi/g. Soil sample B-8 indicated radium-226 at 367 pCi/g and was the highest outdoor sample reading found. The site-specific action level was determined to be 5.58 pCi/g, as identified by the KDHE UFA.

Radon was also detected in the residence and found to be 19.0 pCi/Liter, in excess of the EPA recommended residential action level of 4 pCi/Liter. Radon is generated by the natural decay of radium. Several other areas were identified in the alleyway and were found to exceed the soil screening level of 5 pCi/g.

In December 2011, EPA went back to conduct a further removal assessment of the interior of the residence and the east wall adjacent to the alley. Three core samples were taken inside the residence (2 in the kitchen & 1 in the living room) and three were taken along the east wall of the residence, outside in the alley.

Gamma survey readings in the residence ranged from 80 uR/hr and 3500 cpm in the living room to 1.5 mR/hr and 3100 cpm in the kitchen, next to the dishwasher. These results correlated closely to the levels found in the June assessment. Gamma survey readings in the three locations in the alley, along the east wall ranged from 50 – 80 uR/hr and 4200 – 16,500 cpm. Readings significantly decreased towards the fence and gate at the northern edge of the alley.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Garwin began operations at 918 W. Dooley in 1952. Garwin, Inc., became Garwin-Carruth, Inc., in 1963 and obtained Kansas Radioactive Materials License (KRML) #25- RB0-01 in December 1965. The license was obtained so the facility could repair aircraft instrument dials containing radium-226 paint. Weston Instruments, Inc., purchased Garwin Carruth, Inc., in 1966 and transferred the KRML to show Weston Instruments, Inc., as the licensee in 1967. An internal survey conducted in 1967 identified internal radioactive contamination within the building. From available operational information, it does not appear that any radium dial repair has taken place at the West Dooley location since ownership by Weston Instruments, Inc. EPA is currently undertaking a PRP search to address the radium-226 release at the site.

2.1.2 Response Actions to Date

The initial removal assessment was conducted 6/20-24/11. Note: According to the KDHE UFA and IA, all ground water samples collected, screened, and read, were below the EPA screening level of 5 pCi/g plus background (5.17 pCi/g). Ground water samples were not collected by EPA field staff, as KDHE did not identify any areas where groundwater contamination was a concern. The second removal assessment was conducted 12/14-16/, 2011. EPA is awaiting core and sample analyses.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

A PRP search is underway and should be completed by January 2012.

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

A follow-up assessment was conducted 14 - 16 December 2011 to address the inernal contamination of the kitchen and living room areas. Three cores were taken inside and three corings were taken outside, along the east wall that is adjacent to the alley. EPA is waiting for the analysis to be complete before going further in the assessment phase.

2.2.1.1 Planned Response Activities

None at this time.

2.2.1.2 Next Steps

Inquire of and possibly prepare a report for the Regional Decision Team (RDT) to determine further actions at the Garwin site.

2.2.2 Issues

EPA and KDHE found several areas on the property which are elevated above removal action level of 5.58 pCi/g. Locations include the two grassy areas that border the front door and in the alleyway, next to the east side of the residence. Also, three areas were identified in the residence and radon was also detected.

The former facility is within the boundaries of the Gilbert-Mosley (GM) site. As early as 1986, KDHE identified widespread chlorinated solvent contamination affecting the groundwater in the central business district of Wichita. The GM site has at least six discrete contamination plumes. Trichloroethylene (TCE), tetrachloroethylene (PCE), cis1,2 dichloroethylene (DCE), and vinyl chloride are the predominant components of contamination associated with the plumes. In the spring of 2001 the City of Wichita began implementing a KDHE approved Remedial Action Work Plan, involving extraction wells, piping, and a treatment facility. Continuous operation of the containment wells and treatment system began December 2002.

In June 2011, EPA advanced 15 (5 background & 10 samples) Geoprobe direct-push borings on the property, for the purpose of collecting soil sample cores. Ground water samples were not collected as KDHE did not identify any areas where groundwater concerns were noted. Samples collection depth varied between 0 to 4 feet in depth.

The challenges were to ensure that Kansas One Call and the City of Wichita Water Department came out and thoroughly identified and marked all utility, power, and water lines.

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

2.5.1 Safety Officer

James Johnson, OSC
Roy Kruger, EPA Safety & Health Official

2.5.2 Liaison Officer

Beckie Himes, PIO
Office of Public Affairs

2.5.3 Information Officer

Beckie Himes, PIO
Office of Public Affairs
U.S. EPA Region 7
901 N. 5th Street
Kansas City, KS 66101
Phone: 913-551-7253 or
Toll Free: 1-800-223-0425
himes.beckie@epa.gov

A fact sheet will be developed for the site and provided to the congressional and state representatives and the Director of the Sedgwick County, Kansas Health Department, who provides briefings to the local government. The Removal Assessment is still on-going at this time.

3. Participating Entities

3.1 Unified Command

The command structure for the RSE consisted of:
1. J. Johnson, OSC; T. Campbell, OSC; T. Mahler, OSC (EPA coordinated the activities of START for the removal assessment).
2. START
3. KDHE
4. City of Wichita

3.2 Cooperating Agencies

1. City of Wichita
2. Sedgewick County, Kansas Health Department
3. KDHE

4. ATSDR
5. KS One Call
6. City of Wichita Water Department

4. Personnel On Site

For the Removal Assessment:
3 - EPA OSC's (J. Johnson, T. Mahler, T. Campbell)
1 - EPA Health Physicist (C. Hooper)
2 - START Personnel

5. Definition of Terms

Radium Contaminated Soil - Ra-226 / Ra-228
RA - Removal Action
RSE - Removal Site Evaluation
"picocurie per gram" (pCi/g) = This refers to the amount of radioactivity in a particular solid substance. Picture a one-ton batch of concrete that contains 1,000 pounds of gravel, 500 pounds of cement, and 500 pounds of water. To describe this particular mix of concrete, one might say it contains "500 pounds per ton" of cement. This means that for every pound of concrete, there will also be a quarter of a pound of cement present. Similarly, if you wished to describe the amount of radioactivity that typically exists in soil throughout the United States, you would say that it contains about "one picocurie per gram" of radium, one picocurie per gram of thorium, and a host of other radioactive elements. This means that for every gram (about 0.002 pounds) of soil, there will also be one picocurie of radium and one picocurie per gram of thorium present, along with the rest of the radioactive elements commonly found in soil.

6. Additional sources of information

6.1 Internet location of additional information/report

For additonal information, please refer to "Documents" on www.epaoscv.org/garwin

For additional referece material, please refer to www.iem-inc.com/primrite.html

6.2 Reporting Schedule

Polrep #2 covers the June & December 2011 Removal Assessment's and it is considered a progress report or update when published (also see Polrep #1).

7. Situational Reference Materials

For additional information, photographs, maps, sample analysis, etc; please refer to "Documents" on www.epaosc.org/garwin

For additional information radium-226, please refer to: http://www.epa.gov/radiation/radionuclides/radium.html