



# PROPOSED PLAN OF REMEDIAL ACTION

Up the Creek Site  
Wilmington, Delaware  
DNREC Project No. DE-1384



March 2011

Delaware Department of Natural Resources and Environmental Control  
Division of Waste and Hazardous Substances  
Site Investigation & Restoration Branch  
391 Lukens Drive  
New Castle, Delaware 19720

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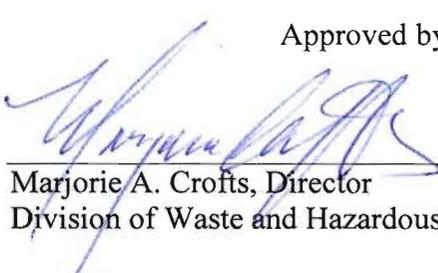
# PROPOSED PLAN OF REMEDIAL ACTION

Up the Creek Site  
Wilmington, Delaware  
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**Approval:**

This Proposed Plan meets the requirements of the Hazardous Substance Cleanup Act.

Approved by:

Marjorie A. Crofts, Director Division of Waste and Hazardous Substances
3.21.11
Date



**What is the Up the Creek Site?** The Up the Creek Site is located on the 7<sup>th</sup> Street Peninsula at 1195 East 7<sup>th</sup> Street in Wilmington, Delaware (Figure 1). The surrounding property use includes commercial entities and a City of Wilmington park (Figure 2). The site has most recently been used as a marina, boat yard and restaurant. Currently the restaurant and marina are closed. River Associates, LLC is proposing to redevelop the property into commercial and/or residential use.

**Tax Parcel Numbers:** 26-052.00-004

**Address:** 1195 East 7<sup>th</sup> Street, Wilmington, Delaware

**Nearest major intersection:** 7<sup>th</sup> Street and Industrial Street

**Area:** approximately 4.52-acres

**Surrounding Property:** Surrounding land use is commercial and a City of Wilmington park

**Zoning:** W-4 Waterfront Residential/Commercial

**Site Utilities:** Site utilities are provided by the City of Wilmington

**Surface water:** The site is located on the bank of the Brandywine River

**Topography:** The site slopes to the southwest towards the Brandywine Creek

**Groundwater:** The groundwater was encountered approximately 1.5 to 12.5 feet below ground surface (bgs) and flows to the southeast towards the Brandywine River.

**What happened at the Up the Creek Site?** During the 1940s through the 1960s much of the south side of the 7<sup>th</sup> Street Peninsula, including the Site, was used by the City of Wilmington as a municipal landfill. The south side of the Peninsula was then filled with coal ash from Wilmington's incinerators and portions were also filled with varying amounts of construction debris and fill material. Prior to the 1940s, the Site was used by a dredging company. Most recently the Site has been used as a restaurant, boat storage and a marina.

**What is the environmental problem at the Up the Creek Site?** Portions of the former Wilmington Municipal Landfill extend onto the northern portion of the Site to a depth of at least 10 feet below ground surface and decreasing to a depth of 2.5 to 3.5 feet thick near the center of the Site. Also, burnt metal and plastic were observed in an isolated area where a burn pit was previously located. The Site surface and subsurface soils have been impacted by metals and several semi-volatile organic compounds, including polycyclic aromatic hydrocarbons (PAHs), phthalates and total petroleum hydrocarbons (TPH). The contamination may have resulted from the historic filling of the property and the marina. In groundwater, arsenic, iron and manganese were detected above DNREC standards. However, groundwater is not being used at the Site and the Site is located within the City of Wilmington's groundwater management zone (GMZ), which prohibits installation and use of drinking water wells. Sediments adjacent to the Site, showed elevated concentrations of metals, acetone and two polycyclic aromatic hydrocarbons (PAHs).

Multiple environmental investigations were performed at the Site, including a Brownfield Preliminary Assessment in 1999, Phase II Site Assessment in February 2006 and a Brownfield Investigation in August 2006.

The three investigations indicated that the site's historical uses have impacted the site. Additionally, burnt metal and plastic were observed in an isolated area adjacent to the parking lot immediately under the soil surface and the Wilmington Municipal Landfill appears to extend onto the Site. Evidence of the landfill was observed at a depth of 10 feet bgs in the northern portions of the Site and decreasing to a depth of 2.5 to 3.5 feet thick near the center of the Site.

The investigations indicated that Site surface soil (0-2 feet depth) is contaminated with arsenic and benzo(a)pyrene, above DNREC standards for a restricted (commercial) use scenario. Under an unrestricted (residential) use scenario benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, dibenz(a,h)anthracene, Aroclor 1260 and several metals (arsenic, copper, iron, manganese) exceeded the DNREC standard. Additionally, lead exceeded the unrestricted use standard within the area of test pit (TP) 14/burn pit area.

The investigations indicated that the Site subsurface soil (2 ft or greater depth) is contaminated with arsenic, lead, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene and indeno(1,2,3-cd)pyrene above DNREC standards for restricted (commercial) use scenario. Under the unrestricted (residential) use scenario arsenic, iron, manganese, lead, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, Aroclor 1248 and Aroclor 1260 exceed the standard.

In groundwater, arsenic, iron and manganese were detected above DNREC standards. However, groundwater is not being used at the Site and the Site is located in a groundwater management zone (GMZ) which prohibits the installation and use of drinking water wells. The evaluation of potential impact of groundwater contamination discharging to surface water (Brandywine River) indicated that the river is not impacted by the site contamination.

In sediments, acetone, benzo(a)pyrene, benzo(a)anthracene and metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, silver and zinc) were detected above DNREC standards. However, based on the sediment evaluation, the Brandywine Creek sediments are not being adversely impacted by the Site.

**What does the owner want to do at the Up the Creek Site?** River Associates, LLC is proposing to redevelop the property into commercial and/or residential use.

The development plan has not been finalized but the preliminary plan is for commercial and/or residential use.

**What clean-up actions are needed at the Up the Creek Site?** DNREC's clean-up plans include the installation of a cap/cover system made up of DNREC approved clean fill and/or an impervious surface to minimize exposure to site surface soils. The impacted soil in the immediate vicinity of TP14/burn pit area will be excavated and disposed properly.

DNREC proposes the following cleanup actions for the Site:

1. The surface of the Site will be covered with a cap which may consist of buildings, pavement, or a minimum of two feet of DNREC-approved fill material over marker fabric for unrestricted/residential use or a minimum of one foot of DNREC-approved fill material over marker fabric for restricted use.
2. The impacted soil in the immediate vicinity of the TP14 area/burn pit area will be over excavated and properly disposed of. Confirmation samples from the excavation will be collected to determine that the hot spot has been removed.
3. All construction and redevelopment work will be performed in accordance with a DNREC-approved Contaminated Material and Water Management Work Plan (CMWMWP), and the Site Specific Health and Safety Plan (HASP).
4. A Long Term Stewardship (LTS) Plan will be established and implemented within ninety (90) days following completion of the redevelopment. The LTS Plan will include annual inspections of the cap and will address any additional remedial actions that may become necessary based on results of the inspections.
5. The Site is within the existing City of Wilmington Groundwater Management Zone (GMZ). The GMZ will prohibit the installation of any water wells on, or groundwater usage at the Site without prior written approval from DNREC.
6. Record an environmental covenant consistent with Delaware's Uniform Environmental Covenants Act, UECA (Title 7, Del. Code Chapter 79, Subtitle II). The environmental covenant will prohibit land disturbing activities without DNREC's prior written approval except in landscaping areas and prohibit the installation of wells and use of any groundwater at the Site.

**What are the long term plans for the Site after the cleanup?** The site will be redeveloped into commercial and/or residential use. After construction, a Long Term Stewardship Plan (LTS) will be submitted for DNREC approval, which will include annual inspections of the cap.

DNREC plans to issue a Certification of Completion of Remedy for the site after the completion of clean-up, the redevelopment of the property, and the implementation of the uniform environmental covenant at the site.

### **How can I find additional information or comment on the Proposed Plan?**

The complete file on the site including the Brownfield Investigation is available at the DNREC office, 391 Lukens Drive in New Castle. Most documents are also found on:

<http://www.nav.dnrec.delaware.gov/DEN3/>

The 20-day public comment period begins on March 27, 2011 and ends at close of business (4:30 pm) on April 15, 2011. Please send written comments to the DNREC office or call Morgan Price, Project Manager, or Robert Newsome, Public Information Officer, at 302-395-2600.

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## Glossary of Terms Used in this Proposed Plan

<b>Brownfield</b>	Property that is vacant or underutilized because of the perception or presence of an environmental problem.
<b>Certified Brownfield</b>	A brownfield that DNREC has determined is eligible for partial funding through the Delaware Brownfields Program.
<b>Contaminant of Concern (COC)</b>	These are potentially harmful substances at concentrations above acceptable levels (eg metals and PAH).
<b>Certificate of Completion of Remedy (COCR)</b>	A formal determination by the Secretary of DNREC that remedial activities required by the Final Plan of Remedial Action have been completed.
<b>*Exposure</b>	Contact with a substance through inhalation, ingestion, or direct contact with the skin. Exposure may be short term (acute) or long term (chronic).
<b>Final Plan of Remedial Action</b>	DNREC's proposal for cleaning up a hazardous site after it has been reviewed by the public and finalized.
<b>Hazardous Substance Cleanup Act (HSCA)</b>	Delaware Code Title 7, Chapter 91. The law that enables DNREC to identify parties responsible for hazardous substances releases and requires cleanup with oversight of the Department.
<b>Human Health Risk Assessment (HHRA)</b>	An assessment done to characterize the potential human health risk associated with exposure* to site related chemicals.
<b>Proposed Plan of Remedial Action</b>	A plan for cleaning up a hazardous site submitted by DNREC and subject to public comments.
<b>Risk</b>	Likelihood or probability of injury, disease, or death.
<b>Risk Assessment Guidance for Superfund (RAGS)</b>	An EPA guidance document for superfund sites
<b>Site Specific Assessment (SSA) and Site Inspection (SI)</b>	Environmental studies of a site including sampling of soils, groundwater, surface water, sediment and/or wastes on the property.

## **What is a *Proposed Plan*?**

A Proposed Plan of Remedial Action (Proposed Plan) is a summary of how DNREC plans to clean up a contaminated site. A Final Plan of Remedial Action (Final Plan) is the adoption of the Proposed Plan, after all comments made by the public within the comment period of twenty days have been considered and addressed by DNREC.

The Delaware State Legislature passed the Hazardous Substance Cleanup Act (HSCA) in 1990. The Legislature made sure that members of the public would be informed about environmental problems in their own neighborhoods and have a chance to express their opinion concerning the clean up of those environmental problems before DNREC takes action.

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After DNREC studies a site, it summarizes the problems there and proposes one or more possible solutions in a Proposed Plan. The Proposed Plan contains enough information to allow lay persons to understand the site. More detailed information can be found in the reports and documents approved by DNREC. All of the documents and reports created by DNREC or consultants during the course of the investigation of the site are available to the public at the offices of DNREC-SIRB or at DNREC's website:

<http://www.nav.dnrec.delaware.gov/DEN3/>

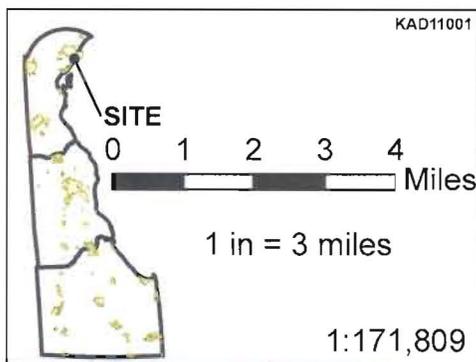
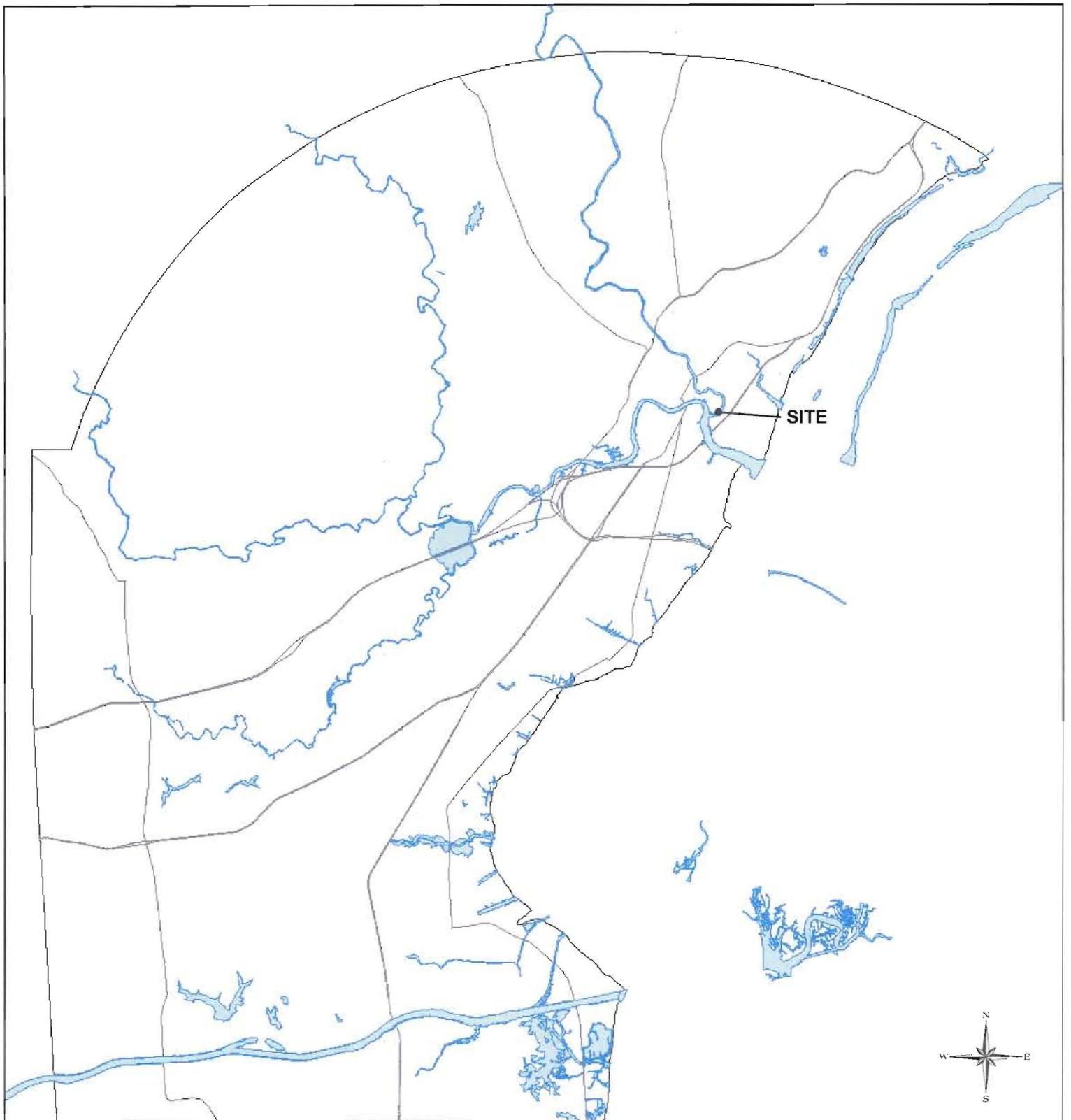
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DNREC issues the Proposed Plan by advertising it in at least one newspaper in the county where the site is located. The legal notices for the Proposed Plans and the Final Plans usually run on Wednesdays or Sundays in the legal classified section of the News Journal and/or the Delaware State News. The public comment period begins on the day (Wednesday), or the day after (Sunday) the newspaper publishes the legal notice for the Proposed Plan.

DNREC frequently holds public meetings during the comment period. Those meetings are usually held near the site in the evening. Citizens can request a public meeting if DNREC did not already schedule one.

Comments are collected at the public meetings, by phone or in writing. DNREC considers all comments and questions from the public before the Proposed Plan is finalized and adopted as a Final Plan.

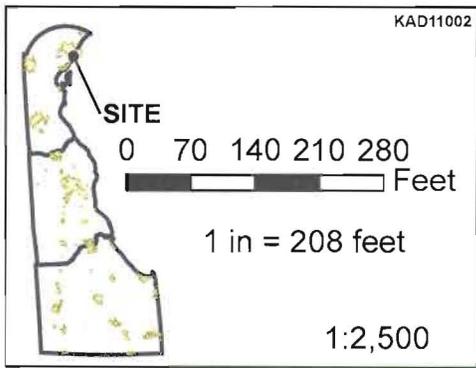
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**FIG. 1:  
LOCATION OF  
UP THE CREEK (DE-1384)  
IN NEW CASTLE COUNTY**

This map is provided by the DNREC-SIRB solely for display and reference purposes and is subject to change without notice. DNREC-SIRB will not be held responsible for the assumed accuracy contained in the map or for use other than its intended purpose.

January 2011



**FIG. 2:  
SITE LOCATION OF  
UP THE CREEK (DE-1384)**

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January 2011