

# PROPOSED PLAN OF REMEDIAL ACTION

Former Sunoco Tank Farm  
New Castle County, Delaware

DNREC Project No. DE-1238



April, 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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Former Sunoco Tank Farm Site  
New Castle County, Delaware

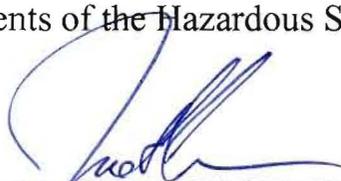
DNREC Project No. DE-1238



April, 2008

**Approval:**

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



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**James D. Werner, Director**  
**Division of Air and Waste Management**

## FORMER SUNOCO TANK FARM SITE



**What is the Former Sunoco Tank Farm Site?** The site consists of a small portion of a former Sunoco R&M Inc. (Sunoco) heating fuel tank farm at Naamans Creek Road , New Castle County, Delaware (Figure 1). The majority of the site (approximately 160 acres) is located in Bethel Township, Pennsylvania. Approximately 3.46 acres are located in Delaware, north of the Northcrest development (Figure 2). The area within the Delaware state boundary is located in the southeastern corner of the property in the vicinity of former aboveground storage tank (AST) 220. The site is currently owned by Sunoco and is a grass covered vacant lot (Figure 3). The site is being addressed under Delaware Voluntary Cleanup Program (VCP) by DNREC Site Investigation and Restoration Branch (SIRB).

Tax Parcel Numbers: 06-015.00-026; 06-015.00-141; 06-015.00-140; 06-015.00-139; 06-015.00-138; 06-015.00-148; 06-015.00-147; and 06-015.00-135

Nearest major intersection: Marsh and Naamans Creek Road, directly behind Chinchilla Drive of the Northcrest housing development

Area: Approximately 3.46 acres

Zoning: Residential and Industrial

Nearest surface water body: West Branch of Naamans Creek and an intermittent branch of Cinko Creek, approximately 350 ft. north

Shallow groundwater at the site flows toward the east-southeast.

The site soil is comprised of Made Land. It is generally flat to gently sloping.

Other surrounding land use is residential and undeveloped properties.

The property has public water and sewer service available.

Groundwater is not being used at the site as a drinking water supply.

**What caused contamination at the Former Sunoco Tank Farm Site?** Site owner, Sunoco, used the property as an aboveground heating fuel storage tank farm from approximately 1919 to the 1980s. It was used for the storage and distribution of heavy petroleum products, particularly home heating oil. An apparent release from the tank farm caused petroleum contamination in groundwater and lead contamination in a small area of the soil. Currently, all infrastructures from the former tank farm have been removed and the site is an open space. The Delaware portion of the site is being used as open space buffer between the development on the Pennsylvania side and the existing Northcrest development.

**What are the environmental problems at the Former Sunoco Tank Farm Site?**

Environmental investigations indicated presence of petroleum contaminants (benzene, ethyl

benzene, toluene, naphthalene, 2-methylnaphthalene, benzo(b)fluoranthene and aliphatic hydrocarbons) above DNREC's action level in groundwater. Soil contaminated with lead was found in a small area; however, it was later removed. Soil vapor sampling was performed to evaluate risk from subsurface vapor intrusion into nearby residences. The evaluation indicated that the current contaminant concentrations in groundwater do not pose a vapor intrusion risk to the nearby residents. Several years of groundwater monitoring indicated that the groundwater contamination is showing a gradual decrease and the contamination is not migrating away from the site. Groundwater from the site is not being used as a drinking water supply and the area is supplied by a public water utility.

Historical site investigation activities included soil sampling, monitoring well installation, groundwater sampling, and soil-gas sampling. A Remedial Investigation (RI) was conducted by Resource Control Corporation (RCC) in 2002 and the supplemental RI in 2004. The 2002 RI included soil sampling, monitoring well installation, groundwater sampling, and soil-gas sampling. Additional groundwater sampling was performed during the supplemental 2004 RI to determine the natural attenuation of the contaminants. Comparison of the contaminants in groundwater through time indicates a gradual decrease in concentrations over time. Groundwater monitoring is continuing at the site. Several vapor monitoring points were installed to assess the soil gas intrusion potential in the basements of three of the Northcrest properties in June 2004. Soil gas sampling was performed quarterly between June 2004 and May 2005 to evaluate seasonal trends. Benzene, toluene, ethylbenzene, total xylenes (BTEX) and methyl tertiary butyl ether (MTBE) concentrations in the soil gas were below the laboratory detection limits and very low concentrations of C1-C4 hydrocarbons were detected in soil gas. A risk assessment performed to evaluate the risk of vapor intrusion into the nearby residences showed that current contaminant concentrations do not pose a vapor intrusion risk. Surface soil sampling showed only a small area with lead concentrations above DNREC's action level and the lead impacted soil was later removed.

### **Was there any cleanup action already taken place at the Site?**

Sunoco operated a groundwater cleanup system on the site from 1999 to 2002 and it reduced the contaminants. Surface soil from a lead contaminated area was removed.

The groundwater remediation system, consisting of soil vapor extraction and air and ozone sparging, operated from August 1999 to June 2002 to remediate the groundwater. The operation of the system reduced the contaminant concentrations in groundwater. A soil excavation occurred to remove soil with elevated concentrations of lead. Post excavation samples showed lead concentrations below the DNREC cleanup level.

### **What does the owner want to do at the Former Sunoco Tank Farm Site?**

The property owner, Sunoco, plans to sell the parcels to a developer. The developer is planning to leave the Delaware portion as open space with a restriction of no residential or commercial development to take place on any portion of the Delaware parcels. The Pennsylvania portion of the Site has been granted a "Release of Liability" under PADEP Act 2.

### **What clean up actions need to be taken at the Former Sunoco Tank Farm Site?**

The cleanup actions at the site consist of restricting the use of the property to open space, preventing the use of groundwater at the site and monitoring groundwater.

DNREC, based on the environmental investigations, risk assessments, evaluation of cleanup options and cleanup objectives, recommends that the following cleanup actions need to be taken for the site by the site owner:

- Record an environmental covenant for the site, consistent with Delaware's Uniform Environmental Covenants Act, UECA (Title 7, Del. Code Chapter 79, Subtitle 11), which will ensure that the site will remain as an open space, will not allow residential or commercial/industrial development at the site, prohibit land disturbing activities and prevent groundwater use at the site. Prior approval by DNREC is required before any land disturbing activities can begin. The environmental covenant will be filed within 90 days following DNREC's adoption of the Final Plan of Remedial Action.
- Prevent use of groundwater at the site by establishing a Groundwater Management Zone (GMZ).

A groundwater monitoring plan will be developed, which will include the following:

- Perform five (5) years of groundwater monitoring of four (4) source wells (MW-7A, VE-7, MW-220F, MW-220E) and one (1) down gradient well (MW-220H). After two (2) years of quarterly monitoring, data will be reviewed by DNREC and depending on results, the following three (3) years of monitoring may be performed on a semi-annual basis.
- Measure the degradation of the contaminants by recording water quality parameters during the sampling events and comparing over time.
- Submit the results of monitoring to DNREC and after the first 5 year review, DNREC will determine if any further actions at the site will be necessary.

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

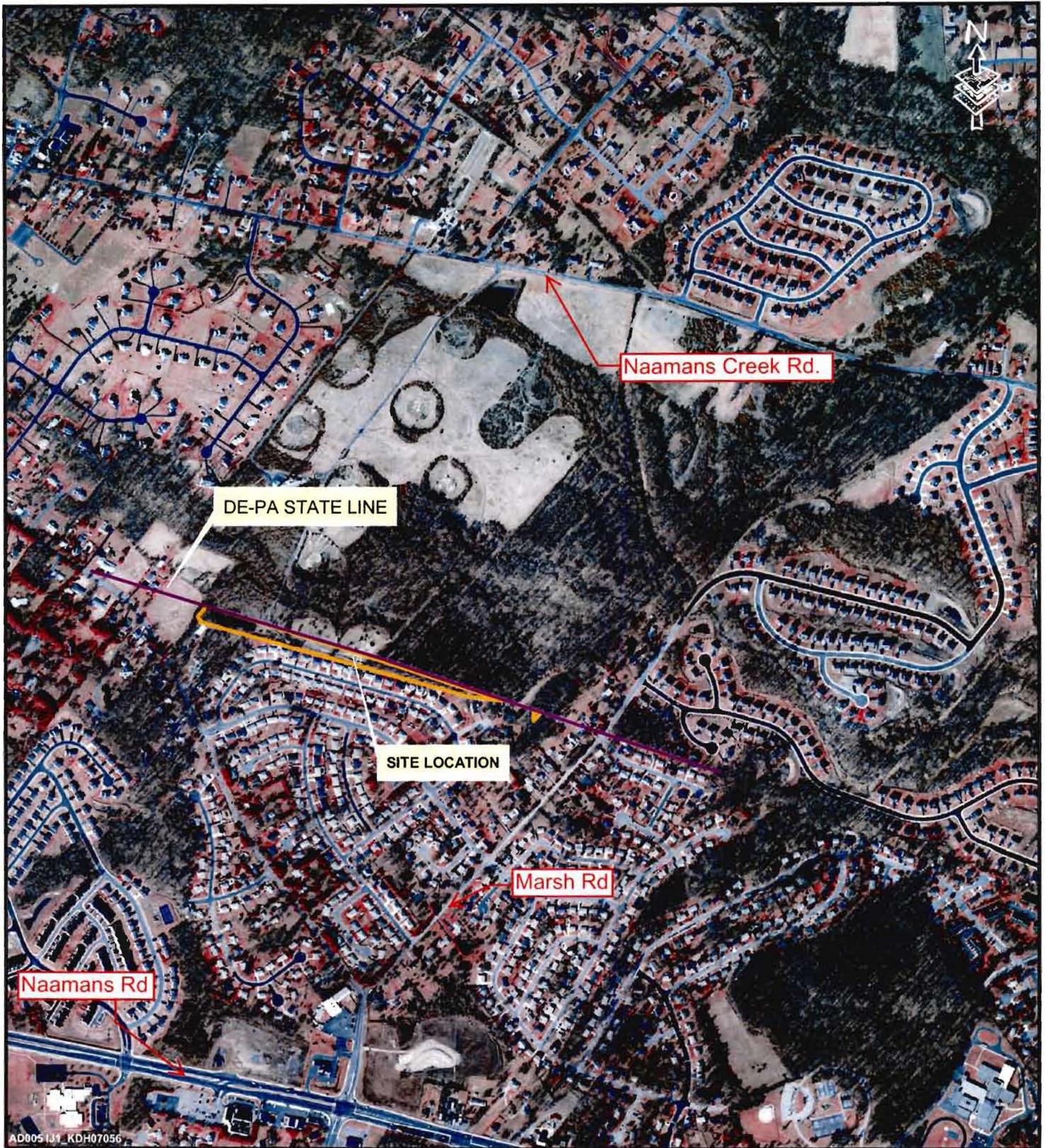
The site will be maintained as an open space and this will be ensured by recoding an environmental covenant. Sunoco recognizes that the remedial action for the Site includes activity and use limitations on both soils and groundwater. Accordingly, part of the remedial action and this Plan is Sunoco's intent to prepare an Environmental Covenant in compliance with Delaware's Uniform Environmental Covenant in compliance with Delaware's Uniform Environmental Covenants Act set forth at Section 7, Chapter 79, Subchapter II of Delaware's Consolidated Statues. Groundwater use from at or near the site will be prevented by the establishment of a GMZ. After the first five year review DNREC will determine if further action will be necessary.

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

The complete file on the site including the 2002 Remedial Investigation and the 2004 Supplemental Remedial Investigation 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 begins on May 4, 2008 and ends at close of business (4:30 pm) on May 26, 2008. Please send written comments to the DNREC office or call Morgan Price, Project Manager, at: 302-395-2600.



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 purposes.

0 1:10,000 0.25 Miles

DNREC  
 SITE INVESTIGATION AND  
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**FIGURE 1  
 LOCATION OF THE  
 FORMER SUNOCO  
 TANK FARM SITE**

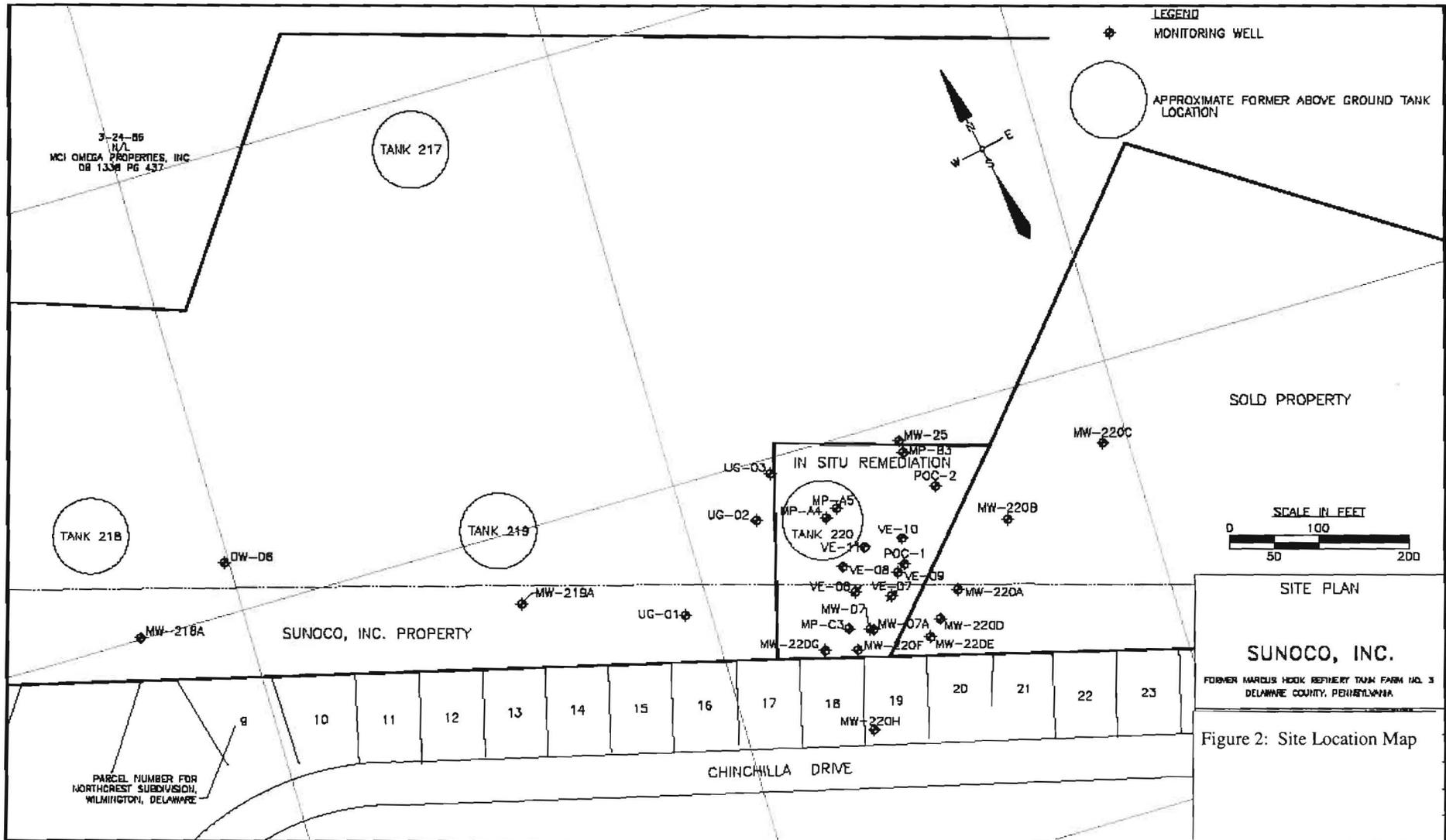


Figure 2: Site Location Map

**Photo #1:** Facing north from MW-220B



**Photo #2:** Facing northwest from MW-220B



**Photo #3:** Facing northwest towards former remediation shed from VE-7



**Photo #4:** Facing southeast towards Delaware property boundary of Northcrest residents and facing MW-220G.



**Photo #5:** Facing north, from the remediation shed



**Photo #6:** Facing northwest towards UG-2 & UG-3



**Figure 3:** Site Photos taken September 28, 2006

## Glossary of Terms Used in this Proposed Plan

<b>COCR</b>	<p><b>Certificate of Completion of Remedy.</b> Upon completion of all tasks (except operations and maintenance) specified in the Final Plan, the person cleaning up a site, or the owner of a site, may apply for a COCR. When issued, a COCR is recorded on the county tax records for a property, identifying the property as having been cleaned up as specified in the Final Plan. A COCR may include conditions or restrictions.</p> <p>A checklist of the requirements for a COCR is at <a href="http://www.dnrec.state.de.us/dnrec2000/Divisions/AWM/sirb/misc%5CJGC07004.pdf">http://www.dnrec.state.de.us/dnrec2000/Divisions/AWM/sirb/misc%5CJGC07004.pdf</a></p>
<b>Contamination</b>	The introduction of harmful or hazardous matter into the environment.
<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>Former Sunoco Tank Farm Site</b>	The 3.46-acre parcel of land that is the subject of this Plan that will be remediated to open space with a restriction of no industrial or residential development on the property.
<b>Groundwater</b>	Water below the land surface in the zone of saturation.
<b>Groundwater Management Zone (GMZ)</b>	A geographical area where DNREC restricts drilling for ground water because it is or may be contaminated.
<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>Proposed Plan of Remedial Action</b>	A plan for cleaning up a hazardous site submitted by DNREC and subject to public comments.
<b>Remedial Investigation</b>	An environmental study of a site including sampling of soils, groundwater, surface water, sediment and/or wastes on the property.
<b>Resource Control Corporation</b>	A private environmental consulting company that conducted the Remedial Investigation for the property owner.
<b>Risk</b>	Likelihood or probability of injury, disease, or death.
<b>Risk Assessment</b>	The systematic, multi-step process of estimating the possible effects of exposure of human populations ( <b>Human Health Risk Assessment</b> or <b>HHRA</b> ) or the environment ( <b>Ecological Risk Assessment</b> or <b>ERA</b> ) to hazardous substances.
<b>Uniform Environmental Covenants Act (UECA)</b>	A standardized form of a land use restriction that is recorded on the deed and runs with the land.
<b>Voluntary Cleanup Program (VCP)</b>	<p>The remedial process established by DNREC under HSCA, that a party willingly enters into (provided its application is approved by DNREC) for the purpose of conducting a remedy at a facility.</p> <p>When a property is contaminated with hazardous substances there are liabilities under Federal and State laws, regardless of who caused the contamination and when it was caused. Because of these liabilities, old industrial sites (with contamination) may not readily attract developers or buyers. Under the VCP, the current owner performing the cleanup of contaminated properties are provided protection from potential liabilities for past contamination, provided certain requirements are met.</p>

## **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.

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