U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Kiskimere Groundwater Investigation - Removal Polrep
Initial Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III

Subject: **POLREP #1**
Initial
Kiskimere Groundwater Investigation
Parks Township, PA
Latitude: 40.6210540 Longitude: -79.5794678

To: Steven Vriesen, US COE
William Frederick , US COE

From: Richard Rupert, OSC
Date: 9/23/2014
Reporting Period: 2/8/2013 to 9/23/14

1. Introduction

1.1 Background

Site Number:		**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	CERCLA	**Response Type:**	
Response Lead:	EPA	**Incident Category:**	Removal Assessment
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:		**Start Date:**	
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category

1.1.2 Site Description

EPA is conducting a removal site evaluation to assess environmental concerns that could be attributed to an off-site release in areas surrounding the Shallow Land Disposal Area (SLDA) and Parks Township (Parks) active remediation sites. The Site includes the Community of Kiskimere which is located on the southern border of the SLDA and neighboring properties in an area of concern (AOC) surrounding the SLDA and Parks Sites. Residents in Kiskimere and surrounding areas consume water sourced from either privately owned wells or municipal systems. The 44-acre SLDA is a former nuclear burial site having 10 disposal trenches that is undergoing cleanup by USACE. The Parks Township site is undergoing remediation due in part to groundwater and soil contamination from the operation of a nuclear fuel facility. Open (non-collapsed) abandoned room-and-pillar coal mines in the Upper Freeport seam underlie a significant portion of the Site area including Kiskimere, the SLDA and Parks Sites, and most of the uplands areas above the Kiskiminetas River flood plain. The coal seam apparently outcropped at lower elevations on site where it was historically strip mined.

1.1.2.1 Location

The address for the Kiskimere Groundwater Well Investigation Site (Site) is the intersection of Kiskimere and Eisenhower Streets in Parks Township which is located in Armstrong County approximately 23 miles east-northeast of Pittsburgh, PA. The Site includes the Community of Kiskimere and neighboring properties in an area of concern (AOC) surrounding the SLDA and Parks Sites. The SLDA and Parks Sites adjoin along a common border that somewhat traces along a small tributary located between the Sites; Dry Run.

The Community of Kiskimere is located between the Kiskiminetas River and the southwest border of the SLDA site. Commercial property is located north of the remediation sites, and rural woodland and farmland border the SLDA to the south and east. Local ground surface elevation ranges from approximately 770 feet at the Kiskiminetas River to approximately 950 feet east of Kiskimere. The Kiskiminetas River is located approximately 900 feet west of Kiskimere where it flows northwestward in a meandering course until it joins the Allegheny River approximately eight miles downstream. The Kiskiminetas River receives Site runoff from two tributaries near the Site. Dry Run is a small intermittent stream that collects surface water and seeps in the upper trench area of the SLDA. It flows along the northern border of the SLDA and reportedly loses some water to the mine through the strip mine tailings near the lower trench area (Trench

10) before emptying into the river. Carnahan Run is a larger, perennially flowing stream on the southern border of the study area.

Open (non-collapsed) abandoned room-and-pillar coal mines in the Upper Freeport seam underlie the majority of the Site. The top of the Upper Freeport coal is approximately 840 feet elevation above mean sea level (amsl). The seam is oriented with a slight southward dip beneath the Site and has an underlying clay layer.

1.1.2.2 Description of Threat

Chemicals of potential concern (COPC) include volatile and semi-volatile organic compounds, metals and radionuclides originating from the nuclear manufacturing industry that may have migrated from nearby sources or disposal areas to off-site drinking water, groundwater, surface water and sediment matrices and that may present a threat to human health and/or the environment.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

The United States Army Corps of Engineers (USACE) conducted an investigation of the radiological contamination at the SLDA site under the Formerly Utilized Sites Remedial Action Program (FUSRAP) consistent with guidance issued by the EPA. The results of these investigations are presented in the RI report (USACE 2005). To support preparation of the RI report, USACE conducted a number of field investigations from August 2003 through January 2004 to determine the nature and extent of radioactive contamination at the SLDA Site. Prior to this fieldwork, in-depth historical record searches and analyses were conducted, and detailed interviews performed with individuals familiar with disposal operations at the SLDA. In conducting the RI, USACE collected samples from surface and subsurface soils, trench waste, the five water-bearing geologic units, sediment, surface water, and groundwater seeps. This sampling program indicated that surface water and sediment in Carnahan Run were uncontaminated, while low levels of radioactive contamination were present at on-site locations in Dry Run and groundwater seeps in the upper trench area. Groundwater at the SLDA Site, outside of perched areas within the trenches, did not appear to be contaminated, other than some localized areas in the upper trench area in the upper shallow bedrock water-bearing zone down gradient of disposal trenches 1 and 2. Some low levels of contamination were identified at this location, which may have been associated with the radioactive wastes in these two trenches. In summary, the contaminated media identified at the SLDA Site were the trench wastes, surface and subsurface soils, and sediment in Dry Run.

Residents from both the Community of Kiskimere and its adjacent neighboring towns (Vandergrift and Leechburg), have contacted EPA and expressed concern that their well water may have been and may currently be contaminated by leachate from the disposed materials at the SLDA and Parks clean-up Sites. During late August 2011, EPA conducted a focused Site Investigation to determine if residents were being exposed to radiological and chemical contaminants related to the nearby sites. Samples were collected from residential wells, surface water and sediments and analyzed for gross alpha/beta, radium 226/228, gamma spec, metals, mercury, uranium, and volatile organic compounds (VOCs). The results indicated that the radionuclides, metals, and organic contaminants in the private wells and environmental samples were within a normal range of background concentrations found in the Parks Township area. Although sample results did not show levels of contamination that would cause a health concern, EPA determined that additional information was needed to further characterize the groundwater.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Removal assessment activities to date are listed below.

2.1.2 Response Actions to Date

On February 8, 2013, the OSC tasked START to conduct a removal assessment including installation of monitoring wells; and sampling of ponds, residential wells, groundwater-to-surface water seeps and sediments.

During April 2013, groundwater seep, spring, outfall and sediment sampling activities were conducted by EPA and START. The OSC approved the Sampling Quality Assurance/Quality Control Work Plan (SAP) drafted to guide the work effort. At the Site, a reconnaissance of draws and tributaries around the SLDA and Parks sites was initially conducted. The assessment team walked the draws and tributaries to emergence points and checked water quality parameters to evaluate locations having groundwater influx. The team used topographic maps and aerial photos of the Site to determine drainage basin geometry. Four (4) surface water samples and four (4) sediment samples were collected for off-site laboratory analyses including TCL VOCs, 1,4-Dioxane, SVOCs, PCBs, TAL metals, mercury, uranium, and radionuclide analyses including gross alpha/beta, gamma spec, Ra-226 and Ra-228. Requisite QA/QC samples (field blank, trip blank, rinsate blank) were also collected. The samples were packaged and sent to the scheduled RAS and DAS laboratories (OASQA, NAREL), procured through the EPA Region III CST. Validated data from this sampling event was received in May and June 2013. The data was analyzed and a trip report prepared for the EPA OSC.

During May 2013, EPA conducted split sampling of groundwater from monitoring wells located inside the SLDA fence line. Samples from pre-designated monitoring well locations were collected by USACE and split with an EPA Hydrogeologist. START supported the effort and procured laboratory space through the CST. START provided the sampling materials, COC documentation, labeling and overall sample

management following sample collection. START was not permitted on-site at the SLDA but remained at the fence-line and maintained the samples collected on ice for preservation. Six (6) groundwater split samples were collected including the duplicate sample. A QA/QC sample (trip blank) was also collected. The samples were shipped for off-site laboratory analyses including TCL TVOAs, 1,4-Dioxane, SVOCs, TAL metals, mercury, uranium and radionuclide analyses including gross alpha/beta, gamma spec, Ra-226 and Ra-228. Validated data from this sampling event was received in June and July 2013. The data was analyzed and a trip report prepared for the EPA OSC.

During July 2013, the OSC and START installed five (5) monitoring wells in the community of Kiskimere. These wells were installed on private residential property after permission was received from the property owners by EPA. START subcontracted the drilling and well installation work to a Pennsylvania licensed company. Wells were constructed to tap three of the five water bearing zones observed during prior SLDA investigations. These hydrostratigraphic zones are described in the SLDA Remedial Investigation Report (USACE 2005). Monitoring wells EPA02, EPA03S, and EPA04 were screened in the first shallow bedrock. Monitoring well EPA03D was screened in the Upper Freeport Coal (UF) where it is likely screened in a pillar of coal because there was a lack of encountering a void during drilling activities. Lastly, EPA01 was screened in Deep Bedrock. During well installation, START conducted periodic air monitoring for gamma radiation and volatile organic compounds in accordance with the HASP and evaluated and logged drill cuttings and water zones. In addition, the OSC assessed an unused home well located in Kiskimere (HW15) to determine the viability of the well for sampling. It was determined the well would be sampled at a future time. IDW generated during the well installation was collected in 55-gallon drums. The IDW was sampled in September of 2013 and was classified as non-hazardous. Transportation and disposal of the IDW was subcontracted by START and the IDW was disposed of in February 2014.

During September 2013, in accordance with the approved SAP, the OSC and START collected sediment and groundwater samples from the area of investigation. Fifty-four (54) sediment samples were collected from the Kiskiminetas River to assess metals and radionuclide constituents that could be attributed to an offsite release from the SLDA. Four areas of the river were sampled and include: 1) background locations located upstream from the former NUMEC nuclear facility in Apollo, PA; 2) upstream from the Site and Carnahan Run; 3) across from the Site; and 4) downstream near the Hyde Park footbridge in Leechburg, PA. As samples were collected, the location was marked with a numbered buoy and the sample labeled and placed in a cooler. After all the samples in an area were collected, GPS information was collected using a Trimble ProXH GPS receiver. The buoy was removed from the river after the GPS coordinates were collected. Sediment samples were shipped to off-site labs procured through the EPA CST. Off-site laboratory analyses included TAL metals, mercury, uranium, and radionuclide analyses including Alpha Spec AM-241, Pu-238/239/240/242, Th-230/232, U-234/235/238 and Gamma Spec (incl: Co-60, Cs-137, Th-234, Bi-212, Pb-212, Pb-214, K-40, Ra-226, Ra-228).

During September 2013, the OSC and START collected samples from the five EPA monitoring wells that were installed during July 2013. A sample was also collected from the unused home well (HW15) that was inspected earlier. Static water level measurements were collected prior to sampling. Low Flow procedures were used to collect the samples at all but EPA03D where a bailer was used due to low volume and recharge rate. Samples for metals analysis were field filtered and preserved by START. A total of seven (7) samples were collected, including a duplicate sample. Requisite QA/QC samples (field blank, trip blank, rinsate blank) were collected. The samples were packaged and sent laboratories procured through EPA. The samples were analyzed for TCL TVOAs, 1,4-Dioxane, SVOCs, TAL metals, mercury, uranium, and radionuclide analyses including Alpha Spec AM-241, Pu-238/239/240/242, Th-230/232, U-234/235/238 and Gamma Spec (incl: Co-60, Cs-137, Th-234, Bi-212, Pb-212, Pb-214, K-40, Ra-226, Ra-228). Validated data from this sampling event was received in November 2013 – March 2014. The data was analyzed and a trip report prepared for the EPA OSC.

During February 2014 a groundwater sampling event was conducted at the five EPA monitoring wells. Six (6) samples were collected. Sampling was conducted in accordance with the approved SAP. Wells EPA03D and EPA04 had low recharge rates and were evacuated by bailer and sampled the following day. QA/QC samples (field blank, trip blank, rinsate blank) were also collected. Metals samples were field filtered and preserved by START. The samples were packaged and sent to the scheduled laboratories, procured through the EPA Region III CST. The samples were analyzed for TCL TVOAs, 1,4-Dioxane, SVOCs, TAL metals, mercury, uranium, and radionuclide analyses including Alpha Spec AM-241, Pu-238/239/240/242, Th-230/232, U-234/235/238 and Gamma Spec (incl: Co-60, Cs-137, Th-234, Bi-212, Pb-212, Pb-214, K-40, Ra-226, Ra-228). Validated data from this sampling event was received during May 2014 – August 2014 and is currently being evaluated.

During March 2014, split groundwater samples were collected by EPA and START from USACE wells in the SLDA. Samples were collected from well IDs 10L31-2, MW05-2, MW08-2, MW13-2, MW14-2, MW39-2, MW52-2, and MW61-2. The samples were packaged and sent to laboratories procured through the EPA Region III CST for TCL TVOAs, 1,4-Dioxane, SVOCs, TAL metals, mercury, uranium, and radionuclide analyses including Alpha Spec AM-241, Pu-238/239/240/242, Th-230/232, U-234/235/238 and Gamma Spec (incl: Co-60, Cs-137, Th-234, Bi-212, Pb-212, Pb-214, K-40, Ra-226, Ra-228). Validated data from this sampling event was received during May 2014 – August 2014 and is currently being evaluated.

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

2.1.4 Progress Metrics

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

2.2 Planning Section

2.2.1 Anticipated Activities

Drinking water, groundwater and sediment sampling is being planned for late October 2014.

2.2.1.1 Planned Response Activities

2.2.1.2 Next Steps

2.2.2 Issues

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

No information available at this time.

3. Participating Entities

No information available at this time.

4. Personnel On Site

No information available at this time.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.