October 20, 2011

DuPont Pompton Lake Remediation Project :

RCRA Permit Modification

GOALS FOR TODAY:

- Review Proposed Remedy Selections for the Acid Brook Delta and Uplands
- Explain the Status of the RCRA Permit Modification Process
- Address Questions on Rationale for Proposed Remedies

Issues To Be Addressed

- Permit process and status
- Objectives of the remediation
- Scope of the work
- Scheduling

Why is a Permit Modification Needed?

- Original permit addressed investigation of site
- Draft Permit Modification will propose remedies
- Provides opportunity for feedback from stakeholders
- Imposes final remedies for the Acid Brook Delta

What is the Acid Brook Delta?

- Acid Brook flows from the DuPont site through Pompton Lakes to Pompton Lake
- The Acid Brook Delta is where the Brook enters the Lake
- Contamination currently exists in the Lake (sediment contamination) and in the uplands (soil contamination)

What Caused the Contamination?

- During operation of the facility, contamination from metals drained from facility processes through the Brook to the Lake
- All processes have been closed, the buildings torn down
- The Brook was remediated 15 years ago
- Sampling is planned to assure that Brook has not been re-contaminated

Remediation Project Summary

- Remedial approach for sediment is hydraulic dredging and restoration
- Remedial approach for upland soil is conventional excavation and restoration
- DuPont has agreed not to utilize on-site reuse as an option

Remedial Action Objectives (RAOs)

- Uplands Soils (Quantitative RAOs)
  - There are numerical human health and ecological standards for soils. So, there are discrete "numbers" that must be achieved for remediation of the uplands soils
- Acid Brook Delta Sediments (Qualitative RAOs)
  - There are no promulgated ecological "numbers" for sediments, only screening benchmark values
  - Qualitative standards were developed to set long term goals to protect human health and the environment

Upland Soil Remedial Action Objectives

- Removal criteria based on the lower of NJDEP Residential Direct Contact Soil Remediation Standards or ecological benchmarks

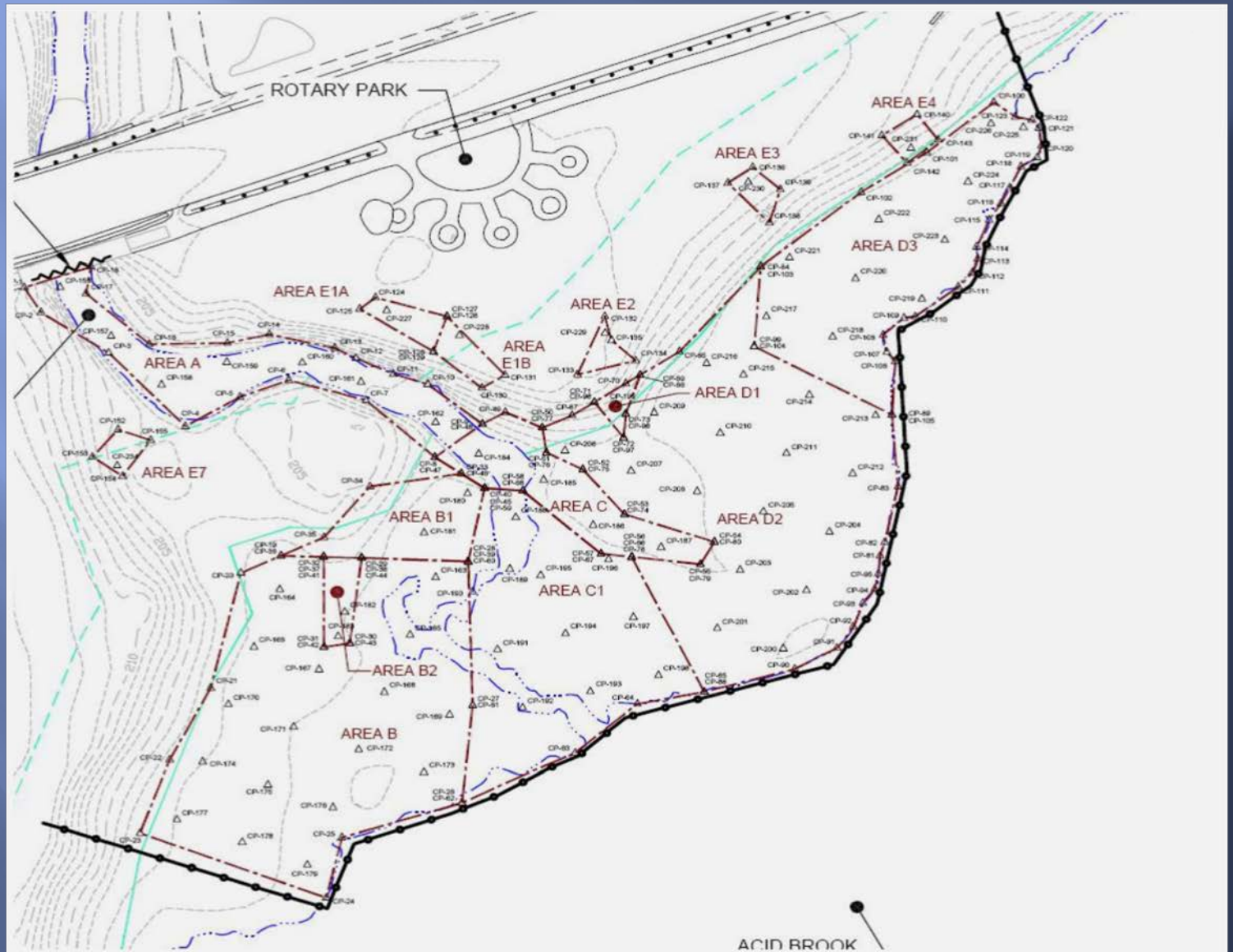
Table 2-1: Uplands RAOs and Removal Criteria

Analyte	Surface Soil Criteria (mg/kg)	Subsurface Soil Criteria (mg/kg)
Copper (Cu)	1,100	3,100
Mercury (Hg)	20.5	23
Lead (Pb)	400	400
Selenium (Se)	5.05	390
Zinc (Zn)	1,507	23,000

Proposed Scope of Work for Pompton Lake Uplands Soil

- Soil will be excavated from 17 specific areas across ~1 acre
- Removal depths range from 0.5 to 8.5 feet
- Approximately 7,800 cubic yards will be excavated
- Excavation using conventional equipment
- DuPont is required to obtain state and local permits necessary to complete remediation

Extent of Uplands Soil Remediation

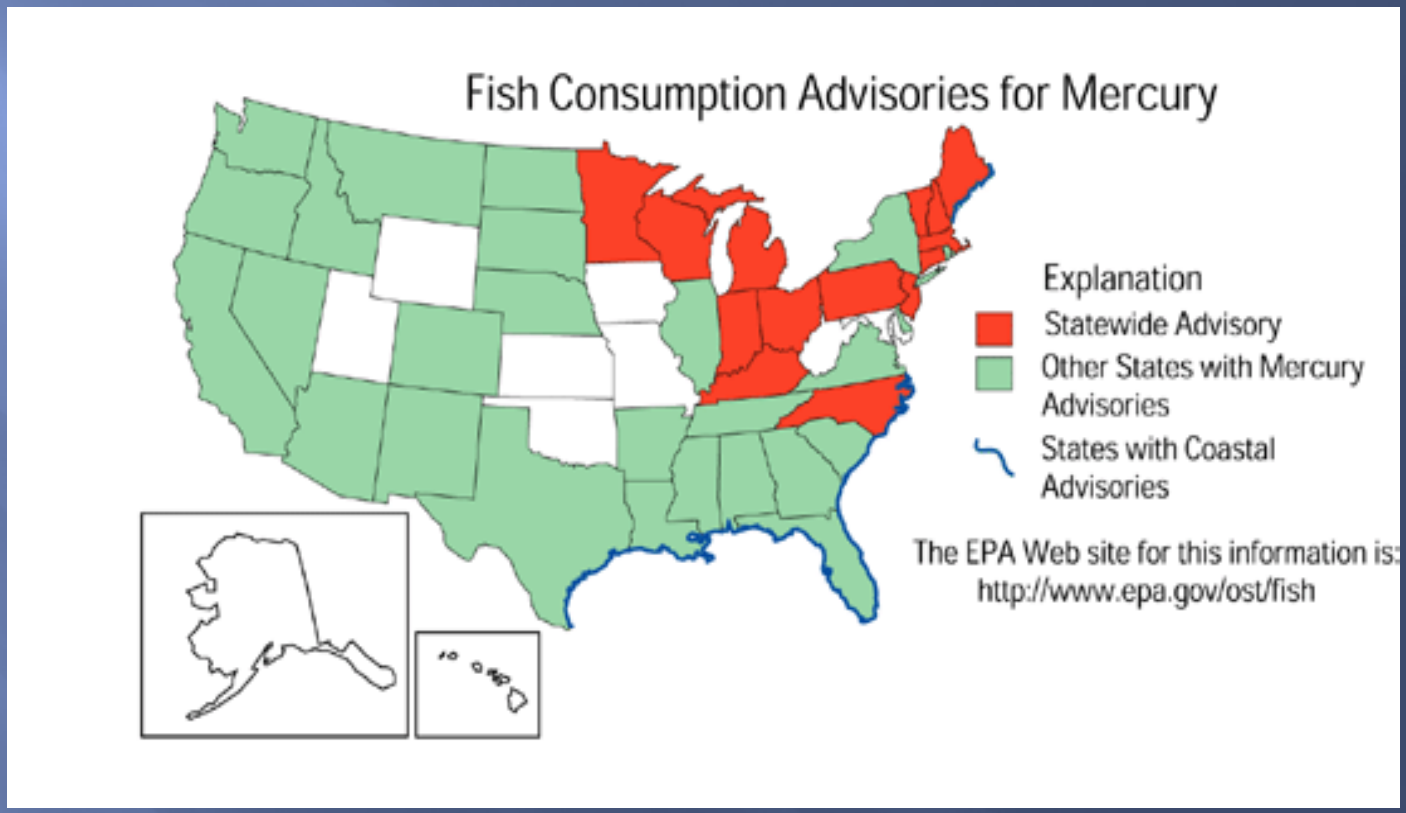


Acid Brook Delta (Pompton Lake) Dredging

- DuPont is responsible only for their mercury contribution.
- There are upstream (background) contributions of mercury from the Ramapo River and air deposition
- There are state-wide mercury fishing restrictions due to ubiquitous mercury in the environment
- Volume-Weighted Spatial Averaging
  - Geostatistical data evaluation technique to map discrete sediment samples

Additional contributors to mercury in lakes include:

- **atmospheric deposition**
  - man-made - coal incinerators, medical and municipal wastes
  - natural - volcanoes, forest fires, geologic deposits, ocean volatilization
- **point sources (mines, landfills, manufacturers of metals, alkali and cement)**
- **upstream sources can be transported and deposited downstream**
- **Information Sources:**
  - http://www.usgs.gov/themes/factsheet/146-00/
  - http://www.epa.gov/hg/



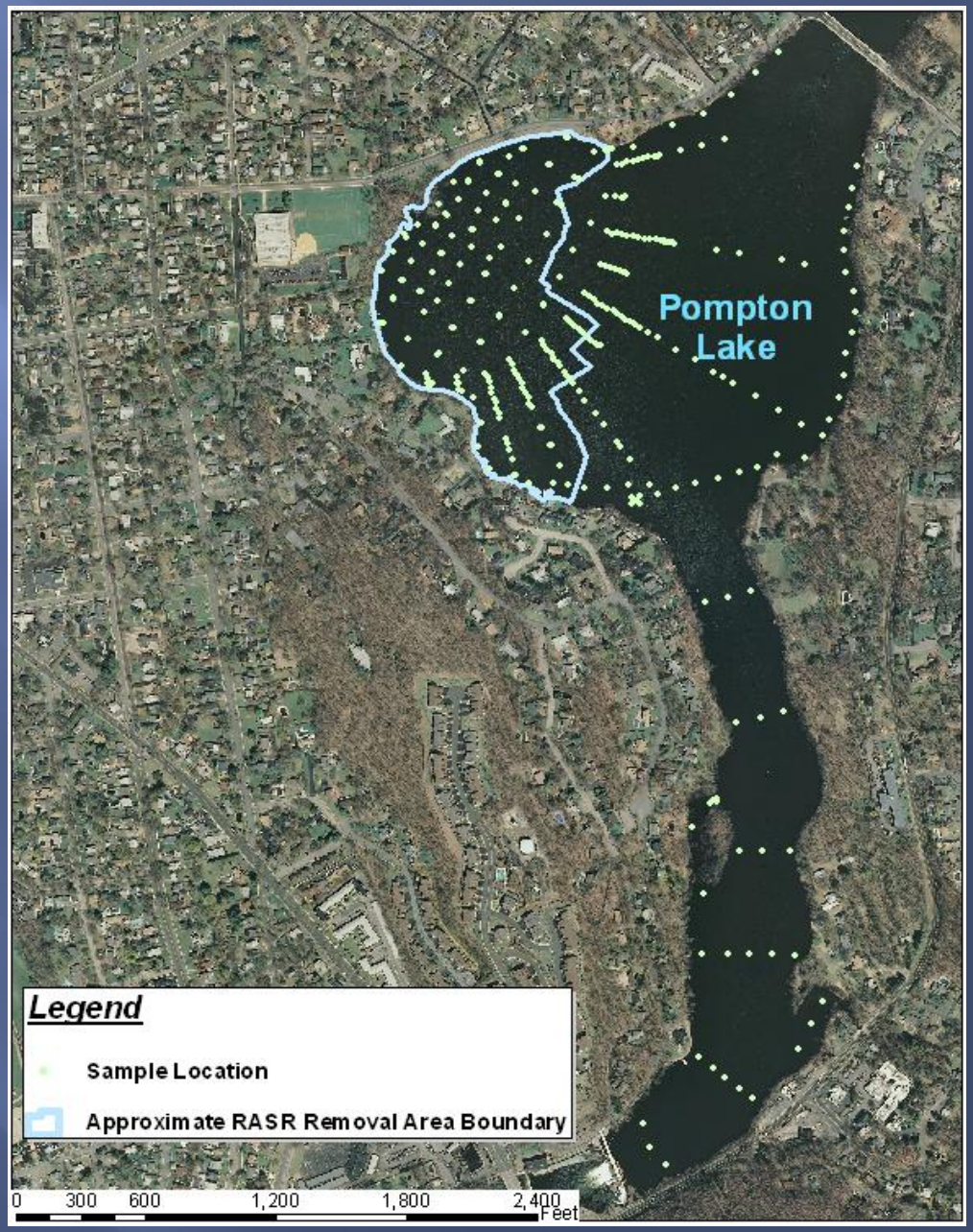
Fish Consumption Advisories for Mercury

* 40 States have issued advisories for methylmercury
* 13 states have statewide advisories for some or all sportfish from rivers or lakes
* Coastal areas along the Gulf of Mexico, Maine and the Atlantic Ocean from Florida through NC are under advisories for methylmercury for certain fish

Assessment of Lake Contamination

- Ten metals have been evaluated
- Surface and subsurface sediment samples were taken from the Delta area and Ramapo River Channel
- Transects were taken radially outward from the Delta
- Mercury which can methylate is the primary constituent of concern
- Other hazardous constituents are co-located with mercury and will also be removed

Sediment Delineation Locations in Pompton Lake



Mercury Methylation

- Inorganic mercury “methylates” through interaction with anaerobic organisms into a most toxic form
- Occurs in near shore sediments in the upper few centimeters
- Methylmercury can enter the food chain and bio-accumulate in organisms
- Multiple lines of evidence to support RAO included vertical profiles, biota studies and patterns of methylmercury in surface water and sediment

Remedial Action Objectives (RAOs) for Pompton Lake Delta Sediment

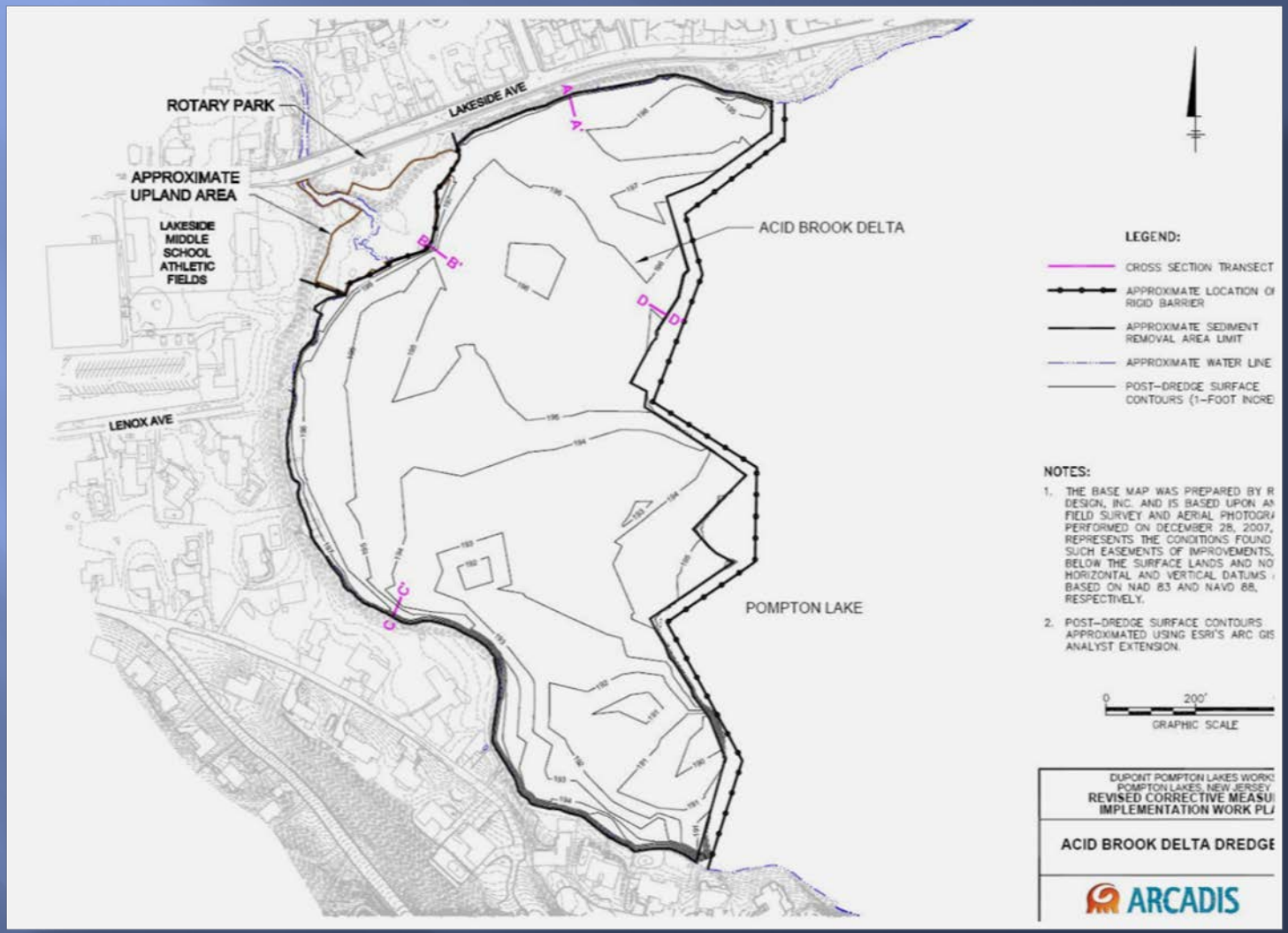
No numerical ecological sediment standards, so the goals are to:

- Remove mercury from near-shore surface sediments so mercury will not be available to methylate
- Reduce the area where organisms can be affected by elevated mercury concentrations

Proposed Scope of Work for Pompton Lake Delta Sediments

- At least 68,000 cubic yards of sediments to be removed over 26 acres
- Rigid barriers will be installed to isolate area to be dredged to contain sediments during dredging
- Hydraulic dredging
- Draft Project Operations Plan was developed by contractor
- DuPont is required to obtain state and local permits necessary to complete remediation

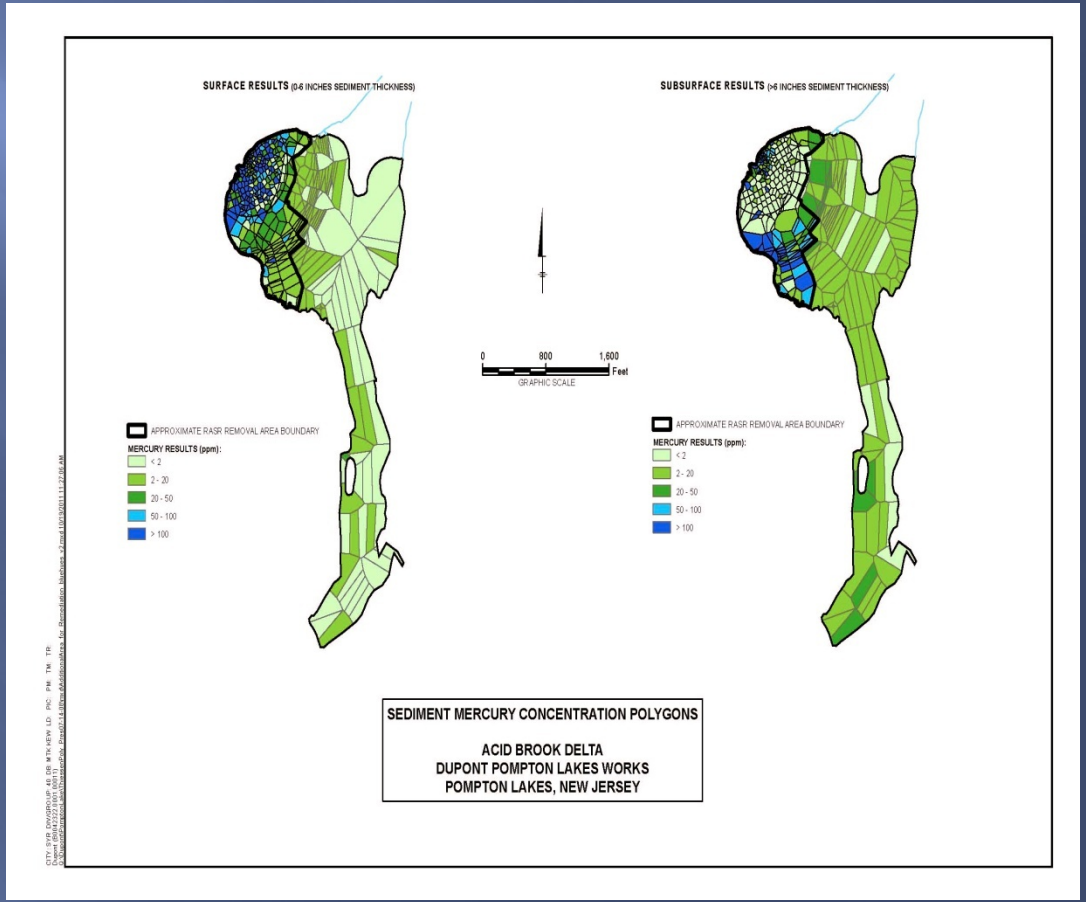
Extent of Delta Dredging



Results of Dredging

- **All** surface and subsurface sediments in the 26 acre area that DuPont is responsible for will be dredged

- It will be replaced with an eco-layer of 6" of clean, sandy soil to enhance the natural recovery of the Lake bottom



Remediation Elements Addressed in Project Operations Plan

- Dredging and excavation methods
- Material handling and transportation methods
- Where sediment dewatering/solidification will be completed and how
- Final disposition of sediment and soil
- Restoration details

Current Scope of Work for Restoration

- DuPont has been meeting with Lake Restoration Committee, Shade Tree Committee and the School Board to identify potential restoration elements
  - In-kind replacement with native vegetation
  - Enhancement of aquatic habitat and wetland resources
  - Supplemental upland plantings and erosion control features

RCRA Permit Next Steps

- Public Notice of the modification to the RCRA Permit to complete lake remediation dredging of sediments and excavation of soil consistent with workplan
- Public hearing to receive comments on the proposed permit modification
- After review and consideration of public comments, issuance of modification to the RCRA Permit
- There will be public input on the conditions in the Project operations Plan as part of the Corrective Measures Implementation Workplan review and approval