

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

SUBJECT: Approval of a Request for Additional Funding, Change of Scope, and Exemption from the \$2 Million and 12-Month Statutory Limits for a Removal Action at the Lower Darby Creek Area Superfund Site – Clearview Landfill Site Darby Township, Delaware County, Pennsylvania

FROM: Dennis P. Carney, Associate Director
Hazardous Site Cleanup Division, Region III 

TO: Mathy Stanislaus, Assistant Administrator
Office of Solid Waste and Emergency Response

THRU: Lawrence Stanton, Director
Office of Emergency Management

ATTN: Gilberto Irizarry, Director
Program Operation and Coordination Division

ISSUE

The attached Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Action Memo pertains to the Lower Darby Creek Area Superfund Site – Clearview Landfill Site located in Darby Township, Delaware County, Pennsylvania. A removal site evaluation performed in accordance with Section 300.410 of the National Oil and Hazardous Substance Pollution Contingency Plan (NCP) has identified a continuing threat to public health or welfare or the environment due to the uncontrolled presence and release of hazardous substances, pollutants, or contaminants at the Site. The removal site evaluation found hazardous substances at the Site, predominantly polychlorinated biphenyls (PCBs), present within the soil at the Site. The Site is listed on the National Priorities List.

The Region, on September 27, 2011, had determined that this Site meets the criteria for a removal action under Section 300.415 of the NCP. Pursuant to Regional Delegation of Authority 14-2, funds in the amount of \$ 1,311,184, of which \$ 1,095,793, were Regional Removal Allowance Costs, were approved to mitigate the threats posed by the Site.

During conduct of the Removal Action, the PCBs were found in additional areas of the Site and at deeper levels. A large mass of the PCBs were also found below the water table. Additional funding and a change in the scope of the Removal Action are now needed to address these threats. The Region believes that the Removal Action will now extend beyond 12 months and cost more than \$2 Million. However, we determine that the Site meets the criteria for exemption from the \$2 Million and 12-Month Statutory Limits for Removal Actions identified

within the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, (CERCLA), 42 U.S.C. § 9604(c)(1)(C)). Section 104(c)(1)(C) of CERCLA provides that a response action may continue after \$2 Million has been obligated for the response action or 12 months have elapsed from the date of the initial response, if the continued response actions are appropriate and consistent with remedial actions to be taken at the Site.

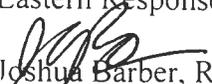
The attached Action Memorandum documents approval of the Removal Action necessitated by Site conditions and threats. Based upon the current Site conditions and information, an additional \$ 1,841,195, of which \$ 1,704,155, are from the Regional Removal Allowance are necessary to mitigate the threats identified in this Action Memorandum. The new Removal Action Project Ceiling is \$ 3,152,379, of which \$ 2,799,948, are from the Regional Removal Allowance.

Attachment: Funding Request



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SUBJECT: Request for Additional Funding, Change of Scope, and Exemption from the \$2 Million and 12-Month Statutory Limits for a Removal Action at the Lower Darby Creek Area Superfund Site – Clearview Landfill Site Darby Township, Delaware County, Pennsylvania

FROM:  Michael Towle, On-Scene Coordinator
Eastern Response Branch (3HS31)
 Joshua Barber, Remedial Project Manager
Eastern PA Branch (3HS21)

TO: Dennis P. Carney, Associate Director
Office of Preparedness and Response (3HS30)

I. ISSUE

The purpose of this Action Memorandum is to request additional funding, a change in the scope, and exemption from Statutory Limits for the Removal Action at the Lower Darby Creek Area Superfund Site – Clearview Landfill Site (Site). The Removal Action was approved by the Environmental Protection Agency (EPA) Region III on September 27, 2011, and initiated at the Site in November 2011. The Removal Action was temporarily demobilized upon discovery of Polychlorinated Biphenyls (PCBs) contamination in an area larger than anticipated and at deeper depths. Additionally, a large mass of PCB contamination was found at depths below the groundwater table. These findings necessitate the approval of this Action Memorandum in order to mitigate the threats and conditions originally identified in the September 27, 2011, Action Memorandum and further defined herein. The scope of the Removal Action is changing in the following manner: 1) soil will be excavated and removed such that remaining soil contains PCBs less than 50 mg/kg (rather than 100 mg/kg), 2) the depth of excavation will no longer be restricted to a depth of 8 feet or to the depth of the water table, and 3) excavation will not occur under areas used by businesses operating on the Site.

The Removal Action specifically addresses threats posed by a portion of the Site referred to as the Southern Industrial Area (SIA) in which elevated concentrations of PCBs and polycyclic aromatic hydrocarbons (PAHs) are located (a map depicting the approximate location of the SIA is included as Attachment A). The SIA is located primarily within Darby Township, Delaware County, Pennsylvania. However, a portion of the SIA and much of the overall Site is located within the limits of a residential and/or recreational area of the City of Philadelphia, Pennsylvania. The contaminated soil in the SIA poses an immediate threat to human health and environment. The Site is listed on the National Priorities List (NPL).

Sampling conducted by the EPA as part of the Remedial Investigation (RI) of the Site indicated the presence of numerous contaminants, including PCBs and PAHs in various media on and within the Site as well as in Darby Creek and Cobbs Creek which flow alongside the Site. A Removal Site Evaluation conducted by the On-Scene Coordinator (OSC) and the Remedial Project Manager (RPM) pursuant to Section 300.410 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. § 300.410, revealed a release and threatened release of hazardous substances, primarily PCBs and PAHs, from the Site into the environment. Although the Removal Site Evaluation considered analytical data from throughout the Site, based upon a review of that data the OSC and RPM proposed removal activities only in the SIA at this time. PCBs and PAHs are two classes of organic compounds that can bioaccumulate in fatty tissue and pose a threat to environmental (e.g., fish) and human receptors through ingestion and other exposure pathways. Fishing advisories for Darby and Cobbs Creek have been established by the Commonwealth of Pennsylvania as a result of potential PCB concentrations in fish.

Based upon information obtained from the Removal Site Evaluation, and upon consideration of the factors in Section 300.415(b)(2) of the NCP, the OSC determined that a Removal Action, pursuant to Section 104(a) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended (CERCLA), 42 U.S.C. § 9604(a), was appropriate and necessary to mitigate threats posed by the release and threatened release of hazardous substances from the Site. The OSC's evaluation of Site conditions indicates that actions including both removal and stabilization of soil contaminated by PCBs and PAHs are required to mitigate the release and threatened release of hazardous substances from the Site.

During implementation of the Removal Action, which included additional site evaluation and environmental sampling, the area of PCB-contaminated soil was found to be larger than anticipated. The PCBs contaminated area expanded generally eastward towards residences in the City of Philadelphia and generally southward toward Darby Creek. A large mass of the PCBs were also found at depths deeper than expected and, importantly, at depths below the groundwater table. These conditions were not expected at the initiation of the Removal Action.

Based upon current information, the OSC anticipates that response actions will require additional funding and will extend beyond 12 months duration. However, the OSC and RPM determined that the Site meets the criteria for exemption from the \$2 Million and 12-Month Statutory Limits for Removal Actions identified within the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, (CERCLA), 42 U.S.C. § 9604(c)(1)(C).¹ Section 104(c)(1)(C) of CERCLA provides that a response action may continue after \$2 Million has been obligated for the response action or 12 months have elapsed from the date of the initial response, if the continued response actions are appropriate and consistent with remedial actions to be taken at the Site. The OSC and the RPM for the Site have coordinated and consulted with Regional management. All actions proposed herein will reduce the source of

¹ Authority to approve continued removal action beyond the statutory limitations pursuant to the "Consistency Waiver" set forth in Section 104(c)(1)(C) of CERCLA, 42 U.S.C. § 9604(C)(1)(C), has been delegated to the Director of the Region III Hazardous Site Cleanup Division pursuant to EPA Delegation 14-2.

hazardous substance releases to the environment at the Site, thus facilitating and contributing to the overall success of the remedial actions expected at the Site.

Although continued removal response actions will be appropriate and consistent with expected future remedial actions at this National Priorities List (NPL) Site, these response actions are immediately necessary to address the threats to human health and welfare and the environment presently posed by conditions at the Site. These threats are posed by PCBs and other hazardous substances in the soils, inclusive of soils located within the groundwater, which are able to migrate to nearby Darby Creek. The PCBs also threaten workers at the Site and may threaten nearby communities. The hazardous substances are located primarily within soil and within a portion of the Lower Darby Creek Area NPL Site, which will be the subject of a future Remedial Action overseen by EPA; however, remedial planning efforts are not complete and on-Site remedial action is not anticipated within the next several years.

A Removal Action Project Ceiling of \$1,311,184, of which \$1,095,793 are from the Regional Removal Allowance, was approved on September 27, 2011. Based upon the current Site conditions and information, an additional \$ 1,841,195, of which \$ 1,704,155, are from the Regional Removal Allowance are necessary to mitigate the threats identified in this Action Memorandum. The new Removal Action Project Ceiling is \$ 3,152,379, of which \$ 2,799,948, are from the Regional Removal Allowance.

II. BACKGROUND AND SITE CONDITIONS

A. Site Description

See the September 27, 2011, Action Memorandum for additional information.

During the Removal Action, the OSC and RPM observed Site conditions, continued to evaluate information relating to the Site, and arranged for the collection and analysis of environmental samples. Historical aerial photographs were also examined. These photographs indicate that features at the Site have changed significantly over the years. These features include 1) an entrance road to the Site which was re-located within the area of contamination and 2) low lying, water-filled features in the area of PCB contamination which were altered and filled. The aerial photographs also show a historic water-filled channel coursing through the present area of PCB contamination that was connected to Darby Creek. During excavation activities, remnants of the former entrance road were found. During sampling activities, groundwater levels in the area of the historic water-filled channel were found to be the highest. Additionally, sampling activities during the Removal Action indicated that the highest concentrations of PCBs were found in soil and fill material now within the area of this historic connection to nearby Darby Creek.

The soil sampling conducted during the Removal Action indicates that the area of PCB-contaminated soil is larger than expected. PCBs were found further east (toward the residential area in the City of Philadelphia) and further south (toward Darby Creek) than originally expected based upon data collected during the RI.

During excavation activities, a large portion of the PCB-contaminated soil was found at depths below the ground water table. This finding complicated the excavation activities causing requirements for expedited soil handling and backfill activity as well as water handling in addition to that originally anticipated by the OSC. During the Removal Action, the depths to the groundwater were measured in the numerous sampling boreholes installed by EPA. The depth to groundwater was originally thought to be at depths upwards of seven or eight feet in the area of excavation. However, once excavation activities commenced below four or five feet and left open, the excavation filled with groundwater. Upon closer evaluation it was concluded that the groundwater table was indeed relatively shallow in some areas where PCB-contaminated soils are located. The groundwater is found at depths as shallow as 3 feet in areas close to the historic water-filled channel where PCB contamination was found at high concentrations.

Several businesses are being operated at the southern end of Clearview Landfill in the SIA. The area around these businesses is paved and the storm water runoff from the paved areas is directed into the PCB-contaminated area. Although the scope of the Removal Action anticipated the need to manage storm water, experience with rain events at the Site has shown that the volume of water is quite large and that additional actions will be required to properly remove storm water from the area of the response action.

B. Quantities and Types of Substances Present

During the RI, the SIA was identified as having areas of significant PCBs and PAHs contamination in both the surface and subsurface soil. Additionally, a transformer carcass was found to be overturned and leaking oil in the northeastern portion of the SIA. Sampling conducted during the removal site evaluation also found elevated PCBs and PAHs. Oily material and petroleum-like odors were also encountered during subsurface soil sampling within the SIA. Organic contaminants typically associated with petroleum compounds, e.g., toluene, naphthalene, and 1-1 biphenyl, were found in the soil area characterized by the petroleum odors.

The most prominent soil contaminants are PCBs, PAHs and, to a lesser degree, metals, pesticides, and dioxins. PCBs, PAHs and other contaminants have migrated from the soils within the SIA into the surrounding environments, e.g., a low-lying wooded area east of the SIA and along the Darby Creek. This low-lying area receives much of the surface water runoff from the SIA and is located over a historic water-filled channel that was connected to Darby Creek. Additionally, sampling conducted during the RI indicates that PCBs, PAHs, and other contaminants, have migrated into the groundwater and surface water environment.

Although the Removal Action proposed herein focuses on PCBs, the OSC and RPM believe that the Removal Action will also address threats potentially posed by other hazardous substances at the Site, including PAHs (such as benzo(a)pyrene), toluene, naphthalene and 1-1 biphenyl, since they will be excavated and disposed along with the PCBs. PCBs and many PAHs, including benzo(a)pyrene, as well as toluene, naphthalene, and 1-1 biphenyl are hazardous substances within the meaning of CERCLA and are listed as such under 40 CFR Part 302.

The total volume of PCB-contaminated soil associated with the SIA at levels above 50 mg/kg is approximately 4200 tons.

C. National Priorities List Status

The Site was listed on the CERCLA National Priorities List (NPL) on June 14, 2001. Removal actions at this Site are appropriate and consistent with any future remedial actions and are coordinated between the OSC and the RPM.

D. State and Local Authorities' Roles

The Site is currently an EPA-lead NPL Site. The OSC and RPM are coordinating activities associated with the assessment and evaluation of the Site with the Pennsylvania Department of Environmental Protection (PADEP). Local authorities have no current role at the Site other than to grant access. The OSC and RPM will continue to coordinate proposed removal actions with State and Local authorities.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT

In addition to the PCB contamination of the surface soil to which human receptors may be exposed (discussed below), Site sampling and analytical results indicate that the environment and habitat of ecological receptors (Creek sediment) is threatened by PCBs and PAHs at levels that bioaccumulate in aquatic organisms and pose a threat to humans ingesting contaminated fish and/or turtles. Currently, Darby and Cobbs Creeks are included under a fish advisory issued by the Commonwealth of Pennsylvania due to the potential concentrations of PCBs in fish. As part of an aquatic risk assessment being conducted by EPA for the Lower Darby Creek Area Superfund Site, fish collection and tissue testing were conducted in 2010. Results of the sampling indicate consistent levels of PCBs in fish tissue at concentrations that exceed human and/or ecological screening levels. Nevertheless, the RPM has witnessed fishing in the area of the Site. Additionally, birds and other aquatic predators gather fish from the area of the Site as well as the John Heinz NWR.

Promulgated federal or State criteria for sediment contamination levels intended for the protection of aquatic organisms (and subsequent human receptors) do not exist. To determine if threats are posed to ecological receptors, EPA instead relies upon a comparison between site-specific contaminant levels and "screening guideline" levels developed from contaminant- and organism-specific toxicity testing. The "screening guideline" levels identify benchmark sediment contaminant levels at which toxicity testing has established a likelihood of adverse biological effects to exposed aquatic organisms. EPA Region 3 uses a concentration of 0.0598 mg/kg as a screening guideline for PCBs, and 0.19 mg/kg for high molecular weight PAHs for aquatic receptors in freshwater sediment. Exceedance of these screening levels will likely result in adverse effects to aquatic organisms. Concentrations of PCBs and PAHs in sediment at the Site exceed these levels.

Hazardous substances released at and from the Site may bioaccumulate in the food chain. Bioaccumulation poses a threat to migratory birds, upper trophic predatory species, and to human receptors ingesting aquatic organisms such as fish, turtles, shellfish, and/or crustaceans in the contaminated environment. Actions to prevent further release of hazardous substances from the

Site will ensure that risks to the food chain posed by bioaccumulation are reduced.

Section 300.415 of the NCP, 40 C.F.R. § 300.415, identifies factors to be considered in determining the appropriateness of a removal action. Paragraphs (b) (2) (i), (ii), (iv), (vii), and (viii) apply to the need for response action at the Site as follows.

§ 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;”

PCBs are present in the surface and subsurface soil at the Site. For example, PCBs have been found at concentrations of approximately 280 mg/kg in surface soil and approximately 3,200 mg/kg in subsurface soil. The most common PCB Aroclor mixture associated with the Site is Aroclor 1260 although PCB Aroclor 1242 is also found in a more limited area. According to EPA, PCB Aroclor 1260 concentrations in excess of approximately 74 mg/kg in the soil of properties subject to industrial use may pose unacceptable cancer risk (e.g., greater than 1×10^{-4} excess cancer risk) to exposed receptors as listed in EPA Region III's most recent (November 2011) Risk-Based Concentration Table. (The 10^{-4} cancer risk value is routinely used by EPA On-Scene Coordinators as a benchmark for considering the need for a removal action.) The surface soil is exposed and accessible to workers and other persons accessing the Site.

Animals, people and the food chain are being, or potentially may be, exposed to hazardous substances in sediment at the Site. Contaminated sediment in the Creek is available for use as habitat to aquatic organisms and other wildlife which use the tidal sediment areas, e.g., mudflats, of Darby and Cobbs Creek as well as the John Heinz NWR. For example, numerous migratory birds such as herons use the mudflat for fishing and feeding purposes at low tide. These are submerged during high tides and serve as aquatic habitat for numerous fish and other species. PCB- and PAH-contaminated Creek sediment is thus potential habitat for a variety of ecological receptors, such as fish, shellfish and birds. PCBs and PAHs can bioaccumulate in exposed organisms. Data recently collected by EPA indicate that accumulation of PCBs and other contaminants is currently occurring, resulting in elevated levels of PCBs in the tissue of fish from Darby and Cobbs Creek. As stated above, the Site and surrounding area, including the John Heinz NWR, serve as critical habitat for migratory waterfowl (herons, geese, and ducks), fish and other aquatic receptors. Fishermen and turtle trappers have also been observed in boats and along the banks of the two creeks. Due to the potential for increased consumption of PCBs by humans, the Commonwealth of Pennsylvania has posted a fishing advisory for the consumption of fish extracted from the creeks surrounding the Site. PCBs now present in the environment of both Darby and Cobbs Creeks have entered the food chain; humans (fishermen) are a part of the Darby and Cobbs Creek food chain.

§ 300.415 (b)(2)(ii) “Actual or potential contamination of drinking water supplies or sensitive ecosystems;”

Contaminated sediments have been identified in tidal mudflat/wetland areas which are habitat to a wide variety of aquatic and terrestrial organisms including migratory birds and anadromous fish, despite the industrialization of much of the surrounding area. Tidally exposed contaminated sediment provides ground for feeding birds such as herons and ducks. The

submerged sediment provides habitat for bottom feeding fish and other lower trophic species; all of which are known to be present in the creeks adjacent to the Site. Furthermore, several known state-listed rare or protected animal and plant species are known to exist in the vicinity and within the John Heinz NWR, which is adjacent to the Site. Because suitable habitat may be scarce in this industrialized area of southeastern Pennsylvania, any available habitat is critical and widely utilized flora and fauna. The contamination of the sediment in the available habitat and the presence of contamination concentration in the SIA portion of the Clearview Landfill greatly increase the potential for PCBs and PAHs to enter into the food chain.

§ 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;”

The results from the EPA RI and Removal Action sampling at the Site indicate that high levels of PCBs are present in the surface and shallow subsurface soils within the SIA portion of the Clearview Landfill. The Site is located within the 100 year floodplain and flooding is common in this area. There are substantial portions of the Site which lack a sufficient cover or vegetation to prevent erosion. Even minor precipitation events have been observed to create sufficient surface water flow and erosion through the SIA toward a wooded lowland area and Darby Creek. As the severity of rain events increases, so does the likelihood that the high levels of PCB contamination in the surface soils are migrating and that contaminants in the shallow subsurface soils will be exposed. Steep terrain on portions of the Site greatly increases the chances of this occurring.

§ 300.415 (b)(2)(vii) “The availability of other appropriate federal or state response mechanisms to respond to the release;”

The Site is an NPL Site for which EPA is designated lead responsibility for response actions.

§ 300.415 (b)(2)(viii) “Other situations or factors that may pose threats to public health or welfare of the United States or the environment; ”

The Site is located on Darby and Cobbs Creek, both of which are tidally influenced. The combination of tide surges and storm events may act to erode the bank of the Site and deposit or erode sediment from the area of the Site. An erosional event may cause the migration of contaminated soil directly into the environment of Darby or Cobbs Creek, increasing the existing public health threat posed by ingestion of organisms from the Creek which are contaminated with PCBs.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response actions outlined in this funding request, may present an imminent and substantial endangerment to the public health, welfare, or the environment.

V. EXEMPTION FROM STATUTORY LIMITS

The conditions at the Site continue to pose an immediate threat to human health and the environment. In the absence of a continuing removal action, the Site threatens to release hazardous substances to the environment. Present conditions at the Site necessitate Removal Actions for a period of time that will exceed 12 months and cost in excess of \$2 Million. As such, exemption from the 12 Month and \$2 Million Statutory Limits upon Removal Actions is required. The Site is on the NPL and remedial actions are being designed. Continued removal response actions are appropriate and

consistent with future remedial actions. The Site, thus, meets the requirements set forth in Section 104(c)(1)(C) of CERCLA, 42 U.S.C. § 9604(c)(1)(C), for an exemption from the 12 month statutory limit for Removal Actions.

The Lower Darby Creek Area Site has been placed on the NPL. EPA Region III is presently conducting activities relating to the assessment of risk and design of remedies to address the longer-term cleanup of the Site. The scope of the remedial actions now being considered will require that concentrations of PCBs above 50 mg/kg in the soils or waste be treated or disposed off-Site. Further, PCBs which may migrate to Darby Creek will require mitigation by the Remedy. The scope of the Removal Actions proposed herein is completely consistent with the Remedial Actions being developed. The Removal Action serves to significantly reduce the amount and concentrations of PCBs which ultimately need to be considered in the remedial alternatives considered by EPA. The OSC and the RPM for the Site coordinate on actions relating to the PCBs in the soil.

The Removal Action includes activities to reduce the foreseeable threats posed by the Site, including threats not specifically addressed by Remedial Actions being developed, and serves to minimize the further migration of hazardous substances into the environment. The Removal Action will significantly decrease the risk posed by the Site and the potential for a release of hazardous substances by decreasing the concentration and volume of the chemical substances on the Site. The Removal Action also protects the integrity of the Remedial Action by minimizing the potential for migration of hazardous substances from the Site into the environment. As such, the Removal Action is appropriate and consistent with the Remedial Action to be taken and meets the requirements for exemption from the statutory limits for Removal Actions identified in Section 104(c)(1)(C) of CERCLA.

VI. PROPOSED ACTIONS AND COSTS

The actions proposed in this Funding Request are intended to remove high concentrations of hazardous substances and minimize the further migration of high concentration PCBs and PAHs into the environment. In addition to posing a threat to human receptors via incidental ingestion and inhalation of surface soil, these hazardous substances which exist immediately adjacent to the Darby Creek and threaten to release into the Creek, pose a potential threat to aquatic receptors. The Action will not result in the complete removal of hazardous substances from the Site. Instead, the response action focuses on high concentrations of PCBs and PAHs which are exposed at the surface and/or are present in the shallow subsurface soil and may further migrate into the environment.

Post Removal Site Controls are not required at this time since the Site is still undergoing EPA investigation and remedy selection activities under the NPL process. The Removal Action specifically addresses threats posed by a portion of the Site referred to as the Southern Industrial Area (SIA) in which high concentrations of polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs) are located, as proposed below (a map depicting the approximate location of the SIA is included as Attachment A).

The actions proposed herein are the same as those selected in the September 27, 2011, Action Memorandum except that:

1. soil will be excavated and removed such that remaining soil contains PCBs less than 50 mg/kg (rather than 100 mg/kg) as indicated in items #7 and #8,
2. the depth of excavation will no longer be restricted to a depth of 8 feet or to the depth of the water table as now indicated in item #7, and
3. excavation activity will not occur under areas used by businesses operating on the Site as indicated in item #7.

A. Proposed Actions

1. Mobilize/demobilize personnel and equipment.
2. Implement facilities and measures (e.g., installing roads and fencing) to facilitate and control access and provide security to facilitate efficient performance of the Removal Action and minimize exposure to hazardous substances during the response action.
3. Implement erosion and sedimentation control features (e.g., silt fencing and vegetative cover) to minimize migration of PCBs contamination from the SIA area During implementation of the Removal Action.
4. Implement storm water management controls during the removal action which minimize the migration of storm water into the area subject to response activity and prevent the migration of potentially PCB-contaminated storm water; actions may Include construction of berms or trenches and pumping and temporary containment of potentially PCB-contaminated storm water.
5. Treat waters which may be accumulated during activities and discharge such waters to local sewage treatment plant. Or, if this arrangement is not feasible, dispose waters off-Site in accordance with CERCLA 121(d)(3) and 40 C.F.R 300.440 and 40 C.F.R. 761.61.
6. Prepare and maintain temporary storage for hazardous substances generated during the Removal Action.

7. Excavate and remove soil contaminated with PCBs such that PCB concentration in soil is less than 50 mg/kg. Excavation shall not compromise the stability of any structure and shall not occur under areas used by businesses operating on the Site.
8. Cover all areas in which PCB contamination in the soil is not removed pursuant to Item #7 and is above 50 mg/kg with a cap/cover meeting the requirements of 40 C.F.R. 761.61. Construct the cover in order to promote drainage away from the PCB-contaminated soil that remains.
9. Excavate and remove remaining soil contaminated with PCBs such that PCB concentration in surface soil (0 to 6 inches) is less than 25 mg/kg.
10. Grade and cover remaining soil contaminated with PCBs greater than 10 mg/kg in a manner which minimizes the migration of PCBs toward Darby Creek.
11. Dispose off-site the hazardous substances (e.g., PCB-contaminated soil) identified above, and other wastes associated with the Removal Action, in accordance with CERCLA 121(d)(3) and 40 C.F.R 300.440 and 40 C.F.R. 761.61. Activities may include sampling, bulking, consolidating, drumming, pumping, or otherwise handling the hazardous wastes, hazardous substances, liquids, and wastes to ensure that they are properly transported.
12. Backfill excavated areas and place fill material such that drainage is directed away from contaminated soil areas.
13. Remove access and security measures and backfill and restore ground disturbed by installation of access and security measures.

B. Contribution to Remedial Performance

The proposed Removal Action is expected to be consistent with Remedial Actions at the Site. The Remedial Action for the Clearview Landfill has not yet been selected.

C. Compliance with ARARs

The Removal Action will attain ARARs to the extent practicable given the exigencies of the situation. The RPM coordinated with PADEP and the following is a summary of the ARARs identified to date that may be applicable or relevant and appropriate to the Removal Action:

- Construction of an on-Site cover shall consider the requirements of 40 C.F.R. 761.61(a)(7) to the extent practical considering the exigencies of the situation.
- Erosion Control Regulations (25 PA Code, Chapter 102) provides requirements for erosion and sedimentation control plans, permits, etc.

- Stormwater Management Act of 1978 (Act 167) requires the implementation of measures to control stormwater runoff.
- National Archeological and Historic Preservation Act (132 C.F.R. 229) may be applicable if any prehistoric, historic, or archeological artifacts are encountered during site remediation.
- Pennsylvania Solid Waste Management Act (the act of July 7, 1980, P.L. 380, No 97, as amended, 35 P.S. §§6018.101-1003 et seq.); regulations pursuant to this are found in 25 Pa Code §260a to 270a, 271 to 285, and 287 to 299.
- If discharging accumulated wastewater to a local Publically Owned Treatment Works (POTW) is necessary, such discharge must be in compliance with the POTW's Municipal Industrial Pretreatment Program (MIPP) requirements if applicable and/or the POTW's Sewer Use Ordinance.

D. Estimated Costs

The proposed distribution of funding is as follows:

Extramural Costs	Previous	This Action	Total
Regional Allowance Costs: (ERRS contractors and subcontractors)	\$ 1,095,793	\$ 1,704,155	\$ 2,799,948
Other Extramural Costs Not Funded from the Regional Allowance: START Contractor	\$ 215,391	\$ 137,040	\$ 352,431
TOTAL REMOVAL ACTION PROJECT CEILING	\$ 1,311,184	\$ 1,841,195	\$ 3,152,379

VII. EXPECTED CHANGE IN SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If no action is taken or the action is delayed, the threat of additional or potential release of hazardous substances from the Lower Darby Creek Area Superfund Site – Clearview Landfill into the environment is inevitable.

VIII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues pertaining to the Lower Darby Creek Area Superfund Site – Clearview Landfill Site.

IX. ENFORCEMENT

The EPA Region III Office of Enforcement has been provided with all background information available regarding this Removal Action to pursue enforcement actions pertaining to the Lower Darby Creek Area Superfund Site – Clearview Landfill (See attached Confidential Enforcement Addendum).

The total EPA costs for this removal action based upon full-cost accounting practices that will be eligible for cost recovery are estimated to be \$ 5,410,631.¹

Direct Extramural Costs	\$ 3,152,379
Direct Intramural Costs	\$ 85,000
Total, Direct Costs	\$ 3,237,379
Indirect Costs (67.13 % x Direct Costs)	\$ 2,173,252
Estimated EPA Costs for a Removal Action	\$ 5,410,631

X. RECOMMENDATION

This Action Memorandum decision document represents the modified and recommended Removal Action for the Lower Darby Creek Area Superfund Site – Clearview Landfill Site in Philadelphia and Darby, Pennsylvania, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. Conditions at the Site meet the NCP Section 300.415(b)(2) factors for a removal and meet the criteria for exemption from the \$2 Million and 12-Month Statutory Limits in Section 104(c)(1)(C) of CERCLA. I recommend your approval of the Removal Action. The total project ceiling will be \$ 3,152,379. Of this, an estimated \$ 2,799,948, comes from the Regional Removal Allowance.

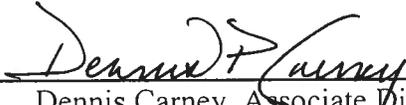
Action by the Approving Official:

This Action Memorandum represents the selected Removal Action for continuing the Removal Action at the Lower Darby Creek Area Superfund Site – Clearview Landfill Site, in Darby Township and the City of Philadelphia, Pennsylvania, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. This decision is based on the administrative record for the Site.

¹Direct Costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.

Pursuant to Section 113(k) of CERCLA, 42 U.S.C. 9613(k) and EPA delegation No. 14-22, I hereby establish the documents identified in Attachment B hereto as the Administrative Record supporting the issuance of the Action Memorandum.

I have reviewed the above-stated facts and based upon those facts and the information compiled in the documents described above, I hereby determine that the release or threatened release of hazardous substances at and/or from the Site presents or may present an imminent and substantial endangerment to the public health or welfare or to the environment. I concur with the Removal Action at the Lower Darby Creek Area Superfund Site – Clearview Landfill Site as outlined in the Action Memorandum.

APPROVED: 
Dennis Carney, Associate Director
Office of Preparedness and Response
EPA Region 3

DATE: 4/12/12

Attachments:

- A. Enforcement Confidential Memo
- B. Administrative Record documents
- C. September 27, 2011 Action Memorandum

ATTACHMENT B

Administrative Record Documents for Clearview Landfill Site Request for Additional Funding

Action Memorandum: Request for Funding for a Removal Action at Lower Darby Creek Area Superfund Site Clearview Landfill Site, 9/27/11

Trip Report: November 2011 Field Analytical Support at the Clearview Landfill Site, Lockheed Martin, 11/30/11

Technical Memorandum: Statistical Comparison of Dextsil Kit Results and GC/ECD Mobile Laboratory Analysis for Aroclor 1260 in Soil Samples from Clearview Landfill Site, Lockheed Martin, 12/6/11

Analytical Report: Clearview Landfill Site, Lockheed Martin, 12/19/11

Memorandum: Preliminary Results of Project Clearview Landfill, includes a Table of Comparison of Mobile Laboratory and Fixed Laboratory Data, Lockheed Martin, 12/23/11

Analytical Report: DAS R33902, WO# 1201004; sample dates 1/9/12 thru 1/11/12, Ft. Meade, 3/15/12

Analytical Report: DAS R33902, WO# 1201006: sample dates 1/10/12 thru 1/13/12, Ft. Meade, 3/27/12

Analytical Report: DAS R33902, WO# 1201008; sample dates 1/13/12 thru 1/17/12, Ft. Meade, 3/27/12

Region III Data QA Review and Attached Data Validation Report, CASE 42161, SDG C0AZ3, Package Date 3/2/12 containing 1 soil sample, EPA 3/2/12

Region III Data QA Review and Attached Data Validation Report, CASE 42181, SDGs COB81, Package date 3/6/12, containing 20 soil samples, EPA 3/6/12

Region III Data QA Review and Attached Data Validation Report, CASE 42160, SDG C0AZ5, Package date 3/7/12 containing 2 aqueous samples, EPA 3/8/12

Region III Data QA Review and Attached Data Validation Report, CASE 42160, SDGs MC0AZ4, Package Date 3/8/12, containing 2 storm water samples, EPA 3/8/12

Region III Data QA Review and Attached Data Validation Report, CASE 42161, SDGs MC0AZ2, Package Date 3/9/12, containing 2 soil samples, EPA 3/9/12

Region III Data QA Review and Attached Data Validation Report, CASE 42161, SDGs C0AZ2 and C1K12, Package Date 3/9/12 containing 2 soil samples, EPA 3/12/12

Region III Data QA Review and Attached Data Validation Report, CASE 42181, SDG C0AX4, Package Date 3/12/12 containing 20 soil samples, EPA 3/13/12

Region III Data QA Review and Attached Data Validation Report, CASE 42181, SDG C0B60, Package Date 3/13/12 containing 20 soil samples, EPA 3/14/12

Region III Data QA Review and Attached Data Validation Report, CASE 42181, SDG C0B36, Package Date 3/14/12 containing 20 soil samples, EPA 3/15/12

Region III Data QA Review and Attached Data Validation Report, CASE 42181, SDG C0C03, Package Date 3/15/12 containing 20 soil samples, EPA 3/16/12

Region III Data QA Review and Attached Data Validation Report, CASE 42181, SDG C0B23, Package Date 3/15/12 containing 15 soil samples, EPA 3/16/12

Region III Data QA Review and Attached Data Validation Report, CASE 42181, SDG C0B15, Package Date 3/16/12 containing 20 soil samples, EPA 3/16/12

Region III Data QA Review and Attached Data Validation Report, CASE 42181, SDG C0AP4, Package Date 3/16/12 containing 20 soil samples, EPA 3/19/12

Region III Data QA Review and Attached Data Validation Report, CASE 42160, SDGs C0C12 and C0AZ4, Package Date 3/19/12 containing 2 aqueous samples, EPA 3/21/12

Region III Data QA Review and Attached Data Validation Report, CASE 42181, SDG C0AN2, Package Date 4/4/12 containing 20 soil samples, EPA 3/5/12 (likely 4/5/12)

Figure 1 – Areas of Geoprobe Borings and Excavation, 1953 Imagery, 1/10/12

Figure 2 – Areas of Geoprobe Borings and Excavation, 1958 Imagery, 1/11/12

Figure 3 – Areas of Geoprobe Borings and Excavation, 1940 Imagery, 1/17/12

Figure 1 – Areas of Geoprobe Borings and Excavation, 1/31/12

POLREP 2, dated 10/24/11
POLREP 3, dated 11/11/11
POLREP 4, dated 11/18/11
POLREP 5, dated 11/25/11
POLREP 6, dated 12/2/11
POLREP 7, dated 12/11/11
POLREP 8, dated 12/16/11
POLREP 9, dated 12/23/11
POLREP 10, dated 12/31/11
POLREP 11, dated 1/6/12
POLREP 12, dated 1/13/12
POLREP 13, dated 1/20/12
POLREP 14, dated 1/27/12
POLREP 15, dated 2/3/12
POLREP 16, dated 2/10/12

November 2011, EPA Region III Risk-Based Concentration Table

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

SEP 27 2011

SUBJECT: Request for Funding for a Removal Action at the
Lower Darby Creek Area Superfund Site – Clearview Landfill Site
Darby Township, Delaware County, Pennsylvania

FROM: Michael Towle, On-Scene Coordinator
Eastern Response Branch (3HS31)
Josh Barber, Remedial Project Manager
Eastern PA Branch (3HS21)

TO: Dennis P. Carney, Associate Director
Office of Preparedness and Response (3HS30)

I. ISSUE

The purpose of this Action Memorandum is to request funding to initiate a Time-Critical Removal Action at the Lower Darby Creek Area Superfund Site – Clearview Landfill Site (Site). The Removal Action specifically addresses threats posed by a portion of the Site referred to as the Southern Industrial Area (SIA) in which high concentrations of polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs) are located (a map depicting the approximate location of the SIA is included as Attachment A). The SIA is located primarily within Darby Township, Delaware County, Pennsylvania. However, a portion of the SIA and much of the overall Site is located within the limits of the City of Philadelphia, Pennsylvania. The contaminated area poses an immediate threat to human health and environment. The Site is listed on the National Priorities List (NPL).

Sampling conducted by the Environmental Protection Agency (EPA) as part of the Remedial Investigation (RI) of the Site indicated the presence of numerous contaminants, including PCBs and PAHs in various media on and within the Site as well as in Darby Creek and Cobbs Creek which flow alongside the Site. A Removal Site Evaluation conducted by the On-Scene Coordinator (OSC) and the Remedial Project Manager (RPM) pursuant to Section 300.410 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. § 300.410, revealed a release and threatened release of hazardous substances, primarily PCBs and PAHs, from the Site into the environment. Although the Removal Site Evaluation considered analytical data from throughout the Site, based upon a review of that data the OSC and RPM are proposing removal activities only in the SIA at this time. PCBs and PAHs are two classes of organic compounds that can bioaccumulate in fatty tissue and pose a threat to environmental (e.g., fish) and human receptors through ingestion and other exposure pathways. Fishing advisories for Darby and Cobbs Creek have been established by the Commonwealth of Pennsylvania as a result

of potential PCBs concentrations in fish.

Based upon information obtained from the Removal Site Evaluation (RSE), and upon consideration of the factors in Section 300.415(b)(2) of the NCP, the OSC has determined that a Removal Action, pursuant to Section 104(a) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended (CERCLA), 42 U.S.C. § 9604(a), is appropriate and necessary to mitigate threats posed by the release and threatened release of hazardous substances from the Site. The OSC's evaluation of Site conditions indicates that actions including both removal and stabilization of soil contaminated by PCBs and PAHs are required to mitigate the release and threatened release of hazardous substances from the Site. A Removal Action Project Ceiling of \$1,311,184, of which \$1,095,793 are from the Regional Removal Allowance, is necessary to mitigate the threats identified in this Action Memorandum.

II. BACKGROUND AND SITE CONDITIONS

A. Site Description

The Lower Darby Creek Area Superfund Site – Clearview Landfill Site is located along the eastern bank of both Darby Creek and Cobbs Creek, near 83rd Street and Buist Avenue. The Site includes the Clearview Landfill, the Eastwick Recreation Park (a/k/a “City Park”) east of the Clearview Landfill, and a portion of the Eastwick neighborhood (a residential area). The Clearview Landfill footprint is primarily within Darby Township, Delaware County, PA, but partially within the limits of the City of Philadelphia. Limited areal contamination and/or landfill debris is expected in the subsurface beneath the City Park and potentially a small portion of the Eastwick neighborhood. According to available information, landfill activities occurred in the Darby and Philadelphia portion of the Site. During the mid-1970s when development began on the Eastwick neighborhood, a considerable amount of waste was excavated and moved from the Philadelphia portion of the Site to the Delaware County portion. Excavated materials were moved from the Philadelphia portion of the Site, placed, graded and partially covered with fill.

The Clearview Landfill was privately owned and operated without a permit from the 1950s to the 1970s by the Clearview Land Development Corporation, and used for the disposal of municipal and industrial waste collected from the City of Philadelphia and portions of Delaware County. There was no documentation of an engineered cover or functioning run-on/runoff control system installed at Clearview Landfill. In addition, there were no records of the types and volume of waste materials accepted at the landfill during operation.

Several businesses are being operated at the southern end of Clearview Landfill in the area referred to as the southern industrial area (SIA). Aside from the previous landfill operations, current and/or previous business operations on the SIA include a trash hauling business, white-goods (appliances) recycling operation, drum storing and recycling, auto repair and salvage, and truck/equipment storing and snow plowing operation. Additional ad-hoc businesses also exist on-site. Evidence of dumping is also present at the Site. The Site includes several structures used by the current businesses entities operating upon the Site. Numerous vehicles, abandoned heavy equipment, scrap metal, and other construction debris is also located upon the Site.

The SIA has been identified as having areas of significant soil contamination, in both the

surface and subsurface. During sampling activities conducted by the Environmental Protection Agency (EPA) (i.e., Remedial Investigation (RI)), a transformer carcass was found to be overturned and leaking oil in the northeastern portion of the SIA. Oily wastes and strong petroleum odors were also encountered during subsurface sampling as part of the RI as well as during subsequent sampling as part of the RSE. The most prominent contaminants are PCBs, PAHs and, to a lesser degree, metals, pesticides, and dioxins. PCBs, PAHs and other contaminants have migrated from the soils within the SIA into the surrounding environments, e.g., a low-lying wooded area east of the SIA and along the Darby Creek. This low-lying area receives much of the surface water runoff from the SIA and is located over a historic stream channel that has since been filled in as a result of landfill activities. The historic creek channel flowed towards and discharged into Darby Creek. Significant concentrations of PAHs have been detected in Darby Creek; PCBs have also been detected to a limited extent. Fish tissue samples from Darby Creek have indicated the presence of elevated levels of PCBs as well as PAHs, dioxins and other contaminants found on the Site.

Benzo(a)pyrene (B(a)P) is the primary risk driver among the detected PAH compounds within the SIA. Significant concentrations of B(a)P and other PAHs have been detected in the sediment of Darby Creek immediately adjacent to and downstream of the Clearview landfill. Maximum concentrations of B(a)P in creek sediment were detected immediately downstream of the Site at a level of 1.1 ppm. The highest total PAH sediment concentration was also found to be just downstream of the landfill in Darby Creek with a concentration of 14.2 ppm.

Although fishing advisories exist for both Darby and Cobbs Creek, the creeks are frequently accessed for recreational purposes, including fishing and turtle trapping. The EPA Remedial Project Manager (RPM) for the Site has witnessed recreational boat traffic and fishermen utilizing the Creek in the area of the Site. The Site and surrounding area serve as habitat for a variety of fauna; migratory waterfowl, anadromous fish and resident ducks, geese, and fish have been observed in the area of the Site. The Site is adjacent to the northern boundary of the John Heinz National Wildlife Refuge (NWR); a location on the migration route that is part of the Atlantic Flyway and the largest tidal freshwater marsh in Pennsylvania.

B. Quantities and Types of Substances Present

Sampling and analysis of soil at the Site has been conducted by the EPA as part of the RI for the Site as well as to support a RSE. Several hazardous substances have been identified in the surface and subsurface soils, sediment and groundwater. PCBs and PAHs are the primary contaminants of concern and the OSC and RPM believe that the actions proposed herein will address the majority of the threats in the SIA posed by hazardous substances by focusing on the PCBs. Maximum surface (0 to 6 inches) concentrations of PCBs within the SIA are 280 parts per million (ppm or mg/kg). Subsurface (6 inches to 9 feet) soil concentrations of PCBs within the SIA exceed 2,100 mg/kg. The highest subsurface detection of B(a)P in the SIA was 16 mg/kg and was from the same sample which resulted in the highest PCB detection (the total PAH concentration at this location was 325 mg/kg). High detections of PAHs (up to 27 mg/kg total PAHs), have also been observed in the wooded low-lying area into which the SIA drains. PCBs and many PAHs, including benzo(a)pyrene, are hazardous substances within the meaning of CERCLA and are listed as such under 40 CFR Part 302.

The total volume of PCB-contaminated soil is unknown. An estimated 540 cubic yards of soil may be contaminated at levels above 50 mg/kg.

C. National Priorities List Status

The Site was listed on the CERCLA National Priorities List (NPL) on June 14, 2001. Removal actions at this Site will not impede any future remedial actions and are coordinated between the OSC and the RPM.

D. State and Local Authorities' Roles

The Site is currently an EPA-lead NPL Site. The OSC and RPM are coordinating activities associated with the assessment and evaluation of the Site with the Pennsylvania Department of Environmental Protection (PADEP). Local authorities have no current role at the Site other than to grant access. The OSC and RPM will continue to coordinate proposed removal actions with State and Local authorities.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT

In addition to the obvious contamination of the surface soil to which human receptors may be exposed (discussed below), Site sampling and analytical results indicate that the environment and habitat of ecological receptors (Creek sediment) is threatened by PCBs and PAHs at levels that bioaccumulate in aquatic organisms and pose a threat to humans ingesting contaminated fish and/or turtles. Currently, Darby and Cobbs Creeks are included under a fish advisory issued by the Commonwealth of Pennsylvania due to the potential concentrations of PCBs in fish. As part of an aquatic risk assessment being conducted by EPA for the Lower Darby Creek Area Superfund Site, fish collection and tissue testing were conducted in 2010. Results of the sampling indicate consistent levels of PCBs in fish tissue at concentrations that exceed human and/or ecological screening levels. Nevertheless, the RPM has witnessed fishing in the area of the Site. Additionally, birds and other aquatic predators gather fish from the area of the Site as well as the John Heinz NWR.

Promulgated federal or State criteria for sediment contamination levels intended for the protection of aquatic organisms (and subsequent human receptors) do not exist. To determine if threats are posed to ecological receptors, EPA instead relies upon a comparison between site-specific contaminant levels and "screening guideline" levels developed from contaminant- and organism-specific toxicity testing. The "screening guideline" levels identify benchmark sediment contaminant levels at which toxicity testing has established a likelihood of adverse biological effects to exposed aquatic organisms. EPA Region 3 uses a concentration of 0.0598 mg/kg as a screening guideline for PCBs, and 0.19 mg/kg for high molecular weight PAHs for aquatic receptors in freshwater sediment. Exceedance of these screening levels will likely result in adverse effects to aquatic organisms.

Hazardous substances released at and from the Site may bioaccumulate in the food chain. Bioaccumulation poses a threat to migratory birds, upper trophic predatory species, and to human receptors ingesting aquatic organisms such as fish, turtles, shellfish, and/or crustaceans in the contaminated environment. Actions to prevent further release of hazardous substances from the

Site will ensure that risks to the food chain posed by bioaccumulation are reduced.

Section 300.415 of the NCP, 40 C.F.R. § 300.415, identifies factors to be considered in determining the appropriateness of a removal action. Paragraphs (b) (2) (i), (ii), (iv), (vii), and (viii) apply to the need for response at the Clearview Landfill Site as follows.

§ 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;”

PCBs are present in the surface (280 mg/kg) and subsurface (2,100 mg/kg) soils at the Site. The most common PCB Aroclor mixture associated with the Site is Aroclor 1260. According to EPA, PCB Aroclor 1260 concentrations in excess of approximately 74 mg/kg in the soil of properties subject to industrial use may pose unacceptable cancer risk (e.g., greater than 1×10^{-4} excess cancer risk) to exposed receptors. The surface soil is exposed and accessible to workers and other persons accessing the Site.

Contaminated sediment in the Creek is available for use as habitat to aquatic organisms and other wildlife which use the tidal sediment areas, e.g., mudflats, of Darby and Cobbs Creek as well as the John Heinz NWR. For example, numerous migratory birds such as herons use the mudflat for fishing and feeding purposes at low tide. These are submerged during high tides and serve as aquatic habitat for numerous fish and other species. PCB- and PAH-contaminated Creek sediment is thus potential habitat for a variety of ecological receptors, such as fish, shellfish and birds. PCBs and PAHs can bioaccumulate in exposed organisms. Data recently collected by EPA indicate that accumulation of PCBs and other contaminants is currently occurring, resulting in elevated levels of PCBs in the tissue of fish from Darby and Cobbs Creek. As stated above, the Site and surrounding area, including the John Heinz NWR, serve as critical habitat for migratory waterfowl (herons, geese, and ducks), fish and other aquatic receptors. Fishermen and turtle trappers have also been observed in boats and along the banks of the two creeks. Due to the potential for increased consumption of PCBs by humans, the Commonwealth of Pennsylvania has posted a fishing advisory for the consumption of fish extracted from the creeks surrounding the Site. PCBs now present in the environment of both Darby and Cobbs Creeks have entered the food chain; humans (fishermen) are a part of the Darby and Cobbs Creek food chain.

§ 300.415 (b)(2)(ii) “Actual or potential contamination of drinking water supplies or sensitive ecosystems;”

Contaminated sediments have been identified in tidal mudflat/wetland areas which are habitat to a wide variety of aquatic and terrestrial organisms including migratory birds and anadromous fish, despite the industrialization of much of the surrounding area. Tidally exposed contaminated sediment provides ground for feeding birds such as herons and ducks. The submerged sediment provides habitat for bottom feeding fish and other lower trophic species; all of which are known to be present in the creeks adjacent to the Site. Furthermore, several known state-listed rare or protected animal and plant species are known to exist in the vicinity and within the John Heinz NWR, which is adjacent to the Site. Because suitable habitat may be scarce in this industrialized area of southeastern Pennsylvania, any available habitat is critical and widely utilized flora and fauna. The contamination of the sediment in the available habitat and the

presence of contamination concentration in the SIA portion of the Clearview Landfill greatly increase the potential for PCBs and PAHs to enter into the food chain.

§ 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;"

The results from the EPA RI sampling at the Site indicate that high levels of PCBs are present in the surface and shallow subsurface soils within the SIA portion of the Clearview Landfill. The Site is located within the 100 year floodplain and flooding is common in this area. There are substantial portions of the Site which lack a sufficient cover or vegetation to prevent erosion. Even minor precipitation events have been observed to create sufficient surface water flow and erosion through the SIA toward a wooded lowland area and Darby Creek. As the severity of rain events increases, so does the likelihood that the high levels of PCB contamination in the surface soils are migrating and that contaminants in the shallow subsurface soils will be exposed. Steep terrain on portions of the Site greatly increases the chances of this occurring.

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

The Site is an NPL Site for which EPA is designated lead responsibility for response actions.

§ 300.415 (b)(2)(viii) "Other situations or factors that may pose threats to public health or welfare of the United States or the environment;"

The Site is located on Darby and Cobbs Creek, both of which are tidally influenced. The combination of tide surges and storm events may act to erode the bank of the Site and deposit or erode sediment from the area of the Site. An erosional event may cause the migration of contamination soil directly into the environment of Darby or Cobbs Creek, increasing the existing public health threat posed by ingestion of organisms from the Creek which are contaminated with PCBs.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response actions outlined in this funding request, may present an imminent and substantial endangerment to the public health, welfare, or the environment.

V. PROPOSED ACTIONS AND COSTS

The actions proposed in this Funding Request are intended to remove high concentrations of hazardous substances and minimize the further migration of high concentration PCBs and PAHs into the environment. In addition to posing a threat to human receptors via incidental ingestion and inhalation of surface soil, these hazardous substances which exist immediately adjacent to the Darby Creek and threaten to release into the Creek, pose a potential threat to

aquatic receptors. The Action will not result in the complete removal of hazardous substances from the Site. Instead, the response action focuses on high concentrations of PCBs and PAHs which are exposed at the surface and/or are present in the shallow subsurface soil and may further migrate into the environment. Post Removal Site Controls are not required at this time since the Site is still undergoing EPA investigation and remedy selection activities under the NPL process. The Removal Action specifically addresses threats posed by a portion of the Site referred to as the Southern Industrial Area (SIA) in which high concentrations of polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs) are located, as proposed below (a map depicting the approximate location of the SIA is included as Attachment A).

A. Proposed Actions

1. Mobilize/demobilize personnel and equipment.
2. Implement facilities and measures (e.g., installing roads and fencing) to facilitate and control access and provide security to facilitate efficient performance of the Removal Action and minimize exposure to hazardous substances during the response action.
3. Implement erosion and sedimentation control features (e.g., silt fencing and vegetative cover) to minimize migration of PCBs contamination from the SIA area during implementation of the Removal Action.
4. Implement storm water management controls during the removal action which minimize the migration of storm water into the area subject to response activity and prevent the migration of potentially PCB-contaminated storm water; actions may include construction of berms or trenches and pumping and temporary containment of potentially PCB-contaminated storm water.
5. Treat, waters which may be accumulated during activities and discharge such waters to local sewage treatment plant. Or, if this arrangement is not feasible, dispose waters off-Site in accordance with CERCLA 121(d)(3) and 40 C.F.R. 300.440 and 40 C.F.R. 761.61.
6. Prepare and maintain temporary storage for hazardous substances generated during the Removal Action.
7. Excavate and remove soil contaminated with PCBs such that PCBs concentration in soil is less than 100 mg/kg. Excavation depth shall be limited to the depth of ground water, shall not compromise the stability of any structure, and shall not extend deeper than 8 feet.
8. Cover all areas in which PCB contamination in the soil is not removed pursuant to Item #7 and is above 100 mg/kg with a cap/cover meeting the requirements of 40 C.F.R. 761.61 and construct in order to promote drainage away from the PCB-contaminated soil that remains.

9. Excavate and remove remaining soil contaminated with PCBs such that PCBs concentration in surface soil (0 to 6 inches) is less than 25mg/kg.
10. Grade and cover remaining soil contaminated with PCBs greater than 10 mg/kg in a manner which minimizes the migration of PCBs toward Darby Creek.
11. Dispose off-site the hazardous substances (e.g., PCB-contaminated soil) identified above, and other wastes associated with the Removal Action, in accordance with CERCLA 121(d)(3) and 40 C.F.R 300.440 and 40 C.F.R. 761.61. Activities may include sampling, bulking, consolidating, drumming, pumping, or otherwise handling the hazardous wastes, hazardous substances, liquids, and wastes to ensure that they are properly transported.
12. Backfill excavated areas and place fill material such that drainage is shed away from contaminated soil areas.
13. Remove access and security measures and backfill and restore ground disturbed by installation of access and security measures.

B. Contribution to Remedial Performance

The proposed Removal Action is not expected to be inconsistent with or hinder any Remedial Actions at the Site. The Remedial Action for the Clearview Landfill has not yet been selected.

C. Compliance with ARARs

The Removal Action will attain ARARs to the extent practicable given the exigencies of the situation. The following is a summary of the ARARs identified to date that may be applicable or relevant and appropriate to the Removal Action:

- Construction of an on-Site cover shall consider the requirements of 40 C.F.R. 761.61(a)(7) to the extent practical considering the exigencies of the situation.
- The Clean Water Act – Ambient Water Quality Criteria (AWQC) (40 C.F.R. Part 131) are non-enforceable guidelines developed for carcinogenic and non-carcinogenic compounds for the protection of human health and aquatic life. AWQC may be used to assess need for remediation of discharges to surface water.
- Pennsylvania Water Quality Standards (25 PA Code, Chapter 93) are surface water quality standards promulgated for protection of human health and aquatic life. These may be used to assess need for remediation of discharges to surface water.
- Clean Water Act Effluent Limitations for Point Source Discharge (40 C.F.R. Part 122) establishes National Pollutant Discharge Elimination System (NPDES) program requirements for discharge of treated water to a point source.

- Erosion Control Regulations (25 PA Code, Chapter 102) provides requirements for erosion and sedimentation control plans, permits, etc.
- Stormwater Management Act of 1978 (Act 167) requires the implementation of measures to control stormwater runoff.
- Federal Water Pollution Control Act (40 C.F.R. Part 116.3) is potentially applicable to any discharges at the site.
- National Archeological and Historic Preservation Act (132 C.F.R. 229) may be applicable if any prehistoric, historic, or archeological artifacts are encountered during site remediation.

The EPA RPM has requested that PADEP provide any potential ARARs by October 7, 2011.

D. Estimated Costs

The proposed distribution of funding is as follows:

Extramural Costs	Total
Regional Allowance Costs: (ERRS contractors and subcontractors)	\$ 1,095,793
Other Extramural Costs Not Funded from the Regional Allowance: START Contractor	\$ 215,391
TOTAL REMOVAL ACTION PROJECT CEILING	\$ 1,311,184

VII. EXPECTED CHANGE IN SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If no action is taken or the action is delayed, the threat of additional or potential release of hazardous substances from the Lower Darby Creek Area Superfund Site – Clearview Landfill into the environment is inevitable.

VIII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues pertaining to the Lower Darby Creek Area Superfund Site – Clearview Landfill Site.

IX. ENFORCEMENT

The EPA Region III Office of Enforcement has been provided with all background information available regarding this Removal Action to pursue enforcement actions pertaining to

the Lower Darby Creek Area Superfund Site – Clearview Landfill (See attached Confidential Enforcement Addendum).

The total EPA costs for this removal action based upon full-cost accounting practices that will be eligible for cost recovery are estimated to be \$

Direct Extramural Costs	\$ 1,311,184
Direct Intramural Costs	\$ 64,000
Total, Direct Costs	\$ 1,375,184
Indirect Costs (67.13 % x Direct Costs)	\$ 923,161
Estimated EPA Costs for a Removal Action	\$ 2,298,345

X. RECOMMENDATION

This Action Memorandum decision document represents the recommended Removal Action for the Lower Darby Creek Area Superfund Site – Clearview Landfill Site in Philadelphia and Darby, Pennsylvania, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. Conditions at the Site meet the NCP Section 300.415(b)(2) factors for a removal and I recommend your approval of the Removal Action. The total project ceiling will be \$ 1,311,184. Of this, an estimated \$ 1,095,793, comes from the Regional Removal Allowance.

Action by the Approving Official:

This Action Memorandum represents the selected Removal Action for continuing the Removal Action at the Lower Darby Creek Area Superfund Site – Clearview Landfill Site, in Darby Township and the City of Philadelphia, Pennsylvania, developed in accordance with CERCLA as

¹Direct Costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.

amended, and not inconsistent with the NCP. This decision is based on the administrative record for the Site.

Pursuant to Section 113(k) of CERCLA, 42 U.S.C. 9613(k) and EPA delegation No. 14-22, I hereby establish the documents identified in Attachment B hereto as the Administrative Record supporting the issuance of the Action Memorandum.

I have reviewed the above-stated facts and based upon those facts and the information compiled in the documents described above, I hereby determine that the release or threatened release of hazardous substances at and/or from the Site presents or may present an imminent and substantial endangerment to the public health or welfare or to the environment. I concur with the Removal Action at the Lower Darby Creek Area Superfund Site – Clearview Landfill Site as outlined in the Action Memorandum.

APPROVED: Dennis P. Carney
Dennis Carney, Director
Office of Preparedness and Response
EPA Region 3

DATE: 9/27/11

Attachments:

- A. Enforcement Confidential Memo
- B. Administrative Record documents