# STATEMENT OF BASIS

## RCRA CORRECTIVE ACTION PERMIT MODIFICATION

**E.I. du Pont de Nemours & Company, Incorporated**
**Pompton Lakes, New Jersey**

**EPA ID Number NJD002173946**

## I. INTRODUCTION AND PROPOSED REMEDY

This Statement of Basis ("SB") outlines the United States Environmental Protection Agency's ("EPA") proposed corrective action decisions for the E.I. du Pont de Nemours & Company ("DuPont") Pompton Lakes Works (PLW), 2000 Cannonball Road, Pompton Lakes, and Passaic County, New Jersey.

DuPont is subject to the Corrective Action program under the Resource Conservation and Recovery Act ("RCRA"). The corrective action program is designed to ensure that facilities investigate and, if necessary, clean up any releases of hazardous wastes or hazardous constituents that may have occurred at their properties (including any releases that have migrated off-site). Pursuant to this program, DuPont has conducted numerous environmental investigations to characterize the nature and extent of contamination attributed to the DuPont facility and has implemented numerous interim corrective measures to address on-site and off-site contamination.

This SB includes an overview of corrective action efforts implemented at DuPont's facility and off-site, and explains why EPA is proposing a permit modification to impose the proposed remedy to address the contamination at the Acid Brook Delta ("ABD"). Additional detail for this remediation will be imposed through approval of the ABD Area Revised Corrective Measures Implementation Work Plan ("CMIWP"), dated September 2011, which may be further revised as additional information on the project becomes available.

This proposed permit modification is limited to the ABD study area, which is one of the 202 solid waste management units ("SWMUs") and areas of concern ("AOCs") that must be addressed by the Permittee. Remedy selection for the other remaining AOCs will be proposed in permit modifications when investigations have been completed and remedies proposed by the Permittee and evaluated by the government. Opportunities for public participation will continue to be provided through public notices as well as informal meetings.

The ABD Delta investigation looked at three major components -- the ABD sediments, the Uplands Soils, and the Shoreline Properties. EPA is proposing as the final remedy for the ABD, dredging of approximately 68,000 cubic yards of sediments from 26 acres of the Lake, which are contaminated primarily with mercury and lead, which will be removed and disposed of at an authorized off-site disposal facility. The proposed remedy also provides for the excavation of 7,800 cubic yards of soil from approximately one acre of the uplands area, contaminated with mercury and lead, which will also be disposed of at an authorized off-site disposal facility. It was determined that the Shoreline Properties were not impacted by ABD sediments during historic storms, and no corrective work is being proposed for them.

Information summarized in this SB is available in greater detail in the relevant documents identified herein and included in the Administrative Record for this facility. EPA encourages the public to review these documents in order to gain a more comprehensive understanding of environmental conditions at the DuPont PLW and the RCRA activities conducted to date. Accordingly, the documents are available for public review at the locations provided at the end of this SB.

EPA is using the administrative procedures set forth in 40 CFR Part 124 to solicit public comments prior to making its final corrective action and permit modification decision(s) for the ABD phase. In making this decision, EPA will evaluate all information received during the public comment period that runs from November 20, 2011 to January 13, 2012.

The address for submission of written comments is provided at the end of this SB.

## II. FACILITY BACKGROUND

The DuPont PLW facility occupies approximately 570 acres of land, surrounded by mountainous areas to the north, Lake Inez (now drained) to the west and residential areas to the east and south. Two parallel valleys (Wanaque River and Acid Brook) run through the site north to south. Land use in the vicinity of the site is predominantly residential and commercial, but also includes undeveloped areas, an interstate highway (Route 287) and state-owned forest. (See Attachment 1.)

DuPont PLW conducted operations at the site from 1902 to April 1994, when the facility ceased its operations. Products manufactured included explosive powder (e.g., mercury fulminate and lead azide) and finished products (e.g., detonating fuses, electric blasting caps, metal wires, and aluminum and copper shells). The manufacturing operations and waste management practices resulted in contamination of the soil, sediment, and groundwater. The primary contaminants in the soil and sediments are lead and mercury. Groundwater contaminated with chlorinated volatile organic compounds (“VOCs”), such as tetrachloroethylene (“PCE”), trichloroethylene (“TCE”), cis 1,2-dichloroethylene, and vinyl chloride, has migrated off-site from the Eastern Valley part of the facility towards Pompton Lake.

Soil and sediment contamination occurred off-site along the Wanaque River, which flows through the Western Valley side of the facility. Operations in the Western Valley ceased in the mid-1920's and relocated to the Eastern Valley side of the plant. Due to releases of lead and mercury to Acid Brook, soil along Acid Brook was contaminated. Acid Brook flows from north to south through the Eastern Valley and discharges into the Acid Brook Delta ("ABD") of Pompton Lake, resulting in contamination of the ABD sediments.

Between 1991 and 1997, Acid Brook was the subject of remedial efforts that included streambed remediation and excavation of floodplain soil. The cleanup at the ABD in Pompton Lake is now the focus of this permit modification. DuPont submitted a permit modification application in April 2011 to propose final remedies for the ABD.

## III. REGULATORY AND PERMIT FRAMEWORK

In 1988, DuPont entered into an Administrative Consent Order ("ACO") with the New Jersey Department of Environmental Protection ("NJDEP"). In 1992, EPA issued to DuPont a Hazardous and Solid Waste Amendments ("HSWA") permit under the Resource Conservation and Recovery Act ("RCRA"). The NJDEP ACO and the EPA HSWA Permit required DuPont to conduct investigation and cleanup of contamination on and/or migrating from the site.

As a result of the RCRA Facility Assessment ("RFA") conducted in 1986 and subsequent investigations conducted under the permit and Order, 202 solid waste management units and/or areas of concern ("SWMUs/AOCs") were identified. The combined remedial investigation reports for the Northern Manufacturing Area, Western Manufacturing Area, and Eastern Manufacturing Area characterize conditions at the 202 SWMUs/AOCs on- and off-site. The off-site SWMUs/AOCs include: the Wanaque River, Acid Brook, Acid Brook Delta, and the groundwater plume.

In addition to the Remedial Investigation Reports ("RIR") for the Northern, Eastern, and Western Manufacturing Areas, all three of which are dated June 30, 2010, there is the ABD RIR, dated December 19, 2008, the RIR for Pompton Lake Uplands, dated June 30, 2010, Acid Brook Delta Area Remedial Action Selection Report ("RASR")/Corrective Measures Study ("CMS"), dated September 18, 2009, and the Acid Brook Delta Area Revised Corrective Measures Implementation Work Plan, dated September 2011.

Remedial activities have been implemented both on-site and off-site, to protect human health and the environment. These included off-site soil cleanup, on-site groundwater extraction, and long-term monitoring. Stabilization of the groundwater contaminated with volatile organic compounds ("VOCs") is being implemented through a groundwater pump and treat system. The groundwater is treated and the clean water is discharged into infiltration basins to flush through the contaminated aquifer. Numerous soil

remedial and interim remedial activities have been implemented on-site to remediate and stabilize the contamination. In addition, due to off-site vapor intrusion, vapor mitigation systems have been installed by DuPont and third party contractors at more than 240 residences affected by the plume of VOC contaminated groundwater located between the site and Pompton Lake. Planning and installation activities are underway for additional homes.

The remainder of this SB will focus on the proposed remedy selection for the ABD and the permit modification provisions for cleanup of the ABD.

## IV. ACID BROOK DELTA ("ABD") OF POMPTON LAKE STUDY AREA

Pompton Lake is a 196-acre impoundment of the Ramapo River that was originally formed in 1858 when the Pompton Lake Dam was constructed by the U.S. Army Corps of Engineers at the southern end of the lake. The Ramapo River flows over the Pompton Lake Dam. Approximately 1.5 miles downstream, the Ramapo and Pequannock Rivers join to form the Pompton River. The Pompton River flows into the Passaic River, which empties into Newark Bay. The dam was enlarged in 1908. When the dam was enlarged, the area that is now the delta was submerged.

Current uses of the lake include boating and fishing. However, recreational activities on the lake are restricted. Due to elevated levels of coliform and bacteria within the surface water, swimming and wading in the lake are prohibited. There is a state consumption advisory for fish due to mercury from DuPont and other sources. The advisory also cites polychlorinated biphenyls, chlordane, dioxin, and DDX (DDT, DDE and DDD), which are from sources other than the DuPont PLW facility.

It is anticipated that current use of the lake will continue into the future. Restrictions on human use can be enforced as they currently are; however, restrictions cannot be applied to ecological receptors. While the potential for unacceptable risks were shown to be minimal, the ecological data for the delta indicated that mercury concentrations in some biota were higher in the delta than in the reference areas.

The ABD Area includes three general areas (1) the portion in Pompton Lake (i.e., lake sediments) termed the delta, (2) the uplands portion defined as the soils between Lakeside Avenue and the water's edge along the lake (including wetland areas), and (3) the shoreline soils adjacent to Pompton Lake south of Lakeside Avenue Bridge and north of the Pompton Lake Dam. (See Attachments 1, 2, and 3.) The ABD lake sediments include the portion of Pompton Lake south of the Lakeside Avenue Bridge, east of the discharge point of Acid Brook into Pompton Lake, and west of the centerline of the former Ramapo River channel (as defined by the 2007 bathymetric survey of Pompton Lake).

(Note: The delineation of mercury is explained in greater detail in the Revised Acid Brook Delta Remedial Investigation Report ("ABD RIR"), dated June 19, 2008.)

## V. INVESTIGATIONS OF THE ABD STUDY AREA

Between 1995 and 2008, studies were conducted within the ABD area, including multiple phases of ecological investigation, scientific studies, and remedial investigations. In March 2004, NJDEP required DuPont to delineate the ABD sediment mercury contamination to 2 mg/kg. This is not a remediation goal, but a level much lower than human health standards that facilitated development of Remedial Action Objectives protective of ecological receptors. The major reports of the ABD Study Area include the Remedial Investigation Report ("RIR") for the ABD, dated December 19, 2008, the RIR for the Uplands, dated June 30, 2010, the Remedial Action Selection Report ("RASR")/Corrective Measures Study ("CMS"), dated September 18, 2009, and the ABD Area Revised Corrective Measures Implementation Work Plan, dated September 2011.

There are both human and ecological receptors in the ABD study area. Humans may have direct contact with surface water and sediment during recreational activities although recreational activities on the lake are restricted due to elevated levels of coliform and bacteria within the surface water. Swimming and wading in the lake are prohibited. It is expected that current use of the lake will continue into the future. Ecological receptors, aquatic species in particular, have direct contact with surface water and sediment. Both humans and ecological receptors may have direct contact with surficial soil and, to a lesser extent, subsurface soil. Surface water flow (i.e., rainfall) may potentially transport soil containing constituents of concern ("COCs") in the Uplands to the lake.

Therefore, the focus on risk management for impacted sediment is on the potential concern for ecological receptors.

### A. Acid Brook Delta Sediments

The ABD sediment is the lake sediment in the area adjacent to the discharge of Acid Brook into Pompton Lake. The medium of concern in the ABD area is sediment.

Several site-related metals have been investigated as part of the ABD investigations including lead, mercury, copper, selenium, barium, and zinc. Barium, copper, selenium, and zinc concentrations are below the current the NJDEP Residential Direct Contact Soil Remediation Standards ("RDCSRS") in N.J.A.C. 7:26D. In areas where lead is above RDCSRS, the lead-impacted area will be addressed by remediation of the co-located mercury-impacted area. These constituents exhibit similar spatial distributions in that the highest concentrations of each are near the shore in the vicinity of the Acid Brook discharge. Mercury is the sole COC that methylates -- i.e., converts from the inorganic form to an organic compound through biological processing with certain bacterium to add a methyl-group-- and therefore, has the potential for bioaccumulation. Methyl mercury was identified as a COC in preliminary studies. It was, however, determined that methyl mercury distribution was based primarily

on location and not on the concentration of mercury in the sediment. Therefore, mercury is the constituent driving the remediation both, in areal extent and in depth, and is the primary COC. The highest mercury concentrations, greater than 100 milligrams per kilogram, (mg/kg) were generally found in the sediment near the Acid Brook discharge.

To summarize the results of the ABD sediment investigation:

- Sediment thickness ranges from 0 to 5.2 feet. Sediment thickness, although variable, is generally less than 2 feet. Sediment is often, but not always, underlain by peat. (The peat is the original ground surface prior to the construction of the dam. The underlying peat ranges in thickness from 0 to 4.3 feet with an average thickness of 1.9 feet.)

- Water depth ranges from less than 1 foot near the mouth of Acid Brook to more than 18 feet near the Pompton Lake Dam. In sediment, mercury concentrations along with other site-related metals generally decrease with distance from the mouth of Acid Brook. (Mercury was identified as the primary COC.)

- Surface water methyl mercury concentrations represent an integration of methyl mercury produced by the underlying sediment. The data clearly shows that the near-shore sediment is the most important site of mercury methylation in the ABD area.

- In general, the distribution pattern of mercury in sediment is consistent with the physical parameters of the conceptual model -- i.e., the mercury concentrations decrease with distance from the discharge point of Acid Brook and increases with sediment depth, which is consistent with the operational history of the DuPont facility and are limited to the sediment overlying the peat.

B. Uplands Area Remedial Investigation

The Uplands Area encompasses approximately 2.6 acres south of Lakeside Avenue. Of those 2.6 acres, approximately 0.9 acres is a relatively flat area situated approximately 8 feet above the lake, 0.7 acres is a wooded slope, and 1 acre is relatively flat wetlands along the lake's shore.

For the Uplands, soil is the primary medium of concern. Barium, copper, lead, mercury, selenium, and zinc were identified as COCs for either human health and/or ecological receptors in some areas of the Uplands. Lead and mercury are the primary COCs with detected concentrations above the NJDEP RDCSRS.

To enhance investigation efforts, the uplands were divided into five areas (Areas A through E) to delineate the vertical and horizontal extent of site-related constituents in soil. Existing soil analytical data was used to focus the delineation sampling. Horizontal delineation in surface soil (0 to 0.5 feet) was based on the lower value of NJDEP's November 2009 RDCSRS and ecological soil delineation criteria allowing for unrestricted use of the Uplands. The RDCSRS was used as the criteria for evaluating soil greater than 0.5 feet deep in the Uplands and surface soil for the shoreline.

Sampling results indicate that Areas A through E were delineated to the applicable criteria. (The results of this investigation are presented in the Pompton Lake Uplands RIR, dated June 30, 2010.)

C. Shoreline Properties Remedial Investigation

Soil sampling within the floodplain was also conducted to determine whether historic flooding may have deposited sediment containing site-related metals onto the shoreline properties. A floodplain analysis was completed to identify the low-lying areas of the adjacent properties along the lake. Samples were then collected from properties along the western shoreline adjacent to Pompton Lake south of Lenox Avenue and north of the Pompton Lake Dam, and analyzed for lead and mercury for characterization purposes. The results of the shoreline sampling indicated that the surface soil had not been impacted by ABD sediment during historic flooding events. The results of this investigation are presented in the Uplands RIR.

D. Sediments at Two Lower Ramapo River Channel Areas

During the remedial investigation mercury delineation studies, sediments in two lower Ramapo River channel areas upstream of the dam with elevated mercury detections were identified for potential inclusion in the remediation area targeted for sediment removal. One area is located on the northern side of an island, and the other area is located adjacent to the western shore at the beginning of the channel. However, after further delineation sampling in the spring of 2010, we no longer believe that removal of the sediments at the two areas is needed to meet the qualitative Remedial Action Objectives described in Section VI., below. The areas either exhibit low mercury concentration or are overlain by several feet of non-impacted sediment. We expect these conditions will be maintained or improved following implementation of the selected remedies and re-establishment of normal flow conditions over time. (See Appendix A in the CMIWP, dated September 2011.)

See Attachments 2, 3, 4 and 5 for the contamination delineation of the ABD study area.

(See also the Acid Brook Delta Area Remedial Action Selection Report/Corrective Measures Study (September 2009) for a more comprehensive discussion.)

## VI. REMEDIAL ACTION OBJECTIVES ("RAOs")

RAOs were developed to address potential unacceptable risks associated with site conditions and the exposure pathways identified. They are media-specific goals that are aimed at protecting human health and the environment. The RAOs were developed as long-term, media-specific goals and were used to assist in selecting a remedial alternative to address elevated mercury concentrations in sediment and various metals concentrations in Uplands Soils.

For this project, potential exposure for human receptors to impacted soil and sediment is expected to be minimal. Previous investigations indicated that the ABD near-shore area had higher dissolved mercury and methyl mercury concentrations in surface water when compared to portions of the ABD area further from the shore and the rest of Pompton Lake. For ecological receptors, both the Ecological Risk Assessment ("ERA") and triad weight of evidence approach indicated that the sediment does not pose an unacceptable risk to benthic macroinvertebrates. (See the Acid Brook Delta Ecological Investigation Reference Area Evaluation and Phase 1 Data Report, dated January 1997, and the Acid Brook Delta Ecological Investigation Phase 2 Report, dated January 2003.)

In developing the RAOs for the ABD study area, both quantitative and qualitative RAOs were considered in analyzing ways to reduce potential exposure to COCs in soil and sediment.

### A. Quantitative RAO for Uplands Soil

Quantitative RAOs are typically defined as promulgated numerical criteria that have been developed to be protective of human health and/or ecological receptors for a particular medium (i.e., sediment, soil). The specific values used for humans may be different than those for ecological receptors because of the differences in toxicity and exposure between the two receptor groups and the medium type. Therefore, while the concentration of a particular constituent in sediment may be unacceptable for ecological receptors, the same concentration in sediment may not result in an unacceptable risk for humans.

For Uplands Soil, both human health and ecological criteria have been selected as the RAOs. As presented in the approved work plan for surface soil (0 to 0.5 foot), the RAOs are based on achieving the lower value of the two, the Residential Direct Contact Soil Remediation Standards and ecological soil delineation criteria. Using the lower value of the RDCSRS and ecological soil delineation criteria allows protection for use of the Uplands by humans while also providing adequate protection for ecological receptors. For subsurface soil (i.e., deeper than 0.5 foot), the RAO is the RDCSRS. As such, the criteria for the constituents of concern ("COCs") considered in establishing the RAOs for the uplands area are provided below.

**Uplands RAOs and Removal Criteria**

| Analyte | Surface Soil Criteria (mg/kg) | Subsurface Soil Criteria (mg/kg) |
|---|---|---|
| Copper | 1,100 | 3,100 |
| Mercury | 20.5 | 23 |
| Lead | 400 | 400 |
| Selenium | 5.05 | 390 |
| Zinc | 1,507 | 23,000 |

Therefore, to achieve the project RAOs, Uplands Soil with contaminants exceeding the applicable criteria will be removed and disposed of at an authorized facility.

A. Qualitative RAO for the ABD Sediment

There are no promulgated applicable remediation standards for sediment to use as a quantitative RAO. However, remediation standards can be narrative standards to which contaminants must be treated, removed or otherwise cleaned in order to meet health risk or environmental standards. As such, qualitative RAOs (narrative standards) were developed for the ABD area sediment to set long-term goals for protecting human health and the environment.

It is anticipated that the current use of the lake will continue in the future by both human and ecological receptors. Restrictions on human use can be enforced as they currently are; however, restrictions cannot be applied to ecological receptors. While the potential for unacceptable risks were shown to be minimal, the ecological data for the ABD area indicated that mercury concentrations in some biota were higher in the ABD area than in reference areas.

Previous investigations concluded that mercury in ABD area sediment appears to be tightly bound to the fine-grained particles as indicated by toxicity characteristic leaching potential ("TCLP") data. However, biological processes in the upper few centimeters of sediment are able to mobilize some mercury in the form of methyl mercury, which then enters the food chain. Furthermore, the near-shore area within the ABD has higher dissolved mercury and methylmercury surface water concentrations when compared to portions of the ABD further from the shore and the rest of Pompton Lake.

It should be noted that the RAOs for the ABD sediment is driven by ecological risk and not human health risk. In order to be protective of ecological receptors, the following qualitative RAOs for the ABD sediment were developed:

- Reduce the potential for mercury methylation in near-shore sediment; and

- Reduce the area of exposure of ecological receptors to elevated mercury concentrations in ABD sediment.

Using multiple lines of evidence (such as dissolved mercury study, methyl mercury potential study, toxicity study, and ecological risk assessment) along with the results from numerous delineation core samples, the RAO Limit line for the ABD was established. The region to the west of the RAO Limit line will be the area targeted for sediment removal. In the region east of the RAO Limit line, the lake characteristics are indicative of the "reference area" (or background condition) for the lake and therefore, do not warrant sediment removal. See Attachment 5 for the contamination delineation of the ABD sediment.

Note that the use of the volume-weighted spatial averaging and the Thiessen grid pattern procedure used to depict the ABD contamination is an acceptable geostatistical method for characterizing the contamination of a large study area consisting of numerous data-points. (See the Acid Brook Delta Area Remedial Action Selection Report/Corrective Measures Study, dated September 2009 for a detailed characterization of the mercury concentration.)

## VII. REMEDIAL ALTERNATIVES AND PROPOSED REMEDY SELECTION

### A. Proposed Remedy Selection

A detailed analysis was completed for five remedial alternatives to evaluate the general suitability of various remediation technologies to meet the established RAOs and specific objectives.
The following remedial action alternatives were evaluated as part of the RASR/CMS:

Alternative #1: No Action
Alternative #2: In-Situ Stabilization
Alternative #3: Capping
**Alternative #4: Removal of sediment (shallow and deep) and soil (uplands)**
Alternative #5: Removal of sediment (shallow) and soil (uplands) and Capping (sediment area beyond 5 feet deep water)

Based on the screening evaluation of the five remedial alternatives listed above, Alternatives #4 and #5 were retained for further review. We now propose to select Alternative #4: Removal of sediment (shallow and deep) and soil (uplands) because:

- Removal reduces the potential for mercury methylation in near-shore sediment within the ABD area.
- Removal increases the amount of material removed from the lake and will, therefore, increase the water storage capacity of Pompton Lake.
- There are no concerns regarding contaminant mobility if the contaminant is removed.
- There are no concerns regarding cap stability during storm events.
- There is no need for a long-term cap monitoring program.

Alternative #5 was also considered to be a viable remedial alternative for the ABD area. However, we prefer Alternative #4 because, although adequately protective, capping would decrease the depth of the Lake and therefore, its capacity. (The capacity of the Lake is important in terms of flood control.)

It should also be noted that NJDEP has a policy to reduce the mercury contamination under its New Jersey Mercury Reduction Action Plan (November 2009), which provides additional support for the Alternative #4.

(A more detailed description of the remedial alternatives and selection process is in the document, Acid Brook Delta Area Remedial Action Selection Report/Corrective Measures Study, dated September 2009.)

B. Anticipated Post-Remediation Result – Sediment

In determining the areal and vertical extent of the remedial action to meet the RAOs (i.e., the RAO Limit), the ABD sediment delineation results were statistically evaluated to develop specific objectives for addressing mercury in sediment. In addition, site-specific information collected during various investigations provided the following lines of evidence to support decisions with respect to the extent of remedial action needed and the protectiveness of the selected remedial alternative:

- Addressing sediment in the near-shore environment will reduce the greatest potential for mercury methylation; hence the bioavailability of mercury.

- Mercury concentrations in the surficial sediment beyond the proposed remedial area are greatly reduced and are also influenced by background conditions (i.e., Ramapo River).

- Mercury concentrations in the deeper sediment are stable with little potential to methylate.

- Dissolved mercury and methyl mercury in the surface water beyond the proposed RAO Limit (to the east) are similar to background concentrations.

However, it was determined that the areal extent of dredging will be slightly larger than the area defined as the Remedial Action Objective Line (see Attachment 5). Instead, the area to be dredged will be defined by Attachment 6. Furthermore, the September 2011 revision to the Corrective Measures Implementation Workplan indicated that the vertical extent of removal would vary throughout the ABD, defined by the removal depth required to achieve the sediment Remedial Action Objectives determined through sampling. The final remedy will involve dredging of the 26 acre area of all of the sediments.

In implementing the remedy to achieve the RAO objectives for the ABD sediment, the proposed remedy will result in the following:

- 100% reduction of mercury in the near-shore environment of the ABD;
- Approximately 97% reduction in mercury in the surficial sediment (0 to 0.5 feet)
- Approximately 93% reduction in mercury in the deep sediment (>0.5 feet); and
- Approximately 95% reduction overall of mercury in the ABD area.

C. Anticipated Post-Remediation Result – Soil

The final soil RAOs developed for the Uplands are protective of both humans and ecological receptors. Concentrations of COCs in soil exceeding the applicable RDCSRS will be removed and disposed of at an authorized off-site facility, thus, meeting the RAO established for the project.

## VIII. REMEDIAL APPROACH FOR THE ABD TO BE IMPOSED BY THE PERMIT MODIFICATION

This permit modification proposes to select dredging as the final remedy for the ABD and excavation as the final remedy for the Uplands soils. Additional operational details are included in the latest revision to the Corrective Measures Implementation Workplan ("CMIWP") which will be approved subsequent to this permit modification. Some of these options have already been discussed at public forums. Prior to approval of the final CMIWP, EPA will provide additional information on the various options. Some of the operational details of the project to be determined include: methods and location for treatment, locations for equipment mobilization, sediment transport routes, and specific locations for temporary storage and stabilization areas.

These are the major components of the proposed remedial approach in the CMIWP:

A. Dredging Containment System

A containment system using rigid and/or flexible methods will be installed around the ABD area to provide an engineering control to protect the surrounding water from re-suspended sediment that may be generated during dredging activities. The chosen system will enclose the removal area and will be put in place prior to any removal activities. The uplands removal area will be isolated with control measures to reduce the potential for erosion or washout from disturbed areas to uncontained areas of the ABD or other areas within the uplands.

Note: It is expected that there will be a buffer zone of approximately 50 feet between the area for targeted sediment removal and the rigid containment system. The area to be dredged will extend as close to the rigid containment system as practicable, therefore the amount of sediment to be removed will exceed the estimated 68,000 cubic yards.

B. Dredging and Excavation

ABD sediments will be dredged (in the wet) using hydraulic equipment. The sediment will be pumped or placed into small scows or other suitable containers on a barge for subsequent transport/re-handling. The removal area consists of approximately 26 acres centered at the discharge point of Acid Brook into Pompton Lake. Water depth in most of this area is less than 5 feet with the exception of the southwest portion of the removal area adjacent to the shore. Approximately 68,000 cubic yards of mercury-impacted sediment and 7,800 cubic yards of Uplands Soils will be targeted for removal. Conventional excavation equipment will be used to excavate the Uplands Soils.

Confirmation of dredging completion will be conducted using both traditional and dredge mounted survey techniques. For the Uplands Soils, removal completion confirmation surveying will be used to verify that the horizontal and vertical limits of removal have been achieved.

C. Re-handling and Solidification

The dredged sediment will be moved to the shoreline. Sediment in the ABD area is a very soft, fine-grained material with very low strength. It is expected to require solidification prior to transport and disposal to meet disposal requirements. The Uplands Soil is typical of conventional earthwork projects and may not require any solidification prior to disposal. It will likely be loaded directly into trucks for transport.

D. Sediment Transport

After all necessary treatment, the sediment and soil will be transported for disposal or re-use at an authorized off-site facility.

E. Restoration

Following dredging and removal, the Uplands area and adjacent wetlands will be restored. The restoration plan will include re-grading of the Uplands to accommodate planting with native vegetation, and placement of park amenities and pathways for public use. In the ABD, the dredged area will be restored by placing a granular layer of sand (i.e., eco-layer) over the dredged area to establish a zone for benthic community re-colonization over time. Additionally, planting and seeding of desirable aquatic native vegetation in the ABD area will take place. The plantings, along with the sand layer, will expedite restoration and increase the ecological functions of both the aquatic and benthic habitats.

F. Monitoring

Water column monitoring will be performed during the dredging and eco-layer placement activities within the ABD area to assess the potential impacts of the remedial activities (e.g., turbidity and mercury concentration). Air monitoring will be conducted during excavation, dredging, and material handling and processing activities. Monitoring will also be conducted for activities that may cause vibration (e.g., rigid barrier installation within the ABD area) at structures within a specified distance from the work area. We will also develop an appropriate post-remediation monitoring program as part of the CMIWP to monitor the effectiveness of the implemented remedies and confirm expected conditions over time.

## IX. RCRA CORRECTIVE ACTION CONCLUSIONS

EPA supports the proposed remedy selection described in the Acid Brook Delta Area Remedial Action Selection Report/Corrective Measures Study, September 2009 ("RASR/CMS") and the elements that describe the dredging of the ABD and the excavation of the Uplands Soils described in the Acid Brook Delta Area Revised Corrective Measures Implementation Work Plan, dated September 2011 ("CMIWP"). It is EPA's position that the corrective measure (or remedy) selection conforms to the requirements set forth at Permit Module VI.7(a) and (b) for corrective measure selection and the proposed CMIWP conforms with the requirements set forth at Permit Module VI.8.a for corrective measure implementation. As noted above, additional operational details of the corrective measure implementation will be established after this Permit Modification as part of the CMIWP approval.

## X. FINANCIAL ASSURANCE

The proposed permit modification incorporates provisions for financial assurance for corrective action, pursuant to 40 CFR 264.101 and Section 3004 of RCRA. The provisions list mechanisms the Permittee may use to establish financial assurance and requires that the Permittee establish and keep up-to-date a cost estimate for necessary corrective action. The initial estimate must be submitted within 90-days of the effective date of this permit modification.

## XI. PUBLIC PARTICIPATION

EPA and NJDEP have participated in the Pompton Lakes Community Advisory Group ("CAG") since October 2010. EPA has asked for input from the community on what type of information would be most useful. As a result, in many of the CAG sessions we have made presentations and responded to questions from the community. In addition, DuPont conducted a poster session in July 2011 in which they presented many of the options to be determined in the CMIWP. EPA conducted an Availability Session on the proposed remedy selection for the ABD on October 20. EPA, NJDEP and DuPont will continue to be responsive by conducting activities and developing communications tools to provide timely dissemination of information to the public and encourage ongoing, two-way communication between DuPont and external stakeholders.

These activities will include: meetings, outreach office, website presence, news releases, and fact sheets.

EPA requests comments from the community on the proposal to issue a permit modification to DuPont PLW's HSWA permit to impose a remedy selection to address the elevated mercury concentration in the Acid Brook Delta study area sediments and soils attributed to DuPont. EPA has established a public comment period from November 20, 2011 to January 13, 2012, to encourage participation in this decision-making process. Finally, EPA requests public comments on the proposal to modify the facility's HSWA permit to the proposed remedy selection to address Acid Brook Delta in Pompton Lake. EPA will respond to written public comments received during this time period. If EPA determines that changes are required with regard to the proposed remedy selection for the ABD, the Agency will allow additional time for public comment on the revised SB. Public comments will be summarized, along with EPA's response to comments, in the Final Decision and Response to Comments to be issued subsequent to the public comment period.

This Statement of Basis, the proposed permit modification, and other relevant documents can be reviewed at:

Pompton Lakes Public Library
333 Wanaque Avenue, Pompton Lakes, New Jersey
(973) 835-0482
http://www.pomptonlakeslibrary.org/libraryinfo.stm

The administrative record and all relevant documents pertaining to the facility may be reviewed Monday through Friday from 8 AM to 4 PM at:

U.S. EPA RCRA Records Center
290 Broadway, 15th Floor, Room 1538
New York, NY 10007-1866
(212) 637-3043

The proposed permit modification and relevant documents are also available at:

EPA website:
http://www.epa.gov/region02/waste/dupont_pompton/index.html

and at:

New Jersey Department of Environmental Protection website:
http://www.nj.gov/dep/srp/community/sites/dupont_pompton_lakes/more_site_info.htm
Mindy Mumford, Office of Community Relations, (609) 777-1976

For additional information about the proposed permit modification and corrective action decision please contact Clifford Ng, Project Manager, EPA RCRA Programs Branch, at (212) 637-4113 or email: ng.clifford@epa.gov.

To submit written comments, contact:

Mr. Adolph S. Everett, P.E.
Chief, RCRA Programs Branch
U.S. Environmental Protection Agency
Region 2
290 Broadway, 22nd Floor
New York, New York 10007-1866
Telephone: (212) 637-4109

Attachments:

1: Fig. 1 from the Permit Modification Application 4/2011 (Quadrant map)
2: Fig. 1A from the RASR 2009 (Areal Extent of ABD)
3: Fig. 2 from the Permit Modification Application 4/2011 (Uplands site plan)
4. Fig. 3 from the Permit Modification Application 4/2011 (ABD Remedial Approach)
5. Fig. 12 from the RASR 2009 (ABD sediment mercury concentration polygons)
6: Fig. 15 from the RASR 2009 (Remedial Alternative #4 -- Removal)