

FINAL PLAN OF REMEDIAL ACTION

Krieger Finger Property
Wilmington, DE

DNREC Project No. DE-1067



August 2009

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

This Final Plan of Remedial Action (Final Plan) for the Krieger Finger Property Site presents the Department of Natural Resources and Environmental Control's (DNREC's) determination that soils contaminated with PCBs are present at the site and require remediation.

DNREC issued public notice of the Proposed Plan of remedial Action (PPRA) for the Krieger Finger Property Site on October 19, 2008 and opened a 20-day public comment period. The Proposed Plan requires:

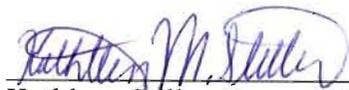
- "Hot spot" removal and off-site treatment and/or disposal of soils from the area of sample location 1325 meeting the remedial action objective of PCB remediation, covering and/or capping the surface of the upland portion of the site with a building structure, paving, and/or a geotextile material or other equivalent approved barrier, and a minimum of 2 feet of clean fill and a protective vegetative cover as part of the site improvements. The covering and/or cap, similar to those implemented at sites in close proximity to the Krieger Finger Property, shall be consistent with the requirements of the Toxic Substance Control Act (TSCA), 40 CFR 761.61.
- Other activities will include engineering controls to limit erosion into the ditches surrounding the site and into associated wetlands; including preserving and protecting the wetlands located on site by maintaining its integrity during site activities, as well as resolution of outstanding wetland fill issues with appropriate federal authorities. All remedial activities within the wetland portion of the site must comply with all applicable State of Delaware and federal laws and regulations.
- A Restrictive Environmental Covenant consistent with the Uniform Environmental Covenants Act (UECA) to be prepared by the responsible parties and approved by DNREC-SIRB stipulating that any disturbance of this cover and/or cap would require prior DNREC approval will be placed on the property.
- A Groundwater Management Zone and Restrictive Environmental Covenant prohibiting use of groundwater at the site will also be put in place.
- A DNREC approved Operation and Maintenance Plan (O&M) to maintain the integrity of the cover and/or cap systems will be developed. The responsible parties and future owners of the property will be responsible for implementation of all aspects and costs of the approved remedy, including all requirements of the final plan, the approved O&M Plan, and adherence to the requirements and conditions to be established in the Uniform Environmental Covenant for the site.

There were several comments or questions from the public regarding the proposed plan. A copy of DNREC's response to these comments is attached.

None of the comments received from the public resulted in the altering of the PPRA, therefore, the Proposed Plan is adopted as the Final Plan (see attached).

Approval:

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



Kathleen Stiller, Program Manager II
Division of Air and Waste Management

8/31/09
Date

**Krieger-Finger Property Site
Proposed Plan of Remedial Action
Department Responsiveness Summary
For Public Comments**

Comments from Stantec Consulting Corporation: A comment letter was received by mail from Ken Hannon, Stantec Consulting Corporation, dated November 5, 2008.

Comment: The Proposed Plan states that the area was filled continuously since the 1800s and also states that historical aerial photos provide clear documentation of fill placement from at least 1959. The response to “How does DNREC plan to cleanup the Krieger-Finger Property Site” states that the plan for the site includes “resolution of outstanding wetland fill issues with appropriate federal authorities.” Please provide additional detail on the resolution that will be required for the wetlands fill issue. Please provide additional details on the historic nature of the fill activities including the extent of fill and a timeline of fill for the various activities.

Response: DNREC has limited information regarding specific timing of filling at the site other than that presented in the referenced reports and the Proposed Plan. Anecdotal information indicates that the properties along A Street were filled for many years. Aerial photos from 1968 show signs of active filling on a portion of the original study area. The Revised Remedial Investigation Report (June 2003) by Shaw states that the site has been subject to placement of debris and fill and surface grading since at least 1959, based on a review of aerial photos.

As part of the South Wilmington Marsh Restoration Project, a Jurisdictional Determination will be conducted that will provide a true delineation of wetlands areas. An assessment by the U. S. Army Corps of Engineers may be necessary to determine if fill was placed in wetlands under their jurisdiction. Damages under the State of Delaware’s Natural Resources Damage Assessment program have not been ruled out.

Comment: The Proposed Plan provides some information on the long-term plans for the site, including the need for a restrictive environmental covenant, groundwater management and an operations and maintenance plan for the cap. The site is shown in the South Walnut Street Urban Renewal Plan as an area that will be wetlands and used as a storm water management area. Has DNREC reviewed the South Walnut Street Urban Renewal Plan to ensure the remedy detailed in the Proposed Plan of Remedial Action is consistent with the potential future use of the site? The proposed remedy should be developed to be comprehensive of potential land uses and not need to be revised for foreseeable future development. Please be sure that all potential uses for the site are considered and that the proposed remedy is complete.

Response: DNREC-SIRB has reviewed the South Walnut Street Urban Renewal Plan and has been in discussion with the DNREC Coastal Zone Program (CZP) and the City of Wilmington (City) regarding development of the South Wilmington Marsh Restoration Project (SWMRP).

The proposed South Wilmington Marsh Restoration Project seeks to:

- Increase storm water storage capacity in South Wilmington
- Provide water quality improvement for Christina River
- Improve existing habitat within the South Wilmington Marsh Area
- Provide pedestrian access between the western and eastern portion of South Wilmington and greenway linkages
- Provide urban green space.

The Krieger-Finger Property is located within the SWMRP area, and as such the CZP and the City have expressed the need that the final plan of remedial action for the subject property be very closely coordinated with the existing and ongoing studies by DNREC and the City of Wilmington as part of the regional drainage improvements and wetland restoration. They are also concerned that remedial activities at the site not preclude soil excavation, removal and/or movement associates with the South Wilmington Special Area Management Plan (SAMP) and efforts related to the South Wilmington Marsh Restoration Project, limiting the ability to meet the goals outlined above.

An evaluation of the hydrology and hydraulics of the wetland area, including the downstream channel and tidegate structure is in progress.

Comments from Delaware Broadcasting Co.: A comment letter was received by mail from E. B. Hawkins, Delaware Broadcasting Co., dated November 7, 2008.

Comment: I wish to identify myself as a co-owner of property abutting the tract in question and also as a co-owner/agent of a property adjacent to the recently installed bioswale. Although this property does not directly abut, we feel that it is equivalently subject to actions taken at the Krieger-Finger plot. I wish to be informed of any actions, meetings, consultations, or planning that regard the above-mentioned property.

Response: DNREC-SIRB will notify Delaware Broadcasting Co. of any public meetings regarding the Krieger-Finger Property. In addition, for information regarding the wetlands area, the South Wilmington Special Area Management Plan has a website:

<http://www.dnrec.state.de.us/dnrec2000/Divisions/Soil/dcmp/WilmSAMP/SAMP.htm>

Comment: A draft comment email was received from David Carter of the DNREC Delaware Coastal Program on November 5, 2008. A similar draft comment letter dated November 4, 2008 was received from the City of Wilmington.

The proposed South Wilmington Marsh Restoration Project seeks to:

- Increase storm water storage capacity in South Wilmington
- Provide water quality improvement for Christina River
- Improve existing habitat within the South Wilmington Marsh
- Provide pedestrian access between the western and eastern portion of South Wilmington and greenway linkages
- Provide urban green space

Several preliminary investigations have taken place or are currently on-going:

- Site Investigation for contaminants conducted by DNREC SIRB (2005)
- South Wilmington Drainage Plan (2006)
- Functional Assessment (to be complete June 2007)
- Initial investigation of flow patterns and tidal influence (June 2007)
- Hydrologic and Hydraulic Study of Drainage Area (City of Wilmington contracted study to be completed in January 2008)
- Comprehensive evaluation of the nature and extent of contamination and ecological risks of all properties in the South Wilmington Wetland area (DNREC, Delaware Coastal Programs contracted study to be completed in March 2009)

The DNREC, Delaware Coastal program fully supports the remediation of contaminated soils that were placed at the Krieger-Finger site in 1985, specifically removal and off-site treatment of “hot spots” found at the site. However, considering plans that are currently under development as part of the SAMP, treatment of soils in place (on-site) may potentially affect both City and DNREC efforts to restore the Krieger-Finger and other adjacent properties to a functioning wetland and flood control environment. We would ask that DNREC-SIRB work closely with both DNREC’s Delaware Coastal Programs and the City of Wilmington to develop the final on-site closure plan for the subject property as to not preclude soil excavation and/or movement associated with the SAMP efforts related to the South Wilmington Marsh Restoration Project, thus limiting our ability to meet the goals outlined above.

Due to the location of this property and its proximity of the downstream channel and tide gate structure of the South Wilmington Wetland Area drainage system, it is critical that we do not eliminate excavation and drainage options before we fully understand the hydrology and hydraulics of the drainage basin. The engineering studies are currently underway to determine if any significant problems with the proposed remedial plan and regional drainage improvements are likely to occur. These studies will be completed in the coming months. In the interim, it would be helpful to ensure that some flexibility exist in the remedial plan to allow some

modifications should they be identified as necessary as a result of the ongoing wetland and drainage system analysis.

Response: DNREC-SIRB will endeavor to work with all parties to achieve a suitable and acceptable remedy for the Krieger-Finger Property while not negatively impacting the future design of the South Wilmington Wetland area plan. While the proposed and final plans of remedial action discuss the ultimate remedy at the site in general terms, the Remedial Design document will address the specific engineering steps of the remedy. It will be necessary for all parties to work closely to permit both projects to move forward. Of particular interest will be the future hydrology of the wetland area and the hydrologic impact it may have locally at the Krieger-Finger Property.

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PROPOSED PLAN OF REMEDIAL ACTION

Krieger – Finger Property
Wilmington, DE

DNREC Project No. DE-1067



October 2008

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

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PROPOSED PLAN OF REMEDIAL ACTION

Krieger – Finger Property
Wilmington, DE

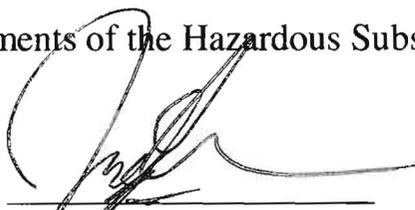
DNREC Project No. DE-1067



October 2008

Approval:

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



James D. Werner, Director
Division of Air and Waste Mangement

10 Oct 2008

Krieger – Finger Property
Wilmington, DE



What is the Krieger-Finger Property Site? The site is currently a vacant property located approximately 400 feet southeast of the intersection of South Walnut Street and “A” Street in an industrialized area of the City of Wilmington, New Castle County, Delaware. The area was originally wetlands and received fill periodically since the 1800’s, as did much of the surrounding area.

Tax Parcel Number: 26-050.00-058

Nearest major intersection: South Walnut Street and “A” Street

Area: Approximately 1.5 acres

Zoning: M-1 Manufacturing and Industrial

Nearest surface water body: Christina River 500 ft. north.

Shallow groundwater at the site flows north toward the Christina River.

The site is within the 100-year flood plain. It is flat with some upland area.

Other surrounding land use is residential and commercial.

The property has no water and sewer service but lies within the City of Wilmington service area.

The City of Wilmington gets its water supply from the Brandywine Creek several miles from the site.

What happened at the Krieger-Finger Property Site? The area was originally wetlands and was filled continuously since the 1800s, as was much of the surrounding area. Historic aerial photos provide clear documentation of fill placement from at least 1959. Historical filling included sands, silts, clays and gravel, along with rubble, glass and glass bottles, brick, metal, wire, roofing shingles, plastic, wood, ash and other debris at various locations and depths. Then, in 1985, excess contaminated soil from a construction project at the Amtrak Wilmington Shops was disposed of at the site.

The EPA and DNREC investigated the placement of the Amtrak soils and determined that the soil contained polychlorinated biphenyls (PCBs). EPA recommended at the time that the site should not be used for residential construction, but industrial development would not present a problem.

What is the environmental problem at the Krieger-Finger Property Site? Soils at the site are contaminated with PCBs at levels that DNREC has determined may have adverse impacts to human health and the environment if a remedy is not conducted. In addition to PCB's, six semi-volatile compounds, three pesticides, eight metals, volatile petroleum hydrocarbons, and extractable petroleum hydrocarbons were detected in soils in concentrations above Unrestricted Use and/or Restricted Use uniform risk-based standards. The presence of these compounds may or may not be related to the presence of PCBs in site soils. (See [Http://docs.dnrec.delaware.gov/docfinity/intraviewer](http://docs.dnrec.delaware.gov/docfinity/intraviewer) for more details).

A Remedial Investigation was conducted by Shaw Environmental and Infrastructure, Inc. (formerly IT Corporation) in 1999. The investigation included soil borings, test pits, and soil, sediment and ground water sampling. A laboratory tested the samples for a full suite of possible contaminants (i.e. full Target Analyte List and Target Compound List). This investigation showed that site soils contained volatile and semivolatile organic compounds, PCBs and metals above DNREC Uniform Risk-Based Standards.

How does DNREC plan to clean up the Krieger-Finger Property Site?

The plan for site cleanup includes "hot spot" removal and off-site treatment and/or disposal of soils from the area of sample location 1325 meeting the remedial action objective of PCB remediation, covering and/or capping the surface of the upland portion of the site with a building structure, paving, and/or a geotextile material or other equivalent approved barrier, and a minimum of 2 feet of clean fill and a protective vegetative cover as part of the site improvements. The covering and/or cap, similar to those implemented at sites in close proximity to the Krieger Finger Property, shall be consistent with the requirements of the Toxic Substance Control Act (TSCA), 40 CFR 761.61. Other activities will include engineering controls to limit erosion into the ditches surrounding the site and into associated wetlands; including preserving and protecting the wetlands located on site by maintaining its integrity during site activities, as well as resolution of outstanding wetland fill issues with appropriate federal authorities. All remedial activities within the wetland portion of the site must comply with all applicable State of Delaware and federal laws and regulations.

What are the long term plans for the Site after the cleanup?

A Restrictive Environmental Covenant consistent with the Uniform Environmental Covenants Act (UECA) to be prepared by the responsible parties and approved by DNREC-SIRB stipulating that any disturbance of this cover and/or cap would require prior DNREC approval will be placed on the property. A Groundwater Management Zone and Restrictive Environmental Covenant prohibiting use of groundwater at the site will also be put in place. A DNREC approved Operation and Maintenance Plan (O&M) to maintain the integrity of the cover and/or cap systems will be developed. The responsible parties and future owners of the property will be responsible for implementation of all aspects and costs of the approved remedy, including all requirements of the final plan, the approved O&M Plan, and adherence to the requirements and conditions to be established in the Uniform Environmental Covenant for the site.

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

The complete file on the site including the DNREC Site Investigation and the 2003 Remedial Investigation Report is available at the DNREC office, 391 Lukens Drive in New Castle. Most documents are also found on:

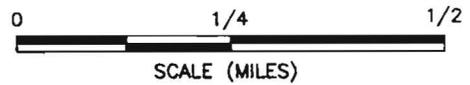
<http://www.dnrec.state.de.us/dnrec2000/Divisions/AWM/sirb/>

The 20-day public comment period ends on November 8, 2008. Please send written comments to the DNREC office or call Larry Jones, Project Manager, at:
302-395-2600.

Figure 1. Krieger – Finger Property Location



QUADRANGLE LOCATION



REFERENCE: USGS 7.5 MINUTE QUADRANGLE; WILMINGTON SOUTH, DELAWARE/PENNSYLVANIA

FOR:

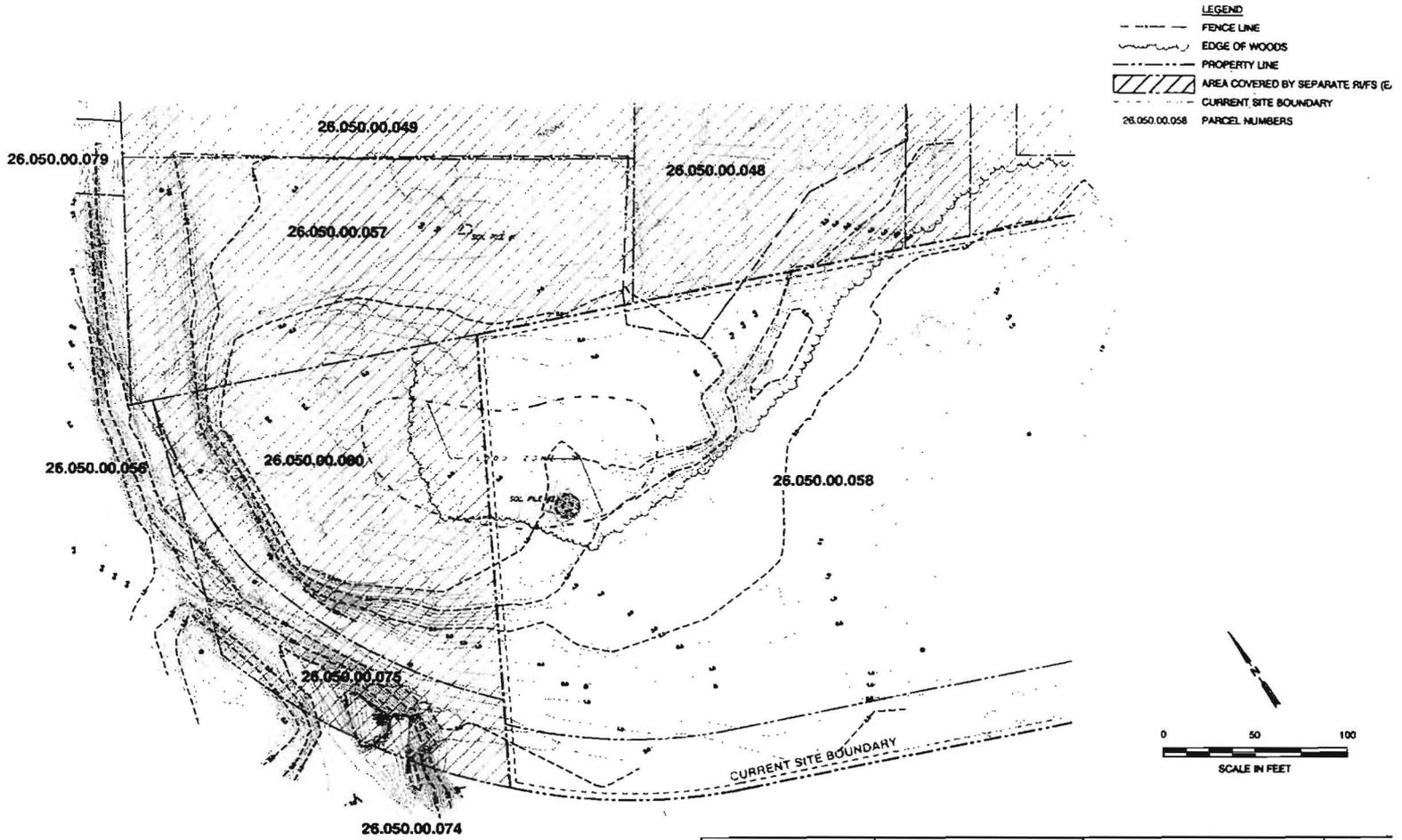
AMTRAK
KRIEGER-FINGER SITE
WILMINGTON, DELAWARE

SITE VICINITY MAP

FIGURE:

1-1

Figure 2. Map of Krieger – Finger Property



FOR:	AMTRAK KRIEGER-FINGER SITE WILMINGTON, DELAWARE	CURRENT SITE AREA	FIGURE:
DRAWN BY:	CHECKED BY:	APPROVED BY:	1-2
			DATE:

Figure 3. View of Krieger – Finger Property



Glossary of Terms Used in this Proposed Plan

Contamination	The introduction of harmful or hazardous matter into the environment.
Certificate of Completion of Remedy (COCR)	A formal determination by the Secretary of DNREC that remedial activities required by the Final Plan of Remedial Action have been completed.
Exposure	Contact with a substance through inhalation, ingestion, or direct contact with the skin. Exposure may be short term (acute) or long term (chronic).
Final Plan of Remedial Action	DNREC's proposal for cleaning up a hazardous site after it has been reviewed by the public and finalized.
Hazardous Substance Cleanup Act (HSCA)	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.
Proposed Plan of Remedial Action	A plan for cleaning up a hazardous site submitted by DNREC and subject to public comments.
Risk	Likelihood or probability of injury, disease, or death.

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.

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.dnrec.state.de.us/dnrec2000/Divisions/AWM/sirb/sitefiles.asp> .

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.
