



State of Delaware  
Department of Natural Resources  
and Environmental Control

STATEMENT OF BASIS

DuPont Experimental Station

WILMINGTON, DELAWARE

EPA ID NO. DED003930807

Prepared by  
Remediation Section  
Division of Waste and Hazardous Substances  
May 11, 2022

## Table of Contents

Section 1: Introduction .....	1
Section 2: Facility Background .....	2
Section 3: Summary of Environmental History .....	2
Section 4: Proposed Remedy .....	5
Section 5: Environmental Indicators .....	5
Section 6: Public Participation .....	6

### Attachments:

Attachment 1: Index to Administrative Record.....	9
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### Figures:

Figure 1	Site Location Map
Figure 2	Boundary of the Creek Road Contamination Area (CRCA)
Figure 3	Confirmation and Step-Out Soil Boring Locations, September 2019
Figure 4	AOC SB-01 September 2019 Boring Locations and Proposed Remediation Area
Figure 5	AOC SB-13 September 2019 Boring Locations and Proposed Remediation Area
Figure 6	Proposed Environmental Covenant Areas for SB-03 and SB-22

## Section 1: Introduction

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The Delaware Department of Natural Resources and Environmental Control (DNREC) has prepared this Statement of Basis (SB) to solicit public comment on its proposed remedy for the DuPont Experimental Station Facility, located at 200 Powder Mill Road, Wilmington, Delaware. DNREC's review of available information indicates that there are no unaddressed releases of hazardous waste or hazardous constituents from the areas previously identified in the site investigations completed at the facility. Based on that assessment, DNREC's proposed decision is that no further investigation or cleanup is required for these areas at the Facility. DNREC has determined that its proposed remedy is protective of human health and the environment. This SB highlights key information relied upon by DNREC in making its proposed remedy decision.

The Facility is subject to the Environmental Protection Agency's Corrective Action Program under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. §§ 6901 et seq. (Corrective Action Program). The Corrective Action Program is designed to ensure that certain facilities subject to RCRA have investigated and cleaned up any releases of hazardous waste and hazardous constituents that have occurred at their property. The State of Delaware is authorized for the Corrective Action Program under Section 3006 of RCRA. Therefore, it retains primary authority in Delaware for the Corrective Action Program under *7 Del C.*, Chapters 60 and 63.

As part of the Corrective Action process for the DuPont Experimental Station in Wilmington, Delaware, DNREC has prepared this SB to provide site background and proposed corrective measures for the site. DNREC has made the decision to close out the existing Part B RCRA Permit. The proposed remedy will be implemented/enforced by the recording of an environmental covenant.

The Administrative Record (AR) for the Facility contains all documents, including data and quality assurance information, on which DNREC's proposed remedy decision is based. The Index to the AR may be found in Attachment #1.

Information on the Corrective Action Program as well as a fact sheet for the Facility can be found by navigating <https://www.epa.gov/hwcorrectiveactionsites>

## **Section 2: Facility Background**

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The Facility consists of approximately 125 acres, located between Route 141 and the banks of the Brandywine Creek, approximately four miles northwest of the city of Wilmington, Delaware in New Castle County (Figure 1).

The Facility is the corporate-wide central research and development facility for DuPont and has been actively used as a research facility for approximately 117 years. The site currently consists of mostly administrative office buildings, laboratories, and parking areas. Prior to this, the section of property area along the Brandywine Creek was used for gunpowder manufacturing by DuPont. In addition to the current research-related activities, DuPont previously operated a hazardous waste incinerator (Thermal Waste Treatment unit) that was equipped with air pollution control devices and several hazardous waste storage pads that were permitted by DNREC.

## **Section 3: Summary of Environmental History**

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### Creek Road Contamination Area:

The RCRA Facility Investigation (RFI) for the Creek Road Contamination Area (CRCA) was conducted between December 1989 and September 1990. In September 1993, the U.S. Environmental Protection Agency (EPA) issued a RCRA administrative order directing DuPont to implement the remedy that was selected by EPA's Regional Administrator in September 1991 (No Further Action with Monitoring) for a portion of this site known as the CRCA; see Figures 1 and 2. EPA and DuPont worked jointly to complete the requirements of the order, which included the following:

- Conduct a five-year groundwater monitoring program, including sampling, analysis of samples, and measurement of groundwater elevations in 14 monitoring wells at the site on a quarterly and semi-annual basis.
- Prepare and submit reports describing this groundwater sampling work for EPA's review.
- Impose deed restrictions on the Property to prevent the placement of wells that could be used for domestic purposes, and any use of the CRCA that may permit dermal contact with subsurface soils and groundwater. DuPont is also required to notify EPA in advance and restrict access during any excavation work that may be completed in the site area.

DuPont completed the five-year groundwater monitoring program that was required as the selected remedy for this site in 1999 and submitted a summary report to EPA. The groundwater data generated during this program consistently indicated that the concentrations of the hazardous constituents of concern in groundwater were significantly below the remediation standards or goals established by EPA for the site, and that concentrations significantly decreased over the duration of the monitoring program. EPA issued its approval of the 5-Year Assessment Report to DuPont on August 30, 2000 and notified DuPont that they had successfully completed the RCRA Corrective Action process for the site. As part of a requirement in the Administrative Order, DuPont continues to maintain the deed restrictions placed on the CRCA.

In 2020, after receiving DNREC approval to proceed, the demolition of the Thermal Waste

Treatment (TWT) unit was initiated as part of the closure of the TWT unit's Part B RCRA permit. The TWT unit is located within the boundaries of the CRCA. Closure documents concluded that closure has been met for the TWT unit. DNREC approval letters were issued on March 30, 2021 for the waste storage pads, and on March 7, 2022 for the incinerator. For the CRCA, DNREC proposes that the deed restrictions currently imposed as part of the Administrative Order be transferred into an environmental covenant. The environmental covenant will be enforceable under the Uniform Environmental Covenant Act, which will include use limitations and requirements on the CRCA to protect human health and the environment and will transfer to any future owner as part of the deed record for the Property.

#### Parking Lot 1:

DNREC was notified by DuPont in May 2019 that waste characterization soil samples collected prior to a reconfiguration project returned soil data analytical results exceeding DNREC Hazardous Substance Cleanup Act (HSCA) Screening Levels (SL). DuPont conducted sampling in September 2019 (Figures 1 and 3) to confirm and better define the areas of concern (AOCs). The AOCs with constituents that exceeded HSCA reporting levels (RLs) as part of the March 2019 event were as follows:

- SB-01: arsenic
- SB-03: arsenic and benzo(a)pyrene
- SB-08: arsenic
- SB-13: benzo(a)pyrene
- SB-22: arsenic, benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and DRO.

The findings and recommendations for each of the five AOCs were as follows:

- SB-01: Soil excavation was identified as the remedial method to address the arsenic detections.
- SB-03: Due to the extent of constituent exceedances, use restrictions in the form of an environmental covenant is recommended. It is currently anticipated that the environmental covenant will encompass the SB-03 area identified in Figure 6.
- SB-08: Confirmation sample results indicate that the arsenic concentrations at SB-08 are below DNREC criteria and are not a concern.
- SB-13: Soil excavation was identified as the remedial method to address the benzo(a)pyrene exceedances.
- SB-22: Due to the extent of constituent exceedances, use restrictions in the form of an environmental covenant are recommended for the SB-22 area (Figure 6).

## **Section 4: Proposed Remedy**

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The corrective measures proposed in this SB effectively limit exposures to human health and the environment. The receptor with the greatest potential for exposure is the on-site construction worker or the on-site utility/excavation worker, where a greater likelihood of direct contact with the impacted soil is associated with intrusive activities. To minimize any potential exposure, the

proposed remedies identified in this Statement of Basis, excavation performed at SB-01 and SB-13 and use restrictions in the form of an environmental covenant per the Uniform Environmental Covenant Act (UECA) for the CRCA, SB-03, and SB 22, meet the threshold criteria and remedy selection balancing criteria for evaluating corrective measures. The environmental covenant will establish areas where institutional controls will remain in place in perpetuity to protect human health and the environment and will transfer to any future owners as part of the deed record for the Facility. The environmental covenant must include the following activity and/or use restrictions:

[a.] Use Restriction. Use of the CRCA and Parking Lot 1 AOC locations shall be restricted solely to those non-residential type uses permitted within commercial, manufacturing, or industrial districts respectively, as such district types and uses (including ancillary or accessory uses) are permitted pursuant to the corresponding zoning district classification of the New Castle County Code; Any change to the current site use must be pre-approved by DNREC. In addition, use of the “CRCA” area shall be restricted to a frequency of less than or equal to 50 days/year/individual.

[b.] Interference with Remedy. There shall be no digging, drilling, excavating, grading, constructing, earth moving, or any other land disturbing activity on the CRCA and Parking Lot 1 AOC locations including any repair, renovation or demolition of the existing structures 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 CRCA and Parking Lot 1 AOC locations without the prior written approval of DNREC’s Remediation Section and DNREC’s Division of Water;

[d.] Submission of a Long-Term Stewardship (LTS) Plan for DNREC’s Approval. The DNREC-approved LTS Plan will detail the requirements to be followed in order to monitor the ground surface to ensure that it is in good condition and has not been compromised due to erosion or wear.

[e.] Submission of a Contaminated Materials Management Plan (CMMP) for DNREC’s approval. The DNREC-approved CMMP will provide guidance to construction workers on how to safely manage and interact with any potentially contaminated media at the Site.

[f.] Emergency Oversight. A person may undertake an emergency response action at these locations after initiation of a remedy without DNREC’s oversight provided the person notifies the DNREC of the details of the action taken, within 48 hours of the initiation of the emergency response action. This does not limit or relieve a person’s liability under other existing federal or state laws or regulations for undertaking an emergency response at a location.

## **Section 5: Environmental Indicators**

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EPA sets national goals to measure progress toward meeting the nation’s major environmental goals. For Corrective Action, EPA evaluates two key environmental indicators for each facility: (1) current human exposures under control and (2) migration of contaminated groundwater under control. The “Migration of Contaminated Groundwater Under Control” or Groundwater Environmental Indicator (EI) ensures that contaminated groundwater does not spread and further contaminate groundwater resources. Groundwater was not encountered in soil borings installed at Parking Lot 1. Based on this information, it is concluded that groundwater is not present in the

unconsolidated soils underlying Parking Lot 1. The thin groundwater flow zone underlying the CRCA has been studied as part of the required monitoring program; groundwater concentrations are below the EPA established remediation standards/goals. Based on this information, groundwater at Parking Lot 1 and the CRCA is not a contaminant transport concern.

The “Current Human Exposures Under Control” or Human Exposures EI ensures that people near a particular facility are not exposed to unacceptable levels of contaminants:

- Areas SB-01 and SB-13 have been excavated, thereby removing potential exposure concerns.
- In the area of the CRCA and AOCs SB-03 and SB-22, the receptor with the greatest potential for exposure is the on-site construction worker or the on-site utility/excavation worker, where a greater likelihood of direct contact with the impacted soil is associated with intrusive activities. To minimize any potential exposure, workers will adhere to the site health and safety plan and the limitation and restriction documents associated with the proposed environmental covenant and Long-Term Stewardship Plan.

## **Section 6: Public Participation**

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On May 11, 2022, DNREC issued a public notice. This notice discussed DNREC’s proposed remedy for the DuPont Experimental Station Lot 1 and the DuPont Experimental Station CRCA.

An electronic version of this SB in addition to the administrative record on which this determination is based is available at the following DNREC website:

<https://de.gov/dnrecnotices>

DNREC is requesting input from the public on its proposed remedy for this facility. The public is also invited to provide comments on remedial alternatives not addressed in this document. The public comment period will last forty-five (45) calendar days beginning May 11, 2022 and ending June 21, 2022. A public hearing on this SB will not be held unless the Secretary of DNREC, in care of Wendy March, receives a meritorious request for a hearing within the forty-five (45) days comment period.

Please send written comments to the DNREC to Wendy March, Project Officer or via email to [RS\\_Public\\_Comments@delaware.gov](mailto:RS_Public_Comments@delaware.gov).

Comments may be sent to DNREC in writing to the address listed below:

Wendy March, CHMM  
Department of Natural Resources and Environmental Control  
Division of Waste and Hazardous Substances  
89 Kings Highway  
Dover, DE 19901  
Phone: (302) 739-9403  
Fax: (302) 739-5060  
Email: [wendy.march@delaware.gov](mailto:wendy.march@delaware.gov)

After evaluation of the public's comments, DNREC will prepare a final decision document, referred to as the Record of Decision (ROD), and a Response to Comments that identifies the final selected remedy. The Response to Comments will address all significant written comments and any significant oral comments generated at the public hearing if a hearing is held. This ROD and Response to Comments will be made available to the public. If, on the basis of such comments or other relevant information, significant changes are proposed to be made to the corrective measures for this facility as identified by DNREC in this SB, DNREC may seek additional public comments.

## Attachment #1

### **Index to Administrative Record**

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- AECOM. February 2022. *Facility Incinerator Closure Report*. DuPont Experimental Station. Wilmington, Delaware.
- AECOM. March 2021. *Parking Lot 1 Post-Excavation Summary for Areas SB-01 and SB-03*. DuPont Experimental Station. Wilmington, Delaware.
- AECOM. February 2021. *Facility Incinerator Waste Storage Pads A, B, C, D, E, F, G, 23, 24, and 24-0 Closure Report*. DuPont Experimental Station. Wilmington Delaware.
- AECOM. March 2020. *Parking Lot 1 Confirmation and Delineation Soil Sampling Report*. DuPont Experimental Station. Wilmington Delaware.
- AECOM. February 2020. *SB-01 Soil Remediation Plan for Parking Lot 1 at the DuPont Experimental Station*. Wilmington Delaware.
- AECOM. January 2020. *Parking Lot 1 Summary Remediation Plan for Areas SB-01 and SB-13*. DuPont Experimental Station. Wilmington Delaware.
- Gentran's Inc. July 1991. *Corrective Measures Study*. DuPont Experimental Station. Prepared for: E.I. du Pont de Nemours & Co., Inc.
- GeoTrans Inc. July 1990. *RCRA Facility Investigation, DuPont Experimental Station. Draft Final Report*. Prepared for: E.I. du Pont de Nemours & Co. Experimental Station.