

FINAL PLAN OF REMEDIAL ACTION



NVF-YORKLYN OPERABLE UNIT #3

*1166 Yorklyn Road
Yorklyn, Delaware*

*January 2016
DNREC Project No. DE-0071*

This Final Plan of Remedial Action (Final Plan) presents clean-up actions required by the Department of Natural Resources and Environmental Control (DNREC) to address environmental contamination at the NVF-Yorklyn Site - Operable Unit #3.

DNREC issued public notice of the Proposed Plan of Remedial Action (Proposed Plan) for the Site on December 23, 2015 and opened a 20-day public comment period. The Proposed Plan is attached. There were no comments from the public; therefore, the Proposed Plan is adopted as the Final Plan.

Approval:

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



Timothy F. Ratsep, Program Administrator
Site Investigation and Restoration Section

January 20, 2016

Date



PROPOSED PLAN OF REMEDIAL ACTION

NVF-Yorklyn Operable Unit #3
Yorklyn, Delaware
DNREC Project No. DE-0071



December 2015

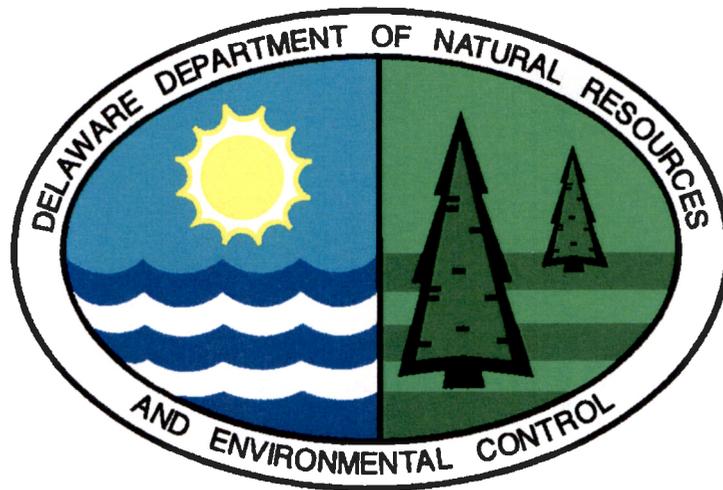
Delaware Department of Natural Resources and Environmental Control
Division of Waste and Hazardous Substances
Site Investigation & Restoration Section
391 Lukens Drive
New Castle, Delaware 19720

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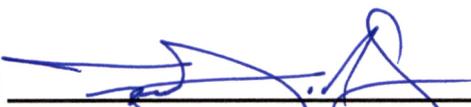
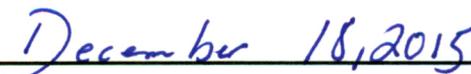
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NVF-Yorklyn Operable Unit #3
Yorklyn, Delaware
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Approval:

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

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| Approved by: |
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| Timothy Ratsep, Environmental Program Administrator Site Investigation & Restoration Section |
|  |
| Date |



What is the Proposed Plan of Remedial Action?

The Proposed Plan of Remedial Action (Proposed Plan) summarizes the clean-up (remedial) actions that are being proposed to address contamination found at the NVF-Yorklyn Operable Unit # 3 Site (OU-3) for public comment. A legal notice is published in the newspaper for a 20-day comment period. DNREC considers and addresses all public comments received and publishes a Final Plan of Remedial Action (Final Plan) for the OU-3 Site.

What is the NVF-Yorklyn Site?

The NVF-Yorklyn Site is a 19 acre property located at 1166 Yorklyn Road in Yorklyn, New Castle County, Delaware, approximately two miles south of the Pennsylvania and Delaware state line. Currently, the OU-3 portion of the Site consists of four tax parcels (0800100027, 0800100025, 0800400274, 0800400275) totaling approximately 3.03 acres. The Site lies along the southern bank of the Red Clay Creek, and was formerly owned and operated by National Vulcanized Fiber. Surrounding properties are a mix of undeveloped, residential and commercial properties. The Site itself consists of abandoned manufacturing facilities, most of which are planned for demolition (Figure 1).

Topography at the Site ranges from gently to steeply sloping. The lowest elevation is generally located near Yorklyn Road and Red Clay Creek. Surface water drains towards Red Clay Creek which is located north of the Site. An unnamed tributary (also referred to as the onsite ditch), located east of Yorklyn Road, flows through the Site in a northeasterly direction toward Red Clay Creek.

For purposes of environmental cleanup and redevelopment, the Site has been divided into three operable units (OUs). OU-1 is comprised of the majority of the former site buildings. OU-2 is comprised of former Mill #6 and surrounding lands, and OU-3 is comprised of former Mill #1 and surrounding lands (Figure 2). This Proposed Plan of Remedial Action is for OU-3 only. Proposed Plans of Remedial Action will be developed for OU-1 and OU-2 separately.

What happened at the NVF-Yorklyn Site (including OU-3)?

The Site has been used historically for paper making, paper vulcanization (with zinc chloride) and for associated zinc reclamation. National Vulcanized Fiber went bankrupt in 2008/2009. The properties were subsequently purchased by a private developer who partnered with the State of Delaware for clean-up/redevelopment of the properties. Although the plant is no longer actively producing vulcanized paper products, the zinc reclamation equipment is currently being operated by the State of Delaware for reclaiming zinc from groundwater beneath the former plant sites.

What is the environmental problem at the NVF-Yorklyn Site (including OU-3)?

Many previous environmental investigations have occurred at the Site between 1986 and 2014, and are summarized in the 2015 Remedial Investigation/Feasibility Study Report. During these investigations, regulated compounds including volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides and metals were detected in soil, groundwater, surface water, and/or sediment. These contaminants are attributed to historic operations at the Site. Asbestos containing materials (ACMs) have also been documented within the older buildings and structures at the Site. As noted above, DNREC is currently operating a zinc groundwater recovery system at the NVF-Yorklyn Site to reduce discharge of zinc to the adjacent Red Clay Creek.

Specifically within OU-3, and as summarized in the 2015 Remedial Investigation/Feasibility Study Report, metals and VOCs were detected in OU-3 soil and/or groundwater at concentrations that exceeded human health and ecological remedial goal objectives (RGOs) established through a site specific risk assessment. Lastly, potential ACMs have been identified inside the interior of the Mill #1 structure.

What clean-up actions have been taken at the NVF-Yorklyn Site (Including OU-3) ?

Several Interim Action (IA) activities have taken place at the NVF-Yorklyn Site (primarily in OU1 and OU-2) between 2012 and 2015. These include removal and disposal of:

- 277,490 pounds of zinc chloride containing solid waste and old tanks
- 60,740 pounds of sodium hydroxide solid waste
- 2,382 pounds of hydrochloric and sulfuric acid waste
- 10 pounds of mercury containing solid waste
- 23,460 pounds of soda ash
- 2,800 pounds of corrosive acidic waste
- 55 gallons of hypochlorite
- 800 pounds of paint related waste
- 300 pounds of aluminum nitrate
- 15.69 tons of treated timber waste
- Relocation of 2,500 cubic yards of PAH contaminated soil to a repository within NVF-Yorklyn OU-1.
- Offsite disposal of 500 tons of PAH contaminated topsoil.
- Removal of zinc contaminated solid waste/tanks from one process area inside the Mill #6 building.

Continued operation of the groundwater zinc recovery system has also removed over 75,000 pounds of zinc from shallow groundwater since 2008.

Specific to OU-3, the following interim actions occurred under USEPA control between 2001 and 2007:

- Removal of hazardous materials from within the building structure
- Removal of salvageable equipment and materials
- Demolition of the northern portion of Mill #1 that formerly contained Tub Rooms
- Covering of the demolished portion of Mill #1 with a pervious soil cap.

What does the owner want to do at the NVF-Yorklyn OU-3 Site?

The owner wants to utilize the OU-3 portion of the former NVF-Yorklyn Site for mixed commercial and recreational purposes. What remains of the original Mill #1 structure is currently intended to be restored, as it has qualified as a historic building by DNREC.

What additional clean-up actions are needed at the NVF-Yorklyn OU-3 Site?

DNREC proposes the following remedial actions for the Site, which need to be completed before a Certificate of Completion of Remedy (COCR) can be issued.

1. Properly remove and dispose of all Asbestos Containing Materials (ACM) from the Site structures prior to demolition/rehabilitation.
2. During demolition/rehabilitation activities, eliminate the pathway of surface soil to the adjacent Red Clay Creek in order to protect ecological receptors.
3. Maintain or improve the existing soil cap previously placed over impacted soils at the OU-3 portion of the Site.
4. Record an Environmental Covenant, consistent with Delaware's Uniform Environmental Covenants Act (Title 7, Del. Code Chapter 79, Subtitle II) (UECA), in the office of the Recorder of Deeds within 60 days of DNREC issuing the Final Plan of Remedial Action for NVF-Yorklyn OU-2. The Environmental Covenant will include the following:
 - a. Use Restriction. Use of the Property shall be restricted solely to non-residential type uses;
 - b. Interference with Remedy. There shall be no digging, drilling, excavating, grading, constructing, earth moving, or any other land disturbing activities on the Property [including any repair, renovation or demolition of the existing structures on the on the Property] without the prior written approval of DNREC;
 - c. Limitation of Groundwater Withdrawal. No groundwater wells shall be installed and no groundwater shall be withdrawn from any well on the Property without the prior written approval of DNREC-SIRS and DNREC Division of Water;
 - d. Compliance with the Long Term Stewardship Plan. All work required by the Long Term Stewardship (LTS) Plan must be

performed to DNREC's satisfaction in accordance with the Plan;
and

- e. Compliance with Contaminated Materials Management Plan. All work required by the Contaminated Materials Management Plan must be performed to DNREC's satisfaction in accordance with the Plan.
5. Implement the DNREC approved Contaminated Materials Management Plan (prepared by Black & Veatch dated December 2013, updated December 2015) for the Site if unknown conditions are encountered during site demolition/rehabilitation activities.
 6. A Long-Term Stewardship (LTS) Plan shall be submitted to DNREC for approval in accordance with the schedule set forth in the approved Remedial Action Work Plan. The LTS plan will detail the site-inspection schedule to be followed in order to ensure the long-term integrity of the previously completed capping remedy.
 7. The LTS Plan must be implemented within 60 days of its approval by DNREC.
 8. Since items 1, 2 and 5 above will be accomplished during the course of normal demolition/rehabilitation activities at the Site under the CMMP and Sediment and Stormwater Permit, a request for a Certification of Completion of Remedy (COCR) should be submitted to DNREC within 60 days after recording the Environmental Covenant or approval of the LTS Plan, whichever occurs later.

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

The Site will be utilized for a mix of commercial and recreational (non-residential) purposes.

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

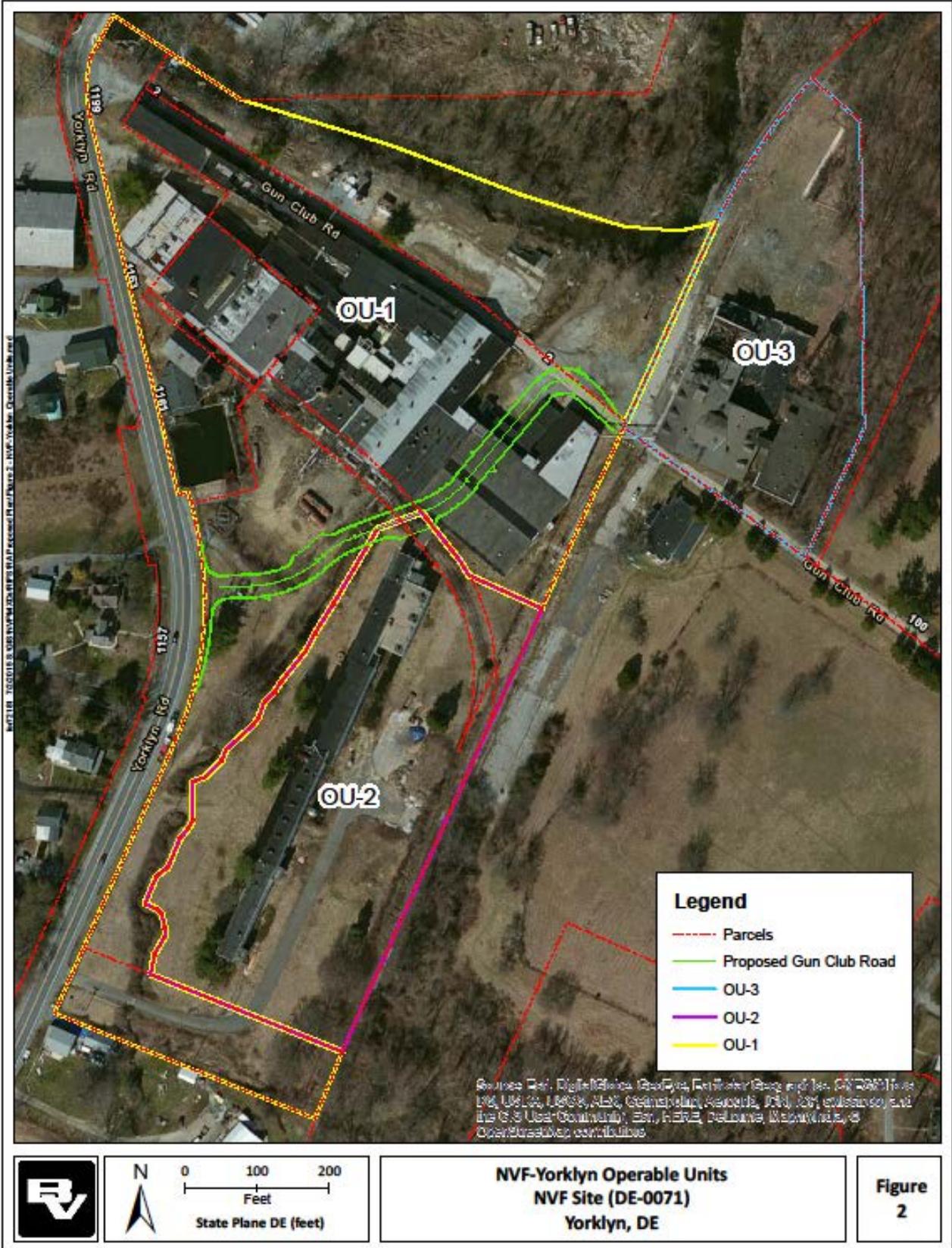
The complete file on the Site including the December 2015 Remedial Investigation/Feasibility Study Report and the various other historic reports are available at the DNREC office, 391 Lukens Drive in New Castle, 19720. Most documents are also found on:

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

The 20-day public comment period begins on December 27, 2015 and ends at close of business (4:30 pm) on January 18, 2015. Please send written comments to the DNREC office at 391 Lukens Drive, New Castle, DE 19720 to John G. Cargill, Project Officer or Robert Newsome, Public Information Officer.

Figure 1: NVF-Yorklyn Site Layout Map

Figure 2: NVF-Yorklyn Operable Units



Glossary of Terms Used in this Proposed Plan

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| Certification 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. |
| Contaminant of Concern (COC) | Potentially harmful substances at concentrations above acceptable levels. |
| Contaminated Materials Management Plan | A written plan specifying how potentially contaminated material at a Site will be sampled, evaluated, staged, transported and disposed of properly. |
| Ecological Risk Assessment (ERA) | An assessment done to characterize the potential ecological risk associated with exposure* to site related chemicals. |
| 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 adopted plan for cleaning up a hazardous site. |
| 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. |
| Human Health Risk Assessment (HHRA) | An assessment done to characterize the potential human health risk associated with exposure* to site related chemicals. |
| Risk | Likelihood or probability of injury, disease, or death. |
| SIRS | Site Investigation Restoration Section of DNREC, which oversees cleanup of sites that were contaminated as a result of past use, from dry cleaners to chemical companies |