

POLREP 8 and Final – Special Bulletin A
Lower Darby Creek Area Superfund Site – Clearview Landfill Site – Operable Unit 1
Philadelphia Darby Township, Delaware County, Pennsylvania 19023

Site ID: 0305521
Lat.: 39.9035470
Long.: -75.2551460

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Date: July 21, 2017

A) Summary Fact Sheet

- **Site Name:** Lower Darby Creek Area- Clearview Landfill
- **Size:** Approximately 65 Acres, of which 33 residential properties were addressed in the Removal Action, which total approximately 1.26 acres.
- **Location:** Eastern bank of Darby and Cobbs Creeks, at 84th Street and Buist Avenue, located in both Delaware and Philadelphia Counties, Pennsylvania.
- **Funding approval date:** September 27, 2011- initial funding of \$1,311,184
April 12, 2012- funding increased to \$3,152,379
July 21, 2017 – funding increased to \$5,245,121
- **Project period:** August 2016 to June 2017
- **Project description:** This time-critical Removal Action was conducted in a portion of the Eastwick Neighborhood that is generally east of the present-day Clearview Landfill and Eastwick Regional City Park. The Removal Action involved the removal of soil contaminated with polycyclic aromatic hydrocarbons (PAHs) from residential yards that were within or adjacent to the historic landfill footprint. EPA removed the contaminated soils to prevent exposure of the residential population to elevated levels of PAHs. The excavated soil was staged in a storage area on top of the current landfill. This material will be placed under the new cover which will be constructed as part of the OU1 remedial action.
- **Hazardous materials present:** Polycyclic Aromatic Hydrocarbons (PAHs), and, to a lesser degree, lead and Polychlorinated biphenyls (PCBs)
- **Quantities removed:** 2,958.5 cubic yards of soil containing PAHs at concentrations greater than the Removal Trigger Levels established in the action memo
- **OSC's name(s):** OSC Michael Towle, and RPM Joshua Barber
- **Primary cleanup contractor:** Environmental Restoration, LLC, St. Louis, MO
- **Disposal location(s):** Clearview Landfill
- **Project Ceiling:** \$ \$5,245,121
- **Project Cost:** \$2,630,096.61
- **Comments:** A Remedial Action will be conducted in the future to address those aspects of the OU1 not addressed by the Removal Action.

A Removal Action was previously conducted in a different area of the Clearview Landfill between November 2011 and September 2012 relating to the removal of PCBs-contaminated soil from the Southern Industrial Area of the Clearview Landfill. See POLREPs 01 through 23 relating to that response action and POLREP 24 which is the Final POLREP for that response action. Since the present

Removal Action in the residential area relates to PAHs in an entirely separate area of the former landfill, this Removal Action will be documented in a new series of POLREPs beginning with POLREP 01 for the residential area dated 9/9/16.

B) Summary of Incident

1. The LDCA Site includes two landfills: 1) the Clearview Landfill and 2) the Folcroft Landfill and Annex. The Clearview Landfill is located along the eastern bank of both Darby Creek and Cobbs Creek, near the intersection of 84th Street and Buist Avenue. The footprint of Clearview Landfill is much larger than the area subject to a Removal Action and lies primarily within Darby Township, Delaware County, PA, but partially within the limits of the City of Philadelphia.
2. Clearview Landfill OU1 includes the waste, soil and shallow leachate associated with the Clearview Landfill, the Eastwick Regional Park (a/k/a “City Park” or “Park”) which abuts the eastern limits of the present-day landfill footprint, and a portion of the Eastwick neighborhood (a residential area) located generally east of the present-day landfill area and the Park.
3. The Site was listed to the National Priorities List (NPL) in 2001 and a Record of Decision for Operable Unit 1 (OU1) at the Site was signed in September 2014.
4. Although the Removal Action described is appropriate and consistent with expected future remedial actions for OU1, these response actions were immediately necessary to address the unacceptable risk to human health and welfare and the environment presently posed by conditions of the OU1 Residential Soil Area. The OU1 Residential Soil Area includes that portion of the Eastwick neighborhood which is used for residential purposes and which is located within the historical extent of the former Clearview Landfill and its operational areas as well as immediately adjacent residential areas.
5. A group of compounds called polycyclic aromatic hydrocarbons (PAHs) present the majority of the threat posed by the Site. Benzo[a]pyrene (B[a]P) is the primary risk driver among the detected PAH compounds. Elevated concentrations of B[a]P and other PAHs are detected in soils within the residential properties of Eastwick neighborhood and adjacent City Park. The levels of PAHs posed an unacceptable risk to residential human receptors (residents of the Eastwick neighborhood exposed to contaminated soils). Elevated lead concentrations were also found within the PAH-contaminated soils. Incidental ingestion of lead in the soil may also result in increased blood lead levels. Lead is known to adversely affect the central nervous system. The threats are more fully described in the July 21, 2016 Action Memorandum.
6. The maximum concentration of PAHs in the surface (0 to 12 inches) soil of the residential properties in the Eastwick neighborhood were 118 mg/kg (ppm or parts per million). The maximum concentration of B[a]P within these soils was 8.6 mg/kg which is well above the 1×10^{-4} excess cancer risk level for this compound. Elevated PAH concentrations were also found in subsurface soils well above the 1×10^{-4} excess cancer risk level. Based upon on-scene observation, some of the contaminated soils were poorly vegetated or mixed into garden or play areas allowing an increased chance of unacceptable exposure to elevated PAHs. Elevated lead was also found in a limited area of the Eastwick neighborhood. The area of elevated lead contamination was believed to exist within the area of elevated PAHs contamination described above.
7. A Removal Action Project Ceiling of \$3,152,379 was approved for OU1 by EPA Region III on April 12, 2012. Of this amount, \$2,799,948 was from the Regional Removal Allowance. A July 21,

2016 action memorandum amended the 2012 action memorandum to address the Residential Soil Area and authorized an additional \$2,092,762 to raise the Removal Action Project Ceiling to \$5,245,141, of which \$4,718,806 was from the Regional Removal Allowance. The funding was necessary to mitigate the threats identified in the July 21 Action Memorandum.

8. The costs associated with the Removal Action completed in September 2012 are documented in POLREP 24 and Final for that response action.
9. The Removal Action was directed by the RPM for the Site (Joshua Barber) with support from OSC Michael Towle.
10. On September 6, 2016, ERRS contractor personnel mobilized to the Site. The initial on-site activities began 9/7/2016. ERRS contractors prepared the Site for Removal Actions by clearing trees and brush from an area to be used to set up a Command Post, equipment staging, material staging. This area was located near the intersection of 83rd Street and Buist. ERRS also prepared an access way from the Command Post area to the area of the landfill upon which the contaminated soil was be staged.
11. Dust suppression was provided whenever necessary throughout the action by spraying water from a "water buffalo" or watering truck. Water is obtained from a hydrant under permit.
12. The START contractor conducted air monitoring using Dust Trak units to monitor dust levels upwind and downwind of the work areas throughout the duration of the action.
13. Soil samples for clean backfill and topsoil were collected by START contractor on 9/16/19 and 9/19/19, respectively. Sample results indicated that both sources were acceptable. There were no exceedances of site-specific soil cleanup levels established in the OU1 Record of Decisions. The backfill and topsoil also met criteria to be considered clean fill under the Pennsylvania Management of Fill policy.
14. Several days prior to initiating any work at on a residential property, the EPA Remedial Project Manager (RPM) and START contractor met with the property owner representatives and tenants. Inventory was taken of all items to be removed prior to excavation. A restoration plan and the expectations for the work to be performed was developed and agreed to by EPA, property owners and tenants. The RPM explained to the property owners and tenants the process that would be followed during yard excavation and restoration. Although dust suppression was be ongoing, EPA recommended that all doors and windows remain closed during excavation to minimize any dust entering the homes and to dampen any loud noises.
15. ERRS contractors began excavation of residential yards on 9/26/16. Rear and side yards were excavated to a depth of 24 inches below ground surface (bgs). Front yards were excavated to a depth of 6 inches bgs in the vicinity of utilities and 24" where no utilities were present. Brick, concrete, asphalt and other construction and demolition debris (C&D) were commonly found throughout the excavated areas. Excavated areas left open overnight were fenced off. Once targeted excavation depths were achieved, high visibility fencing was placed in the bottom of the excavated area. Approximately 18 inches of clean back fill was placed in lifts and compacted with a vibratory roller. Six inches of topsoil were then placed and graded back to pre-excavation elevations. Restored sod, shrubbery, gardens and mulch were then installed on each excavated property. Watering of sod and vegetation was conducted by ERRS for two weeks after installation after which time the maintenance responsibility was transferred to the property owner.
16. Between 9/26/16 and 11/14/16, a total of 27 residential properties were addressed and approximately 2,460 cubic yards of contaminated soil was removed. Excavated soil from yards was placed in the soil staging area on the top of the landfill.

17. Reinstallation of all remaining fencing behind the homes on Buist Ave. and the individual fences on Angelo Place was completed between 11/14 and 11/18/16. Watering of sod for homes on Angelo Place was also conducted on 11/19 to 11/21/16. All personnel and equipment except for one staff to conduct watering were demobilized for the winter by 11/18/16.
18. ERRS contractors remobilized to the Site on 5/1/2017 and resumed site activities on 5/3/2017. Between 5/3/2017 and 5/4/2017, ERRS contractors performed repairs on the gravel access road which runs between the Command Post and the landfill, constructed an extension of the access road into the area behind Angelo Place, and laid mats over areas of paved walkway behind Angelo Place and Mars Place. ERRS contractors began excavation of residential yards on Mars Place on 5/8/2017.
19. Between 5/8/17 and 6/15/17, a total of six yards were completely excavated, backfilled, compacted, and sodded. A total of 498.5 cubic yards of soil were removed from the properties during this time period and placed in the soil staging area on top of the landfill.
20. All equipment was removed from the Site, the soil staging area was covered and stabilized, and the portion of the temporary access way that extended into the City Park was removed and the area restored by 6/15/17. Except for the watering crew, all ERRS contractors demobilized on 6/16/2017 and all removal actions were completed at the Site. Watering of the new sod continued for an additional two weeks up to 6/30/17.

C) Resources Committed

The total project ceiling approved in the Action Memorandum signed 7/21/16 was \$5,245,141.

	Budgeted	Total To Date	Remaining	% Remaining
Removal Costs*				
ERRS - Cleanup Contractor	\$4,718,806.00	\$2,574,335.01	\$2,144,470.99	45.45%
ERT	\$125,000.00	\$85,445.00	\$39,555.00	31.64%
START- Removal	\$526,335.00	\$80,264.38	\$446,070.62	84.75%
Total Site Costs	\$5,370,141.00	\$2,740,044.39	\$2,630,096.61	48.98%

	Budgeted	Total To Date	Remaining	% Remaining
START Assessment Costs*				
START- Assessment	\$156,953	\$84,468	\$72,485	46.18%

* 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.

D) Roster of Agencies

The following table provides a list of federal, state, and local agencies and contractors involved in this removal action. The table also includes a brief description of duties involving this removal action.

Agency	Contact	Brief Description of Duties
U.S. EPA Region III 1650 Arch Street 3HS31 Philadelphia, PA 19103 (215) 814-3272	Mike Towle	On-Scene Coordinator: Coordinated all aspects of the Removal Action integrating various agencies and contractors.
U.S. EPA Region III 1650 Arch Street 3HS21 Philadelphia, PA 19103 (215) 814-3392	Josh Barber	Remedial Project Manager: Coordinated with the OSC on all aspects of the Removal Action. Currently overseeing the overall Remedial Actions at the entire Lower Darby Creek Area Site.
U.S. EPA Region III 1650 Arch Street Philadelphia, PA 19103	J.R. Wright	EPA Cost Accountant - Responsible for tracking all onsite costs.
U.S. EPA Region III 1650 Arch Street Philadelphia, PA 19103	Larry Brown, Gina Soscia	Community involvement coordinators- provided information to the surrounding community regarding the Removal Action.
Pennsylvania Department of Environmental Protection 2 East Main Street Norristown, PA 19401	Colin Wade	Pennsylvania Department of Environmental Protection (PADEP) Project Manager
ER, LLC EPA ERRS Contractor 1666 Fabick Drive St. Louis, MO 63026	Joseph Galioto, Todd Conley	Emergency and Rapid Response Services (ERRS) Response Managers who coordinated or otherwise provided the overall labor, materials, and services to the OSC to excavate soils containing PAH contamination.
Weston Solutions, Inc. EPA START Contractor 1400 Weston Way West Chester PA 19380	Charles Rapone	Member of EPA's Superfund Technical Assessment and Response Team (START) who provided oversight of removal activities, written and photographic documentation, multimedia sampling, and analytical services coordinator.

E) Waste Treatment / Disposition

A total of 2958.5 cubic yards of soil containing PAHS greater than the Removal Trigger Levels were removed from residential yards and placed in the soil staging area on top of the landfill. 2,460 cubic yards of soil were removed during the first phase of the Removal Action, and 498.5 cubic yards from the second phase of the Removal Action.

The following table summarizes the quantity and disposal location of waste streams removed during the Removal Action.

Waste Stream	Quantity	Manifest #	Disposal Facility
PAH Contaminated Soil	2,460 (actual)	Not applicable	Clearview Landfill – Soil Staging Area
PAH Contaminated Soil	498.5 (actual)	Not applicable	Clearview Landfill – Soil Staging Area

F) Future Considerations

Three properties which exceeded the removal trigger levels were not addressed during this removal action. This was attributable to lack of legal access and refusal to participate in the removal. Due to one property owner refusing the removal, an adjacent property was not accessible for removal action as the homes in the Eastwick neighborhood are predominantly row homes and these homes were in the middle of the row. For this yard, along with a third property on an adjacent row, they did not have yards on their other property boundary that qualified for the removal action based on EPA sampling data. Thus, these yards could not be accessed during the removal action. The remedial action for OU1 is starting 2017 and will begin with addressing remaining residential properties that exceed the soil cleanup levels set in the OU1 Record of Decision. This will include these 3 properties that were not addressed by the removal action. These 3 properties were relatively well vegetated and current direct exposure to contamination is very limited. The EPA RPM spoke with these property owners to explain their status and provided educational reference materials to assist with minimizing potential exposure to contaminated soil.

G) Emergency Response And Removal Outcome Measures

Human exposure avoided per \$1 million extramural resources expended:

A calculated total of 5,474 exposures were avoided per one million dollars extramural resources expended due to the removal action.

The calculation of a population that is potentially exposed to contaminated soil is as follows:

$$\text{Human Exposure} = \text{Resident Population On-Site} + \text{Restricted Access Multiplier} \times [\text{Resident Population Off-Site} + \text{Recreational Public Population}]$$

The onsite residential population was estimated as 99 persons living on-site (33 residential yards addressed by the removal action * average of 3 residents/property.) As removal activities were conducted on private properties, a restricted-access multiplier of 1.0 is used. No removal activities were conducted within areas of public use.

$$\text{Human Exposure} = 99 + 1.0[0 + 0]$$

Using the above calculation, the population that is potentially exposed is 99 people. The total extramural cost of the removal activities conducted in the Residential Soil Area is approximately \$982,166. Therefore, 100 human exposures are avoided per \$1 million extramural resources expended due to this removal action.

Acreage protective for people at Emergency Response and Removal sites:

A total of approximately 1.26 acres was excavated and backfilled with clean fill and topsoil. This area was calculated using maps of excavated areas developed using aerial photography and global positioning system (GPS) data, geographic information systems (GIS) software and measuring tape.