Executive Summary
RCRA Part B
Permit Renewal and Class I & II Modifications
Chambers Works Chemical Waste Storage Area

INTRODUCTION

This application is for a RCRA Part B Permit for The Chambers Works Chemical Waste Storage Area. Specifically, this combined application includes the required documentation for three areas of interest: 1) Permit renewal for the Chem Waste Storage Area, 2) Class II Permit Modification for Chemours Chambers Works to resume commercial hazardous waste treatment, and 3) Class I Permit Modification for approval to demolish the 1178 storage building.

Many requested pieces of information overlap in all three of the above mentioned areas, and are in the Chem Waste renewal application. These include, but may not be limited to, the following:

1) USEPA Part A Permit Application
2) General Facility Description
3) Topographical Map
4) Property Ownership Data
5) Flood Hazard Information
6) Traffic Information
7) Specific Hazardous Waste Management Unit Information
8) Site Security Information
9) Facility Inspection Plan
10) Preparedness and Prevention Information
11) Management of Ignitable, Reactive, or Incompatible Wastes
12) Contingency Plan
13) Emergency Procedures Information
14) Personnel Training Information

GENERAL DESCRIPTION

1) The enclosed application is for a RCRA Part B Permit for The Chambers Works Chemical Waste Storage Area. The application presents all information required by 40 CFR 264 Subparts B, C, D, E, F, G, H, and I, and 40 CFR 270. There is a separate, detailed Executive Summary at the start of the Chem Waste application in this binder that summarizes the existing storage areas.

2) A Class II Permit Modification for Chemours Chambers Works to request approval to resume commercial hazardous waste treatment has previously been submitted to the state. This documentation can be found in Subpart B, Attachments B-1 and B-2 of this binder.

3) A Class I Permit Modification for approval to demolish the 1178 Building at Chemours Chambers Works has previously been submitted to the state. The 1178 Building was formerly permitted as a RCRA Containment Building. However, the building has been decommissioned and is no longer being used for chemical storage of any kind. The closure plan and related details can be found in Subpart G of this application binder.

Executive Summary
RCRA Part B Permit Application
Chambers Works Chemical Waste Storage Area

INTRODUCTION

This application is for a RCRA Part B Permit for The Chambers Works Chemical Waste Storage Area. The application presents all information required by 40 CFR 264 Subparts B, C, D, E, F, G, H, and I, and 40 CFR 270. The Executive Summary summarizes the existing storage areas.

The 1178 Building, however, has been decommissioned and is no longer being used for chemical storage of any kind. We have requested approval from NJDEP to demolish the 1178 building.

GENERAL DESCRIPTION

The Chemical Waste Container Storage Area (also referred to as the Chem Waste or Container Storage Area) and the 1178 Building are located within The Chemours Chambers Works plant site and are managed by the Chemical Waste Management Area (CWMA) and the Secure Environmental Treatment (SET) Business Unit. The Chem Waste area is approximately 3,600 feet east of the Delaware River and approximately 4,500 northeast of the Delaware Memorial Bridge. The 1178 Building is approximately 500 feet east of the Delaware River and approximately 1,700 feet north of the Delaware Memorial Bridge.

The permitted Chem Waste Area consists of three principal storage areas designated as A, B, and C, each having reinforced concrete bases and reinforced concrete berms. Storage Area B, the truck spot, has been taken out of service and is not currently being utilized. However, Storage Area B will be left in the Executive Summary should Chambers Works desire to utilize it again if or when the outside waste business is resumed at Chambers Works.

The total permitted capacity of these storage pad areas is 664,500 gallons (9,900 fifty-five gallon drum equivalents) of hazardous and nonhazardous waste in containers, tote tanks, and trailers.

- Area A - 580,500 gallon capacity for containers (approximately 9,900 drums)
- Area B - 28,000 gallon capacity tote tanks or trailers
- Area C - 56,000 gallon capacity tote tanks or trailers

The respective required containment volumes are 58,050, 2,800, and 5,600 gallons. Normally, there are less than 800 drums and 50 totes of waste in storage at any given time. The layout of the Chem Waste container storage area is shown in Attachment I-2.

Area A

Area A is 200' X 136' providing approximately 27,400 ft.^{2} of drum storage area. Approximately 200 ft.^{2} of this is sump and ditch area, and approximately 3,800 ft.^{2} is primary aisle space, which provides for fork lift access to each of the storage sections. The remaining 23,400 ft.^{2} is actual storage area, and is divided into 3 sections, Pad A, 90 Day Pad, and Non Hazardous Pad. An adjacent storage area, Area A5, 90' x 80', provides six truck spots and approximately 7,200 ft.^{2} of additional storage space, where trucks carrying drums for unloading may be placed.

Area B

Storage Area B consists of five truck spots where tank trailers containing liquid wastes may be located. The area is approximately 100' x 75' (four spots) plus 12' x 50' (fifth spot), and contains approximately 8,100 ft^2 of storage area.

Area C

Storage Area C consists of an additional eight tank trailer spots for temporary storage. The area is a concrete pad approximately 100' x 60' and contains 6,000 ft^2 of storage area. Liquid wastes are received at the Chemical Waste Container Area in various types of containers:

- 55 gallon or smaller drums
- 250 gallon poly totes
- Tank Trailers (T/T)
- Dempster/Dumpster Tanks (D/D)

There is an existing dedrumming facility at the Chemical Waste Container Area which is used to transfer aqueous liquid wastes to the Chambers Works Waste Water Treatment Plant (WWTP). The aqueous wastes are directly pumped to the Chambers Works site process waste transfer system which discharges directly to the WWTP.

The facility is designed to store waste (from on-site sources only) prior to shipment to authorized on-site or off-site facilities.

1178 Building

The 1178 Building was formerly permitted as a RCRA Containment Building. However, it has been decommissioned and is no longer being used for chemical storage of any kind. We have requested approval from NJDEP to demolish the 1178 building.

CONTAINER MANAGEMENT PRACTICES

Prior to transfer to the Chemical Waste Container Storage Area, wastes generated in the on-site processing areas are placed in containers which are sealed and labeled according to Chambers Works practices, on Flat bed Trailers, or in Dempster/Dumpster Tanks. Containers are then transported to the storage area by both truck and fork lifts.

Drums are stored on pallets for ease of handling and to elevate them from possible contact with standing liquids. Drums on pallets are stacked up to three high. A minimum secondary aisle space of 30" is kept between pallets of drums to permit access for inspection. Drums are inspected for leaking and/or deterioration a minimum of weekly.

SECONDARY CONTAINMENT - SYSTEM DESIGN AND OPERATION

The containment systems design basis follows New Jersey regulatory requirements N.J.A.C. 7:1E(c). Pad A and B are provided with in situ containment of 6" rain fall event plus the largest container. Pad C is provided with a diversion that can contain and transfers the spill scenario plus rain rate of 1.25" per hour via sump and pump. Each pad feeds to the A regional wastewater tank, which in turn transfers to the wastewater treatment plant.

Area A

Storage Area A is located in the Chem Waste Area. It is approximately 200' x 136' in size. It is constructed of 7" thick concrete and is sloped toward a collection sump located on its northern edge. The sump discharges to the Chambers Works Waste Water Treatment Plant (WWTP) via the site process sewer system.

Area B

Storage Area B is used for Tank Truck storage. The current facility is constructed of concrete and asphalt and is sloped to a concrete ditch which drains to the WWTP via the area's process sewer system. Current design allows the storage area to store up to 10 tank trucks although only 5 tank truck spots are designated.

Area C

Storage Area C is a concrete pad with a six inch curb on the sides, sloped towards a sump which collects any liquid waste for discharge to the WWTP via the site process sewer system.

1178 Building

The 1178 Building has been decommissioned and is no longer being used for chemical storage of any kind. We have requested approval from NJDEP to demolish the 1178 building.

REMOVAL OF ACCUMULATED LIQUIDS TO PREVENT OVERFLOW

All liquids collected within the pad areas are collected and pumped to the Waste Water Treatment Plant via the site process sewer system for treatment.

PREVENTION OF CONTACT WITH FREE STANDING LIQUIDS

Drums are stored on pallets to prevent any contact with free standing liquids.

PREVENTION OF RUN-OFF

Run-on is prevented from entering Storage Areas A, B and C by means of grading to encourage drainage away from the area.

WASTE CHARACTERISTICS

The container storage area is the receiving point for all containerized waste going to the on-site Secure C Landfill, the site WWTP, or off-site for disposal. All wastes managed in the Chem Waste Area have been profiled on Waste Characterization Forms which detail the chemical and physical characteristics of the wastes and the appropriate RCRA Hazardous Waste numbers. The existing permit allows for management of containers of waste which are ID 72 nonhazardous, any hazardous wastes which exhibit a characteristic and all coded hazardous wastes except F020, F021, F022, F023, F026, and F027.

Specific details of the waste streams and general waste analysis is found in Sections B and 40 CFR 270 of this permit application.

Table of Contents

Generator Standards 1
Subpart B - General Facility Standards 11
Subpart C – Preparedness and Prevention 27
Subpart D – Contingency Plan and Emergency Procedures 31
Subpart E – Manifest System, Recordkeeping, and Reporting 35
Subpart F – Releases from Solid Waste Management Units 41
Subpart G – Closure and Post-Closure 43
(includes Class I Permit Modification)
Subpart H – Financial Requirements 47
Subpart I – Use and Management of Containers 49
40 CFR 270 The Hazardous Waste Permit Program 57

Attachments

Attachment B-1 Class II Modification Application
Attachment B-2 Waste Analysis Plan for Commercial Waste Business
Attachment B-3 Inspection Log
Attachment B-4 Training Outline
Attachment B-5 Work Permit
Attachment D-1 Contingency Plan and Emergency Procedures
Attachment D-2 Transmittal of Contingency Plan to Local Governmental Agencies
Attachment E-1 4D Screen Shot
Attachment E-2 Pollution Prevention Plan / 40 CFR 264.73(b)(9)
Attachment E-3 40 CFR Part 268 Land Disposal Notification
Attachment E-4 Chambers Works Wastewater Treatment Facility Land Disposal Restrictions
Attachment E-5 Notification and Certification Form
Attachment F-1 Currently Sampled Monitoring Wells
Attachment G-1 Closure Plan
Attachment H-1 RCRA Financial Assurance Documentation
Attachment H-2 Closure Cost Estimates
Attachment I-1 Drawing 36924
Attachment I-2 Chem Waste Storage Pad Sketch -Waste Arrangement
Attachment 270-1 Chemical and Physical Analyses
Attachment 270-2 Traffic Study
Attachment 270-3 Flood Plan Map
Attachment 270-4 Topographic Map
Attachment 270-5 Access Control Map
Attachment 270-6 Groundwater Sampling Map
Attachment OWB-1 NJPDES Permit NJ0005100
Attachment OWB-2 Conditional A-901 Licensure
Attachment OWB-3 DRBC Docket D-1988-085-3 and Docket Transfer to Chemours
Attachment OWB-4 Chemours Chambers Works Secure Landfill Waste Analysis Plan
Attachment OWB-5 SET Waste Characterization Form (on-site)
Attachment OWB-6 SET Preliminary Waste Characterization Form (off-site)
Attachment OWB-7 SET Final Waste Characterization Form (off-site)
Attachment OWB-8 Land Disposal Restrictions Notifications and Certifications Form (off-site)

EPA ID Number	N	J	D	0	0	2	3	8	5	7	3	0

OMB# 2050-0024; Expires 05/31/2020

United States Environmental Protection Agency

HAZARDOUS WASTE PERMIT PART A FORM

1. Facility Permit Contact

First Name	**Scott**	MI	**T**	Last Name	**Northey**
Title	**Site Environmental Manager**				
Email	**Scott.T.Northey@chemours.com**				
Phone	**856 540-2012**	Ext		Fax	**856 540-3206**

2. Facility Permit Contact Mailing Address

Street Address	**67 Canal Rd, P.O. Box 9001**				
City, Town, or Village	**Deepwater**				
State	**NJ**	Country	USA	Zip Code	08023

3. Facility Existence Date (mm/dd/yyyy)

5/26/1917

4. Other Environmental Permits

A. Permit Type	B. Permit Number													C. Description
N	N	J	0	0	0	5	1	0	0					**Discharge to Surface Water**
N	N	J	0	1	0	5	8	7	2					**Discharge to Groundwater**
N	N	J	0	0	8	3	4	2	9					**Discharge to Groundwater**
R	H	W	P	1	5	0	0	0	1					**RCRA Subtitle C Landfill**
R	H	W	P	1	4	0	0	0	3					**RCRA Subtitle C Storage**
E	L	O	P	1	5	0	0	0	1					**Class III Sanitary Landfill**
E	W	A	P	1	5	0	0	0	1					**Water Allocation Permit**

5. Nature of Business

Chambers Works is a multi-product chemical plant. The chemicals manufactured include organic intermediates (substituted aromatic compounds), fluorochemicals, elastomeric products, and general industrial chemicals, particularly paper and textile treating chemicals and specialty lubricants. The site also includes a wastewater treatment facility, chemical waste storage, a hazardous waste landfill, and a sanitary landfill.

EPA ID Number | N | J | D | 0 | 0 | 2 | 3 | 8 | 5 | 7 | 3 | 0 |

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N	N	J	0	0	0	5	1	0	0					Discharge to Surface Water
N	N	J	0	1	0	5	8	7	2					Discharge to Groundwater
N	N	J	0	0	8	3	4	2	9					Discharge to Groundwater
R	H	W	P	1	5	0	0	0	1					RCRA Subtitle C Landfill
R	H	W	P	1	4	0	0	0	3					RCRA Subtitle C Storage
E	L	O	P	1	5	0	0	0	1					Class III Sanitary Landfill
E	W	A	P	1	5	0	0	0	1					Water Allocation Permit

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Chambers Works is a multi-product chemical plant. The chemicals manufactured include organic intermediates (substituted aromatic compounds), fluorochemicals, elastomeric products, and general industrial chemicals, particularly paper and textile treating chemicals and specialty lubricants. The site also includes a wastewater treatment facility, chemical waste storage, a hazardous waste landfill, and a sanitary landfill.

EPA ID Number	N	J	D	0	0	2	3	8	5	7	3	0

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State	**NJ**	Country	USA	Zip Code	08023

3. Facility Existence Date (mm/dd/yyyy)

5/26/1917

.. Other Environmental Permits

A. Permit Type	B. Permit Number													C. Description
E	6	5	4	7	3									Title V Air Permit
E	D	-	1	9	6	9	-	0	5	9	-	2		DRBC River water withdrawal
E	D	-	1	9	8	8	-	0	8	5	-	3		DRBC wastewater discharge
E	D	-	1	9	9	3	-	1	9	-	2			DRBC surface/groundwater withdrawal
E	T	D	I	1	0	0	0	0	3					NJ Land Use commercial license
E	T	D	I	1	0	0	0	0	1					NJ Land Use utility license
E	T	D	I	0	9	0	0	0	1					NJ Land Use tidelands license

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Chambers Works is a multi-product chemical plant. The chemicals manufactured include organic intermediates (substituted aromatic compounds), fluorochemicals, elastomeric products, and general industril chemicals, particularly paper and textile treating chemicals and specialty lubricants. The site also includes a wastewater treatment facility, chemical waste storage, a hazardous waste landfill, and a sanitary landfill.

EPA ID Number | N | J | D | 0 | 0 | 2 | 3 | 8 | 5 | 7 | 3 | 0 |

OMB# 2050-0024; Expires 05/31/2020

United States Environmental Protection Agency

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Street Address	**67 Canal Rd, P.O. Box 9001**				
City, Town, or Village	**Deepwater**				
State	**NJ**	Country	USA	Zip Code	08023

3. Facility Existence Date (mm/dd/yyyy)

5/26/1917

4. Other Environmental Permits

A. Permit Type	B. Permit Number													C. Description
E	S	L	-	3	8	2	/	0	9					**Delaware Subaqueous Lands**
N	N	J	G	0	2	7	3	9	5	3				**Residual General Permit**

5. Nature of Business

Chambers Works is a multi-product chemical plant. The chemicals manufactured include organic intermediates (substituted aromatic compounds), fluorochemicals, elastomeric products, and general industrial chemicals, particularly paper and textile treating chemicals and specialty lubricants. The site also includes a wastewater treatment facility, chemical waste storage, a hazardous waste landfill, and a sanitary landfill.

6. **Process Codes and Design Capacities**

Line Number		A. Process Code			B. Process Design Capacity		C. Process Total Number of Units	D. Unit Name
					(1) Amount	(2) Unit of Measure		
0	1	S	0	1	664500	G	001	Chem Waste Area
0	2	S	0	1	82000	G	001	1178 building
0	3	T	0	4	33000000	U	001	SET WWTP
0	4	D	8	0	1464000	Y	001	Secure C Landfill

7. **Description of Hazardous Wastes** (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.		A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes									
								(1) Process Codes									(2) Process Description (if code is not entered in 7.D1))

8. **Map**

Attach to this application a topographical map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all spring, rivers, and other surface water bodies in this map area. See instructions for precise requirements.

9. **Facility Drawing**

All existing facilities must include a scale drawing of the facility. See instructions for more detail.

10. **Photographs**

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment, and disposal areas; and sites of future storage, treatment, or disposal areas. See instructions for more detail.

11. **Comments**

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.	A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes									
							(1) Process Codes									(2) Process Description (if code is not entered in 7.D1))
01	D	0	0	1			S	0	1	T	0	4				
02	D	0	0	2			S	0	1	T	0	4				
03	D	0	0	3			S	0	1	T	0	4				
04	D	0	0	4			S	0	1	T	0	4				
05	D	0	0	5			S	0	1	T	0	4				
06	D	0	0	6			S	0	1	T	0	4				
07	D	0	0	7			S	0	1	T	0	4				
08	D	0	0	8			S	0	1	T	0	4				
09	D	0	0	9			S	0	1	T	0	4				
10	D	0	1	0			S	0	1	T	0	4				
11	D	0	1	1			S	0	1	T	0	4				
12	D	0	1	2			S	0	1							
13	D	0	1	3			S	0	1							
14	D	0	1	4			S	0	1							
15	D	0	1	5			S	0	1							
16	D	0	1	6			S	0	1							
17	D	0	1	7			S	0	1							
18	D	0	1	8			S	0	1	T	0	4				
19	D	0	1	9			S	0	1	T	0	4				
20	D	0	2	0			S	0	1	T	0	4				
21	D	0	2	1			S	0	1	T	0	4				
22	D	0	2	2			S	0	1	T	0	4				
23	D	0	2	3			S	0	1	T	0	4				
24	D	0	2	4			S	0	1	T	0	4				
25	D	0	2	5			S	0	1	T	0	4				
26	D	0	2	6			S	0	1	T	0	4				
27	D	0	2	7			S	0	1	T	0	4				
28	D	0	2	8			S	0	1	T	0	4				
29	D	0	2	9			S	0	1	T	0	4				
30	D	0	3	0			S	0	1	T	0	4				
31	D	0	3	1			S	0	1							
32	D	0	3	2			S	0	1	T	0	4				
33	D	0	3	3			S	0	1	T	0	4				
34	D	0	3	4			S	0	1	T	0	4				
35	D	0	3	5			S	0	1	T	0	4				
36	D	0	3	6			S	0	1	T	0	4				
37	D	0	3	7			S	0	1	T	0	4				
38	D	0	3	8			S	0	1	T	0	4				
39	D	0	3	9			S	0	1	T	0	4				
40	D	0	4	0			S	0	1	T	0	4				
41	D	0	4	1			S	0	1	T	0	4				

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.	A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes									
							(1) Process Codes									(2) Process Description (If code is not entered in 7.D1))
42	D	0	4	2			S	0	1	T	0	4				
43	D	0	4	3			S	0	1	T	0	4				
44	F	0	0	1			S	0	1	T	0	4	D	8	0	
45	F	0	0	2			S	0	1	T	0	4	D	8	0	
46	F	0	0	3			S	0	1	T	0	4	D	8	0	
47	F	0	0	4			S	0	1	T	0	4	D	8	0	
48	F	0	0	5			S	0	1	T	0	4	D	8	0	
49	F	0	0	6			S	0	1	T	0	4	D	8	0	
50	F	0	0	7			S	0	1	T	0	4	D	8	0	
51	F	0	0	8			S	0	1	T	0	4	D	8	0	
52	F	0	0	9			S	0	1	T	0	4	D	8	0	
53	F	0	1	0			S	0	1	T	0	4	D	8	0	
54	F	0	1	1			S	0	1	T	0	4	D	8	0	
55	F	0	1	2			S	0	1	T	0	4	D	8	0	
56	F	0	1	9			S	0	1	T	0	4	D	8	0	
57	F	0	2	4			S	0	1				D	8	0	
58	F	0	2	5			S	0	1	T	0	4	D	8	0	
59	F	0	2	7			S	0	1							
60	F	0	2	8			S	0	1							
61	F	0	3	2			S	0	1	T	0	4	D	8	0	
62	F	0	3	4			S	0	1	T	0	4	D	8	0	
63	F	0	3	5			S	0	1	T	0	4	D	8	0	
64	F	0	3	7			S	0	1	T	0	4	D	8	0	
65	F	0	3	8			S	0	1	T	0	4	D	8	0	
66	F	0	3	9			S	0	1	T	0	4	D	8	0	
67	K	0	0	1			S	0	1	T	0	4	D	8	0	
68	K	0	0	2			S	0	1	T	0	4	D	8	0	
69	K	0	0	3			S	0	1	T	0	4	D	8	0	
70	K	0	0	4			S	0	1	T	0	4	D	8	0	
71	K	0	0	5			S	0	1	T	0	4	D	8	0	
72	K	0	0	6			S	0	1	T	0	4	D	8	0	
73	K	0	0	7			S	0	1	T	0	4	D	8	0	
74	K	0	0	8			S	0	1	T	0	4	D	8	0	
75	K	0	0	9			S	0	1	T	0	4	D	8	0	
76	K	0	1	0			S	0	1	T	0	4	D	8	0	
77	K	0	1	1			S	0	1	T	0	4	D	8	0	
78	K	0	1	3			S	0	1	T	0	4	D	8	0	
79	K	0	1	4			S	0	1	T	0	4	D	8	0	
80	K	0	1	5			S	0	1	T	0	4	D	8	0	
81	K	0	1	6			S	0	1	T	0	4	D	8	0	
82	K	0	1	7			S	0	1	T	0	4	D	8	0	

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.	A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes									
							(1) Process Codes									(2) Process Description (if code is not entered in 7.D1))
83	K	0	1	8			S	0	1	T	0	4	D	8	0	
84	K	0	1	9			S	0	1	T	0	4	D	8	0	
85	K	0	2	0			S	0	1	T	0	4	D	8	0	
86	K	0	2	1			S	0	1	T	0	4	D	8	0	
87	K	0	2	2			S	0	1	T	0	4	D	8	0	
88	K	0	2	3			S	0	1				D	8	0	
89	K	0	2	4			S	0	1				D	8	0	
90	K	0	2	5			S	0	1				D	8	0	
91	K	0	2	6			S	0	1				D	8	0	
92	K	0	2	7			S	0	1				D	8	0	
93	K	0	2	8			S	0	1	T	0	4	D	8	0	
94	K	0	2	9			S	0	1	T	0	4	D	8	0	
95	K	0	3	0			S	0	1	T	0	4	D	8	0	
96	K	0	3	1			S	0	1	T	0	4	D	8	0	
97	K	0	3	2			S	0	1				D	8	0	
98	K	0	3	3			S	0	1	T	0	4	D	8	0	
99	K	0	3	4			S	0	1	T	0	4	D	8	0	
100	K	0	3	5			S	0	1	T	0	4	D	8	0	
101	K	0	3	6			S	0	1	T	0	4	D	8	0	
102	K	0	3	7			S	0	1	T	0	4	D	8	0	
103	K	0	3	8			S	0	1				D	8	0	
104	K	0	3	9			S	0	1				D	8	0	
105	K	0	4	0			S	0	1				D	8	0	
106	K	0	4	1			S	0	1				D	8	0	
107	K	0	4	2			S	0	1	T	0	4	D	8	0	
108	K	0	4	3			S	0	1				D	8	0	
109	K	0	4	4			S	0	1	T	0	4	D	8	0	
110	K	0	4	5			S	0	1	T	0	4	D	8	0	
111	K	0	4	6			S	0	1	T	0	4	D	8	0	
112	K	0	4	7			S	0	1	T	0	4	D	8	0	
113	K	0	4	8			S	0	1	T	0	4	D	8	0	
114	K	0	4	9			S	0	1	T	0	4	D	8	0	
115	K	0	5	0			S	0	1	T	0	4	D	8	0	
116	K	0	5	1			S	0	1	T	0	4	D	8	0	
117	K	0	5	2			S	0	1	T	0	4	D	8	0	
118	K	0	6	0			S	0	1	T	0	4	D	8	0	
119	K	0	6	1			S	0	1				D	8	0	
120	K	0	6	2			S	0	1	T	0	4	D	8	0	
121	K	0	6	9			S	0	1	T	0	4	D	8	0	
122	K	0	7	1			S	0	1	T	0	4	D	8	0	
123	K	0	7	3			S	0	1	T	0	4	D	8	0	

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.	A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes									
							(1) Process Codes									(2) Process Description (if code is not entered in 7.D1))
124	K	0	8	3			S	0	1	T	0	4	D	8	0	
125	K	0	8	4			S	0	1	T	0	4	D	8	0	
126	K	0	8	5			S	0	1				D	8	0	
127	K	0	8	6			S	0	1	T	0	4	D	8	0	
128	K	0	8	7			S	0	1	T	0	4	D	8	0	
129	K	0	8	8			S	0	1				D	8	0	
130	K	0	9	3			S	0	1				D	8	0	
131	K	0	9	4			S	0	1				D	8	0	
132	K	0	9	5			S	0	1	T	0	4	D	8	0	
133	K	0	9	6			S	0	1	T	0	4	D	8	0	
134	K	0	9	7			S	0	1				D	8	0	
135	K	0	9	8			S	0	1				D	8	0	
136	K	0	9	9			S	0	1				D	8	0	
137	K	1	0	0			S	0	1	T	0	4	D	8	0	
138	K	1	0	1			S	0	1				D	8	0	
139	K	1	0	2			S	0	1	T	0	4	D	8	0	
140	K	1	0	3			S	0	1	T	0	4	D	8	0	
141	K	1	0	4			S	0	1	T	0	4	D	8	0	
142	K	1	0	5			S	0	1	T	0	4	D	8	0	
143	K	1	0	6			S	0	1	T	0	4	D	8	0	
144	K	1	0	7			S	0	1				D	8	0	
145	K	1	0	8			S	0	1				D	8	0	
146	K	1	0	9			S	0	1				D	8	0	
147	K	1	1	0			S	0	1				D	8	0	
148	K	1	1	1			S	0	1	T	0	4	D	8	0	
149	K	1	1	2			S	0	1				D	8	0	
150	K	1	1	3			S	0	1				D	8	0	
151	K	1	1	4			S	0	1				D	8	0	
152	K	1	1	5			S	0	1				D	8	0	
153	K	1	1	6			S	0	1				D	8	0	
154	K	1	1	7			S	0	1	T	0	4	D	8	0	
155	K	1	1	8			S	0	1	T	0	4	D	8	0	
156	K	1	2	3			S	0	1				D	8	0	
157	K	1	2	4			S	0	1				D	8	0	
158	K	1	2	5			S	0	1				D	8	0	
159	K	1	2	6			S	0	1				D	8	0	
160	K	1	3	1			S	0	1	T	0	4	D	8	0	
161	K	1	3	2			S	0	1	T	0	4	D	8	0	
162	K	1	3	6			S	0	1	T	0	4	D	8	0	
163	K	1	4	1			S	0	1							
164	K	1	4	2			S	0	1	T	0	4	D	8	0	

7. Description of Hazardous Wastes (Enter codes for items 7.A, 7.C and 7.D(1))

Line No.	A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes									
							(1) Process Codes									(2) Process Description (if code is not entered in 7.D1))
165	K	1	4	3			S	0	1	T	0	4	D	8	0	
166	K	1	4	4			S	0	1	T	0	4	D	8	0	
167	K	1	4	5			S	0	1	T	0	4	D	8	0	
168	K	1	4	7			S	0	1	T	0	4	D	8	0	
169	K	1	4	8			S	0	1	T	0	4	D	8	0	
170	K	1	4	9			S	0	1							
171	K	1	5	0			S	0	1							
172	K	1	5	1			S	0	1							
173	K	1	5	6			S	0	1				D	8	0	
174	K	1	5	7			S	0	1				D	8	0	
175	K	1	5	8			S	0	1				D	8	0	
176	K	1	5	9			S	0	1				D	8	0	
177	K	1	6	1			S	0	1				D	8	0	
178	K	1	6	9			S	0	1							
179	K	1	7	0			S	0	1							
180	K	1	7	1			S	0	1							
181	K	1	7	2			S	0	1							
182	K	1	7	4			S	0	1							
183	K	1	7	5			S	0	1							
184	K	1	7	6			S	0	1							
185	K	1	7	7			S	0	1							
186	K	1	7	8			S	0	1							
187	K	1	8	1			S	0	1							
188	P	0	0	1			S	0	1				D	8	0	
189	P	0	0	2			S	0	1				D	8	0	
190	P	0	0	3			S	0	1				D	8	0	
191	P	0	0	4			S	0	1				D	8	0	
192	P	0	0	5			S	0	1				D	8	0	
193	P	0	0	6			S	0	1				D	8	0	
194	P	0	0	7			S	0	1				D	8	0	
195	P	0	0	8			S	0	1				D	8	0	
196	P	0	0	9			S	0	1				D	8	0	
197	P	0	1	0			S	0	1				D	8	0	
198	P	0	1	1			S	0	1				D	8	0	
199	P	0	1	2			S	0	1				D	8	0	
200	P	0	1	3			S	0	1				D	8	0	
201	P	0	1	4			S	0	1				D	8	0	
202	P	0	1	5			S	0	1				D	8	0	
203	P	0	1	6			S	0	1				D	8	0	
204	P	0	1	7			S	0	1				D	8	0	
205	P	0	1	8			S	0	1				D	8	0	

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.	A. EPA Hazardous Waste No.	B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes	
				(1) Process Codes	(2) Process Description (if code is not entered in 7.D1))
206	P 0 2 0			S 0 1 D 8 0	
207	P 0 2 1			S 0 1 D 8 0	
208	P 0 2 2			S 0 1 D 8 0	
209	P 0 2 3			S 0 1 D 8 0	
210	P 0 2 4			S 0 1 D 8 0	
211	P 0 2 6			S 0 1 D 8 0	
212	P 0 2 7			S 0 1 D 8 0	
213	P 0 2 8			S 0 1 D 8 0	
214	P 0 2 9			S 0 1 D 8 0	
215	P 0 3 0			S 0 1 D 8 0	
216	P 0 3 1			S 0 1 D 8 0	
217	P 0 3 3			S 0 1 D 8 0	
218	P 0 3 4			S 0 1 D 8 0	
219	P 0 3 6			S 0 1 D 8 0	
220	P 0 3 7			S 0 1 D 8 0	
221	P 0 3 8			S 0 1 D 8 0	
222	P 0 3 9			S 0 1 D 8 0	
223	P 0 4 0			S 0 1 D 8 0	
224	P 0 4 1			S 0 1 D 8 0	
225	P 0 4 2			S 0 1 D 8 0	
226	P 0 4 3			S 0 1 D 8 0	
227	P 0 4 4			S 0 1 D 8 0	
228	P 0 4 5			S 0 1 D 8 0	
229	P 0 4 6			S 0 1 D 8 0	
230	P 0 4 7			S 0 1 D 8 0	
231	P 0 4 8			S 0 1 D 8 0	
232	P 0 4 9			S 0 1 D 8 0	
233	P 0 5 0			S 0 1 D 8 0	
234	P 0 5 1			S 0 1 D 8 0	
235	P 0 5 4			S 0 1 D 8 0	
236	P 0 5 6			S 0 1 D 8 0	
237	P 0 5 7			S 0 1 D 8 0	
238	P 0 5 8			S 0 1 D 8 0	
239	P 0 5 9			S 0 1 D 8 0	
240	P 0 6 0			S 0 1 D 8 0	
241	P 0 6 2			S 0 1 D 8 0	
242	P 0 6 3			S 0 1 D 8 0	
243	P 0 6 4			S 0 1 D 8 0	
244	P 0 6 5			S 0 1 D 8 0	
245	P 0 6 6			S 0 1 D 8 0	
246	P 0 6 7			S 0 1 D 8 0	

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.	A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes									
							(1) Process Codes									(2) Process Description (if code is not entered in 7.D1))
247	P	0	6	8			S	0	1				D	8	0	
248	P	0	6	9			S	0	1				D	8	0	
249	P	0	7	0			S	0	1				D	8	0	
250	P	0	7	1			S	0	1				D	8	0	
251	P	0	7	2			S	0	1				D	8	0	
252	P	0	7	3			S	0	1				D	8	0	
253	P	0	7	4			S	0	1				D	8	0	
254	P	0	7	5			S	0	1				D	8	0	
255	P	0	7	6			S	0	1				D	8	0	
256	P	0	7	7			S	0	1				D	8	0	
257	P	0	7	8			S	0	1				D	8	0	
258	P	0	8	1			S	0	1				D	8	0	
259	P	0	8	2			S	0	1				D	8	0	
260	P	0	8	4			S	0	1				D	8	0	
261	P	0	8	5			S	0	1				D	8	0	
262	P	0	8	7			S	0	1				D	8	0	
263	P	0	8	8			S	0	1				D	8	0	
264	P	0	8	9			S	0	1				D	8	0	
265	P	0	9	2			S	0	1				D	8	0	
266	P	0	9	3			S	0	1				D	8	0	
267	P	0	9	4			S	0	1				D	8	0	
268	P	0	9	5			S	0	1				D	8	0	
269	P	0	9	6			S	0	1				D	8	0	
270	P	0	9	7			S	0	1				D	8	0	
271	P	0	9	8			S	0	1				D	8	0	
272	P	0	9	9			S	0	1				D	8	0	
273	P	1	0	1			S	0	1				D	8	0	
274	P	1	0	2			S	0	1				D	8	0	
275	P	1	0	3			S	0	1				D	8	0	
276	P	1	0	4			S	0	1				D	8	0	
277	P	1	0	5			S	0	1				D	8	0	
278	P	1	0	6			S	0	1				D	8	0	
279	P	1	0	8			S	0	1				D	8	0	
280	P	1	0	9			S	0	1				D	8	0	
281	P	1	1	0			S	0	1				D	8	0	
282	P	1	1	1			S	0	1				D	8	0	
283	P	1	1	2			S	0	1				D	8	0	
284	P	1	1	3			S	0	1				D	8	0	
285	P	1	1	4			S	0	1				D	8	0	
286	P	1	1	5			S	0	1				D	8	0	
287	P	1	1	6			S	0	1				D	8	0	

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.	A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes									
							(1) Process Codes									(2) Process Description (if code is not entered in 7.D1))
28	8	P	1	1	8			S	0	1				D	8	0	
28	9	P	1	1	9			S	0	1				D	8	0	
29	0	P	1	2	0			S	0	1				D	8	0	
29	1	P	1	2	1			S	0	1				D	8	0	
29	2	P	1	2	2			S	0	1				D	8	0	
29	3	P	1	2	3			S	0	1				D	8	0	
29	4	P	1	2	7			S	0	1				D	8	0	
29	5	P	1	2	8			S	0	1				D	8	0	
29	6	P	1	8	5			S	0	1				D	8	0	
29	7	P	1	8	8			S	0	1				D	8	0	
29	8	P	1	8	9			S	0	1				D	8	0	
29	9	P	1	9	0			S	0	1				D	8	0	
30	0	P	1	9	1			S	0	1				D	8	0	
30	1	P	1	9	2			S	0	1				D	8	0	
30	2	P	1	9	4			S	0	1				D	8	0	
30	3	P	1	9	6			S	0	1				D	8	0	
30	4	P	1	9	7			S	0	1				D	8	0	
30	5	P	1	9	8			S	0	1				D	8	0	
30	6	P	1	9	9			S	0	1				D	8	0	
30	7	P	2	0	1			S	0	1				D	8	0	
30	8	P	2	0	2			S	0	1				D	8	0	
30	9	P	2	0	3			S	0	1				D	8	0	
31	0	P	2	0	4			S	0	1				D	8	0	
31	1	P	2	0	5			S	0	1				D	8	0	
31	2	U	0	0	1			S	0	1				D	8	0	
31	3	U	0	0	2			S	0	1	T	0	4	D	8	0	
31	4	U	0	0	3			S	0	1	T	0	4	D	8	0	
31	5	U	0	0	4			S	0	1	T	0	4	D	8	0	
31	6	U	0	0	5			S	0	1	T	0	4	D	8	0	
31	7	U	0	0	6			S	0	1				D	8	0	
31	8	U	0	0	7			S	0	1				D	8	0	
31	9	U	0	0	8			S	0	1				D	8	0	
32	0	U	0	0	9			S	0	1	T	0	4	D	8	0	
32	1	U	0	1	0			S	0	1				D	8	0	
32	2	U	0	1	1			S	0	1				D	8	0	
32	3	U	0	1	2			S	0	1	T	0	4	D	8	0	
32	4	U	0	1	4			S	0	1				D	8	0	
32	5	U	0	1	5			S	0	1				D	8	0	
32	6	U	0	1	6			S	0	1				D	8	0	
32	7	U	0	1	7			S	0	1				D	8	0	
32	8	U	0	1	8			S	0	1	T	0	4	D	8	0	

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.	A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes									
							(1) Process Codes									(2) Process Description (if code is not entered in 7.D1))
329	U	0	1	9			S	0	1	T	0	4	D	8	0	
330	U	0	2	0			S	0	1				D	8	0	
331	U	0	2	1			S	0	1				D	8	0	
332	U	0	2	2			S	0	1	T	0	4	D	8	0	
333	U	0	2	3			S	0	1				D	8	0	
334	U	0	2	4			S	0	1	T	0	4	D	8	0	
335	U	0	2	5			S	0	1	T	0	4	D	8	0	
336	U	0	2	6			S	0	1				D	8	0	
337	U	0	2	7			S	0	1	T	0	4	D	8	0	
338	U	0	2	8			S	0	1	T	0	4	D	8	0	
339	U	0	2	9			S	0	1	T	0	4	D	8	0	
340	U	0	3	0			S	0	1	T	0	4	D	8	0	
341	U	0	3	1			S	0	1	T	0	4	D	8	0	
342	U	0	3	2			S	0	1	T	0	4	D	8	0	
343	U	0	3	3			S	0	1				D	8	0	
344	U	0	3	4			S	0	1				D	8	0	
345	U	0	3	5			S	0	1				D	8	0	
346	U	0	3	6			S	0	1				D	8	0	
347	U	0	3	7			S	0	1	T	0	4	D	8	0	
348	U	0	3	8			S	0	1				D	8	0	
349	U	0	3	9			S	0	1	T	0	4	D	8	0	
350	U	0	4	1			S	0	1				D	8	0	
351	U	0	4	2			S	0	1				D	8	0	
352	U	0	4	3			S	0	1	T	0	4	D	8	0	
353	U	0	4	4			S	0	1	T	0	4	D	8	0	
354	U	0	4	5			S	0	1	T	0	4	D	8	0	
355	U	0	4	6			S	0	1				D	8	0	
356	U	0	4	7			S	0	1	T	0	4	D	8	0	
357	U	0	4	8			S	0	1	T	0	4	D	8	0	
358	U	0	4	9			S	0	1				D	8	0	
359	U	0	5	0			S	0	1	T	0	4	D	8	0	
360	U	0	5	1			S	0	1	T	0	4	D	8	0	
361	U	0	5	2			S	0	1	T	0	4	D	8	0	
362	U	0	5	3			S	0	1				D	8	0	
363	U	0	5	5			S	0	1				D	8	0	
364	U	0	5	6			S	0	1				D	8	0	
365	U	0	5	7			S	0	1	T	0	4	D	8	0	
366	U	0	5	8			S	0	1				D	8	0	
367	U	0	5	9			S	0	1				D	8	0	
368	U	0	6	0			S	0	1				D	8	0	
369	U	0	6	1			S	0	1				D	8	0	

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.	A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes									
							(1) Process Codes									(2) Process Description (if code is not entered in 7.D1))
370	U	0	6	2			S	0	1				D	8	0	
371	U	0	6	3			S	0	1	T	0	4	D	8	0	
372	U	0	6	4			S	0	1				D	8	0	
373	U	0	6	6			S	0	1	T	0	4	D	8	0	
374	U	0	6	7			S	0	1	T	0	4	D	8	0	
375	U	0	6	8			S	0	1	T	0	4	D	8	0	
376	U	0	6	9			S	0	1	T	0	4	D	8	0	
377	U	0	7	0			S	0	1	T	0	4	D	8	0	
378	U	0	7	1			S	0	1	T	0	4	D	8	0	
379	U	0	7	2			S	0	1	T	0	4	D	8	0	
380	U	0	7	3			S	0	1				D	8	0	
381	U	0	7	4			S	0	1				D	8	0	
382	U	0	7	5			S	0	1	T	0	4	D	8	0	
383	U	0	7	6			S	0	1	T	0	4	D	8	0	
384	U	0	7	7			S	0	1	T	0	4	D	8	0	
385	U	0	7	8			S	0	1	T	0	4	D	8	0	
386	U	0	7	9			S	0	1	T	0	4	D	8	0	
387	U	0	8	0			S	0	1	T	0	4	D	8	0	
388	U	0	8	1			S	0	1	T	0	4	D	8	0	
389	U	0	8	2			S	0	1	T	0	4	D	8	0	
390	U	0	8	3			S	0	1	T	0	4	D	8	0	
391	U	0	8	4			S	0	1	T	0	4	D	8	0	
392	U	0	8	5			S	0	1				D	8	0	
393	U	0	8	6			S	0	1				D	8	0	
394	U	0	8	7			S	0	1				D	8	0	
395	U	0	8	8			S	0	1	T	0	4	D	8	0	
396	U	0	8	9			S	0	1				D	8	0	
397	U	0	9	0			S	0	1				D	8	0	
398	U	0	9	1			S	0	1				D	8	0	
399	U	0	9	2			S	0	1				D	8	0	
400	U	0	9	3			S	0	1				D	8	0	
401	U	0	9	4			S	0	1				D	8	0	
402	U	0	9	5			S	0	1				D	8	0	
403	U	0	9	6			S	0	1				D	8	0	
404	U	0	9	7			S	0	1				D	8	0	
405	U	0	9	8			S	0	1				D	8	0	
406	U	0	9	9			S	0	1				D	8	0	
407	U	1	0	1			S	0	1	T	0	4	D	8	0	
408	U	1	0	2			S	0	1	T	0	4	D	8	0	
409	U	1	0	3			S	0	1				D	8	0	
410	U	1	0	5			S	0	1	T	0	4	D	8	0	

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.	A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes									
							(1) Process Codes									(2) Process Description (if code is not entered in 7.D1))
41 1	U	1	0	6			S	0	1	T	0	4	D	8	0	
41 2	U	1	0	7			S	0	1	T	0	4	D	8	0	
41 3	U	1	0	8			S	0	1				D	8	0	
41 4	U	1	0	9			S	0	1				D	8	0	
41 5	U	1	1	0			S	0	1				D	8	0	
41 6	U	1	1	1			S	0	1	T	0	4	D	8	0	
41 7	U	1	1	2			S	0	1	T	0	4	D	8	0	
41 8	U	1	1	3			S	0	1				D	8	0	
41 9	U	1	1	4			S	0	1				D	8	0	
42 0	U	1	1	5			S	0	1				D	8	0	
42 1	U	1	1	6			S	0	1				D	8	0	
42 2	U	1	1	7			S	0	1	T	0	4	D	8	0	
42 3	U	1	1	8			S	0	1	T	0	4	D	8	0	
42 4	U	1	1	9			S	0	1				D	8	0	
42 5	U	1	2	0			S	0	1	T	0	4	D	8	0	
42 6	U	1	2	1			S	0	1	T	0	4	D	8	0	
42 7	U	1	2	2			S	0	1				D	8	0	
42 8	U	1	2	3			S	0	1				D	8	0	
42 9	U	1	2	4			S	0	1				D	8	0	
43 0	U	1	2	5			S	0	1				D	8	0	
43 1	U	1	2	6			S	0	1				D	8	0	
43 2	U	1	2	7			S	0	1	T	0	4	D	8	0	
43 3	U	1	2	8			S	0	1	T	0	4	D	8	0	
43 4	U	1	2	9			S	0	1				D	8	0	
43 5	U	1	3	0			S	0	1	T	0	4	D	8	0	
43 6	U	1	3	1			S	0	1	T	0	4	D	8	0	
43 7	U	1	3	2			S	0	1				D	8	0	
43 8	U	1	3	3			S	0	1				D	8	0	
43 9	U	1	3	4			S	0	1	T	0	4	D	8	0	
44 0	U	1	3	5			S	0	1				D	8	0	
44 1	U	1	3	6			S	0	1	T	0	4	D	8	0	
44 2	U	1	3	7			S	0	1	T	0	4	D	8	0	
44 3	U	1	3	8			S	0	1	T	0	4	D	8	0	
44 4	U	1	4	0			S	0	1	T	0	4	D	8	0	
44 5	U	1	4	1			S	0	1	T	0	4	D	8	0	
44 6	U	1	4	2			S	0	1				D	8	0	
44 7	U	1	4	3			S	0	1				D	8	0	
44 8	U	1	4	4			S	0	1	T	0	4	D	8	0	
44 9	U	1	4	5			S	0	1	T	0	4	D	8	0	
45 0	U	1	4	6			S	0	1	T	0	4	D	8	0	
45 1	U	1	4	7			S	0	1				D	8	0	

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.	A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes									
							(1) Process Codes									(2) Process Description (if code is not entered in 7.D1))
452	U	1	4	8			S	0	1				D	8	0	
453	U	1	4	9			S	0	1				D	8	0	
454	U	1	5	0			S	0	1				D	8	0	
455	U	1	5	1			S	0	1				D	8	0	
456	U	1	5	2			S	0	1	T	0	4	D	8	0	
457	U	1	5	3			S	0	1				D	8	0	
458	U	1	5	4			S	0	1	T	0	4	D	8	0	
459	U	1	5	5			S	0	1	T	0	4	D	8	0	
460	U	1	5	6			S	0	1				D	8	0	
461	U	1	5	7			S	0	1	T	0	4	D	8	0	
462	U	1	5	8			S	0	1	T	0	4	D	8	0	
463	U	1	5	9			S	0	1	T	0	4	D	8	0	
464	U	1	6	0			S	0	1				D	8	0	
465	U	1	6	1			S	0	1	T	0	4	D	8	0	
466	U	1	6	2			S	0	1	T	0	4	D	8	0	
467	U	1	6	3			S	0	1				D	8	0	
468	U	1	6	4			S	0	1				D	8	0	
469	U	1	6	5			S	0	1	T	0	4	D	8	0	
470	U	1	6	6			S	0	1				D	8	0	
471	U	1	6	7			S	0	1				D	8	0	
472	U	1	6	8			S	0	1				D	8	0	
473	U	1	6	9			S	0	1	T	0	4	D	8	0	
474	U	1	7	0			S	0	1	T	0	4	D	8	0	
475	U	1	7	1			S	0	1				D	8	0	
476	U	1	7	2			S	0	1	T	0	4	D	8	0	
477	U	1	7	3			S	0	1				D	8	0	
478	U	1	7	4			S	0	1	T	0	4	D	8	0	
479	U	1	7	6			S	0	1				D	8	0	
480	U	1	7	7			S	0	1				D	8	0	
481	U	1	7	8			S	0	1				D	8	0	
482	U	1	7	9			S	0	1	T	0	4	D	8	0	
483	U	1	8	0			S	0	1	T	0	4	D	8	0	
484	U	1	8	1			S	0	1	T	0	4	D	8	0	
485	U	1	8	2			S	0	1				D	8	0	
486	U	1	8	3			S	0	1	T	0	4	D	8	0	
487	U	1	8	4			S	0	1	T	0	4	D	8	0	
488	U	1	8	5			S	0	1	T	0	4	D	8	0	
489	U	1	8	6			S	0	1				D	8	0	
490	U	1	8	7			S	0	1	T	0	4	D	8	0	
491	U	1	8	8			S	0	1	T	0	4	D	8	0	
492	U	1	8	9			S	0	1				D	8	0	

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.	A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes									
							(1) Process Codes									(2) Process Description (if code is not entered in 7.D1))
49 3	U	1	9	0			S	0	1				D	8	0	
49 4	U	1	9	1			S	0	1				D	8	0	
49 5	U	1	9	2			S	0	1	T	0	4	D	8	0	
49 6	U	1	9	3			S	0	1				D	8	0	
49 7	U	1	9	4			S	0	1				D	8	0	
49 8	U	1	9	6			S	0	1	T	0	4	D	8	0	
49 9	U	1	9	7			S	0	1				D	8	0	
50 0	U	2	0	0			S	0	1				D	8	0	
50 1	U	2	0	1			S	0	1				D	8	0	
50 2	U	2	0	3			S	0	1	T	0	4	D	8	0	
50 3	U	2	0	4			S	0	1	T	0	4	D	8	0	
50 4	U	2	0	5			S	0	1	T	0	4	D	8	0	
50 5	U	2	0	6			S	0	1				D	8	0	
50 6	U	2	0	7			S	0	1	T	0	4	D	8	0	
50 7	U	2	0	8			S	0	1	T	0	4	D	8	0	
50 8	U	2	0	9			S	0	1	T	0	4	D	8	0	
50 9	U	2	1	0			S	0	1	T	0	4	D	8	0	
51 0	U	2	1	1			S	0	1	T	0	4	D	8	0	
51 1	U	2	1	3			S	0	1				D	8	0	
51 2	U	2	1	4			S	0	1				D	8	0	
51 3	U	2	1	5			S	0	1				D	8	0	
51 4	U	2	1	6			S	0	1				D	8	0	
51 5	U	2	1	7			S	0	1				D	8	0	
51 6	U	2	1	8			S	0	1				D	8	0	
51 7	U	2	1	9			S	0	1				D	8	0	
51 8	U	2	2	0			S	0	1	T	0	4	D	8	0	
51 9	U	2	2	1			S	0	1				D	8	0	
52 0	U	2	2	2			S	0	1				D	8	0	
52 1	U	2	2	3			S	0	1				D	8	0	
52 2	U	2	2	5			S	0	1	T	0	4	D	8	0	
52 3	U	2	2	6			S	0	1	T	0	4	D	8	0	
52 4	U	2	2	7			S	0	1	T	0	4	D	8	0	
52 5	U	2	2	8			S	0	1	T	0	4	D	8	0	
52 6	U	2	3	4			S	0	1				D	8	0	
52 7	U	2	3	5			S	0	1	T	0	4	D	8	0	
52 8	U	2	3	6			S	0	1				D	8	0	
52 9	U	2	3	7			S	0	1				D	8	0	
53 0	U	2	3	8			S	0	1				D	8	0	
53 1	U	2	3	9			S	0	1	T	0	4	D	8	0	
53 2	U	2	4	0			S	0	1				D	8	0	
53 3	U	2	4	3			S	0	1	T	0	4	D	8	0	

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.	A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes									
							(1) Process Codes									(2) Process Description (if code is not entered in 7.D1))
534	U	2	4	4			S	0	1				D	8	0	
535	U	2	4	6			S	0	1				D	8	0	
536	U	2	4	7			S	0	1				D	8	0	
537	U	2	4	8			S	0	1				D	8	0	
538	U	2	4	9			S	0	1				D	8	0	
539	U	2	7	1			S	0	1				D	8	0	
540	U	2	7	8			S	0	1				D	8	0	
541	U	2	7	9			S	0	1				D	8	0	
542	U	2	8	0			S	0	1				D	8	0	
543	U	3	2	8			S	0	1				D	8	0	
544	U	3	5	3			S	0	1				D	8	0	
545	U	3	5	9			S	0	1				D	8	0	
546	U	3	6	4			S	0	1				D	8	0	
547	U	3	6	7			S	0	1	T	0	4	D	8	0	
548	U	3	7	2			S	0	1				D	8	0	
549	U	3	7	3			S	0	1				D	8	0	
550	U	3	8	7			S	0	1				D	8	0	
551	U	3	8	9			S	0	1				D	8	0	
552	U	3	9	4			S	0	1				D	8	0	
553	U	3	9	5			S	0	1				D	8	0	
554	U	4	0	4			S	0	1				D	8	0	
555	U	4	0	9			S	0	1				D	8	0	
556	2	4	1	0			S	0	1				D	8	0	
557	U	4	1	1			S	0	1				D	8	0	

OMB# 2050-0024; Expires 05/31/2020

United States Environmental Protection Agency
RCRA SUBTITLE C SITE IDENTIFICATION FORM

1. Reason for Submittal (Select only one.)

☐	Obtaining or updating an EPA ID number for an on-going regulated activity that will continue for a period of time. (Includes HSM activity)
☐	Submitting as a component of the Hazardous Waste Report for _____ (Reporting Year)
	☐ Site was a TSD facility and/or generator of > 1,000 kg of hazardous waste, > 1 kg of acute hazardous waste, or > 100 kg of acute hazardous waste spill cleanup in **one or more months of the reporting year** (or State equivalent LQG regulations)
☐	Notifying that regulated activity is no longer occurring at this Site
☐	Obtaining or updating an EPA ID number for conducting Electronic Manifest Broker activities
☑	Submitting a new or revised Part A Form

2. Site EPA ID Number

N	J	D	0	0	2	3	8	5	7	3	0

Site Name

Chemours Chambers Works

4. Site Location Address

Street Address	**67 Canal Road, P. O. Box 9001**	
City, Town, or Village **Deepwater**		County **Salem**
State **NJ**	Country **US**	Zip Code **08023**

5. Site Mailing Address ☑ Same as Location Address

Street Address		
City, Town, or Village		
State	Country	Zip Code

6. Site Land Type

☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

7. North American Industry Classification System (NAICS) Code(s) for the Site (at least 5-digit codes)

A. (Primary)	**325199**	C.	**325180**
B.	**325211**	D.	**325120**

8. Site Contact Information

☐ Same as Location Address

First Name **Scott**	MI **T**	Last Name **Northey**
Title **Site Environmental Manager**		
Street Address **67 Canal Road, P. O. Box 9001**		
City, Town, or Village **Deepwater**		
State **NJ**	Country **US**	Zip Code **08023**
Email **Scott.T.Northey@chemours.com**		
Phone **856 540-2012**	Ext	Fax **856 540-3203**

9. Legal Owner and Operator of the Site

A. Name of Site's Legal Owner

☐ Same as Location Address

Full Name The Chemours Company FC, LLC		Date Became Owner (mm/dd/yyyy) 7/1/2015
Owner Type ☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other		
Street Address 67 Canal Road, P. O. Box 9001		
City, Town, or Village Deepwater		
State NJ	Country **US**	Zip Code 08023
Email Dawn.M.Hughes-1@chemours.com		
Phone 856 540-2600	Ext	Fax 856 540-3203
Comments		

B. Name of Site's Legal Operator

☑ Same as Location Address

Full Name		Date Became Operator (mm/dd/yyyy)
Operator Type ☐ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other		
Street Address		
City, Town, or Village		
State	Country	Zip Code
Email		
Phone	Ext	Fax
Comments		

0. Type of Regulated Waste Activity (at your site)

Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities

☑ Y ☐ N	1. Generator of Hazardous Waste—If "Yes", mark only one of the following—a, b, c	
☑	a. LQG	-Generates, in any calendar month (includes quantities imported by importer site) 1,000 kg/mo (2,200 lb/mo) or more of non-acute hazardous waste; or - Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lb/mo) of acute hazardous waste; or - Generates, in any calendar month or accumulates at any time, more than 100 kg/mo (220 lb/mo) of acute hazardous spill cleanup material.
☐	b. SQG	100 to 1,000 kg/mo (220-2,200 lb/mo) of non-acute hazardous waste and no more than 1 kg (2.2 lb) of acute hazardous waste and no more than 100 kg (220 lb) of any acute hazardous spill cleanup material.
☐	c. VSQG	Less than or equal to 100 kg/mo (220 lb/mo) of non-acute hazardous waste.
If "Yes" above, indicate other generator activities in 2 and 3, as applicable.		
☐ Y ☑ N	2. Short-Term Generator (generates from a short-term or one-time event and not from on-going processes). If "Yes", provide an explanation in the Comments section.	
☐ Y ☑ N	3. Mixed Waste (hazardous and radioactive) Generator	
☑ Y ☐ N	4. Treater, Storer or Disposer of Hazardous Waste—Note: A hazardous waste Part B permit is required for these activities.	
☐ Y ☑ N	5. Receives Hazardous Waste from Off-site	
☐ Y ☑ N	6. Recycler of Hazardous Waste	
☐	a. Recycler who stores prior to recycling	
☐	b. Recycler who does not store prior to recycling	
☐ Y ☑ N	7. Exempt Boiler and/or Industrial Furnace—If "Yes", mark all that apply.	
☐	a. Small Quantity On-site Burner Exemption	
☐	b. Smelting, Melting, and Refining Furnace Exemption	

B. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g. D001, D003, F007, U112). Use an additional page if more spaces are needed.

D001	D002	D003	D004	D005	D006	D007
D008	D009	D010	D011	D012	D013	D014
D015	D016	D017	D018	D019	D020	D021
D022	D023	D024	D025	D026	D027	D028
D029	D030	D031	D032	D033	D034	D035

C. Waste Codes for State Regulated (non-Federal) Hazardous Wastes. Please list the waste codes of the State hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

B. Waste Codes for Federally Regulated Hazardous Wastes (cont'd)

D036	D037	D038	D039	D040	D041	D042
D043	F001	F002	F003	F004	F005	F006
F007	F008	F009	F010	F011	F012	F019
F024	F025	F027	F028	F032	F034	F035
F037	F038	F039	K001	K002	K003	K004
K005	K006	K007	K008	K009	K010	K011
K013	K014	K015	K016	K017	K018	K019
K020	K021	K022	K023	K024	K025	K026
K027	K028	K029	K030	K031	K032	K033
K034	K035	K036	K037	K038	K039	K040
K041	K042	K043	K044	K045	K046	K047
K048	K049	K050	K051	K052	K060	K061
K062	K069	K071	K073	K083	K084	K085
K086	K087	K088	K093	K094	K095	K096
K097	K098	K099	K100	K101	K102	K103
K104	K105	K106	K107	K108	K109	K110
K111	K112	K113	K114	K115	K116	K117
K118	K123	K124	K125	K126	K131	K132
K136	K141	K142	K143	K144	K145	K147
K148	K149	K150	K151	K156	K157	K158
K159	K161	K169	K170	K171	K172	K174
K175	K176	K177	K178	K181	P001	P002
P003	P004	P005	P006	P007	P008	P009
P010	P011	P012	P013	P014	P015	P016
P017	P018	P020	P021	P022	P023	P024
P026	P027	P028	P029	P030	P031	P033
P034	P036	P037	P038	P039	P040	P041
P042	P043	P044	P045	P046	P047	P048
P049	P050	P051	P054	P056	P057	P058
P059	P060	P062	P063	P064	P065	P066
P067	P068	P069	P070	P071	P072	P073
P074	P075	P076	P077	P078	P081	P082
P084	P085	P087	P088	P089	P092	P093
P094	P095	P096	P097	P098	P099	P101
P102	P103	P104	P105	P106	P108	P109
P110	P111	P112	P113	P114	P115	P116
P118	P119	P120	P121	P122	P123	P127

B. Waste Codes for Federally Regulated Hazardous Wastes (cont'd)

P128	P185	P188	P189	P190	P191	P192
P194	P196	P197	P198	P199	P201	P202
P203	P204	P205	U001	U002	U003	U004
U005	U006	U007	U008	U009	U010	U011
U012	U014	U015	U016	U017	U018	U019
U020	U021	U022	U023	U024	U025	U026
U027	U028	U029	U030	U031	U032	U033
U034	U035	U036	U037	U038	U039	U041
U042	U043	U044	U045	U046	U047	U048
U049	U050	U051	U052	U053	U055	U056
U057	U058	U059	U060	U061	U062	U063
U064	U066	U067	U068	U069	U070	U071
U072	U073	U074	U075	U076	U077	U078
U079	U080	U081	U082	U083	U084	U085
U086	U087	U088	U089	U090	U091	U092
U093	U094	U095	U096	U097	U098	U099
U101	U102	U103	U105	U106	U107	U108
U109	U110	U111	U112	U113	U114	U115
U116	U117	U118	U119	U120	U121	U122
U123	U124	U125	U126	U127	U128	U129
U130	U131	U132	U133	U134	U135	U136
U137	U138	U140	U141	U142	U143	U144
U145	U146	U147	U148	U149	U150	U151
U152	U153	U154	U155	U156	U157	U158
U159	U160	U161	U162	U163	U164	U165
U166	U167	U168	U169	U170	U171	U172
U173	U174	U176	U177	U178	U179	U180
U181	U182	U183	U184	U185	U186	U187
U188	U189	U190	U191	U192	U193	U194
U196	U197	U200	U201	U203	U204	U205
U206	U207	U208	U209	U210	U211	U213
U214	U215	U216	U217	U218	U219	U220
U221	U222	U223	U225	U226	U227	U228
U234	U235	U236	U237	U238	U239	U240
U243	U244	U246	U247	U248	U249	U271
U278	U279	U280	U328	U353	U359	U364
U367	U372	U373	U387	U389	U394	U395
U404	U409	U410	U411			

.. **Additional Regulated Waste Activities (NOTE: Refer to your State regulations to determine if a separate permit is required.)**

A. Other Waste Activities

☐ Y ☑ N	1. Transporter of Hazardous Waste—If "Yes", mark all that apply.
☐	a. Transporter
☐	b. Transfer Facility (at your site)
☐ Y ☑ N	2. Underground Injection Control
☐ Y ☑ N	3. United States Importer of Hazardous Waste
☐ Y ☑ N	4. Recognized Trader—If "Yes", mark all that apply.
☐	a. Importer
☐	b. Exporter
☐ Y ☑ N	5. Importer/Exporter of Spent Lead-Acid Batteries (SLABs) under 40 CFR 266 Subpart G—If "Yes", mark all that apply.
☐	a. Importer
☐	b. Exporter

B. Universal Waste Activities

☐ Y ☑ N	1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) - If "Yes" mark all that apply. Note: Refer to your State regulations to determine what is regulated.
☐	a. Batteries
☐	b. Pesticides
☐	c. Mercury containing equipment
☐	d. Lamps
☐	e. Other (specify) _____
☐	f. Other (specify) _____
☐	g. Other (specify) _____
☐ Y ☑ N	2. Destination Facility for Universal Waste Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities

☐ Y ☑ N	1. Used Oil Transporter—If "Yes", mark all that apply.
☐	a. Transporter
☐	b. Transfer Facility (at your site)
☐ Y ☑ N	2. Used Oil Processor and/or Re-refiner—If "Yes", mark all that apply.
☐	a. Processor
☐	b. Re-refiner
☐ Y ☑ N	3. Off-Specification Used Oil Burner
☐ Y ☑ N	4. Used Oil Fuel Marketer—If "Yes", mark all that apply.
☐	a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
☐	b. Marketer Who First Claims the Used Oil Meets the Specifications

12. Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR 262 Subpart K.

☐ Y ☑ N	A. Opting into or currently operating under 40 CFR 262 Subpart K for the management of hazardous wastes in laboratories—If "Yes", mark all that apply. Note: See the item-by-item instructions for definitions of types of eligible academic entities.
☐	1. College or University
☐	2. Teaching Hospital that is owned by or has a formal written affiliation with a college or university
☐	3. Non-profit Institute that is owned by or has a formal written affiliation with a college or univer-
☐ Y ☑ N	B. Withdrawing from 40 CFR 262 Subpart K for the management of hazardous wastes in laboratories.

13. Episodic Generation

☐ Y ☑ N	Are you an SQG or VSQG generating hazardous waste from a planned or unplanned episodic event, lasting no more than 60 days, that moves you to a higher generator category. If "Yes", you must fill out the Addendum for Episodic Generator.

14. LQG Consolidation of VSQG Hazardous Waste

☐ Y ☑ N	Are you an LQG notifying of consolidating VSQG Hazardous Waste Under the Control of the Same Person pursuant to 40 CFR 262.17(f)? If "Yes", you must fill out the Addendum for LQG Consolidation of VSQGs hazardous waste.

15. Notification of LQG Site Closure for a Central Accumulation Area (CAA) (optional) OR Entire Facility (required)

☐ Y ☑ N	LQG Site Closure of a Central Accumulation Area (CAA) or Entire Facility.
	A. ☐ Central Accumulation Area (CAA) or ☐ Entire Facility
	B. Expected closure date: _____ mm/dd/yyyy
	C. Requesting new closure date: _____ mm/dd/yyyy
	D. Date closed : _____ mm/dd/yyyy ☐ 1. In compliance with the closure performance standards 40 CFR 262.17(a)(8) ☐ 2. Not in compliance with the closure performance standards 40 CFR 262.17(a)(8)

16. Notification of Hazardous Secondary Material (HSM) Activity

☐ Y ☑ N	A. Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 260.30, 40 CFR 261.4(a)(23), (24), or (27)? If "Yes", you must fill out the Addendum to the Site Identification Form for Managing Hazardous Secondary Material.
☐ Y ☑ N	B. Are you notifying under 40 CFR 260.43(a)(4)(iii) that the product of your recycling process has levels of hazardous constituents that are not comparable to or unable to be compared to a legitimate product or intermediate but that the recycling is still legitimate? If "Yes", you may provide explanation in Comments section. You must also document that your recycling is still legitimate and maintain that documentation on site.

17. Electronic Manifest Broker

☐ Y ☑ N	Are you notifying as a person, as defined in 40 CFR 260.10, electing to use the EPA electronic manifest system to obtain, complete, and transmit an electronic manifest under a contractual relationship with a hazardous waste generator?

Comments (Include item number for each comment)

10.A.4 The Secure C Landfill RCRA Part B permit allows disposal of hazardous wastes from other Chemours facilities if they meet Land Disposal Restrictions limits; this last occurred in 2009.

19. Certification I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. **Note: For the RCRA Hazardous Waste Part A permit Application, all owners and operators must sign (see 40 CFR 270.10(b) and 270.11).**

Signature of legal owner, operator or authorized representative	Date (mm/dd/yyyy)
Dawn M. Hughes	09/13/2018
Printed Name (First, Middle Initial Last) DAWN M. HUGHES	Title **Plant Manager**
Email dawn.m.hughes-1@chemours.com	

Signature of legal owner, operator or authorized representative	Date (mm/dd/yyyy)
Printed Name (First, Middle Initial Last)	Title
Email	

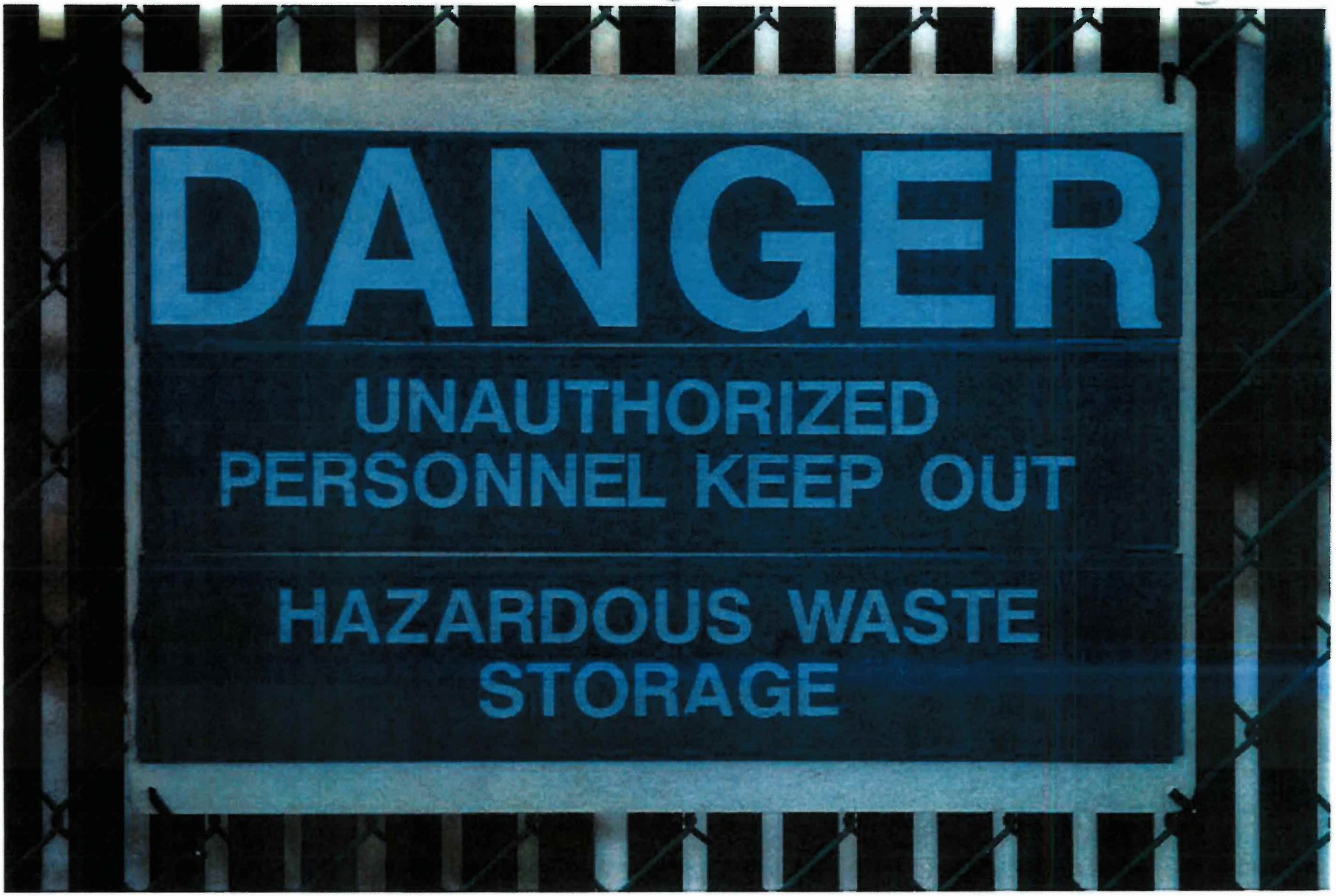
04.11.2018 14:40

04 11 2018 14:39

04.11.2018 14:39

04 11 2018 14 41

WARNING
Classified (Hazardous) Area
Class I, Division 1 and 2, Groups C, D, Temp...
Cell Phones, Flashlights, Portable Instruments,
and similar devices must be labeled for this
location, or a Flame / Spark Permit must be
in effect, or the devices must be left outside of the area.
DANGER
AUTHORIZED PERSONNEL
ONLY
04 11 2018 14:39


DANGER
UNAUTHORIZED
PERSONNEL KEEP OUT
HAZARDOUS WASTE
STORAGE

CAUTION
CONTAINS
PCBs
(Polychlorinated Biphenyls)
A toxic environmental contaminant requiring special handling and disposal in accordance with U.S. Environmental Protection Agency Regulations 40 CFR 761. For Disposal Information contact the nearest U.S. E.P.A. Office.
In case of accident or spill, call toll free the U.S. Coast Guard National Response Center 800-424-8802
Also Contact
Tel. No.

SAFETY FIRST
DO NOT ENTER
WITHOUT SAFETY HAT
AND SIDE SHIELD
EYE PROTECTION

WARNING
Classified (Hazardous) Area
Class I, Division 1 and 2, Groups C,D, Temp...
Cell Phones, Flashlights, Portable Instruments, and similar devices must be labeled for this location, or a Flame/Spark Permit must be in affect, or the devices must be left outside of the area.

CAUTION
LOOK OUT
FOR
FORKLIFTS

40 CFR Part 262--Standards Applicable To Generators of Hazardous Waste

Subpart A - General

40 CFR 262.11 Hazardous Waste Determination and Recordkeeping.

(a) Chemours Chambers Works makes the hazardous waste determination at the point of generation, the first point at which a sample can be collected.

(b) Chemours Chambers Works considers whether the solid waste is excluded from regulation under 40 CFR 261.4

(c) Chemours Chambers Works uses knowledge of the waste to determine whether the waste meets a listing description for which a F-, K-, P-, or U-code could be assigned based on waste origin, composition, the process producing the waste, feedstock, and other reliable and relevant information.

(d) Chemours Chambers Works applies knowledge and/or tests a representative sample of the waste to determine if it exhibits one or more hazardous characteristics.

(e) If determined to be hazardous, Chemours Chambers Works uses parts 261, 264, 265, 266, and 268 exclusions and restrictions to manage the waste.

(f) Chemours Chambers Works maintains records supporting its hazardous waste determinations for at least 3 years from the date that the waste was last sent to on-site or off-site treatment, storage, or disposal. The records include the results of any tests, sampling, waste analyses, or other determinations made in accordance with this section; records documenting the tests, sampling, and analytical methods used to demonstrate the validity and relevance of such tests; records consulted in order to determine the process by which the waste was generated, the composition of the waste, and the properties of the waste; and records which explain the knowledge basis for the generator's determination.

(g) For wastes determined to be hazardous, all applicable EPA hazardous waste codes are documented in the records described above. Further, prior to shipping the waste offsite, Chemours Chambers Works marks each container with all applicable EPA hazardous waste codes as required by 40 CFR 262.32. Alternately, Chemours may use a nationally recognized electronic system such as bar coding to record hazardous waste number(s) on containers for shipment off-site.

40 CFR 262.13 Generator Category Determination

Chemours Chambers Works is consistently a large quantity hazardous waste generator.

40 CFR 262.18 EPA Identification Numbers and Re-Notification for Small Quantity Generators and Large Quantity Generators

(a) Chemours Chambers Works is assigned EPA ID number NJD002385730.

(b) Not applicable. Chemours Chambers Works holds a valid EPA ID number.

(c) Chemours Chambers Works only offers its wastes to transporters and treatment, storage, and disposal facilities that hold EPA ID numbers.

(d) As a large quantity hazardous waste generator, Chemours Chambers Works re-notifies EPA by March 1 of each even-numbered year using EPA Form 8700-12 as part of its Biennial Report as required by 40 CFR 262.51

(e) Not applicable. Chemours Chambers Works does not import or export hazardous wastes.

Subpart B - Manifest Requirements Applicable to Small and Large Quantity Generators
40 CFR 262.20 General Requirements

(a) Chemours Chambers Works prepares a manifest for each hazardous waste shipment it offers for offsite treatment, storage, or disposal.

(b) On each manifest, Chemours Chambers Works designates one facility to handle the designated waste(s).

(c) Chemours Chambers Works may designate one alternate facility which is permitted to handle the waste in the event an emergency prevents delivery of the waste to the primary designated facility.

(d) If the transporter is unable to deliver the hazardous waste to the designated facility or the alternate facility, the generator must either designate another facility or instruct the transporter to return the waste.

(e) Not applicable. Chemours Chambers Works is a large quantity hazardous waste generator.

(f) Manifests are not required for transport of hazardous wastes on a public or private right-of-way within or along the border of contiguous property under the control of the same person. Nonetheless, a transporter is responsible for taking immediate action to control and clean up a hazardous waste discharge per 40 CFR 263.30 and 263.31, respectively.

40 CFR 262.22 Number of Copies

The new uniform hazardous waste manifest consists of 5 pages which will provide the generator, initial transporter, and the owner or operator of the designated facility with one copy each for their records and another copy to be returned to the generator, with the top copy designated for submission to the e-Manifest system by the treatment or disposal facility. Additional copies may be made where multiple transporters are used.

40 CFR 262.23 Use of the Manifest

(a) Chemours Chambers Works signs the manifest certification by hand, obtains the handwritten signature of the initial transporter and the shipment's acceptance date, and

keeps one copy.

(b) Chemours Chambers Works gives the transporter the remaining copies of the manifest.

(c) Not applicable. Chemours Chambers Works does not ship hazardous waste by water.

(d) Not applicable. Chemours Chambers Works does not ship hazardous waste by rail.

(e) Not applicable. Chemours Chambers Works is only shipping hazardous waste to designated facilities in states with the authorization to regulate the particular waste codes.

(f) For rejected shipments of hazardous waste or container residues in non-empty containers that are returned to Chemours Chambers Works as the generator, Chemours Chambers Works will sign the manifest accompanying the returned shipment, provide a copy of the manifest to the transporter; within 30 days of delivery, send a copy of the manifest to the facility that returned the shipment, and keep a copy of the manifest for at least 3 years from the delivery date.

40 CFR 262.27 Waste Minimization Certification

When initiating a shipment of hazardous waste, Chemours Chambers Works certifies the following statement in Item 15 of the uniform hazardous waste manifest:

(a) "I am a large quantity generator. I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment;"

Subpart C - Pre-Transport Requirements Applicable to Small and Large Quantity Generators

40 CFR 262.30 Packaging

Before transporting hazardous waste or offering hazardous waste for transportation off-site, Chemours Chambers Works must package the waste in accordance with the applicable Department of Transportation regulations on packaging under 49 CFR Parts 173, 178, and 179.

40 CFR 262.31 Labeling

Before transporting or offering hazardous waste for transportation off-site, Chemours Chambers Works must label each package in accordance with the applicable Department of Transportation regulations on hazardous materials under 49 CFR Part 172.

40 CFR 262.32 Marking

(a) Before transporting or offering hazardous waste for transportation off-site, Chemours Chambers Works must mark each package of hazardous waste in accordance with the applicable Department of Transportation regulations on hazardous materials under 49 CFR Part 172;

(b) Before transporting hazardous waste or offering hazardous waste for transportation off site, Chemours Chambers Works must mark each container of 119 gallons or less used in such transportation with the following words and information in accordance with the requirements of 49 CFR 172.304:

(b)(1) HAZARDOUS WASTE - Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.

(b)(2) Generator's Name and Address _____.

(b)(3) Generator's EPA Identification Number _____.

(b)(4) Manifest Tracking Number _____.

(b)(5) EPA Hazardous Waste Number(s) _____.

(c) A generator may use a nationally recognized electronic system, such as bar coding, to identify the EPA Hazardous Waste Number(s), as required by paragraph (b)(5) or paragraph (d).

(d) Lab packs that will be incinerated in compliance with §268.42(c) are not required to be marked with EPA Hazardous Waste Number(s), except D004, D005, D006, D007, D008, D010, and D011, where applicable.

40 CFR 262.33 Placarding

Before transporting hazardous waste or offering hazardous waste for transportation off-site, Chemours Chambers Works must placard or offer the initial transporter the appropriate placards according to Department of Transportation regulations for hazardous materials under 49 CFR part 172, subpart F.

Subpart D – Recordkeeping and Reporting Applicable to Small and Large Quantity Generators.

40 CFR §262.40 Recordkeeping

(a) Chemours Chambers Works keeps a copy of each manifest signed in accordance with §262.23(a) for three years or until receiving a signed copy from the designated facility which received the waste. This signed copy is retained as a record for at least three years from the date the waste was accepted by the initial transporter.

(b) Chemours Chambers Works keeps a copy of each Biennial Report and Exception Report for a period of at least three years from the due date of the report.

(c) Per §262.11(f) for recordkeeping requirements for documenting hazardous waste determinations, Chemours Chambers Works maintains records supporting its hazardous waste determinations for at least 3 years from the date that the waste was last sent to on-site or off-site treatment, storage, or disposal. The records include the results of any tests, sampling, waste analyses, or other determinations made in accordance with this section; records documenting the tests, sampling, and analytical methods used to demonstrate the validity and relevance of such

tests; records consulted in order to determine the process by which the waste was generated, the composition of the waste, and the properties of the waste; and records which explain the knowledge basis for the generator's determination.

(d) The periods or retention referred to in this section are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator.

40 CFR 262.41 Biennial Report

(a) As a large quantity generator for at least one month of an odd-numbered year (reporting year) who ships any hazardous waste off-site to a treatment, storage or disposal facility within the United States, Chemours Chambers Works completes and submits EPA Form 8700-13 A/B to the Regional Administrator by March 1 of the following even-numbered year and must cover generator activities during the previous year.

(b) As a large quantity generator for at least one month of an odd-numbered year (reporting year) who treats, stores, or disposes of hazardous waste on site, Chemours Chambers Works completes and submits EPA Form 8700-13 A/B to the Regional Administrator by March 1 of the following even-numbered year covering those wastes in accordance with the provisions of 40 CFR parts 264, 265, 266, 267 and 270.

(c) Not applicable. Chemours Chambers Works does not export hazardous waste to foreign countries.

40 CFR 262.42 Exception Reporting

(a)(1) As a large quantity hazardous waste generator, if Chemours Chambers Works does not receive a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 35 days of the date the waste was accepted by the initial transporter, it must contact the transporter and/or the owner or operator of the designated facility to determine the status of the hazardous waste.

(a)(2) As a large quantity hazardous waste generator, Chemours Chambers Works must submit an Exception Report to the EPA Regional Administrator for the Region in which the generator is located if he has not received a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 45 days of the date the waste was accepted by the initial transporter. The Exception Report must include:

(a)(2)(i) A legible copy of the manifest for which the generator does not have confirmation of delivery;

(a)(2)(ii) A cover letter signed by the generator or his authorized representative explaining the efforts taken to locate the hazardous waste and the results of those efforts.

(b) Not applicable. Chemours Chambers Works is a large quantity hazardous waste generator.

(c) For rejected shipments of hazardous waste or container residues contained in non-empty containers that are forwarded to an alternate facility by a designated facility using a new manifest (following the procedures of 40 CFR 264.72(e)(1) through (6) or 40 CFR 265.72(e)(1) through

(6)), the generator must comply with the requirements of paragraph (a) or (b) of this section, as applicable, for the shipment forwarding the material from the designated facility to the alternate facility instead of for the shipment from the generator to the designated facility. For purposes of paragraph (a) or (b) of this section for a shipment forwarding such waste to an alternate facility by a designated facility:

> **(c)**(1) The copy of the manifest received by the generator must have the handwritten signature of the owner or operator of the alternate facility in place of the signature of the owner or operator of the designated facility, and
>
> **(c)**(2) The 35/45/60-day timeframes begin the date the waste was accepted by the initial transporter forwarding the hazardous waste shipment from the designated facility to the alternate facility.

Subpart M--Preparedness, Prevention, and Emergency Procedures for Large Quantity Generators

40 CFR §262.250 Applicability

As described above, Chemours Chambers Works is a large quantity hazardous waste generator and the provisions of Subpart M apply to it.

40 CFR §262.251 Maintenance And Operation of Facility

Chemours Chambers Works maintains and operates its facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

40 CFR §262.252 Required Equipment

All areas deemed applicable by §262.250 must be equipped with the items in paragraphs (a) through (d) of this section (unless none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below or the actual hazardous waste generation or accumulation area does not lend itself for safety reasons to have a particular kind of equipment specified below). A large quantity generator may determine the most appropriate locations within its facility to locate equipment necessary to prepare for and respond to emergencies:

(a) The Chem Waste area office building receives voice announcements and signal tones from the site emergency communication system.

(b) Barnco personnel, located in the Chem Waste area, carry hand-held 2-way radios. Barnco personnel in the Chem Waste area share a radio channel with the Chemours Chambers Works wastewater treatment plant control room. Chem Waste area also has a plant alarm box to notify site emergency response.

Site emergency procedures call for communications to flow from the incident location to the area control room, then to the site emergency response center. The site emergency response personnel and the site incident commander will decide whether to request emergency assistance from local police departments, fire departments, or state or local emergency response teams.

(c) The Chem Waste area has portable fire extinguishers, spill control equipment, and a water truck (on-site) and portable secondary containment units that can be deployed for decontaminating personnel and equipment. The materials stored in the Chem Waste area may require special extinguishing equipment, such as foam, inert gas, or dry chemicals. Site emergency response team will bring those when called.

(d) The Chemours Chambers Works fire truck carries 1000 gallons of water and the Secure C Landfill water truck holds 2000 gallons of water. Water and/or dry chemical will be used in the event of a fire at the Chem Waste area.

40 CFR §262.253 Testing and Maintenance of Equipment

Chemours Chambers Works tests and maintains its communications and alarm systems, fire protection equipment, spill control equipment, and decontamination equipment as necessary to assure its proper operation in time of emergency.

40 CFR §262.254 Access to Communications or Alarm System

(a) Whenever hazardous waste is being unloaded, poured, mixed, spread, or otherwise handled, Chem Waste area personnel involved in the operation have immediate access (*e.g.,* direct or unimpeded access) to an internal alarm or emergency communication device, either directly via hand-held two-way radio or through visual or voice contact with another employee.

(b) In the event there is just one employee on the premises while the facility is operating, the employee has immediate access (*e.g.,* direct or unimpeded access) to a hand-held two-way radio, capable of summoning external emergency assistance.

40 CFR §262.255 Required Aisle Space

Chemours Chambers Works maintains sufficient space at the Chem Waste area to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to all its operating areas in an emergency.

40 CFR §262.256 Arrangements with Local Authorities

As a large quantity hazardous waste generator and the operator of two permitted hazardous waste facilities, in addition to its on-site emergency response personnel, equipment, and procedures, Chemours Chambers Works has made arrangements with the local police department, fire department, other emergency response teams, emergency response contractors, equipment suppliers, and local hospitals, taking into account the types and quantities of hazardous wastes handled at the facility. The emergency response and off-site services arrangements are further described in the Contingency and Emergency Plan provided as Attachment D-1.

40 CFR §262.260 Purpose and Implementation of Contingency Plan

(a) As a large quantity hazardous waste generator and the operator of two permitted hazardous waste facilities, Chemours Chambers Works maintains a contingency plan that encompasses the 40 CFR 262 and 40 264 Subpart D requirements. The contingency plan is designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water. The Contingency and Emergency Plan is provided as Attachment D-1.

(b) The contingency plan provisions will be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

40 CFR §262.262 Copies of Contingency Plan

As a large quantity hazardous waste generator and the operator of two permitted hazardous waste facilities, Chemours Chambers Works maintains a contingency plan that encompasses the 40 CFR 262 and 40 264 Subpart D requirements.

(a) Chemours Chambers Works has sent copies of the current contingency plan to the Deepwater Fire Company, Carneys Point Fire Department, Pennsville Police Department, Carneys Point Fire Department, and Salem County Office of Emergency Management as the local emergency responders that may be called upon to provide emergency services. Rather than revising previous contingency plans, Chemours has provided complete new plans.

(b) On December 28, 2017, Chemours Chambers Works submitted a quick reference guide of the contingency plan to the local emergency response entities identified above. The quick reference guide includes hazard, waste type, estimated maximum quantity present; identification of hazardous wastes where exposure would require unique or special treatment by medical or hospital staff; a facility map showing where hazardous wastes are generated, accumulated, or treated, and routes for accessing these wastes; a street map locating the facility relative to surrounding businesses, schools, and residential areas; fire hydrants and water bodies in proximity to the permitted hazardous waste storage and disposal facilities; manually activated fire alarm boxes and emergency reporting; and emergency response personnel contact information.

40 CFR §262.263 Amendment of Contingency Plan

Chemours Chambers Works will review the contingency plan, and immediately amend it, if necessary, whenever:

(a) Applicable regulations are revised;

(b) The plan fails in an emergency;

(c) The generator facility changes-in its design, construction, operation, maintenance, or other circumstances-in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;

(d) The list of emergency coordinators changes; or

(e) The list of emergency equipment changes.

40 CFR §262.264 Emergency Coordinator

Chemours Chambers Works has an incident commander on site at all times, who has the responsibility for coordinating all emergency response measures and implementing the necessary emergency procedures outlined in §262.265. Each incident commander is thoroughly familiar with all aspects of the generator's contingency plan, all operations and activities at the facility, the location and characteristics of hazardous waste handled, the location of all records within the

facility, and the facility's layout. The incident commander has the authority to commit the resources needed to carry out the contingency plan.

40 CFR §262.265 Emergency Procedures

(a) Whenever there is an imminent or actual emergency situation, the Chemours Chambers Works emergency procedures and contingency plan require the incident commander (or his designee when the emergency coordinator is on call) to immediately:

(a)(1) Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and

(a)(2) Notify appropriate state or local agencies with designated response roles if their help is needed.

(b) Whenever there is a release, fire, or explosion, the incident commander is responsible for immediately identifying the character, exact source, amount, and areal extent of any released materials by observation or review of the facility records or manifests and, if necessary, by chemical analysis.

(c) Concurrently, the incident commander is responsible for assessing possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (*e.g.,* the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-offs from water or chemical agents used to control fire and heat-induced explosions).

(d) If the incident commander determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, he or she must report the findings as follows:

(d)(1) If the assessment indicates that evacuation of local areas may be advisable, the incident commander must immediately notify appropriate local authorities. The incident commander must be available to help appropriate officials decide whether local areas should be evacuated; and

(d)(2) The incident commander must immediately notify either the government official designated as the on-scene coordinator for that geographical area, or the National Response Center (using their 24-hour toll free number 800/424-8802). The report will include: Name and telephone number of reporter; name and address of the generator; time and type of incident (*e.g.*, release, fire); name and quantity of material(s) involved, to the extent known; the extent of injuries, if any; and the possible hazards to human health, or the environment, outside the facility.

(e) During an emergency, the incident commander is responsible for taking all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the generator's facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released hazardous waste, and removing or isolating containers.

(f) If the generator stops operations in response to a fire, explosion or release, the incident commander is responsible for assuring that monitoring occurs for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

(g) Immediately after an emergency, the incident commander and site leadership through normal site work processes will provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility. Unless the generator can demonstrate, in accordance with §261.3(c) or (d) of this chapter, that the recovered material is not a hazardous waste, then it is a newly generated hazardous waste that must be managed in accordance with all the applicable requirements and conditions for exemption in parts 262, 263, and 265 of this chapter.

(h) The incident commander and site leadership will ensure that, in the affected area(s) of the facility:

> **(h)**(1) No hazardous waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and
>
> **(h)**(2) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

(i) The generator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, the generator must submit a written report on the incident to the Regional Administrator. The report must include: name, address, and telephone number of the generator; date, time, and type of incident (*e.g.,* fire, explosion); name and quantity of material(s) involved; the extent of injuries, if any; an assessment of actual or potential hazards to human health or the environment, where this is applicable; and estimated quantity and disposition of recovered material that resulted from the incident.

Subpart B - General Facility Standards

(text assumes 1178 building closure, possible future restart of commercial hazardous wastewater treatment)

40 CFR 264.11 Identification Number

The Chemours Chambers Works EPA identification number is NJD002385730.

40 CFR 264.12 Required Notices

(a)(1) Chambers Works Chem Waste Pad and 1178 Building do not receive and store hazardous wastes from foreign sources. Should Chemours Chambers Works be able to resume commercial hazardous waste treatment, Chemours will provide notice to NJDEP and the US EPA Regional Administrator in writing at least 4 weeks in advance of the date the hazardous waste from a foreign source is first expected to arrive at the facility.

(a)(2) Not applicable. Chemours Secure Environmental Treatment does not operate a recovery facility.

(b) Not applicable to Chemours Chambers Works. As of April 1, 2012, Chambers Works stopped receiving wastes from off-site generators. Should Chemours Chambers Works be able to resume commercial hazardous waste treatment, customer notifications will inform the off-site generator in writing that Chemours Chambers Works has the appropriate permit(s) for, and will accept, the waste the generator is shipping. Chemours Chambers Works would keep a copy of this written notice as part of the operating record.

(c) Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the post-closure care period, the owner or operator must notify the new owner or operator in writing of the requirements of 40 CFR 264 and 40 CFR 270.

40 CFR 264.13 General Waste Analysis

As required by 40 CFR 262.11, Chemours utilizes a management system of waste characterization forms, which may be supplemented by a combination of process knowledge, (Material) Safety Data Sheets, or sampling and analysis for on-site generated wastes entering the RCRA permitted storage facilities. The level of required analyses, acceptability of process knowledge or related technical data to support a waste characterization may vary depending upon factors such as:

1) Specific analyses addressing off-site TSDF permit requirements;
2) Specific analyses addressing gaps in waste characterization forms;
3) Degree to which the Safety Data Sheets for purchased or Chemours manufactured commercial chemical products address all elements of the waste characterization form; or
4) Use of process knowledge from on-site production processes or similar processes under Chemours control (e.g., applying knowledge of the hazard characteristics in light of the materials or process used).

The range of analyses available in support of process knowledge or as separate analyses may include, but is not limited to, Area QA/QC lab data, site product R&D lab data, site SET lab screening analyses, and off-site contract laboratories certified by NJDEP. Should Chemours Chambers Works be able to resume commercial hazardous waste treatment, off-site generators may also provide agreed upon supplemental analyses in support of waste characterizations.

264.13 General Waste Analysis

The text in this section reflects the Class I permit modification NJDEP granted on November 19, 2013 and was in effect when the permit application text was prepared in February 2018. Chemours filed a Class II permit modification in November 2016 requesting reinstatement of provisions to receive commercial hazardous waste for treatment in its wastewater treatment plant. However, the Chem Waste area facilities were to remain used solely for wastes generated by Chemours Chambers Works. NJDEP denied that request in November 2017 and Chemours filed an appeal in December 2017. The application under appeal is provided as Attachment B-1.

(a)(1) The waste analysis plan for the Chambers Works Chemical Waste Area (Chem Waste) lists the waste characterization and pre-disposal analysis activities for storage, consolidation, pre-treatment, blending, transfer, and/or disposal of waste streams.

The elements of the plan are aimed at ensuring proper waste management at this facility. The plan provides a mechanism for obtaining required information necessary to safely store the wastes at the RCRA permitted facility, treat the waste in the on-site wastewater treatment facility or to dispose of wastes in on-site or off-site facilities. This is done through a comprehensive characterization of the waste prior to treating, storing, transferring or disposing of the waste. Particular attention is paid to identifying potentially ignitable, reactive, or incompatible wastes that could generate extreme heat or pressure, fire or explosions, or violent reactions; produce uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health or the environment or pose a risk of fire or explosions, damage the structural integrity of the facility, or otherwise threaten human health or the environment. Should Chemours Chambers Works be able to resume commercial hazardous waste treatment, waste shipments received from off-site sources will be checked for conformance versus the waste characterization either daily or per load, depending on process and potential variability assessment, prior to treating the waste. The plan acknowledges variability of waste stream make-up and provides for the initial certification and re-certification of each waste stream once every two years, or sooner if the process generating the waste changes.

Waste streams are accepted at the RCRA permitted storage facilities from on-site generators for storage prior to shipment to off-site disposal facilities. If compatible with wastewater treatment facilities and regulatory limitations, totes or containers of waste may be pumped at the Chem Waste pad to the overhead sewer system for on-site treatment. Should Chemours Chambers Works be able to resume commercial hazardous waste treatment, wastes will also be accepted from off-site generators for treatment at the Chemours Secure Environmental Treatment Plant (wastewater treatment plant).

Consolidation of on-site Chemours Chambers Works waste

Only wastes describable under the same Waste Characterization Form may be consolidated into a single container; examples would include batteries or light bulbs.

Transfer, Pre-treatment, Treatment, Disposal of on-site Chemours Chambers Works waste

For on-site wastes that cannot be treated in the on-site facility, arrangements will be made to send them off-site to an acceptable treatment facility. Any waste characterization and analysis necessary for contract approval for treatment, storage or disposal at that facility will be completed prior to shipment off-site.

For wastes requiring pretreatment, such as dewatering or stabilization, provisions will be made to utilize the appropriate equipment in accordance with the permit. The phase(s) that can be appropriately treated in the WWTP will be characterized to the extent necessary to ensure safe and effective treatment. Any residuals that require off-site treatment will be subject to characterization and analysis necessary for treatment at the designated facility.

(a)(2) Information used to characterize waste may include data developed in support of waste classification per 40 CFR 261, existing published or documented data on the hazardous waste or on hazardous was generated from similar processes.

Sampling and Analysis Exceptions

The sampling and analytical requirements of this Waste Analysis Plan do not apply to on-site generated wastes if adequate waste identification and handling information is available from a completed waste characterization form, waste profile or Safety Data Sheet, and if the shipment meets one of the following conditions:

1) Inherently dangerous materials which would pose a significant threat to human health or the environment (e.g., reactive waste, cyanides, sulfides, fuming acids, gas cylinders); or
2) Shipment is accepted for on-site storage only and will not be opened at the facility;
3) Commercial chemical products or materials packaged in their original un-opened container as provided by the manufacturer; or
4) Shipment is generated within the Chambers Works site and has been pre-approved for management within the facilities authorized by the RCRA storage permit.

Additionally, difficult to sample wastes such as drained fuel filters, batteries, aerosol cans, and other manufactured objects that are adequately characterized through use of the manufacturer's Safety Data Sheet and/or by way of the known contaminants (e.g., gasoline and diesel fuel for fuel filters), are not subject to the sampling and analysis requirements providing a completed waste characterization form and, where available, supporting Safety Data Sheet(s), has been approved by the Chem Waste Area.

(a)(3) Characterizations are updated by the generating area every two years or sooner if a process change alters the waste composition.

(a)(4) Does not currently apply because hazardous waste shipments from off-site generators are not currently accepted at Chemours Chambers Works. Should Chemours Chambers Works be able to resume commercial hazardous waste treatment, Chemours will follow the waste analysis procedures described in the Waste Analysis Plan (Attachment B-2).

(b)(1) and (b)(2) – Waste Characterization and Approval

All waste streams destined for treatment or handling at the on-site hazardous waste facilities shall be characterized in accordance with the waste analysis plans referenced in the permits for those facilities. For example, a waste destined for the on-site landfill must be characterized in accordance with the landfill permit waste analysis plan. Likewise, containerized aqueous waste destined for the wastewater treatment plant must be evaluated per that facility's waste analysis needs including conformance with NJPDES wastewater discharge permit limits including Centralized Waste Treatment categorical effluent guidelines, treatment residue compliance with RCRA Land Disposal Restrictions (40 CFR 268), and air emissions limits imposed by the Offsite Waste and Recovery Operations NESHAP (40 CFR 63 Subpart DD). Containerized hazardous wastewater shipment waste analysis requirements are documented within the Chemical Waste Storage Waste Analysis Plan (in Attachment B-2).

Prior to acceptance of a new Chambers Works waste stream at the Chemical Waste Storage Area, the waste shall be evaluated by the Chemical Waste Area Waste Coordinator, or designate, to ensure the stream can be handled at the facility. If the waste is acceptable, a Chemours Secure Environmental Treatment waste characterization form shall be completed and kept on file and/or posted in site-accessible databases. A sample may be analyzed if needed to properly characterize the waste or to address specific analytical requirements of off-site contract treatment or disposal facilities. This sample analysis may include, but not be limited to, flammability, miscibility and pH available through the on-site SET laboratory or off-site analyses performed at an NJDEP certified laboratory. The waste characterization form, supporting process knowledge, Safety Data Sheets, and any analytical results shall be reviewed and approved as outlined at the bottom of the approval sheet. The approved waste stream shall be identified by a unique Chambers Works identification number. Characterizations are updated by the generating area every two years or sooner if a process change alters the waste composition.

(b)(3) – Representative Samples

The waste characterization process relies on the generator presenting representative samples for analysis. The generator is responsible for using equipment and sample collection techniques that will result in representative samples. Per Appendix I to 40 CFR 261, a composite liquid waste sampler ("Coliwasa") is the tool recommended to obtain representative samples of containerized liquid waste (drums, totes, tank trailers). "A Coliwasa consists of a glass, plastic, or metal tube equipped with an end closure than can be opened and closed while the tube is submerged in the material to be sampled" (SW-846, NINE-50). SW-846 suggests that weighted bottles and dippers could be used as Coliwasa alternatives when sampling liquids and free-flowing slurries (NINE-50). While SW-846 discusses peristaltic pumps only in the context of monitoring well sampling (NINE-56, 57), peristaltic pumps are widely used in commercial composite wastewater samplers.

(b)(4) – Requalification

All waste streams will be re-evaluated and requalified every two years or sooner when the process generating the waste changes or a change in the character of the waste is observed, or when requested by Chemours personnel. The requalification process for wastes requiring storage only or storage, mixing, blending, or other pretreatment, requires the generator to update the Waste Characterization profile and recertify the waste composition. The Chem Waste Area waste coordinator, or designate, will reapprove the waste for Chambers Works waste streams. When the process generating the waste has changed, updated analysis is required in addition to an updated waste characterization form or profile sheet. In the case of a process change, the unique Waste Characterization Form number may remain the same on the updated profile, or may be changed at the discretion of the Chem Waste Area Waste Consultants.

264.13(b)(5) Not applicable as Chemours Chambers Works does not receive wastes from non-Chemours or off-site generators. Should Chemours Chambers Works be able to resume commercial hazardous waste treatment, generators will be required to characterize their wastes in accordance with the provisions of the Waste Analysis Plan in effect to assure safe handling and effective treatment.

(b)(6) – Methods to Meet Additional Waste Analysis Requirements

See the permit application section addressing the requirements of §264.17 for precautions to prevent accidental ignition or reaction of ignitable or reactive wastes. The pre-shipment waste characterization processes described above are necessary elements for proper waste classification. In turn, waste classification leads to identification and use of appropriate waste handling methods to prevent accidental ignition or reaction.

The prohibitions addressed by §§264.314 (bulk and containerized free liquids) apply to containerized hazardous waste and non-hazardous waste solids destined for off-site landfills. Where testing is required to determine the presence or absence of free liquids, Method 9095B (Paint Filter Liquid Test) as described in "Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods" EPA Publication SW-846, as incorporated by reference at 40 CFR 260.11.

The methods addressed by 264.341 (incinerators), 264.1034(d) (process vents), and 264.1063(d) (process equipment) are not applicable.

For the requirements listed at §264.1083, per the December 8, 1997 Federal Register, page 64646, "A TSDF owner or operator is not required to determine the volatile organic concentration of the waste if it is placed in a tank, surface impoundment, or container using the required air emission controls." Containers used at the Chem Waste Pad include DOT-compliant containers, closed containers, and roll-off boxes with continuous tarps or barriers or equivalent. Additionally, bulk containers may demonstrate compliance through a pressure/vacuum test or Leak Detection and Repair monitoring of all valves and hatches to demonstrate that the unit is operating with no detectable emissions.

40 CFR 268.7 – Testing, Tracking, and Recordkeeping Requirements for Generators, Treaters, and Disposal Facilities

(a)(1) Chemours (as the waste generator) determines the Part 268 Land Disposal Restriction treatment standards through knowledge or testing of the waste. The testing is performed by a NJDEP certified laboratory and/or the on-site SET Waste Acceptance laboratory. The parameters analyzed for are based upon knowledge of the material (e.g., constituents reasonably expected to be present in the waste; constituents specific to the listed waste codes; suspected hazardous waste characteristics; whether the facility is submitting a notification of constituents subject to treatment, or a certification that the waste meets all applicable technology and concentration-based standards).

(a)(2) If the waste or contaminated soils do not meet the treatment standards, then Chemours (as the waste generator) will provide a one-time LDR notification to each treatment, storage or disposal facility that the waste requires treatment (or such a notification may accompany each hazardous waste shipment at the discretion of Chemours). Alternately, Chemours may choose to not make a determination of whether the waste must be treated, in which case the notification must include the EPA Hazardous Waste Numbers and Manifest Number of the first shipment and must state: "This hazardous waste may or may not be subject to the LDR treatment standards. The treatment facility must make the determination."

Sealed containerized hazardous wastes are not disposed of in the on-site landfill. Bulk solids and wastes which are not containerized are permitted in the on-site hazardous waste landfill, providing those wastes which are RCRA hazardous wastes, meet the LDR specified technology and concentration-based standards. Containerized hazardous wastes destined for off-site landfill will be treated (typically stabilized) at that facility to meet land disposal restriction requirements. Chemours Chambers Works provides a one-time written notice conforming to the requirements of 40 CFR 268.7(a)(2) to each treatment or storage facility receiving the waste, and a copy of the notice is retained for the file (Chemours may elect to provide a copy of the LDR form with each hazardous waste shipment to the same facility, at the discretion of the Chem Waste Area).

(a)(3) If the waste or contaminated soil meets the treatment standards at the point of generation, Chemours provides the required land disposal restriction (LDR) certification paperwork to each treatment, storage or disposal facility with shipments at the necessary frequency.

(a)(4) Not applicable because no exemptions are sought to the land disposal restrictions, with the exception of a case-by-case variance granted to the Chambers Works hazardous waste landfill for K181 and F039 constituent 1,3-Phenylenediamine (see 71 FR 6238, February 7, 2006 for the variance).

(a)(5) Not applicable because the wastes handled through the Chem Waste Storage Pad are covered by the regulations at 40 CFR264 Subpart I, 40 CFR 270 Subpart B, and related sections as a RCRA permitted facility, not a less than 90-day storage facility as described in 40 CFR 262.34. At the RCRA permitted storage facility, hazardous wastes are not treated to meet LDR standards. Wastes are typically sent off-site for treatment. However, depending on waste characteristics, the waste can be sent to the site wastewater treatment plant. 1178 RCRA permitted storage building is no longer in use and is pending NJDEP approval of our closure plan permit modification to allow for demolition.

(a)(6) For wastes handled through the Chem Waste Storage Pad to which land disposal restrictions are determined to apply, the site Waste Characterization Form is the document where the supporting data is retained. This data may be in the form of knowledge of the waste, or may consist of waste analysis. 1178 Building is no longer in use and is pending NJDEP approval for demolition.

(a)(7) For wastes handled through the Chem Waste Storage Pad and where the waste is determined to be a prohibited waste excluded from the definition of hazardous or solid waste or exempted from Subtitle C regulation under 40 CFR 261.2 through 261.6 after generation, a one-time notice will be placed in the on-site files. This requirement is addressed also by way of the Chemours Secure Environmental Treatment waste characterization form check box "Formerly a RCRA hazardous waste, and has been rendered non-hazardous. List all EPA hazardous waste codes (and subcategories)." The notice will describe such generation, subsequent exclusion from the definition of hazardous or solid waste or exemption from RCRA Subtitle C regulation and the disposition of the waste. 1178 Building is no longer in use and is pending NJDEP approval for demolition.

(a)(8) All required records are maintained in the Chem Waste offices, SET Waste Acceptance Offices and laboratory, posted on computer network servers for access by environmental resources, or stored in corporate off-site records management facilities.

(a)(9) This section addresses the alternative treatment standard for lab packs. Chemours ships lab-packs and may elect to utilize the alternative treatment standard for lab packs at the discretion of the Chem Waste Area.

(a)(10) Not applicable. Chemours Chambers Works is not a small quantity generator.

(b)(1) and (b)(2) Chemours samples the wastes in accordance with the frequency identified in this plan, utilizing the appropriate methodology (e.g., TCLP or total constituent concentrations) as required by the LDR treatment standard for the specific listed or characteristically hazardous wastes. The RCRA storage facility is not a treatment facility treating wastes to meet the LDRs.

(b)(3), (b)(4) Chemours provides all required notices of restricted wastes requiring treatment and

& (b)(5) certifications that wastes meet the treatment standards or have been treated to meet such standards, to the land disposal facility.

(b)(6) Not applicable. Chemours Chambers Works is not a recycling facility.

(c)(1) Required notices and certifications are filed by the Chem Waste Area Coordinator, or designate, with each Waste Characterization form.

(c)(2) Per text above describing measures to satisfy 40 CFR 264.13(b)(4) requirements: All waste streams will be reevaluated and requalified every two years or sooner when the process generating the waste changes or a change in the character of the waste is observed during storage, or when requested by site personnel. The requalification process for wastes requiring storage only or storage, mixing, blending, or other pretreatment, requires the generator to update the Waste Characterization profile and recertify the waste composition.

(d) Not applicable. Debris treated by an extraction or destruction technology is not expected to be received at the Chem Waste Storage Pad. 1178 Building is no longer in use and is pending NJDEP approval for demolition.

(e) Not applicable. The reference is to soil subject to LDRs per 40 CFR 268.49(a) destined for land disposal. The Chem Waste Storage Pad and the 1178 Building* are not disposal facilities. If the facility obtains a "no longer contains a listed waste determination" from NJDEP or EPA for soils, then the required 268.49(a) documentation and LDR notices would be maintained per the requirements. 1178 Building* is no longer in use and is pending NJDEP approval for demolition.

264.13(b)(7) Not applicable because the Chem Waste Storage Pad and 1178 Building are not surface impoundments. 1178 Building is no longer in use and is pending NJDEP approval for demolition.

264.13(b)(8) Not applicable because no exemption is sought from the air emission standards of subpart CC. In the event a VO (Volatile Organic) waste determination is requested or required by a treatment facility, then the VO samples for direct measurement would be obtained at the time of confirmation analysis sampling or, knowledge of the waste may be used for the waste determination.

SET Waste Acceptance Lab Methods

Test – Common Name	WAL Method	Standard Methods Reference
Color	Method 1 (D Samples)	2120 C
Appearance	Method 1 (D Samples)	2110
Odor	Method 1 (D Samples)	2150 B
Phase Separation	Method 1 (D Samples)	Observation

Water Miscibility	Method 1 (D Samples)	Observation
Radioactivity	Method 32	7030
Flashpoint	Method 33A	Observation
Specific Gravity	Method 2	2710 F
pH	Method 100	4500-H+B
Acidity	Method 4	2310 B
Alkalinity	Method 23	2320 B
Sulfides	Method 10 and 10A	4500-S2-A&D
Cyanides	Method 13 and 13A	4500-CN-E & modified K
Latex	Method 45B	Observation
Total Organic Carbon/Total Nitrogen	Method 103B	5310
Dissolved Organic Carbon	Method 103A	5310 with filtration and acidification
Total Suspended Solids	Method 50	2540 D
Foam	Method 27	Observation
Fecal coliform	Method 31A	Modified 9221 E
Metals	Method 60B	3030 F
Hexavalent Chromium	Method 14	3500-Cr B
Hexadecane Gas Chromatography	Method 5	SW-846 8260B
Water Gas Chromatography	Method 5	SW-846 8260B
Mercaptan Gas Chromatography	Method 5	EPA Method 624
Ammonia	Method 22	Modified EPA Method 350.1
Chemical Oxygen Demand	Method 12	Modified 5220 D
Formaldehyde	Method 12	EPA Method 316
Free Chlorine	Method 12	4500-Cl G
Total Chlorine	Method 12	4500-Cl G
Hydrazine	Method 12	ASTM 1385-07
Nitrate	Method 12	4500-NO3-B
Nitrite	Method 12	4500-NO2-B
Orthophosphate	Method 12	Modified 4500-P C
Sulfate	Method 12	4500-SO4 2

5-Day Biochemical Oxygen Demand (BOD5)	Method 7	5210 B
Treatability	Method 7	5210 D
Thiocyanate	Method 13 D	4500-CN- M
Ferrocyanide	Method 35	Modified SW-846 9014
Total Cyanide	Method 13B	4500-CN- C

40 CFR 264.14 Security

(a) The Chem Waste Pad and 1178 Building are located within the fenced perimeter of the access-controlled Chemours Chambers Works complex (1178 Building is no longer in use and is pending NJDEP approval for demolition). Entering trucks are required to go through 100% inspection before entering the facility. Employees and contractors enter through designated gates through which access is controlled by photo identification badges that are individually verified by a security guard. Visitors require advance application for passes.

(a)(1) Not applicable. Wastes are stored in metal or plastic containers with the lids secured except during sampling and transfer activities limiting potential for physical contact by unknowing or unauthorized persons or livestock that may enter the active portion of the facility.

(a)(2) Not applicable. Wastes are stored in metal or plastic containers with the lids secured except during sampling and transfer activities limiting potential for disturbance of the waste or equipment by unknowing or unauthorized persons or livestock that may enter the active portion of the facility.

(b)(1) The facility is attended at all times, as it operates 24 hours a day, 365 days per year. The guards make regular patrols, at least once per shift, or all facility areas, and will detect and report spills or unusual conditions. The major facility areas are adequately illuminated for night-time operation.

Detailed information on specific security measures can be found on the site's Security and Emergency Manuals. Some examples relevant to the Chem Waste area include:

Security Manual, Chapter	Title
A-1	Receiving and Responding to Intrusion Alarms
B-3	Breach of Security
E-3	Emergency Electric Power
E-4	Emergency Lights
E-5	Emergency Response
E-6A	Chambers Works Security Emergency
E-6B	Emergency Storm Procedures
F-5	Fence Alarm Intrepid
F-5A	Fence Alarm Intrusions
G-3	Gates – Gate and Lock Inspections
R-2	Security Section Daily Shift Report (MU-885)

All site security procedures are readily accessible to security personnel.

(b)(2)(i) The Chambers Works plant perimeter is completely fenced (land and river sides).

(b)(2)(ii) The only entrance to the Chambers Works complex is through entrance gates that are either locked or guarded around the clock.

(c) Signs warning of "Danger – Unauthorized Personnel Keep Out" are posted at regular intervals on the fence surrounding the Chambers Works complex and also at the Chem Waste pad and 1178 Building. 1178 Building is no longer in use and is pending NJDEP approval for demolition.

40 CFR 264.15 General Inspection Requirements

(a) The Chemical Waste Storage Facility Pads A, B, and C are inspected daily for malfunctions, deterioration, operator errors, and discharges which may lead to the release of hazardous waste to the environmental to threaten human health. All inspections are documented on the Chemical Waste Management Area Inspection Log, included as Attachment B-3. 1178 Building is no longer in use and is pending NJDEP approval for demolition.

(b) Attachment B-3 (Inspection Log) is also used to verify operating conditions such as safety and emergency equipment, security devices, and operating and structural equipment such as dikes and sump pumps. The inspection forms are kept on file at the Chemical Waste Management Office. Any problems identified during the inspection are documented on the inspection form. The frequency of inspection varies from daily to weekly, depending on the item inspected and the required inspection frequency. The schedule identifies the types of problems (malfunctions, deterioration) which are to be looked for during the inspection.

(c) All spills or releases are documented by the Chambers Works Emergency Response procedures, which includes determining the nature of the spill or release and if state or federal regulatory agencies require notification. An internal incident investigation is also held to determine the cause of the spill or release and to develop measures to prevent recurrence. Equipment or structural failures are evaluated by site Engineering and a repair or replacement determination is made.

(d) Inspection forms are maintained for at least three years from the date of the inspection and are kept on file in the Chemical Waste Management Office. The inspection logs include the date and time of the inspection, the name of the inspector, and room for noting both observations made and corrective actions (Attachment B-3).

40 CFR 264.16 Personnel Training

(a)(1) Facility personnel complete a program of on-the-job training that teaches them to perform their duties in conformance with area procedures. An outline of the training program is provided as Attachment B-4 to this section.

(a)(2) The training program is delivered by the SET and/or the contracted service provider training coordinators who have been trained in hazardous waste management procedures. The program ensures that operators are trained in the area procedures relevant to the operation of the Chem Waste facility and in effective emergency response.

(a)(3) Area procedures include emergency procedures and emergency equipment including:
- (i) Procedures for using, inspecting, and replacing facility emergency and monitoring equipment;
- (ii) Communications or alarm systems;
- (iii) Response to fires or explosions;
- (iv) Response to groundwater contamination incidents; and
- (v) Shutdown of operations

Note: 40 CFR 264.16(a)(3)(ii) does not apply because there are no automatic waste feed cut-off systems in the Chem Waste area or 1178 Building.

Each procedure is organized with a "Safety/Health/Environmental" section that describes potential hazards, required personal protective equipment; spill prevention, reporting, and cleanup/disposal; and emergency shutdown actions. Preceding the "Safety/Health/ Environmental" section, is a process description including the principle and technical basis for the procedure. The procedure tasks and steps follows the "Safety/Health/ Environmental" section. Appendices are included as needed to show examples of labels, forms, log sheets, etc. 1178 Building is no longer in use and is pending NJDEP approval for demolition.

Each procedure includes a competency evaluation that is filed with each employee's training records.

In addition to the area-specific training, operations personnel at the Chem Waste Area receive both initial and annual refresher training that satisfies OSHA regulatory requirements listed in 29 CFR 1910.120. The SET training coordinator maintains training records for Chemours personnel at Chem Waste, and Barnco maintains training records for Barnco personnel at Chem Waste.

(b) Personnel complete the training within 6 months of assignment to the Chem Waste area. Personnel are not permitted to work without supervision until their training is completed.

(c) Training is reviewed annually through a combination of job cycle checks and computer-based and/or face-to-face training.

(d) Chemours maintains the following documents and records for the Chem Waste area:
- (1) Job title for each position and name of each individual filling each job;
- (2) Written job description for each job title;

(3) Written description of the type and amount of introductory and continuing training for each job title;
(4) Records documenting the training or job experience required above has been delivered and completed by each individual.

(e) Training records are maintained:
(1) For current employees until facility closure; and
(2) For former employees for at least three years after the last date worked at the facility.

40 CFR 264.17 General Requirements for Ignitable, Reactive, or Incompatible Wastes

(a) To prevent accidental ignition or reaction of ignitable or reactive wastes, the following precautions are followed at the Chem Waste Pad and 1178 Building*:

- Smoking is prohibited on the Chambers Works site
- Use of open flames, cutting and welding, and hot surfaces is strictly regulated on site through the use of a mandatory work permit which includes a special permit for flames or hot work. An example work permit is provided as Attachment B-5.
- Area procedures address precautions to prevent generation of static electricity that could lead to sparking. Specifically, spark-proof tools and grounding cables are required when opening drums containing flammable wastes. In addition, operators are cautioned against sloshing open drums to prevent the inadvertent generation of a static charge. Heel measurement rods are required to be wetted prior to insertion into drums containing flammable wastes.

*1178 Building is no longer in use and is pending NJDEP approval for demolition.

(b) To prevent reactions which generate extreme heat or pressures, fire or explosions, or violent reactions; produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment; produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions; damage the structural integrity of the device or facility; or through other means threaten human health or the environment, the following precautions are taken at the Chem Waste Pad:

- Waste characterization and approval process prior to the wastes being transported to the Chem Waste Pad,
- Requalification of each waste stream every two years, when the process generating the waste changes or upon request by Chemours as described in more detail in the Waste Analysis Plan.

*1178 Building is no longer in use and is pending NJDEP approval for demolition.

In addition to the precautions listed in above in (a), additional measures to prevent reactions include:

- Adherence to the operating procedures,
- Segregation of incompatible waste classes during storage (not on same pallet, not in same row),

- Assuring container integrity through inspection,
- Use of overpack containers as deemed necessary,
- Keeping containers closed except when sampling or removing wastes,
- Assuring drums are emptied to RCRA empty status, and
- Requiring use of a drum recycler for drums that have been emptied to RCRA empty status; drums from the Chem Waste operations are not reused elsewhere on site.

40 CFR 264.18 Location Standards

(a) Seismic considerations – The Chemours Chambers Works complex is located in Pennsville and Carneys Point Townships, Salem County, NJ. Salem County, NJ is not listed in Appendix VI to 40 CFR 264 and is therefore not located in a political jurisdiction in which compliance with §264.18(a) must be demonstrated.

(b) Floodplains – The Chem Waste Storage Pad and 1178 Building are located within the area delineated as a "Special Flood Hazard Area subject to inundation by the 1% annual chance flood", Zone AE where the base flood elevation has been determined to be 9 feet. It is outside of the area of moderate wave action. The Chem Waste Storage pad has a concrete curb around it and its concrete floor slopes to a central trench that drains to a sump with pumps to transfer drainage to the wastewater treatment plant. Steel I-beam barricades are ready to be put in place to prevent containers from floating out of the enclosure if extreme flooding is anticipated. 1178 Building is no longer in use. It is pending NJDEP approval for demolition.

(c) Salt dome formations, salt bed formations, underground mines and caves – This requirement prohibits placement of noncontainerized or bulk liquid hazardous waste in any salt dome formation, salt bed formation, underground mine or cave. This requirement is not relevant to this renewal application to store containerized hazardous and non-hazardous wastes on a concrete pad.

40 CFR 264.19 Construction Quality Assurance

Not applicable because the requirements of this section apply to surface impoundments, waste piles, and landfills, not storage units.

ATTACHMENT B-1

CLASS II MODIFICATION APPLICATION

Chemours

The Chemours Company
Fluoroproducts
67 Canal Road, P. O. Box 9001
Chambers Works - Pedersen Building
Deepwater, NJ 08023

November 14, 2016

Certified Mail – Return Receipt Requested
70123050000039391322

Mr. Zafar Billah, Acting Bureau Chief
New Jersey Department of Environmental Protection
Bureau of Recycling and Hazardous Waste Management
P. O. Box 420, Mail Code 401-02C
401 East State Street, 2nd Floor
Trenton, NJ 08625-0420

Re: Chemours Chambers Works, Deepwater, NJ, EPA ID No. NJD002385730, Permit No. HWP140003 – Class II Modification to Modify the Waste Analysis Plan

Dear Mr. Billah:

Enclosed please find a Class II permit modification application to modify the Waste Analysis Plan that is part of the Chambers Works Chemical Waste Area RCRA Part B permit. The modification seeks approval to allow Chemours Chambers Works to again receive certain commercial containerized hazardous wastewater shipments for treatment at its wastewater treatment plant.

The Chemical Waste Area continues to be used for hazardous and non-hazardous waste generated by the Chemours Chambers Works manufacturing and support activities and it remains unchanged in configuration and purpose. A check for $5001.00 accompanies this Class II modification request per N.J.A.C. 7:26G-3.3(e)7ii.

If you have questions, please contact Cynthia McManus (SET Environmental Coordinator) at (856) 540-3438 or by e-mail at Cynthia.N.McManus@chemours.com.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." [40 CFR 270.11(d)(1)]

Sincerely,

Dawn M. Hughes

Dawn M. Hughes
Plant Manager

The Chemours Company
Fluoroproducts
67 Canal Road, P. O. Box 9001
Chambers Works - Pedersen Building
Deepwater, NJ 08023

November 11, 2016
Certified Mail – Return Receipt Requested

Honorable Joseph F. Racite, Mayor *(70123050000039391124)*
Carneys Point Township
303 Harding Highway
Carneys Point, NJ 08069

Mr. Jeffrey Salabritas, Supervisor *(70123050000039391117)*
New Jersey Department of Environmental Protection
Bureau of Hazardous Waste Compliance and Enforcement
Southern Regional Field Office
2 Riverside Drive, Suite 201
Camden, NJ 08103

Ms. Heather Genievich *(70123050000039391087)*
New Jersey Department of Environmental Protection
Division of Water Quality
Bureau of Surface Water Permitting
Mail Code 401-02B
401 E. State Street
P.O. Box 420
Trenton, NJ 08625-0420

RE: Chemours Chambers Works, Deepwater, NJ, EPA ID No. NJD002385730, Permit No. HWP140003 – Notice of Class II Permit Modification Application

Dear Mr. Racite, Mr. Salabritas, and Ms. Genievich:

I am writing to let you know that Chemours Chambers Works is submitting a Class 2 permit modification to the New Jersey Department of Environmental Protection for its Chemical Waste Storage area. The modification addresses changes to the Waste Analysis Plan that will allow Chemours Chambers Works to again receive commercial containerized hazardous wastewater shipments for treatment at its wastewater treatment plant.

Per 40 CFR 270.42(b)(2), the permittee must send notice of the modification request to the appropriate units of State and local government within seven calendar days before or after the modification request submittal date and provide evidence of the mailing.

The public notice for the Class 2 permit modification will be published in the South Jersey Times on or about November 12, 2016. The public notice will announce a 60-day public comment period beginning on the publication date.

Relevant comments should be submitted to:

Mr. Zafar Billah, Acting Bureau Chief
New Jersey Department of Environmental Protection
Bureau of Landfill and Hazardous Waste Permitting
P. O. Box 420, Mail Code 401-02C
401 East State Street, 2nd Floor
Trenton, NJ 08625-0420

A public meeting will be held for any interested parties on Wednesday December 21, 2016 from 5:30 to 6:30 p.m. at Salem Community College, Davidow Hall DAV-117, 460 Hollywood Avenue, Carneys Point, New Jersey 08069, telephone (856) 299-2100.

The Chemours Chambers Works contact person is Mr. Scott Northey and his telephone number is (856) 540-2012.

A copy of the permit modification request and its supporting documents can be reviewed and copied at the Municipal Clerks Office, Carneys Point Township Municipal Building, 303 Harding Highway, Carneys Point, NJ 08069, telephone (856) 299-0070 extension 147.

The permittee's compliance history during the life of the permit being modified is available from the Agency contact person.

Sincerely,

Cynthia N. McManus

Cynthia N. McManus
SET environmental coordinator – waste, wastewater

CNM/clc

Norris
McLaughlin
& Marcus, P.A.
ATTORNEYS AT LAW

400 Crossing Boulevard
8th Floor
P.O. Box 5933
Bridgewater, NJ 08807
T: 908-722-0700
F: 908-722-0755

eahogan@nmmlaw.com
Direct Dial: (908) 252-4200

December 5, 2017

VIA EMAIL AND FEDERAL EXPRESS
Ms. Karen Kloo, Chief
Bureau of Recycling and Hazardous Waste Management
NJDEP, Division of Solid and Hazardous Waste
Mail Code 401-02C
P.O. Box 420
Trenton, New Jersey 08625-0420

New Jersey Department of Environmental Protection
Office of Legal Affairs
Attention: Adjudicatory Hearing Requests
401 East State Street
P.O. Box 402
Mail Code 401-04L
Trenton, New Jersey 08625-0402

Re: In the Matter of November 14, 2016 Request for a Class 2 Permit Modification
Permit No. HWP160002

Dear Ms. Kloo:

As you are aware, this office represents The Chemours Company and The Chemours Company FC, LLC with respect to the above-referenced permit modification application. Enclosed please find Chemours' Notice of a Request for an Adjudicatory Hearing, filed in response to the November 9, 2017 Denial of the Class 2 Permit Modification Application Requst submitted by Chemours on November 14, 2016 for Permit No. HWP160002.

Thank you for your time and consideration with respect to this matter.

Sincerely,
NORRIS McLAUGHLIN & MARCUS, P.A.

Edward A. Hogan

cc: Bernard J. Reilly, Esq.
Martha N. Donovan, Esq.

Martha N. Donovan, Esq.
NORRIS, McLAUGHLIN & MARCUS, P.A.
400 Crossing Boulevard, 8th Floor
Bridgewater, NJ 08807-5933
908-722-0700
Attorneys for The Chemours Company and
The Chemours Company FC, LLC

In the Matter of November 14, 2016
Request for a Class 2 Permit Modification

EPA ID No.: NJD002385730

Permit No.: HWP160002

NOTICE OF A REQUEST FOR AN ADJUDICATORY HEARING

TO: New Jersey Department of Environmental Protection
Office of Legal Affairs
Attention: Adjudicatory Hearing Requests
401 East State Street
P.O. Box 402
Mail Code 401-04L
Trenton, New Jersey 08625-0402

Karen Kloo, Chief
Bureau of Recycling and Hazardous Waste Management
NJDEP, Division of Solid and Hazardous Waste
Mail Code 401-02C
P.O. Box 420
Trenton, New Jersey 08625-0420

The Chemours Company and the Chemours Company FC, LLC (hereinafter collectively referred to as "Chemours"), which operates the Chambers Works facility, located in Deepwater, New Jersey, 08023, requests an adjudicatory hearing to contest the November 9, 2017 Denial (hereinafter referred to as the "Permit Denial") of the Class 2 Permit Modification Application Request submitted by Chemours on November 14, 2016 for Permit No.: HWP160002.

In compliance with the Administrative Hearing Request Checklist and Tracking form for Permits/Denials (attached as Exhibit A), Chemours states as follows:

I. **Denial Being Appealed**:

Denial of Class 2 Permit Modification Application Request submitted by Chemours on November 14, 2016 for Permit No.: HWP160002. The New Jersey Department of Environmental Protection ("NJDEP") denied the Permit modification on November 9, 2017.

II. **Person Requesting Hearing:**

Chemours is requesting the hearing. The address for The Chemours Company and The Chemours Company FC, LLC is: 67 Canal Road, P.O. Box 9001, Deepwater, NJ 08023. The Attorney for Chemours is Edward A. Hogan, Esq. of Norris, McLaughlin & Marcus, 400 Crossing Boulevard, 8th Floor, Bridgewater, NJ 08807.

III. **Additional Information Required**:

A. Date the Permittee received the final permit/denial letter:

Chemours received Certified Mail-Return Requested Letter on November 16, 2017.

B. A copy of the permit/denial letter:

A copy of the Permit Denial is attached as Exhibit B.

C. The legal and factual questions at issue:

1. Did the November 19, 2013 modification to HWP130001 affect Chambers Works' status as an "existing major hazardous waste facility" pursuant to the Major Hazardous Waste Facility Siting Act, N.J.S.A. 13:1E-49 et seq. (hereinafter, "the Act") and, if so, how?

2. Did Chemours or its predecessor, DuPont, ever temporarily interrupt its commercial hazardous waste operations at Chambers Works and, even if either did, does this temporary interruption, as a matter of law, mean that the Chambers Works facility no longer qualifies as an "existing major hazardous waste facility" under the Act.

3. Does the Act require a "grandfathered" entity, such as "Chambers Works", to continuously accept commercial hazardous waste in order to avoid having to satisfy the siting requirements of N.J.S.A. 13:1E-57(9) in order to resume commercial hazardous waste operations?

4. As a matter of law, has an entity, such as Chemours, abandoned commercial hazardous waste operations at an existing hazardous waste facility despite the fact that it has continued, at all times, without interruption, to (i) treat on-site hazardous wastewaters for parties unrelated to Chemours, (ii) permitted RCRA Part B-permitted storage of on-site containerized hazardous wastes, and (iii) operated an on-site hazardous waste landfill?

5. Was it "arbitrary and capricious" for NJDEP to impose on Chemours siting requirements for "new" major hazardous waste facilities as a precondition to considering the permit modification where, as here, it is clear that the Legislature intended for the siting requirements to apply exclusively to "new" facilities?

6. Does 40 C.F.R. §270.41 prohibit NJDEP from considering siting requirements in connection with Chambers Works request for a permit modification?

7. Is NJDEP estopped from claiming that DuPont/Chemours abandoned commercial operations at Chambers Works in 2013, when the 2013 modification to HWP130001 was undertaken at NJDEP's suggestion?

8. NJDEP's Permit Denial is arbitrary and capricious as it cites neither to the Act, the Act's now expired regulations, nor any precedent supporting its position either that the "November 19, 2013 modification eliminated DuPont's status as a commercial hazardous waste facility" or that the Chambers Works facility must now meet the "siting" requirements of the Act.

D. A statement as to whether or not the permittee raised each legal and factual issue during the public comment period on the permit action:

These issues were addressed in correspondence between Carneys Point Township ("Carneys Point"), NJDEP, and Chemours prior to the Permit Denial. Specifically, counsel for Carneys Point sent a letter to NJDEP on January 9, 2017, arguing that the Class II Permit Modification Application submitted by Chemours should be denied because the facility "discontinued its commercial operations a few years ago and as such abandoned its nonconforming grandfathered status" under the Act. A copy of the January 9, 2017 letter is attached as Exhibit C. In response, NJDEP sent the Carneys Point letter to Chemours by email on January 17, 2017, requesting Chemours' comments on the issue. Chemours responded to NJDEP by letter dated January 31, 2017, and argued that the Act does not require facilities that pre-dated the Act ("existing hazardous waste facilities") to satisfy the siting requirements of the Act. There is no provision by which a facility that existed prior to passage of the Act loses its "existing hazardous waste facility" status. Therefore, Chambers Works is not required to satisfy the siting requirements of the Act in order to resume commercial operations. A copy of Chemours' January 31, 2017 letter is attached as Exhibit D. On November 8, 2017, Carneys Point (through its' Mayor, Dr. Joseph F. Racite) sent a letter to NJDEP withdrawing its' objection to the Class 2 Permit Modification. Carneys Point proffered that Chambers Works continued to accept hazardous waste from tenants located at

the facility, and from a neighboring facility that transported hazardous waste to the facility through a hard-piped connection. Therefore, Carneys Point (which lodged the initial request that NJDEP deny the Permit Modification) concluded that Chambers Works never abandoned its "existing hazardous waste facility" status, and was not subject to the siting requirements of the Act. A copy of the November 8, 2017 letter is attached as Exhibit E. Chemours received the Permit Denial on November 9, 2017.

E. Suggested revisions or alternatives to the permit conditions/denial letter:

Chemours requests that the permit modification application be granted. There is no legal basis for the NJDEP's unsupported conclusions that Chemours lost its status as an "existing hazardous waste facility." Moreover, Carneys Point withdrew its objection to the issuance of the modification. Finally, Chemours notes that the 2013 RCRA permit modification was undertaken upon NJDEP's suggestion, as it was the most straightforward way to reduce the weekly compliance and enforcement inspections. Therefore, Chemours requests that the Class 2 Permit Modification be granted.

F. An estimate of the time required for the hearing:

One day.

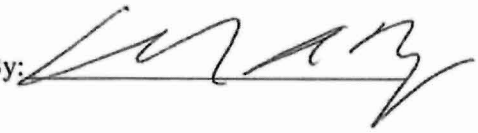
G. A request, if necessary, for a barrier-free hearing location for physically disabled persons:

At this time, a barrier-free hearing location for physically disabled persons is not necessary.

H. A clear indication of any willingness to negotiate a settlement with the Department prior to the Department's processing of your hearing request to the Office of Administrative Law:

The Petitioner is willing to negotiate a settlement with the Department (perhaps through the mediation offices of Ray Papperman, Esq.) prior to the Department processing this hearing request for referral to the Office of Administrative Law.

Norris, McLaughlin & Marcus, P.A.
Attorneys for The Chemours Company

By: 

Dated: December 5, 2017

Exhibits

Exhibit A

Exhibit B

Exhibit C

Exhibit D

Exhibit E

EXHIBIT A

Administrative Hearing Request Checklist

and Tracking Form for Permits/Denials

I. Permit/Denial Being Appealed:

Denial of Class 2 Permit Modification Application Request submitted by Chemours on November 14, 2016

Title and Type of Permit/Denial

Denial dated November 9, 2017

Issuance Date of Permit/Denial

Permit No. HWP160002

Applicable Permit Number

II. Person Requesting Hearing:

Chemours

Name/Company

67 Canal Road, P.O. Box 9001

Deepwater, NJ 08023

Address

Edward A. Hogan, Esq., Norris McLaughlin & Marcus, P.A.

Name of Attorney (if applicable)

400 Crossing Boulevard, 8th Floor

Bridgewater, New Jersey 08807

Address of Attorney

III. Please Include the Following Information as Part of Your Request:

A. The date the permittee received the final permit/denial letter;

B. A copy of permit/denial letter;

C. The legal and factual questions at issue;

D. A statement as to whether or not the permittee raised each legal and factual issue during the public comment period on the permit action;

E. Suggested revisions or alternatives to the permit conditions/denial letter;

F. An estimate of the time required for the hearing;

G. A request, if necessary, for a barrier-free hearing location for physically disabled persons;

H. A clear indication of any willingness to negotiate a settlement with the Department prior to the Department's processing of your hearing request to the Office of Administrative Law; and

I. This form, completed, signed and dated with all the information listed above, including attachments, to:

1. Office of Legal Affairs

   ATTENTION: Adjudicatory Hearing Requests

   New Jersey Department of Environmental Protection

   401 East State Street

   P.O. Box 402,

   Mail Code 401-04L

   Trenton, New Jersey 08625-0402

2. Karen Kloo, Chief

   Bureau of Recycling and Hazardous Waste Management

   NJDEP, Division of Solid and Hazardous Waste

   Mail Code 401-02C

   P.O. Box 420

   Trenton, New Jersey 08625-0420

3. All co-permittees

IV. Signature: _____

Date: 12/5/17

EXHIBIT B

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF SOLID WASTE & HAZARDOUS WASTE
BUREAU OF RECYCLING & HAZARDOUS WASTE MANAGEMENT
P. O. Box 420 Mail Code 401-02C
Trenton, New Jersey 08625-0420
Tel. #: 609-984-3438
Fax. #: 609-777-1951
www.state.nj.us/dep/dshw/recycling

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

November 9, 2017

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Cynthia McManus
The Chemours Company
67 Canal Road & Rt. 130
P.O. Box 9001
Chambers works – Pedersen Building
Deepwater, NJ 08023

RE: November 14, 2016, Request for a Class 2 Permit Modification, The Chemours Company, Deepwater, Pennsville Township, Salem County, EPA ID No.: NJD002385730; Permit No.: HWP160002

Dear Ms. McManus:

The Bureau of Recycling & Hazardous Waste Management (the Bureau) has reviewed Chemours Chambers Works (Chemours) November 14, 2016, request for a Class 2 permit modification and additional information submitted on January 17, 2017. The modification requests changes to the facility's Waste Analysis Plan and authorization to begin the acceptance of commercial containerized hazardous wastewater shipments for treatment at its wastewater treatment plant. Chemours consented to extend the time for the Department to respond to the modification request until November 13, 2017.

The Bureau denies this request for the following reasons:

E.I. du Pont de Nemours and Company, Inc. (DuPont), the previous owner of the facility, requested a modification of its hazardous waste facility permit to terminate its commercial hazardous waste management operations, and the Department modified DuPont's hazardous waste facility permit no.: HWP130001 as requested on November 19, 2013. The Department also on August 21, 2013 approved modifications requested by DuPont to the facility's Title V permit reflecting that commercial hazardous waste acceptance had been discontinued.

The November 19, 2013 modification eliminated DuPont's status as an existing major commercial hazardous waste facility for which it had been grandfathered. In light of the modification, Chemours' request for a Class 2 permit modification to begin commercial hazardous waste facility operations would require Chemours to be sited as a new major commercial hazardous waste facility. Because Chemours has not demonstrated compliance with criteria set forth in the New Jersey Major Hazardous Waste Facilities Siting Act (N.J.S.A. 13:1E-40 set seq.), specifically N.J.S.A. 13:1E-57(9)a for a new major commercial hazardous waste facility, the Bureau cannot approve Chemours' November 14, 2016 request for a Class 2 permit modification.

Should you wish to contest this denial decision, you may request a contested case hearing pursuant to the Administrative Procedure Act, N.J.S.A. 52:14B–1 et seq., and the New Jersey Uniform Administrative Procedure Rules, N.J.A.C. 1:1 et seq. All requests for contested case hearings must be received in writing by the Department within thirty (30) days of the date you receive this letter and must contain the information specified in the Administrative Hearing Checklist and Tracking Form.

Should you have any questions regarding this letter, please contact Zafar Billah of my staff at (609) 984-2042 or by email at zafar.billah@dep.nj.gov.

Sincerely,

Karen Kloo

Karen Kloo, Chief
Bureau of Recycling & Hazardous Waste Management

Doc.: Class 2 Mod Denial
Encl: Administrative Hearing Checklist and Tracking Form.

C: Adolph Everett, Chief - USEPA – Region 2
Nidal Azzam - USEPA - Region 2
Bob Gomez, Acting Chief - Bureau of Hazardous Waste Compliance and Enforcement
Jeffrey Salabritas, Supervisor - Bureau of Hazardous Waste Compliance and Enforcement, Southern Region Field Office
Kevin Greener, Bureau of Air Permits
Jennifer Meyer, Bureau of Recycling & Hazardous Waste Management
John Scott, Engineer, Bureau of Recycling & Hazardous Waste Management

Additional Facility Mailing List:

Honorable Joseph Racite
Mayor Carneys Point Township
303 Harding Highway
Carneys Point, NJ 08069

Honorable Robert McDade
Mayor, Township of Pennsville
City Government Offices
90 North Broadway
Pennsville, NJ 08070

Albert I. Telsey
Meyer and Landis LLP
Attorney at Law
One Gateway Center, Suite 2500
Newark, NJ 07102

David M. Matthews
Manager, Environmental Affairs
Bristol-Myers Squibb
P.O. Box 4000
Princeton, NJ 08543-4000

Robert Fixter
Vice-President of Compliance
Clean Earth of North Jersey, Inc.
115 Jacobus Ave.
S. Kearny, NJ 07032

Tony Dilodovico
Regulatory Compliance Agent
Schoor Depalma
200 Route 9
P.O. Box 900
Manalapan, NJ 07726

Daniel Toder
Senior Associate
Killam Associates
27 Bleeker St.
Millburn, NJ 07041

Albert Fralinger
Manager - Resource Recovery
PSE&G
80 Park Plaza
MC 23C
Newark, NJ 07101

Jerry Faveretto
1815 Macavoy Terrace
Millville, NJ 08332

Gary Forosisky
President
G.E. Mechanical, Inc.
2316 S. Main Rd.
Vineland, NJ 08360

David C. Parris
Curator of Natural History
New Jersey State Museum
P.O. Box 530
Trenton, NJ 08625-0530

Administrative Hearing Request Checklist

and Tracking Form for Permits/Denials

I. Permit/Denial Being Appealed:

_____

Title and Type of Permit/Denial

_____ _____

Issuance Date of Permit/Denial Applicable Permit Number

II. Person Requesting Hearing:

_____ _____

Name/Company Name of Attorney (if applicable)

_____ _____

_____ _____

Address Address of Attorney

III. Please Include the Following Information as Part of Your Request:

A. The date the permittee received the final permit/denial letter;

B. A copy of permit/denial letter;

C. The legal and factual questions at issue;

D. A statement as to whether or not the permittee raised each legal and factual issue during the public comment period on the permit action;

E. Suggested revisions or alternatives to the permit conditions/denial letter;

F. An estimate of the time required for the hearing;

G. A request, if necessary, for a barrier-free hearing location for physically disabled persons;

H. A clear indication of any willingness to negotiate a settlement with the Department prior to the Department's processing of your hearing request to the Office of Administrative Law; and

I. This form, completed, signed and dated with all the information listed above, including attachments, to:

1. Office of Legal Affairs

   ATTENTION: Adjudicatory Hearing Requests

   New Jersey Department of Environmental Protection

   401 East State Street

   P.O. Box 402,

   Mail Code 401-04L

   Trenton, New Jersey 08625-0402

2. Karen Kloo, Chief

   Bureau of Recycling and Hazardous Waste Management

   NJDEP, Division of Solid and Hazardous Waste

   Mail Code 401-02C

   P.O. Box 420

   Trenton, New Jersey 08625-0420

3. All co-permittees

IV. Signature: _____

Date: _____

EXHIBIT C

REPLY TO:
ALBERT I. TELSEY
DIRECT EXTENSION: 439
DIRECT DIAL: 973-602-3439
ATELSEY@MEYNER.COM

MEYNER AND LANDIS LLP
ATTORNEYS AT LAW
ONE GATEWAY CENTER
SUITE 2500
NEWARK, NEW JERSEY 07102
WWW.MEYNER.COM

ROBERT B. MEYNER
(1908-1990)
TM

973-624-2800
FAX: 973-624-0356

January 9, 2017

Mr. Zafar Billah, Acting Bureau Chief
NJDEP – Bureau of Landfill and Hazardous Waste and Permitting
P.O. Box 420, Mail Code 401-02C
401 E. State Street, 2nd Fl.
Trenton, NJ 08625-0420

Re: OBJECTIONS
Chemours Chambers Works, Deepwater, NJ
EPA Id. No. NJD002385730
Permit No. HWP140003
Class II Permit Modification Application

Dear Mr. Billah,

We represent Carneys Point Township ("Carneys Point"). Carneys Point objects to the Department granting the Permit Modification proposed by The Chemours Company FC, LLC ("Chemours FC").

Restarting commercial hazardous waste operations at the facility violates the Major Hazardous Waste Facilities Siting Act, N.J.S.A. 13:1E-49 et seq. ("Act"). The Chemours FC facility had been in operation since prior to 1981 and was a nonconforming existing major hazardous waste facility that was grandfathered under the Act. However, according to Chemours FC the facility discontinued its commercial operations a few years ago and as such abandoned its nonconforming grandfathered status.

Presuming Chemours FC did abandon its grandfathered commercial operations as it claims then the facility cannot restart those operations because it does not fit the siting criteria for a commercial operation set forth in the Act. In particular, the Act prohibits the siting of a commercial facility within 20 miles of a nuclear power plant storing spent fuel rods. N.J.S.A. 13:1E-57a(5). The facility is located 15 miles from the Salem nuclear power plant, which stores spent fuel rods. In addition, the facility is located within a flood hazard area and within 2000 feet of the Deepwater Diner/Truck Stop – a location that is routinely occupied by the same person or persons more than 12 hours per day or by the same person or persons under the age of 18 for more than two hours per day. The Act prohibits the siting of a commercial hazardous waste facility under these circumstances as well. N.J.S.A. 13:1E-57a(1)(2).

The bottom line is that a commercial hazardous waste facility is not appropriate for this densely populated area so close to nuclear waste stockpiles and the Delaware River. But for its earlier grandfathered status, the site would never have been approved for a commercial hazardous waste facility.

The legislature adopted the Major Hazardous Waste Facilities Siting Act because it found that "the choice of hazardous waste disposal sites is now made, all too frequently, on an indiscriminate and illegal basis, that it is necessary to establish a mechanism for the rational siting of hazardous waste facilities; [and] that the informed participation of the public and of elected and appointed officials at all levels of government is essential to establish this mechanism." N.J.S.A. 13:1E-50.

Carneys Point is presently in litigation with the prior owner and operator of the site – DuPont – for failing to post $1.1 billion in a remediation trust fund as required by the Industrial Site Recovery Act ("ISRA") when it transferred the site to Chemours FC. The reason so much money must be posted is because the site is contaminated with over 100 million pounds of hazardous waste in soil and groundwater. Hazardous waste is also migrating from the site as far as 2 miles. Now, Chemours FC is proposing to add even more hazardous waste to this site that is literally choked with hazardous waste that is not under control. The permit modification is unsound, unwise and illegal.

For these reasons Carneys Point demands that the Department take timely action to specifically reject the application by Chemours FC to restart commercial hazardous waste operations and to not otherwise grant the facility automatic or temporary authorization by taking no action.

I look forward to hearing from you. Thank you.

Sincerely,
MEYNER AND LANDIS LLP

Albert I. Telsey

cc. Carneys Point Mayor and Township Committee
David Avedissian, Esq.

EXHIBIT D

The Chemours Company
67 Canal Road, P.O. Box 9001
Deepwater, NJ 08023

Chemours™

January 31, 2017

Mr. Zafar Billah, Acting Bureau Chief
NJDEP
Bureau of Landfill and Hazardous Waste and Permitting
P.O. Box 420, Mail Code 401-02C
401 East State Street, 2nd Floor
Trenton, New Jersey 08625-0420

Dear Mr. Billah:

I write in response to the January 9, 2017 letter submitted on behalf of Carneys Point Township ("Carneys Point") regarding the Class II Permit Modification Application filed by The Chemours Company FC, LLC ("Chemours FC") for its Chambers Works facility in Deepwater, New Jersey. The Class II Permit Modification Application seeks New Jersey Department of Environmental Protection ("NJDEP") approval for Chemours FC to restart certain operations at the Chambers Works facility. Chemours FC strongly disagrees with the position taken by Carneys Point that this is a "new" operation. The Major Hazardous Waste Facilities Siting Act (the "Act") does not require renewed operations at major hazardous waste facilities ("HWFs") such as this one, which pre-date the Act (i.e. "existing hazardous waste facilit[ies]") to satisfy the Act's siting, registration or engineering design requirements. Therefore, Chemours FC requests that the permit modification be granted without further delay.

The Act sets forth requirements for site selection for new major HWFs in New Jersey. See N.J.S.A. 13:1E-60. For new facilities only the Act requires that an applicant seek NJDEP approval of a "registration statement" and "engineering design" prior to commencing construction on a new HWF, See N.J.S.A. 13:1E-60, and provides siting requirements such as the requirement that a HWF not be located within 20 miles of a nuclear power plant N.J.S.A. 13:1E-57(a). The Act also establishes requirements for obtaining NJDEP approval of a capacity increase of 50% or greater at a HWF. See, e.g., N.J.S.A. 13:1E-87. Chemours FC is not seeking approval to to commence construction on a new HWF, nor is it seeking a capacity increase of 50% or greater. Rather, it is seeking the NJDEP's modification of an already existing permit.

The statute explicitly defines the terms "existing hazardous waste facilities" and "new hazardous waste facilities." An "existing hazardous waste facility" is "any major hazardous waste facility which was legally in operation or upon which construction had legally commenced prior to the effective date" of the Act. In contrast, a "new major hazardous waste facility" means "any major hazardous waste facility other than an existing major hazardous waste facility. See N.J.S.A. 13:1E-51.

The Chambers Works facility was legally in operation prior to the effective date of the Act. Therefore, it is considered an "existing hazardous waste facility." The Act does not require that the facility have been "continuously operated" or contain any language indicating that the

facility could lose its status as an "existing hazardous waste facility" if it temporarily ceased or modified its operations. There is no statutory language indicating that the legislature intended for a facility to be considered "new" when it modifies its operations.

New Jersey courts routinely emphasize that the "legislature's intent is the paramount goal when interpreting a statute and, generally, the best indicator of that intent is the statutory language." DiProspero v. Penn, 183 N.J. 477, 492 (2005). Courts will not "rewrite a plainly-written enactment of the Legislature or presume that the Legislature intended something other than that expressed by way of the plain language." Id.

Simply put, there is no indication that the legislature ever intended for a pre-Act facility to lose its "grandfathered" status as Carneys Point argues. Because Chemours FC is not proposing any new construction, or expansion of capacity, and because the Act does not establish any requirements pertaining to the NJDEP's review of the permit modification at issue, the Act simply does not provide a basis for the NJDEP to deny the permit modification request.

As a final point, Carneys Point, which is in litigation with Chemours and the prior owner of the site, is correct that there is ongoing remediation at the site. However, Chemours FC has fully cooperated with the Environmental Protection Agency and NJDEP regarding that remediation. Further, there is simply no basis for Carneys Point's allegations that hazardous waste at the site is not under control. In addition, Chambers Works has been and is fully permitted for its ongoing operations and waste disposal practices.

Thank you for your consideration. If you have any further questions or concerns, please do not hesitate to contact me.

Sincerely,

Dawn M. Hughes

Dawn M. Hughes
Plant Manager

EXHIBIT E

CARNEYS POINT TOWNSHIP

DR. JOSEPH F. RACITE
MAYOR

WAYNE D. PELURA
DEPUTY MAYOR

KENNETH H. BROWN
COMMITTEEMAN

JUNE PROFFITT
TOWNSHIP CLERK/REGISTRAR

KENNETH R. DENNIS
COMMITTEEMAN

MARCUS E. DOWE, JR.
COMMITTEEMAN

MARIE STOUT
CFO/ADMINISTRATOR

November 7, 2017

Zafar.billah@dep.nj.gov
Mr. Zafar Billah, Acting Bureau Chief
NJDEP – Bureau of Landfill and
Hazardous Waste and Permitting
P.O. Box 420, Mail Code 401-02C
401 E. State St., 2nd Fl.
Trenton, NJ 08625-0420

Mark.Pedersen@dep.nj.gov
Mr. Mark J. Pedersen, Assist. Comm.
NJDEP – Site Remediation/Waste
Management
Mail Code: 401-406
P.O. Box 420
Trenton, NJ 08625-0420

Lisa.Morelli@law.njoag.gov
Lisa Morelli, DAG
Division of Law
R.J. Hughes Justice Complex
25 Market Street
Trenton, New Jersey 08625-093

Re: WITHDRAWAL OF OBJECTION
Chemours Chambers Works, Deepwater, NJ
EPA Id. No. NJD002385730
Permit No. HWP140003
Class II Permit Modification Application

Dear Mr. Billah, Mr. Pedersen and Ms. Morelli,

As the Mayor of Carneys Point Township I write to withdraw our letter dated January 9, 2017 to Mr. Billah in which Carneys Point objected to The Chemours Company FC, LLC's ("Chemours") application to restart containerized hazardous waste operations at the Chambers Works hazardous waste facility located in Carneys Point. The facility did not lose its grandfathered status as more fully discussed below.

First, as you may know, Carneys Point sued Chemours and its parent, The Chemours Company, in the U.S. District Court for the District of New Jersey for failure to pay host taxes pursuant to the Major Hazardous Waste Facilities Siting Act (the "Act"). The parties have recently settled that suit. During the course of the suit, Chemours clarified that despite its letter dated September 15, 2015 from Bernard Reilly, Esq. to Andrea Rhea, Esq., Township solicitor, Chemours' predecessor, DuPont and Chemours never abandoned its commercial hazardous waste operations at Chambers Works.

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www.carneyspointnj.gov

In particular, despite the fact that Chambers Works ceased accepting containerized waste in 2012 both DuPont and Chemours continued to accept piped-in hazardous waste from tenants at Chambers Works and from offsite neighbors. As part of the settlement Chemours has agreed to pay tax on the waste it received from piped-in customers because it is required by the Act.

The Reilly letter stated that Chambers Works ceased being a commercial hazardous waste facility because, after it stopped accepting containerized waste from various commercial customers, it only continued to accept piped-in hazardous waste from tenants. The Reilly letter took the position that tenant waste streams were all from one site, the Chambers Works site, and that one generator site did not count as a commercial operation. The Reilly letter, however, failed to recognize that the leasehold operations at Chambers Works were "individual generator sites" as defined by the Act, which created multiple generator sites at Chambers Works and preserved the facility's grandfathered commercial operations.

In particular, according to the Act, a commercial hazardous waste facility is required to pay gross receipt taxes to the host community if the "commercial hazardous waste facility . . . accepts hazardous waste from more than one generator for storage, treatment or disposal at a site other than the site where the hazardous waste was generated."[1] In other words, the Act makes a distinction between the "individual generator site" and the "hazardous waste facility site" and requires that the facility accept hazardous waste from at least two individual generator sites unrelated to the facility's onsite manufacturing operations in order to make the facility a commercial operation.

The Act defines the hazardous waste facility "site" to mean the "area or plot of land" required to operate the commercial major hazardous waste facility.[2] Therefore, the hazardous waste facility "site" at Chambers Works is the 65-acres of property required to operate the wastewater treatment plant, storage and unloading areas and hazardous waste landfill. See the Facility Brochure attached.

DEP defines an "individual generator site" to mean "the contiguous site at or on which one or more hazardous wastes are generated. An individual generation site, such as a large manufacturing plant, may have one or more sources of hazardous waste but is considered a single or individual generation site if the site or property is contiguous."[3]

The Chemours manufacturing plant at Chambers Works is an "individual generator site." The plant has a number of hazardous waste production areas but is considered an individual generation site because each of the production areas are part of the same plant. The individual leaseholds at Chambers Works are not part of the Chemours plant and are individual generator sites distinct from the Chemours generator site.

The leasehold spaces occupied by the tenant generators are "individual generator sites" because they are not part of the hazardous waste facility and are not part of the Chemours individual generator site. The leasehold spaces are not part of the hazardous waste facility because the wastewater treatment plant, storage

[1] N.J.S.A. 13:1E-51 [Emphasis added].

[2] "Site" means the area or plot of land being considered for use as a new major commercial hazardous waste facility plus any contiguous lands reserved to meet the requirements of N.J.A.C. 7:26G-14.12.

[3] N.J.A.C. 7:26G-14.12; *see also* N.J.A.C. 7:26-1.4. DEP defines "generator" to mean "any person, by site, whose act or process produces hazardous waste as defined by this subchapter." N.J.A.C. 7:26G-14.6.

areas and landfills are not located on the tenant leasehold spaces. See Figure 1 attached. The leasehold spaces are also not part of the Chemours individual generator site because the tenants are separate businesses operating separate production processes on separate leasehold spaces that are not owned or operated by Chemours or part of the Chemours plant site. See Figure 1.

The U.S. Resource Conversation and Recovery Act ("RCRA") requires each generator to have EPA ID Nos. to track the generation, transportation and disposal of hazardous waste from cradle-to-grave using a manifest. Chemours and its tenants at Chambers Works each have individual EPA ID Nos.[4] Indeed, EPA has always treated tenant space as an individual generator site. For example, EPA informed the regulated community that, when a tenant operates a laboratory or structure on leasehold space or in an industrial park with many tenants, each "generator must obtain one identification number for each laboratory or structure even if the regulated activity is taking place on a contiguous piece of property."[5] RCRA best management practices also require individual generator tenants to have separate EPA ID Nos.[6]

Accordingly, Chambers Works never lost its grandfathered status as a commercial hazardous waste facility because it never ceased accepting hazardous waste from tenants and neighbors who sent their hazardous waste to the Chambers Works facility via pipe.

Second, Chemours is seeking to restart the containerized waste business and convert Chambers Works into an industrial park that will offer the amenity of hazardous waste services to its tenants. See Chemours marketing piece attached. Containerized waste operations and tenant waste operations may create job opportunities for the community, generate revenue for Chemours to use towards its onsite remediation obligation and produce a community host tax that Carneys Point sorely needs as one of the few municipalities in the state hosting a major hazardous waste facility. If DEP were to deny Chemours' application on the grounds that Chemours abandoned its grandfathered status, such a decision would be contrary to the Act and its regulations and be hurtful to Chemours and Carneys Point Township.

Accordingly, we respectfully request that DEP grant Chemours its permit for containerized waste. We are available to discuss this matter further and look forward to hearing from you. Thank you.

---

[4] EPA ID Nos. for Chambers Works Complex: Chemours Company FC, LLC (NJD002385730); DuPont (NJR986645174); CoGen Facility (NJD986625952); Cogentirx (NJD986623952); Praxair (NJD982186538). Calpine EPA ID No. is NJR986642916.

[5] Monthly Report Question; February 1988 (RCRA Online #13129).
https://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175/f4c39bba8a9632018525670f006bc5e4!OpenDocument

[6] RCRA Subtitle C EPA Identification Number, Site Status, and Site Tracking Guidance For Managing Data on RCRAInfo, "Multiple operators can exist on sites such as a large manufacturing building or industrial park with several tenants, a large corporation with financially distinct entities on a single contiguous property, or an office building holding multiple tenants, etc. In all such cases, where there is separate generation of waste streams, we recommend an individual RCRA EPA ID Number be issued to each tenant if the above-mentioned criteria are met. Although the location address will be the same for all operators, they should be differentiated by indication of suite numbers, floors, or locations on a floor.
http://www.deq.state.ok.us/lpdnew/FactSheets/Site%20ID%20Guidance%20Final%2003-25-05.pdf

Sincerely,

Joseph F. Racite, Mayor

Attachments

Cc: Carneys Point Township Committee
Salem County Freeholders
Senator Stephen M. Sweeney
Assemblyman John J. Burzichelli
Assemblyman Adam J. Taliaferro
David Avedissian, Esq.

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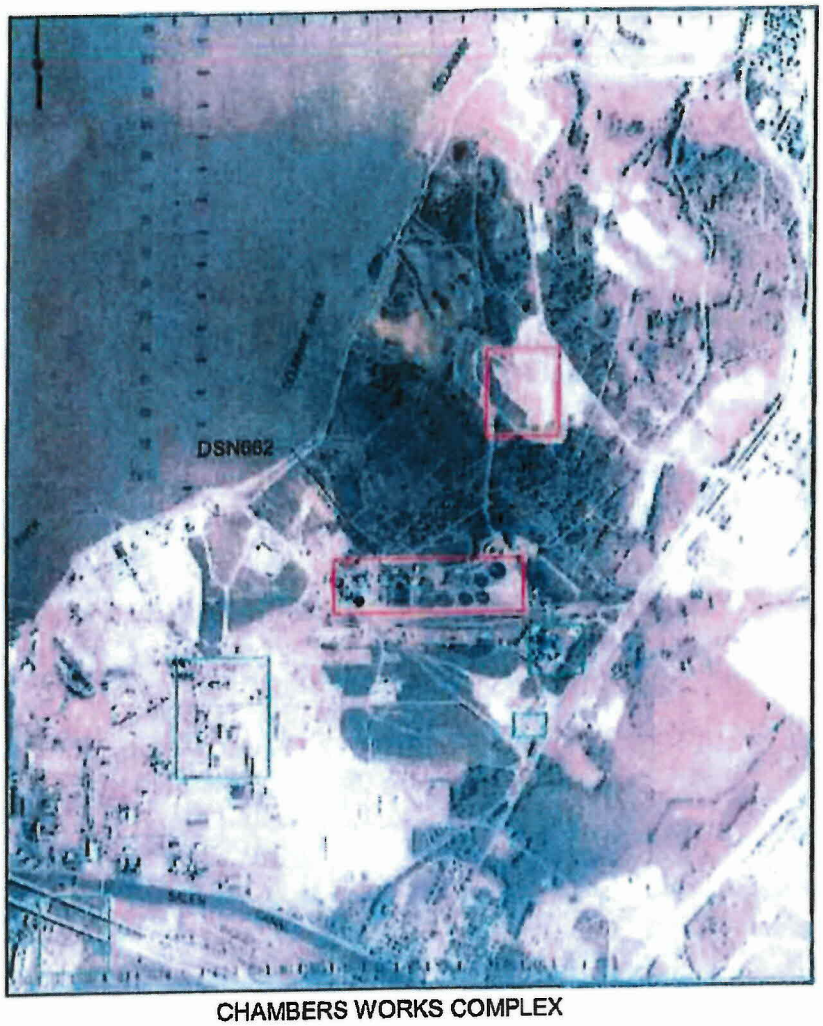
www.carneyspointnj.gov

Figure 1



CHAMBERS WORKS COMPLEX

- Red squares are wastewater treatment plant/storage areas (40-acres) and hazardous waste landfill (25-acres) referred to herein as the 65-acre "Facility"
- Green squares above Salem Canal are DuPont, Praxair and the Cogen leaseholds
- Balance of Complex above Salem Canal is Chemours
  - Green square below the Salem Canal is neighboring Calpine not part of Chambers Works

Chemours Facility Brochure

History

Site Opened	1899
Previous Land Use	Farming
Manufacturing Activities	Chambers Works site originally manufactured smokeless powder and in 1917 expanded to produce other organic chemicals. All operations related to nitrocellulose and explosive products ceased in the late 1970s. Chemical processing at the site currently includes the production of organic chemicals and organic intermediates.
Waste Disposal On-Site	Waste disposal has been handled on-site since 1917 for DuPont manufacturing operations. The Wastewater Treatment Plant was constructed in the mid-1970s.
Commercial Water Treatment Plant	Opened to commercial generators in 1979-80, when capacity became available.

Facility Location and Setting

Location	The Wastewater Treatment Plant (WWTP) is part of the Chambers Works facility in Deepwater, New Jersey. The facility is located along the Delaware River and Salem Canal, at the base of the Delaware Memorial Bridge. It lies in Pennsville and Carney's Point townships. For general location, see Appendix C.
Accessibility	Chambers Works is located on Route 130, just north of I-95 and near the southern end of the New Jersey Turnpike. The site is also accessible by rail and barge.
Size	Entire Chambers Works facility: 1,440 acres, including a 200 acre wildlife habitat. WWTP: 40 acres; 25 acres for landfill.

The miracles of science

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Chemours Marketing as Industrial Park

Build Ready Location with Infrastructure in Place

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www.carneyspointnj.gov

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF LEGAL AFFAIRS
MAIL CODE 401-04L, P.O. BOX 402
Trenton, NJ 08625-0402
TEL: # (609) 292-0716
FAX # (609) 984-3488

BOB MARTIN
Commissioner

RECEIVED
JAN 16 2018
NORRIS, MC LAUGHLIN & MARCUS

January 5, 2018

Edward A. Hogan, Esq.
Norris McLaughlin & Marcus, P.A.
400 Crossing Boulevard, 8th Floor
P.O. Box 5933
Bridgewater, NJ 08807

RE: Request for an Adjudicatory Hearing
THE CHEMOURS COMPANY
HWP160002-NJD002385730

Dear Mr. Hogan:

Please be advised that the Department has received your request for an adjudicatory hearing. Your request is under review and you will be hearing from the Department as to its disposition.

Sincerely,

Colin Emerle, Esq.
Regulatory Officer
Office of Legal Affairs

C: Anthony Fontana
609-292-9880
OLA #17-0167

V:\LegalAff\Plola4\1ST PARTY HEARINGS\MERGE DOCUMENTS\Acknowledgement Letter

ATTACHMENT B-3

INSPECTION LOG

Chemical Waste Managment Area
Storage and Treatment Facilities
Daily Inspection Log Sheet

☐ PTM
☐ AM
☐ UM

te: _____ **Time:** _____ **Inspector (Full Name):** _____

ITEMS TO BE INSPECTED		INSPECT FOR			CORRECTIVE ACTION
1. Container Storage Inventory:		Damage?	☐ Yes	☐ NO	
A. Containers		Leaks?	☐ Yes	☐ NO	
(Drums/pails)		Labels?	☐ Yes	☐ NO	
Totes		Segregation by Waste?	☐ Yes	☐ NO	
Roll Offs		Aisle Space (30")?	☐ Yes	☐ NO	
		Stacking height (3 Drums max)	☐ Yes	☐ NO	
B. Pallets (when used):		Damaged/deterioration?	☐ Yes	☐ NO	
Hoses:		Damaged/deterioration?	☐ Yes	☐ NO	
C. Secondary Containment Systems: (Drum Pad,		Cracks, Spalling, Uneven Settlement, Deterioration, High Sump Levels?	☐ Yes	☐ NO	
Unloading Spots 1025-1028,		Spills, Precipitation, Debris?	☐ Yes	☐ NO	
Cw-1 Sump, Pads A, B, & 90 Day)		90 Day Pad: Drain Valve Closed?	☐ Yes	☐ NO	
2. Secondary Containment Systems:		Cracks, Spalling, Uneven Settlement, Deterioration	☐ Yes	☐ NO	
(Pad C Tank Trailer Storage)		Spills, Precipitation, Debris?	☐ Yes	☐ NO	
Inventory:		Drain Valve Closed?	☐ Yes	☐ NO	
Number of Tank Trailers:		Current DOT Inspections?	☐ Yes	☐ NO	
Number of Roll Off Boxes:		Current NJDEP Waste Hauler Decals?	☐ Yes	☐ NO	
3. Safety & Emergency Equipment:		Telephones Working?	☐ Yes	☐ NO	
		First Aid Supplies?	☐ Yes	☐ NO	
		Calcium Gluconate Gel?	☐ Yes	☐ NO	
		Protective Clothing?	☐ Yes	☐ NO	
		Safety Showers Working?	☐ Yes	☐ NO	
		Spill Control Supplies Ready?	☐ Yes	☐ NO	
		Deluge Systems Working?	☐ Yes	☐ NO	
		Safety Blankets?	☐ Yes	☐ NO	
4. General Facility Safety & Security:		Housekeeping?	☐ Yes	☐ NO	
		Empty Drum Area Clean/Organized?	☐ Yes	☐ NO	
		Spare Drum Area Clean/Organized?	☐ Yes	☐ NO	
		Evacuation Routes Unobstructed?	☐ Yes	☐ NO	
		Fences/Gates?	☐ Yes	☐ NO	
		Warning Signs In Place/Legible?	☐ Yes	☐ NO	
5. Waste Compatibility:		Incompatible Materials Segregated on Pad?	☐ Yes	☐ NO	
6. One Year Storage Limits:		Any Hazardous Wastes Near their 1 Year Storage Limit?	☐ Yes	☐ NO	
Fluorescent Lamp Tube Shed:		Boxes Labeled & Dated?	☐ Yes	☐ NO	
		Boxes in Good Shipping Condition?	☐ Yes	☐ NO	
		Housekeeping Adequate?	☐ Yes	☐ NO	

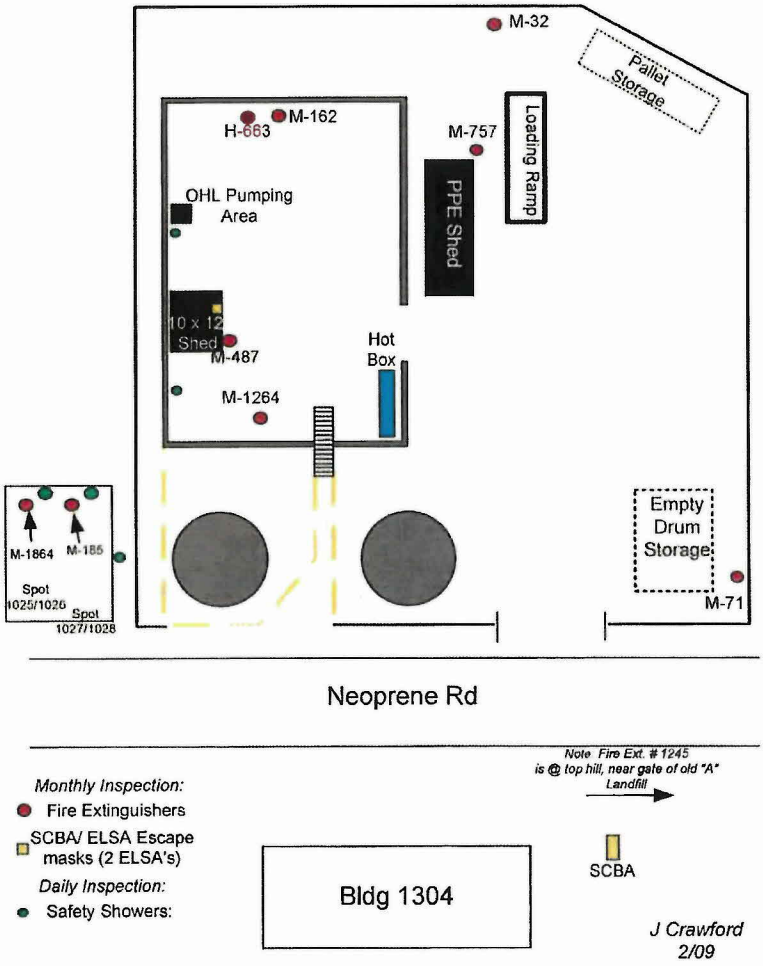
Retention Time: 10 Years
Retention time based on DPCC rules

Shared Drive Location: S:\D.E.T\Chem Waste Area\Logsheets

Rev 5/2016

Chem Waste Pad "A"
Monthly Safety Inspection
Checksheet

		Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Fire Extinguishers	32												
	71												
	162												
	185												
	487												
	663												
	757												
	1264												
	1864												
SCBA's / ELSA's													

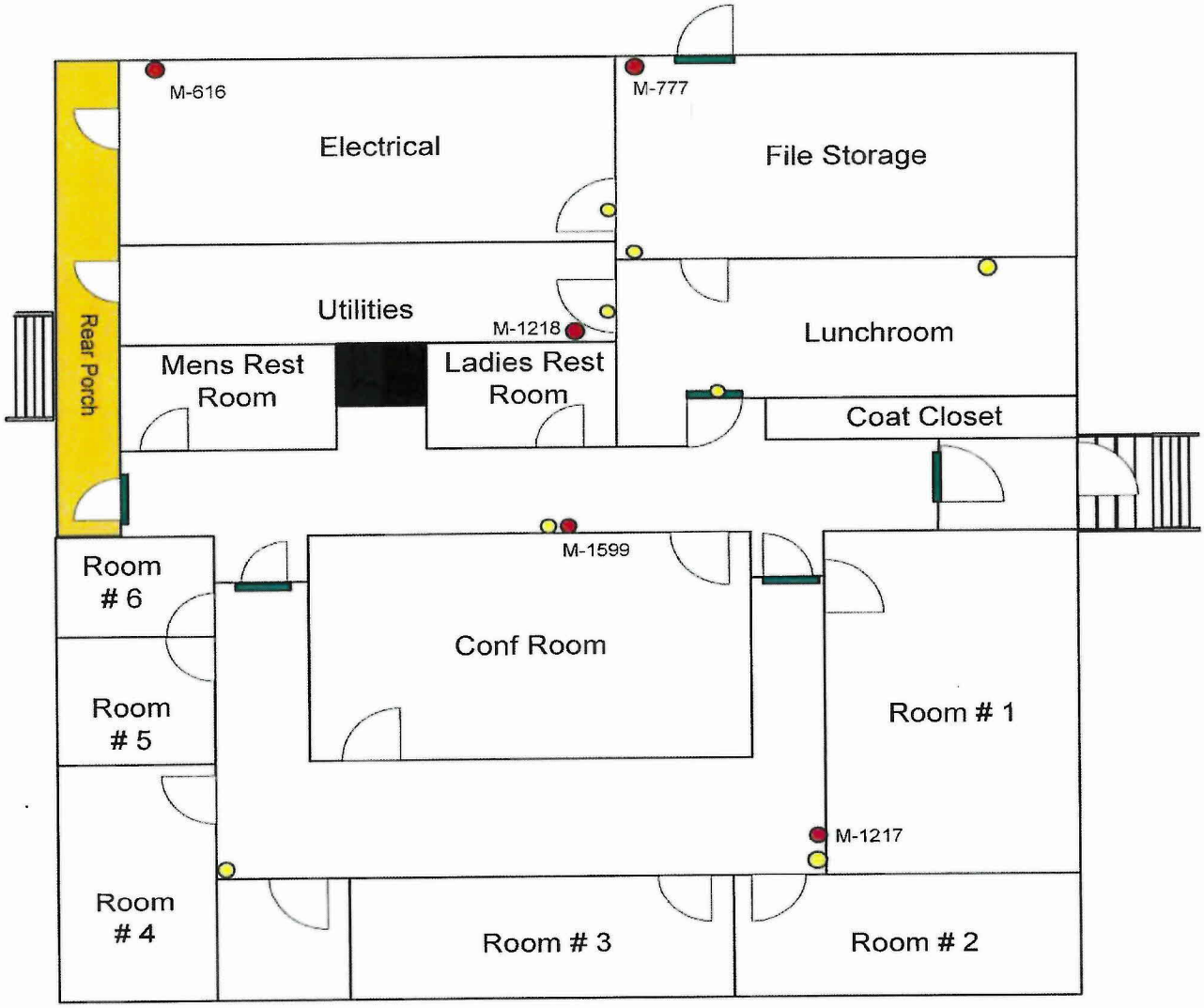


J Crawford
2/09

S:\D.E.T\PRISM Information\Procedures\Chem Waste\Chem Waste Pad Inspection Sheet

Chem Waste Bldg 1304
Monthly Safety Inspection
Checksheet

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
M-616												
M-777												
M-1217												
M-1218												
M-1599												
Emergency Lights												
Lighted Exit Signs												



Monthly Inspections:

- Fire Extinguisher
- Emergency Light
- Lighted Exit Sign

J. Crawford
9/10

S:\D.E.T\PRISM Information\Procedures\Chem Waste\ Chem Waste Monthly Inspection Checklist

			Need		SW45S						
Bldg	**Hose #**	**Location**	**Diamet**	**Length**	**Diameter**	**Length**	**SAP ID**	**Hose located?**	**Good condition?**	**Tag in place?**	**Date on tag?**
1079	FH-00001A	Chemwaste Pad B, T/T unloading	3"	20'	3"	20'	51176664				
1079	FH-00001B	Chemwaste Pad B, T/T unloading	3"	20'	3"	20'	51176671				
1079	FH-0004B	Discharge of P-47A	2"	6'	2"	15'	51176681				
1079	FH-00005A	P-56 (overhead line) suction	2"	10'	1.5"	10'	51176682				
1079	FH-00005B	P-56 (overhead line) suction	2"	10'	1.5"	10'	51176685				
1079	FH-00006A	Chemwaste Pad A river water	1.5"	10'	1.5"	10'	51176686				
1079	FH-00006**B**	Chemwaste Pad A river water	1.5"	10'	1.5"	10'	51176687				

ATTACHMENT D-2

TRANSMITTAL OF CONTINGENCY PLAN TO LOCAL GOVERNMENTAL AGENCIES

The Chemours Company
Fluoroproducts
67 Canal Road, P. O. Box 9001
Chambers Works - 1244 Building
Deepwater, NJ 08023

December 28, 2017

Salem County Office of Emergency Management
135 Cemetery Rd.
Woodstown, NJ 08098

RE: Contingency Plan and Emergency Procedures
Chambers Works
Secure Environmental Treatment

Please add the enclosed "Quick Reference Guide" to the front of the Contingency Plan and Emergency Procedures for the Secure Environmental Treatment area that you received in May 2017.

Should you have any questions, please feel free to contact cynthia.m.mcmanus@chemours.com or by telephone at 856-540-3438.

Thank you.

Sincerely,

Cheryl Coneeny

Cheryl Coneeny
Admin. Asst.
Secure Environmental Treatment
Chemours Chambers Works
67 Canal Rd. Bldg. 1244
Deepwater, NJ 08023

The Chemours Company
Fluoroproducts
67 Canal Road, P. O. Box 9001
Chambers Works - 1244 Building
Deepwater, NJ 08023

December 28, 2017

Deepwater Fire Company No. 2
PO Box 309
Deepwater, NJ 08023

RE: Contingency Plan and Emergency Procedures
Chambers Works
Secure Environmental Treatment

Please add the enclosed "Quick Reference Guide" to the front of the Contingency Plan and Emergency Procedures for the Secure Environmental Treatment area that you received in May 2017.

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Thank you.

Sincerely,

Cheryl Coneeny

Cheryl Coneeny
Admin. Asst.
Secure Environmental Treatment
Chemours Chambers Works
67 Canal Rd. Bldg. 1244
Deepwater, NJ 08023

The Chemours Company
Fluoroproducts
67 Canal Road, P. O. Box 9001
Chambers Works - 1244 Building
Deepwater, NJ 08023

December 28, 2017

Carneys Point Fire Department
"D" Street and Walker Avenue
Carneys Point, NJ 08069

RE: Contingency Plan and Emergency Procedures
Chambers Works
Secure Environmental Treatment

Please add the enclosed "Quick Reference Guide" to the front of the Contingency Plan and Emergency Procedures for the Secure Environmental Treatment area that you received in May 2017.

Should you have any questions, please feel free to contact cynthia.m.mcmanus@chemours.com or by telephone at 856-540-3438.

Thank you.

Sincerely,

Cheryl Coneeny

Cheryl Coneeny
Admin. Asst.
Secure Environmental Treatment
Chemours Chambers Works
67 Canal Rd. Bldg. 1244
Deepwater, NJ 08023

The Chemours Company
Fluoroproducts
67 Canal Road, P. O. Box 9001
Chambers Works - 1244 Building
Deepwater, NJ 08023

December 28, 2017

Pennsville Police Department
90 North Broadway
Pennsville, NJ 08070

RE: Contingency Plan and Emergency Procedures
Chambers Works
Secure Environmental Treatment

Please add the enclosed "Quick Reference Guide" to the front of the Contingency Plan and Emergency Procedures for the Secure Environmental Treatment area that you received in May 2017.

Should you have any questions, please feel free to contact cynthia.m.mcmanus@chemours.com or by telephone at 856-540-3438.

Thank you.

Sincerely,

Cheryl Coneeny

Cheryl Coneeny
Admin. Asst.
Secure Environmental Treatment
Chemours Chambers Works
67 Canal Rd. Bldg. 1244
Deepwater, NJ 08023

The Chemours Company
Fluoroproducts
67 Canal Road, P. O. Box 9001
Chambers Works - 1244 Building
Deepwater, NJ 08023

December 28, 2017

Carneys Point Police Department
303 Harding Highway
Carneys Point, NJ 08069

RE: Contingency Plan and Emergency Procedures
Chambers Works
Secure Environmental Treatment

Please add the enclosed "Quick Reference Guide" to the front of the Contingency Plan and Emergency Procedures for the Secure Environmental Treatment area that you received in May 2017.

Should you have any questions, please feel free to contact cynthia.m.mcmanus@chemours.com or by telephone at 856-540-3438.

Thank you.

Sincerely,

Cheryl Coneeny

Cheryl Coneeny
Admin. Asst.
Secure Environmental Treatment
Chemours Chambers Works
67 Canal Rd. Bldg. 1244
Deepwater, NJ 08023

Subpart E – Manifest System, Recordkeeping, and Reporting

40 CFR 264.70 Applicability

The requirements of this part apply to Chem Waste Area RCRA permitted hazardous waste storage operations (i.e., Chem Waste Area Container Storage Pad). 1178 Building is no longer in use and is pending NJDEP approval for demolition.

The facility ships RCRA hazardous waste containers stored on-site in RCRA permitted storage locations to off-site treatment, storage, or disposal facilities (TSDF) for management per 40 CFR 264.71(c). The facility prepares a RCRA Uniform Hazardous Waste Manifest (EPA Form 8700-22; Rev. 12-17) for all hazardous waste shipments. The Uniform Hazardous Waste Manifest is also provided for required destination or consignment State regulated wastes (264.71(e)), addressing State specific requirements more stringent than the Federal RCRA program. The Uniform Hazardous Waste Manifest is also prepared for TSCA Polychlorinated Biphenyl (PCB) wastes as required by 40 CFR Part 761.

40 CFR 264.71 Use of Manifest System

The permitted storage facility currently does not receive imported hazardous waste from foreign sources (264.71(a)(3)). However, after approval of our Class 2 permit modification, Chemours Chambers Works SET wastewater treatment plant anticipates receiving containerized hazardous wastewaters accompanied by a Uniform Hazardous Waste Manifest(s) from off-site Chemours, Chambers Works non-Chemours entities, and non-Chambers Works non-Chemours entities. Use of the e-Manifest System will be phased in when the commercial hazardous waste business is resumed. In the interim, the new 5-page Uniform Hazardous Waste Manifest may continue to be used. The facility owner, operator, or his or her agent will sign and date each manifest to certify that the hazardous waste covered by the manifest was received except as noted in the discrepancy space of the manifest, or that the hazardous waste was rejected as noted in the manifest discrepancy space.

The permitted storage facility does not receive hazardous waste from a rail or water (bulk shipment) source (264.71(b)). Additionally, 264.71(d) addressing the Transfrontier Shipments of Hazardous Wastes for Recovery within the OECD is not applicable to the Chem Waste area.

For those wastes residing in areas subject to the RCRA storage permit, at the point of shipment off-site all Federal and State regulated hazardous wastes, as well as any TSCA regulated PCB wastes, subject to the Uniform Hazardous Waste Manifest requirements will be manifested. The Uniform Hazardous Waste Manifest may be generated on-site by Chem Waste Area, or provided by the vendor picking up the load. In all cases, the facility owner, operator or his/her agent will:

1) Sign the outbound manifest(s) as Generator/Offeror;
2) Retain the Generator Initial Copy for required records;
3) Make additional copies of the manifest as needed by the transporter;
4) Provide all other signed copies to the transporter;

Exception Reporting (262.42): For outbound hazardous waste shipments, if the facility has not received a signed copy of the Uniform Hazardous Waste Manifest from the destination TSDF within 35 days, then Chem Waste Area personnel must contact the transporter and/or the TSDF facility to determine the status of the hazardous waste. If after the above steps a signed copy of the manifest is not received within 45 days of the date of initial shipment, then an Exception Report is filed with the NJDEP and EPA Regional Administrator.

The Exception Report will include:

1) A legible copy of the manifest for which the generator does not have confirmation of delivery;
2) A cover letter signed by the generator or his authorized representative explaining the efforts taken to locate the hazardous waste and the results of those efforts.

40 CFR 264.72 Manifest Discrepancies

Not applicable currently. As of April 2012, Chambers Works stopped receiving wastes from off-site generators for storage at the Chem Waste area. However, should Chemours Chambers Works be able to resume commercial hazardous waste treatment, all manifest discrepancies noted in section 18a of the Uniform Hazardous Waste Manifest for wastes received will be handled per the requirements of 264.72. Decisions to accept or reject manifested wastes upon discovery of a discrepancy will be based on the nature of the discrepancy and permit limitations.

40 CFR 264.73 Operating Record

(a) The Secure Environmental Treatment unit at Chemours Chambers Works keeps a written operating record.

(b) The Chem Waste Storage area uses a PC database system called 4D which tracks all the waste received, handled and shipped. Manifest and waste characterization info along with Chemical and Hazardous Waste labels are managed with this system. See sample screen shot provided as Attachment E-1.

(b)(1) The Chem Waste Storage area retains a description and quantity of each waste received, and the method and date of its treatment, storage or disposal is maintained in the 4D system. Equivalent operating data prior to 4D system is stored on 3.5 inch floppy disks.

(b)(2) The location of each waste and manifest information is also recorded in the 4D system.

(b)(3) Records and results of waste analyses and waste determinations are saved as part of the waste profile or waste characterization form.

(b)(4) Should an incident occur that requires implementation of the Contingency Plan, the incident investigation including timeline and corrective measures will be recorded in the site Reliance database.

(b)(5) Inspections are conducted Monday through Friday excluding holidays by operators. The inspection sheets are reviewed by the area supervisor and saved by the area file clerk.

(b)(6) Monitoring, testing or analytical data and associated corrective action (when required by subpart F) are managed by AECOM (previously called the Corporate Remediation Group) on behalf of the Chambers Works facility.

(b)(7) Not applicable currently. Should Chemours Chambers Works be able to resume commercial hazardous waste treatment, part of the process involved with setting up a contract to receive wastes will include Chambers Works informing the generator in writing that it holds the appropriate permits for and will accept the waste the generator will ship. A copy of the written notice will be retained as part of the operating record.

(b)(8) The closure cost estimate as of September 2017 is provided in Attachment H-2. It is based on the cost of hiring a third party to close the facility. The cost estimate does not take credit for any salvage value.

(b)(9) The letter in Attachment E-2 from Mr. Raymond Basso, Chief, RCRA Program Branch, EPA Region 2 to Mr. Anthony Fontana, NJDEP states that submittals for the "On-Site Pollution Prevention Plan Yearly Summaries and Progress Reports" ("P2") can be substituted for the annual waste minimization certification requirement per 40 CFR 264.73(b)(9). Chemours Chambers Works files these reports annually with NJDEP.

(b)(10) Not applicable to the storage facilities covered by this permit application.

(b)(11) For wastes shipped from Chambers Works to an off-site treatment facility, Chambers Works will either provide a completed Land Disposal Restriction form from the receiving TSDF or, if the receiving TSDF does not have their own form, send a completed version of the form shown in Attachment E-3, "40 CFR Part 268 Land Disposal Notification." Should Chemours Chambers Works be able to resume commercial hazardous waste treatment, generators that would ship their wastes to Chemours Chambers Works for treatment would be required to complete and certify the form provided as Attachment E-4, "Chambers Works Wastewater Treatment Facility Land Disposal Restrictions" with all applicable attachments.

(b)(12) For wastes generated and treated at Chambers Work, the form provided as Attachment E-5 ("Notification and Certification Form") is completed, certified and filed with the Waste Characterization Form.

(b)(13) For wastes shipped from Chambers Works to an off-site disposal facility, Chambers Works will either provide a completed Land Disposal Restriction form from the receiving TSDF or, if the receiving TSDF does not have their own form, send a completed version of the form provided as Attachment E-3, "40 CFR Part 268 Land Disposal Notification." Should Chemours Chambers Works be able to resume commercial hazardous waste treatment, generators that would ship their wastes to Chemours Chambers Works for treatment would be required to complete and certify the form provided as Attachment E-

4, "Chambers Works Wastewater Treatment Facility Land Disposal Restrictions" with all applicable attachments.

(b)(14) For wastes generated and landfilled at Chambers Works, the form provided as Attachment E-5 ("Notification and Certification Form") is completed, certified and filed with the Waste Characterization Form.

(b)(15) Not applicable to the storage facilities covered by this permit application.

(b)(16) For wastes generated and stored at Chambers Works, the form provided as Attachment E-5 is completed, certified and filed with the Waste Characterization Form.

(b)(17) Not applicable because Chambers Works is not a remediation waste management site.

(b)(18) Not applicable because Chambers Works is not permitted for hazardous waste incineration. 40 CFR 264 Subpart O does not apply to the facilities covered by this permit application.

(b)(19) Not applicable because Chambers Works is not permitted for hazardous waste treatment, storage, or disposal in tanks. 40 CFR 264 Subpart J does not apply to the facilities covered by this permit application.

40 CFR 264.74 Availability, Retention, and Disposition of Records

(a) All records including plans required by 40 CFR 264 for the Chem Waste Storage Pad and the 1178 Building will be furnished upon request and made available at reasonable times for inspection to EPA officers, employees, or representatives duly designated by the Administrator. 1178 Building is no longer in use and is pending NJDEP approval for demolition.

(b) Records retention periods otherwise specified are automatically extended during the course of any unresolved enforcement action regarding the facility or as requested by the Administrator. The data is saved on the 4D server and is backed-up nightly on the P: Drive on the plant server.

(c) Not applicable because the Chem Waste Storage Pad and 1178 Building are not disposal facilities. 1178 Building is no longer in use and pending NJDEP approval for demolition.

40 CFR 264.75 Biennial Report

Each even-numbered year, Chambers Works prepares and submits a Biennial Report to the Regional Administrator. The report on Form 8700-13B covers the activities during the previous calendar year and includes the:

(a) EPA identification number, name, and address of the facility;
(b) Calendar year covered by the report;

(c) EPA identification number of each hazardous waste generator from which the facility received a hazardous waste during the reporting year;
(d) Description and quantity of each hazardous waste the facility received during the reporting year, listed by EPA identification number of each generator;
(e) Method of treatment, storage, or disposal for each hazardous waste;
(g) Most recent closure cost estimate;
(h) Description of efforts undertaken during the year to reduce the volume and toxicity of wastes generated on-site;
(i) Description of changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent such information is available for the years prior to 1984;
(j) Certification by the owner or operator.

40 CFR 264.76 Unmanifested Waste Reports

Not applicable to the Chemours Chambers Works. As of April 1, 2012, Chambers Works stopped receiving wastes from off-site generators.

Should Chemours Chambers Works be able to resume commercial hazardous waste treatment, and if the facility receives a hazardous waste without an accompanying Uniform Hazardous Waste Manifest, and the waste is not determined to be excluded from the manifest requirements, the owner or operator must then prepare and submit a letter to the NJDEP and EPA regional Administrator within 15 days after receiving the waste. The report requirements of 264.76(a)(1)-(6) must be followed:

1) EPA Identification Number of the facility, as well as name and address;
2) Date the facility received the waste;
3) EPA ID Number, name and address of the generator and transports, if available;
4) Description of the quantity of each unmanifested waste received;
5) Method of treatment, storage, or disposal for each hazardous waste.
6) The certification signed by the owner or operator of the facility or his authorized representative; and,
7) A brief explanation of why the waste was unmanifested, if known.

Copies of unmanifested waste reports will be maintained, and all manifests, for 3 years unless extended as a result of an enforcement action per 264.74(b).

40 CFR 264.77 Additional Reports

In addition to the Biennial Report described in 40 CFR 264.75, the facility must also report to the Regional Administrator:

(a) As required by 40 CFR 264.56(i):

Following an event that required implementation of the Contingency Plan, the hazardous waste facility operator must note in the operating record the time, date, and details of the

incident. Within 15 days of the incident that required implementation of the Contingency Plan, section 1.G of the plan requires the hazardous waste facility operator to submit a written report to the Regional Administrator that includes:

(1) name, address, and telephone number of the owner or operator,
(2) name, address, and telephone number of the facility,
(3) date, time, and type of incident,
(4) name and quantity of materials involved,
(5) extent of injuries,
(6) assessment of actual or potential hazards to human health or the environment, and
(7) estimated quantity and disposition of recovered material that resulted from the incident.

(b) Certifications of facility closures (not applicable to storage facilities) per 40 CFR 264.115; and

(c) As required by subparts:

- F (releases from solid waste management units) per 40 CFR 264.101,
- K (surface impoundments, not applicable to this permit renewal application),
- L (waste piles, not applicable to this permit renewal application),
- M (land treatment, not applicable to this permit renewal application),
- N (landfill, not applicable to this permit renewal application),
- AA (air emission standards for process vents, not applicable to this permit renewal application),
- BB (air emission standards for equipment leaks, not applicable to this permit renewal application),
- CC (air emission standards for tanks, surface impoundments, containers; only containers are applicable to the permit renewal application)

ATTACHMENT E-1

4D SCREEN SHOT

File Edit Setup Inventory Landfill Shipments Reports Administration Help

Drums Stored at Chem Waste

924 in view

EPAManifest	RecDate	Line	HF	Unload Spot	WCF	WIP/TSDF	Customer Container		Cont Name	Wt	BarCode	Location	Heel	Recd Id storage	Last Scanned
WTO C57585	4/17/20181			RCRA S	1-I-18		VEX	01	55 DF	600	210268	Row 26	Heel	10118	00/00/00
WTO C001912	4/12/20181			RCRA S	115-I-194B		CH	01	Tote	220(	210265	Row 40	Heel	10117	00/00/00
WTO C001912	4/12/20181			RCRA S	115-I-194B		CH	03	Tote	220(	210267	Row 40	Heel	10117	00/00/00
WTO C001912	4/12/20181			RCRA S	115-I-194B		CH	02	Tote	220(	210266	Row 40	Heel	10117	00/00/00
WTO C58536	4/11/20181			RCRA S	CW-I-1		MAR	01	Tote	200(	210260	Row 51	Heel	10115	00/00/00
WTO C58536	4/11/20181			RCRA S	CW-I-1		MAR	05	Tote	200(	210264	Row 51	Heel	10115	00/00/00
WTO C58536	4/11/20181			RCRA S	CW-I-1		MAR	02	Tote	200(	210261	Row 51	Heel	10115	00/00/00
WTO C58536	4/11/20181			RCRA S	CW-I-1		MAR	03	Tote	200(	210262	Row 51	Heel	10115	00/00/00
WTO C58536	4/11/20181			RCRA S	CW-I-1		MAR	04	Tote	200(	210263	Row 51	Heel	10115	00/00/00
WTO C001150	4/10/20181			RCRA S	185-I-124		VEX	06	55 DM	400	210229	Row 26	Heel	10100	00/00/00
WTO C001150	4/10/20181			RCRA S	185-I-124		VEX	05	55 DM	400	210228	Row 26	Heel	10100	00/00/00
WTO C001150	4/10/20181			RCRA S	185-I-124		VEX	03	55 DM	400	210226	Row 26	Heel	10100	00/00/00
WTO C001150	4/10/20181			RCRA S	185-I-124		VEX	15	55 DM	400	210238	Row 26	Heel	10100	00/00/00
WTO C001150	4/10/20181			RCRA S	185-I-124		VEX	04	55 DM	400	210227	Row 26	Heel	10100	00/00/00
WTO C001150	4/10/20181			RCRA S	185-I-124		VEX	11	55 DM	400	210234	Row 26	Heel	10100	00/00/00
WTO C001150	4/10/20181			RCRA S	185-I-124		VEX	12	55 DM	400	210235	Row 26	Heel	10100	00/00/00
WTO C001150	4/10/20181			RCRA S	185-I-124		VEX	10	55 DM	400	210233	Row 26	Heel	10100	00/00/00
WTO C001150	4/10/20181			RCRA S	185-I-124		VEX	01	55 DM	400	210224	Row 26	Heel	10100	00/00/00
WTO C001150	4/10/20181			RCRA S	185-I-124		VEX	09	55 DM	400	210232	Row 26	Heel	10100	00/00/00
WTO C001150	4/10/20181			RCRA S	185-I-124		VEX	02	55 DM	400	210225	Row 26	Heel	10100	00/00/00
WTO C001150	4/10/20181			RCRA S	185-I-124		VEX	13	55 DM	400	210236	Row 26	Heel	10100	00/00/00
WTO C001150	4/10/20181			RCRA S	185-I-124		VEX	14	55 DM	400	210237	Row 26	Heel	10100	00/00/00
WTO C001150	4/10/20181			RCRA S	185-I-124		VEX	08	55 DM	400	210231	Row 26	Heel	10100	00/00/00
WTO C001150	4/10/20181			RCRA S	185-I-124		VEX	07	55 DM	400	210230	Row 26	Heel	10100	00/00/00
WTO C001149	4/10/20181			RCRA S	185-I-2		MAR	02	55 DM	400	210210	Row 3	Heel	10098	00/00/00
WTO C001149	4/10/20181			RCRA S	185-I-2		MAR	06	55 DM	400	210214	Row 3	Heel	10098	00/00/00
WTO C001149	4/10/20181			RCRA S	185-I-2		MAR	07	55 DM	400	210215	Row 3	Heel	10098	00/00/00
WTO C001149	4/10/20181			RCRA S	185-I-2		MAR	08	55 DM	400	210216	Row 3	Heel	10098	00/00/00

For selected barcodes maximize

Print | Print Selecti... | Ship | print | Order By barcode | Order By | Query | Show All | search by | Done

ATTACHMENT E-2

POLLUTION PREVENTION PLAN
40 CFR 264.73(B)(9)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

OCT 3 1 2000

Mr. Anthony Fontana, Chief
Bureau of Hazardous Waste and Transfer Facilities
State of New Jersey
Department of Environmental Protection (NJDEP)
Division of Solid and Hazardous Waste
401 E. State Street
P.O. Box 414
Trenton, NJ 08625-0414

Dear Mr. Fontana:

This is in response to your letter dated June 19, 2000, addressed to Mr. John Filippelli regarding the NJDEP assuming responsibility for implementing the hazardous waste minimization provisions [40CFR 264.73(b)(9)] of permits for treatment, storage and disposal facilities (TSD).

As a result of the authorization of the New Jersey hazardous waste program on August 2, 1999 and furthermore the Performance Partnership Agreement between the United States Environmental Protection Agency (USEPA) and the NJDEP, the USEPA agrees to delegate the above Hazardous Waste Reduction Plan (HWRP) reporting to the NJDEP. Consequently, EPA issued permits for corrective action and other non-delegated Hazardous and Solid Waste Amendments provisions at New Jersey facilities will not contain HWRP ("annual waste minimization certification requirement") reporting requirements.

The NJDEP presently has an existing On-Site Pollution Prevention Plan Yearly Summaries and Progress Reports (P 2 report) format for New Jersey facilities that can be substituted for the EPA's HWRPs certificates and reports for the TSD facilities in question, as per 40 CFR 264.73(b)(9). Please advise these facilities (see attached list) to submit a P 2 report to the NJDEP Office of Pollution Prevention & Permit Coordination in lieu of USEPA HWRP requirement to satisfy the requirements of this regulation.

If you have any question, please contact Mr. Joseph Malki of my staff at (212) 637-4101.

Sincerely,

Raymond Basso
Chief, RCRA Program Branch

Enclosure

cc: Anthony Fontana, NJDEP Bureau of Hazardous Waste Regulation w/encl.
Melinda Dower, NJDEP Bureau of Pollution Prevention w/encl.
Facilities' List w/o encl.

ATTACHMENT E-3

40 CFR PART 268
LAND DISPOSAL NOTIFICATION

MANIFEST ATTACHMENT
40 CFR PART 268 LAND DISPOSAL NOTIFICATION
[For regulations with "*" see Appendix J for equivalent state regulations.]

Generator EPA ID No. _____ Manifest Doc. No. _____
Generator _____
Generator Address _____ Manifest Page No./Line Letter _____
Plant Waste Name _____ Manifest Date _____
Plant Waste Code _____ TSD Facility (Mark the appropriate box below.)

☐ Ch Wks NJD002385730 ☐ Other (Name/EPA ID No.) _____

This form is submitted in accordance with 40 CFR Part 268* that restricts the land disposal of certain hazardous wastes.

NOTIFICATION

☐ This shipment is to a landfill. [If so, check block & answer next line. Continue below] (40 CFR 264.314, 316*)
This shipment contains ☐ **No** ☐ **a Biodegradable** ☐ **a Non-Biodegradable** sorbent.

☐ Upon review of the Land Disposal Restriction (LDR) regulations, it was determined that these regulations **DO NOT APPLY** to this waste. (Sign certification statement at bottom of Page 2 to complete this form.)

☐ This waste is a hazardous waste OR is now a non-hazardous waste, but was a hazardous waste (e.g. deactivated D002 wastes) AND **MUST MEET** the applicable LDR Treatment Standards. (Continue to Section I below.)

I. Land Disposal Restriction Status: This waste ☐ **MEETS** ☐ **MUST BE TREATED TO** the applicable treatment standards set forth in 40 CFR Part 268 Subpart D*.
[Complete Sections III and/or IV as appropriate, Section V and the applicable Certifications and Appendices (as identified in Item II below)].

II. Identification of Required Notices for Wastes with Special Requirements (mark **ALL** that apply):

☐ a. This shipment includes F001-F005 spent solvents and/or 40 CFR 268.49 F001-F005 contaminated soil as identified in Appendix A attached. (If this box is marked, complete and attach the Appendix A notification for spent solvent wastes.)

☐ b. This shipment includes <10% TOC D001 ignitable wastes for which the CMBST or RORGS treatment technology is not used, D002 corrosive wastes, D003 reactive wastes of Explosives, Water Reactive or Other Reactives Subcategory, D004-D011 metal wastes for which a treatment technology is not specified, D012-D017 non-wastewaters, D018-D043 organic TC wastes, 40 CFR 268.49 D001-D043 contaminated soil and/or hazardous or non-hazardous treatment residues from any of these wastes. [NOTE: Do not mark this box if the above wastes are/will be deactivated and then managed in a Class I UIC, CWA or CWA-equivalent system.] (If this box is marked, complete and attach the `Appendix B notification for D001-D043 wastes.)

☐ c. This shipment includes F039 wastes and/or 40 CFR 268.49 F039 contaminated soil. (If this box is marked, complete and attach the Appendix C notification for F039 wastes.)

☐ d. This shipment includes 40 CFR 268.45* hazardous debris wastes to be treated per the alternative treatment standards of 40CFR 268.45, Table 1*. (If this box is marked, complete and attach the Appendix D notification for debris.)

☐ e. This shipment includes 40 CFR 268.42(c), Appendix IV* lab pack wastes. (If this box is marked, complete Section III, the lab pack certification on Page 3 and applicable State Certification Page(s). Applicable EPA Hazardous Waste Codes must be included in Section III and blocks II.a-II.d above must be checked if applicable.)

☐ f. The waste _____ (waste code/treatability group) is subject to a case-by-case extension or a nationwide capacity variance that expires on _____ (date).

Manifest Doc. No. _____ Manifest Page No./Line Letter _____

MANIFEST ATTACHMENT (Cont'd)
40 CFR PART 268 LAND DISPOSAL NOTIFICATION
[For regulations with "*" see Appendix J for equivalent state regulations.]

NOTIFICATION (Cont'd)

III. Required Notices For Wastes That Do Not Meet Treatment Standards (mark if applies):

☐ This shipment includes the hazardous wastes identified below that **are subject to** the applicable treatment standards or specified technologies as set forth in 40 CFR 268.40-43* and 40 CFR 268.45*. [Also include the EPA Hazardous Waste Codes for all newly-identified wastes or newly-listed wastes for which no treatment standards have been set.]

EPA Hazardous Waste Code	Treatment or Regulatory Subcategory	Treatability Group (WW/NWW)*

* WW = Wastewater, NWW = Nonwastewater

IV. Identification of Wastes That Meet Applicable Treatment Standards (mark if applies):

☐ This shipment includes the hazardous wastes identified below that **meet** applicable treatment standards or specified technologies as set forth in 40 CFR 268.40-43* and 40 CFR 268.45*. For these wastes identify below the EPA Hazardous Waste Code(s), Subcategory and Treatability Group for which the land disposal restrictions are met and complete the appropriate certification statement(s) on Page 3.

EPA Hazardous Waste Code	Treatment or Regulatory Subcategory	Treatability Group (WW/NWW)*

V. Waste Information: Waste analysis data attached (circle) Yes / No Waste analysis data available (circle) Yes / No

I certify that all information submitted in this and attached documents is complete and accurate to the best of my knowledge.

PRINTED NAME _____ SIGNATURE _____
TITLE _____ DATE _____

Manifest Doc. No. _____ Manifest Page No./Line Letter _____

CERTIFICATION OF RESTRICTED WASTES MEETING TREATMENT STANDARDS-EPA

(Instructions: Initial the line(s) beside the appropriate certification statement(s) and certify by signing at bottom.)

_____ 1. GENERATOR'S WASTE CERTIFICATION [40 CFR 268.7(a)(3)(i)]
I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

_____ 2. GENERATOR'S CONTAMINATED SOIL CERTIFICATION [40 CFR 268.7(a)(2)(i)]
I certify under penalty of law that I personally have examined this contaminated soil and it [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and requires treatment to meet the soil treatment standards as provided by 268.49(c).

_____ 3. TREATMENT FACILITY WASTE CERTIFICATION [40 CFR 268.7(b)(4)]
I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards specified in 40 CFR Part 268.40 without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

_____ 4. TREATMENT FACILITY CONTAMINATED SOIL CERTIFICATION [40 CFR 268.7(b)(4)]
I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and believe that it has been maintained and operated properly so as to comply with the treatment standards specified in 40 CFR Part 268.49 without impermissible dilution of the prohibited wastes. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

_____ 5. TREATMENT FACILITY ORGANIC DETECTION LIMIT CERTIFICATION [40 CFR 268.7(b)(4)(iii)]
I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion units as specified in 40 CFR Part 268.42, Table 1. I have been unable to detect the nonwastewater organic constituents, despite having used best good-faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

_____ 6. D001-D043 WASTES - UNDERLYING HAZARDOUS CONSTITUENTS PRESENT [40 CFR 268.7(b)(4)(iv
I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268 or 268.49 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

_____ 7. D001-D043 WASTES - UNDERLYING HAZARDOUS CONSTITUENTS TREATED [40 CFR 268.7(b)(4)(v
I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic, and that underlying hazardous constituents, as defined in § 268.2(i), have been treated on-site to meet the § 268.48 Universal Treatment Standards. I am aware that the are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

CERTIFICATION OF LAB PACKS CONTAINING RESTRICTED WASTES-EPA

_____ 8. GENERATOR'S APPENDIX IV LAB PACK CERTIFICATION [40 CFR 268.7(a)(9)(i)]
I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack contains only wastes that have not been excluded under Appendix IV to 40 CFR part 268 and that this l pack will be sent to a combustion facility in compliance with the alternative treatment standards for lab packs at 40 CFR 268.42(c). I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

For each initialed statement I certify the information is true and accurate to the best of my knowledge.

PRINTED NAME _____ SIGNATURE _____

TITLE _____ DATE _____

APPENDIX A

[For regulations with "*" see Appendix J for equivalent state regulations.]

Manifest Doc. No. _____ Manifest Page No./Line Letter _____

TREATMENT STANDARDS FOR F001-F005 SPENT SOLVENTS

(Instructions: **Mark** the box beside the appropriate code(s) included in the shipment; mark the individual constituents as described below and **circle** the appropriate column heading - 'Wastewater' or 'Nonwastewater')

Hazardous Waste Description	Constituents of Concern	Wastewater Total Composition (mg/l)	Nonwastewater Total Composition (mg/kg)
☐ F001-F005 Solvent Wastes (Contains any combination of one or more of these spent solvents)	__ Acetone	0.28	160
	__ Benzene	0.14	10
	__ n-Butyl alcohol	5.6	2.6
	__ Carbon disulfide	3.8	NA
	__ Carbon tetrachloride	0.057	6.0
Mark all appropriate hazardous waste codes:	__ Chlorobenzene	0.057	6.0
	__ o-Cresol	0.11	5.6
☐ F001	__ m-Cresol	0.77	5.6
☐ F002	__ p-Cresol	0.77	5.6
☐ F003	__ Cresols-mixed isomers (Cresylic acid)	0.88	11.2
☐ F004	__ Cyclohexanone	0.36	NA
☐ F005	__ o-Dichlorobenzene	0.088	6.0
	__ Ethyl acetate	0.34	33
Mark applicable constituents in the waste above the regulatory levels in this table.	__ Ethyl benzene	0.057	10
	__ Ethyl ether	0.12	160
	__ Isobutanol	5.6	170
	__ Methanol	5.6	NA
	__ Methylene chloride	0.089	30
	__ Methyl ethyl ketone	0.28	36
☐ Waste contains no constituents above applicable regulatory levels in this table.	__ Methyl isobutyl ketone	0.14	33
	__ Nitrobenzene	0.068	14
	__ Pyridine	0.014	16
	__ Tetrachloroethylene	0.056	6.0
	__ Toluene	0.080	10
	__ 1,1,1-Trichloroethane	0.054	6.0
	__ 1,1,2-Trichloroethane	0.054	6.0
	__ 1,1,2-Trichloro-1,2,2-trifluoroethane	0.057	30
	__ Trichloroethylene	0.054	6.0
	__ Trichloromonofluoromethane	0.020	30
	__ Xylenes-mixed isomers	0.32	30
☐ F003 and/or F005 Solvent Wastes (Contains only one or more of these as F001-F005 solvents)	__ Carbon disulfide	3.8	4.8 mg/l [TCLP]
	__ Cyclohexanone	0.36	0.75 mg/l [TCLP]
	__ Methanol	5.6	0.75 mg/l [TCLP]
☐ F005 Solvent Wastes (Contains only one of these as sole F001-F005 solvent)	__ 2-Nitropropane	(WETOX or CHOXD)[fb] CARBN; or CMBST	CMBST
	__ 2-Ethoxyethanol	BIODG; or CMBST	CMBST

APPENDIX B

Manifest Doc. No. _____ Manifest Page No./Line Letter _____

UNDERLYING HAZARDOUS CONSTITUENTS FOR APPICABLE D001-D043* WASTES

(Instructions: Enter the EPA Hazardous waste code, subcategory and treatability group below and mark the constituents reasonably expected to be present in the waste as generated above the wastewater or nonwastewater concentrations shown.)

EPA Hazardous Waste Code	Treatment or Regulatory Subcategory	Treatability Group (WW/NWW)*

☐ Deactivated (non-hazardous) treatment residue(s) of D001, D002 and/or D004-D043 wastes _____

☐ "Reasonably expected"** to contain **no** constituents **above** the appropriate wastewater (WW) or nonwastewater (Non-WW) concentration levels shown below. (If this block is marked, Appendix B is complete. Do not mark any constituents below.)

Constituents of Concern	Total Composition WW (mg/l)	Total Composition Non-WW (mg/kg)
__ Acenaphthylene	0.059	3.4
__ Acenaphthene	0.059	3.4
__ Acetone	0.28	160
__ Acetonitrile	5.6	38
__ Acetophenone	0.010	9.7
__ 2-Acetylaminofluorene	0.059	140
__ Acrolein	0.29	NA
__ Acrylamide	19	23
__ Acrylonitrile	0.24	84
__ Aldicarb sulfone	0.056	0.28
__ Aldrin	0.021	0.066
__ 4-Aminobiphenyl	0.13	NA
__ Aniline	0.81	14
__ o-Anisidine (2-Methoxyaniline)	0.010	0.66
__ Anthracene	0.059	3.4
__ Aramite	0.36	NA
__ alpha-BHC	0.00014	0.066
__ beta-BHC	0.00014	0.066
__ delta-BHC	0.023	0.066
__ gamma-BHC	0.0017	0.066
__ Barban	0.056	1.4
__ Bendiocarb	0.056	1.4
__ Benomyl	0.056	1.4
__ Benzene	0.14	10
__ Benz(a)anthracene	0.059	3.4
__ Benzal chloride	0.055	6.0
__ Benzo(b)-fluoranthene	0.11	6.8
__ Benzo(k)-fluoranthene	0.11	6.8
__ Benzo(g,h,i)-perylene	0.0055	1.8
__ Benzo(a)pyrene	0.061	3.4
__ Bromodichloromethane	0.35	15
__ Bromomethane (Methyl bromide)	0.11	15
__ 4-Bromophenyl phenyl ether	0.055	15
__ n-Butyl alcohol	5.6	2.6
__ Butylate	0.042	1.4
__ Butyl benzyl phthalate	0.017	28
__ 2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	0.066	2.5
__ Carbaryl	0.006	0.14
__ Carbenzadim	0.056	1.4
__ Carbofuran	0.006	0.14
__ Carbofuran phenol	0.056	1.4
__ Carbon disulfide	3.8	4.8 mg/l TCLP
__ Carbon tetrachloride	0.057	6.0

Constituents of Concern	Total Composition WW (mg/l)	Total Composition Non-WW (mg/kg)
__ Carbosulfan	0.028	1.4
__ Chlordane (alpha & gamma isomers)	0.0033	0.26
__ p-Chloroaniline	0.46	16
__ Chlorobenzene	0.057	6.0
__ Chlorobenzilate	0.10	NA
__ 2-Chloro-1,3-butadiene	0.057	0.28
__ Chlorodibromomethane	0.057	15
__ Chloroethane	0.27	6.0
__ bis(2-Chloroethoxy) methane	0.036	7.2
__ bis(2-Chloroethyl) ether	0.033	6.0
__ Chloroform	0.046	6.0
__ bis(2-Chloroisopropyl) ether	0.055	7.2
__ p-Chloro-m-cresol	0.018	14
__ 2-Chloroethyl vinyl ether	0.062	NA
__ Chloromethane (Methyl chloride)	0.19	30
__ 2-Chloronaphthalene	0.055	5.6
__ 2-Chlorophenol	0.044	5.7
__ 3-Chloropropylene	0.036	30
__ Chrysene	0.059	3.4
__ p-Cresidine	0.010	0.66
__ o-Cresol	0.11	5.6
__ m-Cresol	0.77	5.6
__ p-Cresol	0.77	5.6
__ m-Cumenyl methylcarbamate	0.056	1.4
__ Cyclohexanone	0.36	0.75 mg/l T
__ o,p'-DDD	0.023	0.087
__ p,p'-DDD	0.023	0.087
__ o,p'-DDE	0.031	0.087
__ p,p'-DDE	0.031	0.087
__ o,p'-DDT	0.0039	0.087
__ p,p'-DDT	0.0039	0.087
__ Dibenz(a,h) anthracene	0.055	8.2
__ Dibenzo(a,e) pyrene	0.061	NA
__ 1,2-Dibromo-3-chloropropane	0.11	15
__ 1,2-Dibromoethane (Ethylene dibromide)	0.028	15
__ Dibromomethane	0.11	15
__ m-Dichlorobenzene	0.036	6.0
__ o-Dichlorobenzene	0.088	6.0
__ p-Dichlorobenzene	0.090	6.0
__ Dichlorodifluoromethane	0.23	7.2
__ 1,1-Dichloroethane	0.059	6.0
__ 1,2-Dichloroethane	0.21	6.0
__ 1,1-Dichloroethylene	0.025	6.0

Manifest Doc. No. _____ Manifest Page No./Line Letter _____

UNDERLYING HAZARDOUS CONSTITUENTS FOR APPLICABLE D001-D043* WASTES (Cont'd)

Constituents of Concern	Total Composition WW (mg/l)	Total Composition Non-WW (mg/kg)
__ trans-1,2-Dichloroethylene	0.054	30
__ 2,4-Dichlorophenol	0.044	14
__ 2,6-Dichlorophenol	0.044	14
__ 2,4-Dichlorophenoxyacetic acid (2,4-D)	0.72	10
__ 1,2-Dichloropropane	0.85	18
__ cis-1,3-Dichloropropene	0.036	18
__ trans-1,3-Dichloropropene	0.036	18
__ Dieldrin	0.017	0.13
__ Diethyl phthalate	0.20	28
__ p-Dimethylaminoazobenzene	0.13	NA
__ 2,4-Dimethylaniline (2,4-Xylidine)	0.010	0.66
__ 2,4-Dimethyl phenol	0.036	14
__ Dimethyl phthalate	0.047	28
__ Di-n-butyl phthalate	0.057	28
__ 1,4-Dinitrobenzene	0.32	2.3
__ 4,6-Dinitro-o-cresol	0.28	160
__ 2,4-Dinitrophenol	0.12	160
__ 2,4-Dinitrotoluene	0.32	140
__ 2,6-Dinitrotoluene	0.55	28
__ Di-n-octyl phthalate	0.017	28
__ Di-n-propylnitrosoamine	0.40	14
__ 1,4-Dioxane	12.0	170
__ Diphenylamine	0.92	13
__ Diphenyl nitrosamine	0.92	13
__ 1,2-Diphenylhydrazine	0.087	NA
__ Disulfoton	0.017	6.2
__ Dithiocarbamates (total)	0.028	28
__ Endosulfan I	0.023	0.066
__ Endosulfan II	0.029	0.13
__ Endosulfan sulfate	0.029	0.13
__ Endrin	0.0028	0.13
__ Endrin aldehyde	0.025	0.13
__ EPTC	0.042	1.4
__ Ethyl acetate	0.34	33
__ Ethyl benzene	0.057	10
__ Ethyl cyanide (Propanenitrile)	0.24	360
__ Ethyl ether	0.12	160
__ bis(2-Ethylhexyl) phthalate	0.28	28
__ Ethyl methacrylate	0.14	160
__ Ethylene oxide	0.12	NA
__ Famphur	0.017	15
__ Fluoranthene	0.068	3.4
__ Fluorene	0.059	3.4
__ Formetanate hydrochloride	0.056	1.4
__ Heptachlor	0.0012	0.066
__ Heptachlor epoxide	0.016	0.066
__ Hexachlorobenzene	0.055	10
__ 1,2,3,4,6,7,8-HpCDD***	0.000035	0.0025
__ 1,2,3,4,6,7,8-HpCDF***	0.000035	0.0025
__ 1,2,3,4,7,8,9-HpCDF***	0.000035	0.0025
__ Hexachlorobutadiene	0.055	5.6
__ Hexachlorocyclopentadiene	0.057	2.4
__ HxCDDs (Hexachlorodibenzo-p-dioxins)	0.000063	0.001
__ HxCDFs (Hexachlorodibenzofurans)	0.000063	0.001
__ Hexachloroethane	0.055	30
__ Hexachloropropylene	0.035	30

Constituents of Concern	Total Composition WW (mg/l)	Total Composition Non-WW (mg/kg)
__ Indeno(1,2,3-c,d)pyrene	0.0055	3.4
__ Iodomethane	0.19	65
__ Isobutyl alcohol (Isobutanol)	5.6	170
__ Isodrin	0.021	0.066
__ Isosafrole	0.081	2.6
__ Kepone	0.0011	0.13
__ Methacrylonitrile	0.24	84
__ Methanol	5.6	0.75 mg/l TCLP
__ Methapyrilene	0.081	1.5
__ Methiocarb	0.056	1.4
__ Methomyl	0.028	0.14
__ Methoxychlor	0.25	0.18
__ 3-Methylchlolanthrene	0.0055	15
__ 4,4-Methylene-bis(2-chloroaniline)	0.50	30
__ Methylene chloride	0.089	30
__ Methyl ethyl ketone	0.28	36
__ Methyl isobutyl ketone	0.14	33
__ Methyl methacrylate	0.14	160
__ Methyl methansulfonate	0.018	NA
__ Methyl parathion	0.014	4.6
__ Metolcarb	0.056	1.4
__ Mexacarbate	0.056	1.4
__ Molinate	0.042	1.4
__ Naphthalene	0.059	5.6
__ 2-Naphthylamine	0.52	NA
__ o-Nitroaniline	0.27	14
__ p-Nitroaniline	0.028	28
__ Nitrobenzene	0.068	14
__ 5-Nitro-o-toluidine	0.32	28
__ o-Nitrophenol	0.028	13
__ p-Nitrophenol	0.12	29
__ N-Nitrosodiethylamine	0.40	28
__ N-Nitrosodimethylamine	0.40	2.3
__ N-Nitroso-di-n-butylamine	0.40	17
__ N-Nitrosomethylethylamine	0.40	2.3
__ N-Nitrosomorpholine	0.40	2.3
__ N-Nitrosopiperidine	0.013	35
__ N-Nitrosopyrrolidine	0.013	35
__ OCDD***	0.000063	0.005
__ OCDF***	0.000063	0.005
__ Oxamyl	0.056	0.28
__ Parathion	0.014	4.6
__ Total PCBs (sum of all PCB isomers)****	0.10	10
__ Pebulate	0.042	1.4
__ Pentachlorobenzene	0.055	10
__ PeCDDs (Pentachlorodibenzo-p-dioxins)	0.000063	0.001
__ PeCDFs (Pentachlorodibenzofurans)	0.000035	0.001
__ Pentachloroethane	0.055	6.0
__ Pentachloronitrobenzene	0.055	4.8
__ Pentachlorophenol	0.089	7.4
__ Phenacetin	0.081	16
__ Phenanthrene	0.059	5.6
__ Phenol	0.039	6.2
__ o-Phenylenediamine	0.056	5.6
__ 1,3-Phenylenediamine	0.010	0.66
__ Phorate	0.021	4.6
__ Phthalic acid	0.055	28

APPENDIX B (Cont'd)

[For regulations with "*" see Appendix J for equivalent state regulations.]

Manifest Doc. No. _____ Manifest Page No./Line Letter _____

UNDERLYING HAZARDOUS CONSTITUENTS FOR APPLICABLE D001-D043* WASTES (Cont'd)

Constituents of Concern	Total Composition WW (mg/l)	Total Composition Non-WW (mg/kg)	Constituents of Concern	Total Composition WW (mg/l)	Total Composition Non-WW (mg/kg)
__ Phthalic anhydride	0.055	28	__ Antimony	1.9	1.15 mg/l TCLP
__ Physostigmine	0.056	1.4	__ Arsenic	1.4	5.0 mg/l TCLP
__ Physostigmine salicylate	0.056	1.4	__ Barium	1.2	21 mg/l TCLP
__ Promecarb	0.056	1.4	__ Beryllium	0.82	1.22 mg/l TCLP
__ Pronamide	0.093	1.5	__ Cadmium	0.69	0.11 mg/l TCL
__ Propham	0.056	1.4	__ Chromium (Total)	2.77	0.60 mg/l TCLP
__ Propoxur	0.056	1.4	__ Cyanides (Total)	1.2	590
__ Prosulfocarb	0.042	1.4	__ Cyanides (Amendable)	0.86	30
__ Pyrene	0.067	8.2	__ Lead	0.69	0.75 mg/l TCLP
__ Pyridine	0.014	16	__ Mercury (Nonwastewaters from Retort)	NA	0.20 mg/l TCLP
__ Safrole	0.081	22	__ Mercury (All others)	0.15	0.025 mg/l TCLP
__ Silvex (2,4,5-TP)	0.72	7.9	__ Nickel	3.98	11 mg/l TCLP
__ 1,2,4,5-Tetrachlorobenzene	0.055	14	__ Silver	0.43	0.14 mg/l TCLP
__ TCDDs (Tetrachlorodibenzo-p-dioxins)	0.000063	0.001	__ Thallium	1.4	0.20 mg/l TCLP
__ TCDFs (Tetrachlorodibenzofurans)	0.000063	0.001			
__ 1,1,1,2-Tetrachloroethane	0.057	6.0			
__ 1,1,2,2-Tetrachloroethane	0.057	6.0			
__ Tetrachloroethylene	0.056	6.0			
__ 2,3,4,6-Tetrachlorophenol	0.030	7.4			
__ Thiodicarb	0.019	1.4			
__ Thiophanate-methyl	0.056	1.4			
__ Toluene	0.080	10			
__ Toxaphene	0.0095	2.6			
__ Triallate	0.042	1.4			
__ Tribromomethane (Bromoform)	0.63	15			
__ 2,4,6-Tribromophenol	0.035	7.4			
__ 1,2,4-Trichlorobenzene	0.055	19			
__ 1,1,1-Trichloroethane	0.054	6.0			
__ 1,1,2-Trichloroethane	0.054	6.0			
__ Trichloroethylene	0.054	6.0			
__ Trichloromonofluoromethane	0.020	30			
__ 2,4,5-Trichlorophenol	0.18	7.4			
__ 2,4,6-Trichlorophenol	0.035	7.4			
__ 2,4,5-Trichlorophenoxyacetic acid (245T)	0.72	7.9			
__ 1,2,3-Trichloropropane	0.85	30			
__ 1,1,2-Trichloro-1,2,2-trifluoroethane	0.057	30			
__ Triethylamine	0.081	1.5			
__ tris(2,3-dibomopropyl) phosphate	0.11	0.10			
__ Vernolate	0.042	1.4			
__ Vinyl chloride	0.27	6.0			
__ Xylene(s) (sum of mixed isomers)	0.32	30			

* Or residues from treating applicable D001-D043 wastes.

** "Reasonably expected to be present" - In the Preamble to the Final LDR Phase II Rule the EPA clarified that this term does not require that the generator analyze for the presence of all hazardous constituents in the Universal Treatment Standards (40 CFR 268.48*). Generators may base the determination on their knowledge of the raw materials that they use, the process that they operate, the potential reaction products of the process or the results of a one-time analysis for the entire list of Universal Treatment Standards constituents.

*** 1,2,3,4,6,7,8-HpCDD = 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin; 1,2,3,4,6,7,8-CDF = 1,2,3,4,6,7,8-Heptachlorodibenzofuran 1,2,3,4,7,8,9-HpCDF = 1,2,3,4,7,8,9-Heptachlorodibenzofuran; OCDD = 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin; OCDF = 1,2,3,4,6,7,8,9-Octachlorodibenzofuran

**** The "Total PCBs" standard is temporarily deferred for soil exhibiting a characteristic due to D004-D011 only.

APPENDIX C

Manifest Doc. No. _____ Manifest Page No./Line Letter _____

TREATMENT STANDARDS FOR F039 LEACHATE WASTES

(Instructions: **Mark** the F039 wastes box, **circle** the appropriate wastewater (WW) or nonwastewater (NWW) treatability group and **mark** the constituents present in the wastes above the appropriate wastewater or nonwastewater concentrations shown.)

Constituents of Concern	Total Composition WW (mg/l)	Total Composition Non-WW (mg/kg)	Constituents of Concern	Total Composition WW (mg/l)	Total Composition Non-WW (mg/kg)
☐ **F039 Wastes**	WW	NWW			
__ Acenaphthylene	0.059	3.4	__ 2-Chloronaphthalene	0.055	5.6
__ Acenaphthene	0.059	3.4	__ 2-Chlorophenol	0.044	5.7
__ Acetone	0.28	160	__ 3-Chloropropylene	0.036	30
__ Acetonitrile	5.6	38	__ Chrysene	0.059	3.4
__ Acetophenone	0.010	9.7	__ p-Cresidine	0.010	0.66
__ 2-Acetylaminofluorene	0.059	140	__ o-Cresol	0.11	5.6
__ Acrolein	0.29	NA	__ m-Cresol	0.77	5.6
__ Acrylonitrle	0.24	84	__ p-Cresol	0.77	5.6
__ Aldrin	0.021	0.066	__ Cyclohexanone	0.36	0.75 mg/l TCLP
__ 4-Aminobiphenyl	0.13	NA	__ 1,2-Dibromo-3-chloropropane	0.11	15
__ Aniline	0.81	14	__ Ethylene dibromide (1,2-Dibromoethane)	0.028	15
__ o-Anisidine (2-Methoxyaniline)	0.010	0.66	__ Dibromomethane	0.11	15
__ Anthracene	0.059	3.4	__ 2,4-D (2,4-Dichlorophenoxyacetic acid)	0.72	10
__ Aramite	0.36	NA	__ o,p'-DDD	0.023	0.087
__ alpha-BHC	0.00014	0.066	__ p,p'-DDD	0.023	0.087
__ beta-BHC	0.00014	0.066	__ o,p'-DDE	0.031	0.087
__ delta-BHC	0.023	0.066	__ p,p'-DDE	0.031	0.087
__ gamma-BHC	0.0017	0.066	__ o,p'-DDT	0.0039	0.087
__ Benzene	0.14	10	__ p,p'-DDT	0.0039	0.087
__ Benz(a)anthracene	0.059	3.4	__ Dibenz(a,h) anthracene	0.055	8.2
__ Benzo(b)-fluoranthene	0.11	6.8	__ Dibenzo(a,e) pyrene	0.061	NA
__ Benzo(k)-fluoranthene	0.11	6.8	__ m-Dichlorobenzene	0.036	6.0
__ Benzo(g,h,i)-perylene	0.0055	1.8	__ o-Dichlorobenzene	0.088	6.0
__ Benzo(a)pyrene	0.061	3.4	__ p-Dichlorobenzene	0.090	6.0
__ Bromodichloromethane	0.35	15	__ Dichlorodifluoromethane	0.23	7.2
__ Methyl bromide (Bromomethane)	0.11	15	__ 1,1-Dichloroethane	0.059	6.0
__ 4-Bromophenyl phenyl ether	0.055	15	__ 1,2-Dichloroethane	0.21	6.0
__ n-Butyl alcohol	5.6	2.6	__ 1,1-Dichloroethylene	0.025	6.0
__ Butyl benzyl phthalate	0.017	28	__ trans-1,2-Dichloroethylene	0.054	30
__ 2-sec-Butyl-4,6-dinitrophenol	0.066	2.5	__ 2,4-Dichlorophenol	0.044	14
__ Carbon disulfide	3.8	4.8 mg/l TCLP	__ 2,6-Dichlorophenol	0.044	14
__ Carbon tetrachloride	0.057	6.0	__ 1,2-Dichloropropane	0.85	18
__ Chlordane (alpha & gamma isomers)	0.0033	0.26	__ cis-1,3-Dichloropropene	0.036	18
__ p-Chloroaniline	0.46	16	__ trans-1,3-Dichloropropene	0.036	18
__ Chlorobenzene	0.057	6.0	__ Dieldrin	0.017	0.13
__ Chlorobenzilate	0.10	NA	__ Diethyl phthalate	0.20	28
__ 2-Chloro-1,3-butadiene	0.057	0.28	__ 2,4-Dimethylaniline (2,4-Xylidine)	0.010	0.66
__ Chlorodibromomethane	0.057	15	__ 2,4-Dimethyl phenol	0.036	14
__ Chloroethane	0.27	6.0	__ Dimethyl phthalate	0.047	28
__ bis(2-Chloroethoxy) methane	0.036	7.2	__ Di-n-butyl phthalate	0.057	28
__ bis(2-Chloroethyl) ether	0.033	6.0	__ 1,4-Dinitrobenzene	0.32	2.3
__ Chloroform	0.046	6.0	__ 4,6-Dinitro-o-cresol	0.28	160
__ bis(2-Chloroisopropyl) ether	0.055	7.2	__ 2,4-Dinitrophenol	0.12	160
__ p-Chloro-m-cresol	0.018	14	__ 2,4-Dinitrotoluene	0.32	140
__ Chloromethane (Methyl chloride)	0.19	30	__ 2,6-Dinitrotoluene	0.55	28

Manifest Doc. No. _____ Manifest Page No./Line Letter _____

TREATMENT STANDARDS FOR F039 LEACHATE WASTES (Cont'd)

Constituents of Concern	Total Composition WW (mg/l)	Total Composition Non-WW (mg/kg)	Constituents of Concern	Total Composition WW (mg/l)	Total Composition Non-WW (mg/kg)
__ Di-n-octyl phthalate	0.017	28	__ p-Nitroaniline	0.028	28
__ Di-n-propylnitrosoamine	0.40	14	__ Nitrobenzene	0.068	14
__ 1,4-Dioxane	0.22	170	__ 5-Nitro-o-toluidine	0.32	28
__ Diphenylamine	0.92	13	__ p-Nitrophenol	0.12	29
__ Diphenyl nitrosamine	0.92	13	__ N-Nitrosodiethylamine	0.40	28
__ 1,2-Diphenylhydrazine	0.087	1.5	__ N-Nitrosodimethylamine	0.40	2.3
__ Disulfoton	0.017	6.2	__ N-Nitroso-di-n-butylamine	0.40	17
__ Endosulfan I	0.023	0.066	__ N-Nitrosomethylethylamine	0.40	2.3
__ Endosulfan II	0.029	0.13	__ N-Nitrosomorpholine	0.40	2.3
__ Endosulfan sulfate	0.029	0.13	__ N-Nitrosopiperidine	0.013	35
__ Endrin	0.0028	0.13	__ N-Nitrosopyrrolidine	0.013	35
__ Endrin aldehyde	0.025	0.13	__ OCDD*	0.000063	0.0025
__ Ethyl acetate	0.34	33	__ OCDF*	0.000063	0.005
__ Ethyl cyanide (Propanenitrile)	0.24	360	__ Parathion	0.014	4.6
__ Ethyl benzene	0.057	10	__ Total PCBs (sum of all PCB isomers)	0.10	10
__ Ethyl ether	0.12	160	__ Pentachlorobenzene	0.055	10
__ bis(2-Ethylhexyl) phthalate	0.28	28	__ PeCDDs (Pentachlorodibenzo-p-dioxins)	0.000063	0.001
__ Ethyl methacrylate	0.14	160	__ PeCDFs (Pentachlorodibenzofurans)	0.000035	0.001
__ Ethylene oxide	0.12	NA	__ Pentachloronitrobenzene	0.055	4.8
__ Famphur	0.017	15	__ Pentachlorophenol	0.089	7.4
__ Fluoranthene	0.068	3.4	__ Phenacetin	0.081	16
__ Fluorene	0.059	3.4	__ Phenanthrene	0.059	5.6
__ Heptachlor	0.0012	0.066	__ Phenol	0.039	6.2
__ Heptachlor epoxide	0.016	0.066	__ 1,3-Phenylenediamine	0.010	0.66
__ 1,2,3,4,6,7,8-HpCDD*	0.000035	0.0025	__ Phorate	0.021	4.6
__ 1,2,3,4,6,7,8-HpCDF*	0.000035	0.0025	__ Phthalic anhydride	0.055	28
__ 1,2,3,4,7,8,9-HpCDF*	0.000035	0.0025	__ Pronamide	0.093	1.5
__ Hexachlorobenzene	0.055	10	__ Pyrene	0.067	8.2
__ Hexachlorobutadiene	0.055	5.6	__ Pyridine	0.014	16
__ Hexachlorocyclopentadiene	0.057	2.4	__ Safrole	0.081	22
__ HxCDDs (Hexachlorodibenzo-p-dioxins)	0.000063	0.001	__ Silvex (2,4,5-TP)	0.72	7.9
__ HxCDFs (Hexachlorodibenzofurans)	0.000063	0.001	__ 2,4,5-T	0.72	7.9
__ Hexachloroethane	0.055	30	__ 1,2,4,5-Tetrachlorobenzene	0.055	14
__ Hexachloropropylene	0.035	30	__ TCDDs (Tetrachlorodibenzo-p-dioxins)	0.000063	0.001
__ Indeno(1,2,3-c,d)pyrene	0.0055	3.4	__ TCDFs (Tetrachlorodibenzofurans)	0.000063	0.001
__ Iodomethane	0.19	65	__ 1,1,1,2-Tetrachloroethane	0.057	6.0
__ Isobutanol	5.6	170	__ 1,1,2,2-Tetrachloroethane	0.057	6.0
__ Isodrin	0.021	0.066	__ Tetrachloroethylene	0.056	6.0
__ Isosafrole	0.081	2.6	__ 2,3,4,6-Tetrachlorophenol	0.030	7.4
__ Kepone	0.0011	0.13	__ Toluene	0.080	10
__ Methacrylonitrile	0.24	84	__ Toxaphene	0.0095	2.6
__ Methanol	5.6	0.75 mg/l TCLP	__ Bromoform (Tribromomethane)	0.63	15
__ Methapyrilene	0.081	1.5	__ 1,2,4-Trichlorobenzene	0.055	19
__ Methoxychlor	0.25	0.18	__ 1,1,1-Trichloroethane	0.054	6.0
__ 3-Methylcholanthrene	0.0055	15	__ 1,1,2-Trichloroethane	0.054	6.0
__ 4,4-Methylene-bis(2-chloroaniline)	0.50	30	__ Trichloroethylene	0.054	6.0
__ Methylene chloride	0.089	30	__ Trichloromonofluoromethane	0.020	30
__ Methyl ethyl ketone	0.28	36	__ 2,4,5-Trichlorophenol	0.18	7.4
__ Methyl isobutyl ketone	0.14	33	__ 2,4,6-Trichlorophenol	0.035	7.4
__ Methyl methacrylate	0.14	160	__ 1,2,3-Trichloropropane	0.85	30
__ Methyl methansulfonate	0.018	NA	__ 1,1,2-Trichloro-1,2,2-trifluoroethane	0.057	30
__ Methyl parathion	0.014	4.6	__ tris(2,3-dibomopropyl) phosphate	0.11	0.10
__ Naphthalene	0.059	5.6	__ Vinyl chloride	0.27	6.0
__ 2-Naphthylamine	0.52	NA	__ Xylene(s) (sum of mixed isomers)	0.32	30

APPENDIX C (Cont'd)

Manifest Doc. No. _____ Manifest Page No./Line Letter _____

TREATMENT STANDARDS FOR F039 LEACHATE WASTES (Cont'd)

Constituents of Concern	Total Composition WW (mg/l)	Total Composition Non-WW (mg/kg)	Constituents of Concern	Total Composition WW (mg/l)	Total Composition Non-WW (mg/kg)
__ Antimony	1.9	1.15 mg/l TCLP			
__ Arsenic	1.4	5.0 mg/l TCLP			
__ Barium	1.2	21 mg/l TCLP			
__ Beryllium	0.82	NA mg/l TCLP			
__ Cadmium	0.69	0.11 mg/l TCLP			
__ Chromium (Total)	2.77	0.60 mg/l TCLP			
__ Cyanides (Total)	1.2	590			
__ Cyanides (Amendable)	0.86	NA			
__ Fluoride	35	NA			
__ Lead	0.69	0.75 mg/l TCLP			
__ Mercury	0.15	0.025 mg/l TCLP			
__ Nickel	3.98	11 mg/l TCLP			
__ Selenium	0.82	5.7 mg/l TCLP			
__ Silver	0.43	0.14 mg/l TCLP			
__ Sulfide	14	NA			
__ Thallium	1.4	NA			
__ Vanadium	4.3	NA			

* 1,2,3,4,6,7,8-HpCDD = 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin; 1,2,3,4,6,7,8-CDF = 1,2,3,4,6,7,8-Heptachlorodibenzofuran; 1,2,3,4,7,8,9-HpCDF = 1,2,3,4,7,8,9-Heptachlorodibenzofuran; OCDD = 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin; OCDF = 1,2,3,4,6,7,8,9-Octachlorodibenzofuran

ATTACHMENT E-4

CHAMBERS WORKS WASTEWATER TREATMENT FACILITY LAND DISPOSAL RESTRICTIONS

Attachment 1

Identify all additional characteristic, listed, newly identified and newly listed U.S. EPA hazardous waste codes that apply. For each waste code, identify the subcategory, indicate whether the waste is a wastewater or non-wastewater, and indicate how the waste must be managed based on the options found on pages 1 & 2.

Continued from page 1

U.S. EPA Hazardous Waste Code(s) Per 40 CFR 261	Subcategory Enter the subcategory description per CFR 268.40 If not applicable, check "none"		Treatability Group		How Must The Waste Be Managed? Enter the letter from pages 2 & 3
	Description	None	Waste Water	Non-Waste Water	
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Chemours

Chemours Secure Environmental Treatment

Attachment II

Instructions: Mark the box beside the appropriate code(s) included in the shipment; mark * the individual constituents present in the wastes

*Optional for wastes treated at Chemours Chambers Works Wastewater Treatment Plant (WWTP) The WWTP monitors all F001-F005 regulated constituents in its treatment residues.

Hazardous Waste Description	Constituents of Concern	Wastewater Total Composition mg/l	Non-Wastewater Total Composition mg/l
☐ F001-F005 Solvent Wastes (Contains any combination of one or more of these spent solvents)	☐ Acetone	0.28	160
	☐ Benzene	0.14	10
	☐ n-Butyl alcohol	5.6	2.6
	☐ Carbon disulfide	3.8	NA
	☐ Carbon tetrachloride	0.057	6.0
	☐ Chlorobenzene	0.057	6.0
	☐ o-Cresol	0.11	5.6
	☐ m-Cresol	0.77	5.6
	☐ p-Cresol	0.77	5.6
	☐ Cresols-Mixed Isomers (Cresylic Acid)	0.88	11.2
	☐ Cyclohexane	0.36	NA
	☐ o-Dichlorobenzene	0.088	11.2
	☐ Ethyl acetate	0.34	33
	☐ Ethyl benzene	0.057	10
	☐ Ethel ether	0.12	160
	☐ Isobutanol	5.6	170
	☐ Methanol	5.6	NA
	☐ Methylene chloride	0.089	30
	☐ Methyl ethyl ketone	0.28	36
	☐ Methyl isobutyl ketone	0.14	33
	☐ Nitrobenzene	0.068	14
	☐ Pyridine	0.014	33
	☐ Tetrachloroethylene	0.056	6.0
	☐ Toluene	0.080	10
	☐ 1,1,1-Trichloroethane	0.054	6.0
	☐ 1,1,2-Trichloroethane	0.054	6.0
	☐ 1,1,2-Trichloro-1,2,2-trifluoroethane	0.057	30
	☐ Trichloroethylene	0.054	6.0
	☐ Trichloromonofluoromethane	0.020	30
	☐ Xylenes-mixed isomers	0.32	30
☐ F003 and/or F005 Solvent Wastes (contains only one or more of these as F001-F005 Solvents)	☐ Carbon disulfide	3.8	4.8 mg/L (TCLP)
	☐ Cyclohexane	0.36	0.75 mg/L (TCLP)
	☐ Methanol	5.6	0.75 mg/L (TCLP)
☐ F005 Solvent Wastes (Contains only one of these as sole F001-F005 solvent)	☐ 2-Nitropropane	(WETOX or CHOXD) CARBN; or CMBST	CMBST
	☐ 2-Ethoxyethanol	BIODG;or CMBST	

Attachment III

Treatment Standards for F039 Multisource Leachate Wastes

Instructions: Mark the constituents present in the wastes.*

*Optional for wastes treated at the Chemours Wastewater Treatment Plant (WWTP). The WWTP monitors all F039 regulated constituents in its treatment residues.

Constituents Of Concern	Total WW (mg/l)	Composition Non-WW (mg/kg)	Constituents Of Concern	Total WW (mg/l)	Composition Non-WW (mg/kg)
__ Acenaphthylene	0.059	3.4	__ 2-Chloro-1,3-butadiene	0.057	0.28
__ Acenaphthene	0.059	3.4	__ Chlorodibromomethane	0.057	15
__ Acetone	0.28	160	__ Chloroethane	0.27	6.0
__ Acetonitrile	5.6	38	__ bis(2-Chloroethoxy) methane	0.036	7.2
__ Acetophenone	0.010	9.7	__ bis(2-Chloroethyl) ether	0.033	6.0
__ 2-Acetylaminofluorene	0.059	140	__ Chloroform	0.046	6.0
__ Acrolein	0.29	NA	__ bis(2-Chloroisopropyl) ether	0.055	7.2
__ Acrylonitrile	0.24	84	__ p-Chloro-m-cresol	0.018	14
__ Aldrin	0.021	0.066	__ Chloromethane (Methyl chloride)	0.19	30
__ 4-Aminobiphenyl	0.13	NA	__ 2-Chloronaphthalene	0.055	5.6
__ Aniline	0.81	14	__ 2-Chlorophenol	0.044	5.7
__ o-Anisidine (2-Methoxyaniline)	0.010	0.66	__ 3-Chloropropylene	0.036	30
__ Anthracene	0.059	3.4	__ Chrysene	0.0.59	3.4
__ Aramite	0.36	NA	__ p-Cresidine	0.010	0.66
__ alpha-BHC	0.00014	0.066	__ o-Cresol	0.11	5.6
__ beta-BHC	0.00014	0.066	__ m-Cresol	0.77	5.6
__ delta-BHC	0.023	0.066	__ p-Cresol	0.77	5.6
__ gamma-BHC	0.0017	0.066	__ Cyclohexanone	0.36	0.75 mg/L [TCLP]
__ Benzene	0.14	10			
__ Benz(a)anthracene	0.059	3.4	__ 1,2-Dibromo-3-chloropropane	0.11	15
__ Benzo(b)-fluoranthene	0.11	6.8	__ Ethylene dibromide (1,2-Dibromomethane)	0.028	15
__ Benzo(k)-fluoranthene	0.11	6.8	__ Dibromomethane	0.11	15
__ Benzo(g,h,i)-perylene	0.0055	1.8	__ 2,4-D (2,4-Dichlorophenoxyacetic acid)	0.72	10
__ Benzo(a)pyrene	0.061	3.4	__ o,p'-DDD	0.023	0.087
__ Bromodichloromethane	0.35	15	__ p,p'-DDD	0.023	0.087
__ Methyl bromide (Bromomethane)	0.11	15	__ o,p'-DDE	0.031	0.087
__ 4-Bromophenyl phenyl ether	0.055	15	__ p,p'-DDE	0.031	0.087
__ n-Butyl alcohol	5.6	2.6	__ o,p'-DDT	0.0039	0.087
__ Butyl benzyl phthalate	0.017	28	__ p,p'-DDT	0.0039	0.087
__ 2-sec-Butyl-4,6-dinitrophenol	0.066	2.5	__ Dibenz(a,h) anthracene	0.055	8.2
__ Carbon disulfide	3.8	4.8 mg/L [TCLP]	__ Dibenzo(a,e) pyrene	0.061	NA
			__ m-Dichlorobenzene	0.036	6.0
__ Carbon tetrachloride	0.057	6.0	__ o-Dichlorobenzene	0.088	6.0
__ Chlordane (alpha & gamma isomers)	0.0033	0.26	__ p-Dichlorobenzene	0.090	6.0
__ p-Chloroaniline	0.46	16	__ Dichlorodifluoromethane	0.23	7.2
__ Chlorobenzene	0.057	6.0	__ 1,1-Dichloroethane	0.059	6.0
__ Chlorobenzilate	0.10	NA	__ 1,2-Dichloroethane	0.21	6.0

__ Pyrene	0.067	8.2
__ Pyridine	0.014	16
__ Safrole	0.081	22
__ Silvex (2,4,5-TP)	0.72	7.9
__ 2,4,5-T	0.72	7.9
__ 1,2,4,5-Tetrachlorobenzene	0.055	14
__ TCDDs (Tetrachlorodibenzo-p-dioxins)	0.000063	0.001
__ TCDFs (Tetrachlorodibenzofurans)	0.000063	0.001
__ 1,1,1,2-Tetrachloroethane	0.057	6.0
__ 1,1,2,2-Tetrachloroethane	0.057	6.0
__ Tetrachloroethylene	0.056	6.0
__ 2,3,4,6-Tetrachlorophenol	0.030	7.4
__ Toluene	0.080	1.0
__ Toxaphene	0.0095	2.6
__ Bromoform (Tribromomethane)	0.63	15
__ 1,2,4-Trichlorobenzene	0.055	19
__ 1,1,1-Trichloroethane	0.054	6.0
__ 1,1,2-Trichloroethane	0.054	6.0
__ Trichloroethylene	0.054	6.0
__ Trichloromonofluoromethane	0.020	30
__ 2,4,5-Trichlorophenol	0.18	7.4
__ 2,4,6-Trichlorophenol	0.035	7.4
__ 1,2,3-Trichloropropane	0.85	30
__ 1,1,2-Trichloro-1,2,2-trifluoroethane	0.057	30
__ tris(2,3-dibomopropyl) phosphate	0.11	0.10
__ Vinyl chloride	0.27	6.0
__ Xylene(s) (sum of mixed isomers)	0.32	30

__ Antimony	1.9	1.15 mg/L [TCLP]
__ Arsenic	1.4	5.0 mg/L [TCLP]
__ Barium	1.2	21 mg/L [TCLP]
__ Beryllium	0.82	NA
__ Cadmium	0.69	0.11 mg/L [TCLP]
__ Chromium (Total)	2.77	0.60 mg/L [TCLP]
__ Cyanides (Total)	1.2	590
__ Cyanides (Amenable)	0.86	NA
__ Fluoride	35	NA
__ Lead	0.69	0.75 mg/L (TCLP]
__ Mercury	0.15	0.025 mg/L (TCLP]
__ Nickel	3.98	11 mg/L [TCLP]
__ Selenium	0.82	5.7 mg/L [TCLP]
__ Silver	0.43	0.14 mg/L [TCLP]
__ Sulfide	14	NA
__ Thallium	1.4	NA
__ Vanadium	4.3	NA

** 1,2,3,4,6,7,8-HpCDD = 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin;
1,2,3,4,6,7,8-CDF = 1,2,3,4,6,7,8-Heptachlorodibenzofuran;
1,2,3,4,7,8,9-HpCDF = 1,2,3,4,7,8,9-Heptachlorodibenzofuran;
OCDD = 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin;
OCDF = 1,2,3,4,6,7,8,9-Octachlorodibenzofuran

Attachment IV

Universal Treatment Standards for D001, D002, and/or D004-D043 Wastes

Instructions: Mark the underlying hazardous constituents (UHCs) which can reasonably be expected to be present at the point of generation of the hazardous waste at a concentration above the constituent-specific UTS treatment standards. [40 CFR 268.2(i)].*

*Optional for wastes treated at the Chemours Chambers Works Wastewater Treatment Plant (WWTP). The WWTP is regulated under the Clean Water Act.

Constituents Of Concern	Total WW (mg/L)	Composition Non-WW (mg/kg)
I. ORGANIC CONSTITUENTS:		
__ Acenaphthylene	0.059	3.4
__ Acenaphthene	0.059	3.4
__ Acetone	0.28	160
__ Acetonitrile	5.6	38
__ Acetophenone	0.010	9.7
__ 2-Acetylaminofluorene	0.059	140
__ Acrolein	0.29	NA
__ Acrylamide	19	23
__ Acrylonitrile	0.24	84
__ Aldicarb sulfone	0.056	0.28
__ Aldrin	0.021	0.066
__ 4-Aminobiphenyl	0.13	NA
__ Aniline	0.81	14
__ o-Anisidine (2-Methoxyaniline)	0.010	0.66
__ Anthracene	0.059	3.4
__ Aramite	0.36	NA
__ alpha-BHC	0.00014	0.066
__ beta-BHC	0.00014	0.066
__ delta-BHC	0.023	0.066
__ gamma-BHC	0.0017	0.066
__ Barban	0.056	1.4
__ Bendiocarb	0.056	1.4
__ Benomyl	0.056	1.4
__ Benzene	0.14	10
__ Benz(a)anthracene	0.059	3.4
__ Benzal chloride	0.055	6.0
__ Benzo(b)-fluoranthene	0.11	6.8
__ Benzo(k)-fluoranthene	0.11	6.8
__ Benzo(g,h,i)-perylene	0.0055	1.8
__ Benzo(a)pyrene	0.061	3.4
__ Bromodichloromethane	0.35	15
__ Bromomethane (Methyl bromide)	0.11	15
__ 4-Bromophenyl phenyl ether	0.055	15
__ n-Butyl alcohol	5.6	2.6
__ Butylate	0.042	1.4
__ Butyl benzyl phthalate	0.017	28
__ 2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	0.066	2.5
__ Carbaryl	0.006	0.14
__ Carbenzadim	0.056	1.4
__ Carbofuran	0.006	0.14
__ Carbofuran phenol	0.056	1.4
__ Carbon disulfide	3.84	4.8 mg/L [TCLP]
__ Carbon tetrachloride	0.057	6.0
__ Carbosulfan	0.028	1.4
__ Chlordane (alpha & gamma isomers)	0.0033	0.26
__ p-Chloroaniline	0.46	16
__ Chlorobenzene	0.057	6.0
__ Chlorobenzilate	0.10	NA
__ 2-Chloro-1,3-butadiene	0.057	0.28
__ Chlorodibromomethane	0.057	15
__ Chloroethane	0.27	6.0
__ bis(2-Chloroethoxy) methane	0.036	7.2
__ bis(2-Chloroethyl) ether	0.033	6.0
__ Chloroform	0.046	6.0
__ bis(2-Chloroisopropyl) ether	0.055	7.2
__ p-Chloro-m-cresol	0.018	14
__ 2-Chloroethyl vinyl ether	0.062	NA
__ Chloromethane (Methyl chloride)	0.19	30
__ 2-Chloronaphthalene	0.055	5.6
__ 2-Chlorophenol	0.044	5.7
__ 3-Chloropropylene	0.036	30
__ Chrysene	0.059	3.4
__ p-Cresidine	0.010	0.66
__ o-Cresol	0.11	5.6
__ m-Cresol	0.77	5.6
__ p-Cresol	0.77	5.6
__ m-Cumenyl methylcarbamate	0.056	1.4
__ Cyclohexanone	0.36	0.75 mg/L [TCLP]
__ o,p'-DDD	0.023	0.087
__ p,p'-DDD	0.023	0.087
__ o,p'-DDE	0.031	0.087

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Attachment IV (cont.)

__ p,p'-DDE	0.031	0.087
__ o,p'-DDT	0.0039	0.087
__ p,p'-DDT	0.0039	0.087
__ Dibenz(a,h) anthracene	0.055	8.2
__ Dibenzo(a,e) pyrene	0.061	NA
__ 1,2-Dibromo-3-chloropropane	0.11	15
__ 1,2-Dibromomethane (Ethylene dibromide)	0.028	15
__ Dibromomethane	0.11	15
__ m-Dichlorobenzene	0.036	6.0
__ o-Dichlorobenzene	0.088	6.0
__ p-Dichlorobenzene	0.090	6.0
__ Dichlorodifluoromethane	0.23	7.2
__ 1,1-Dichloroethane	0.059	6.0
__ 1,2-Dichloroethane	0.21	6.0
__ 1,1-Dichloroethylene	0.025	6.0
__ trans-1,2-Dichloroethylene	0.054	30
__ 2,4-Dichlorophenol	0.044	14
__ 2,6-Dichlorophenol	0.044	14
__ 2,4-Dichlorophenoxyacetic acid (2,4-D)	0.72	10
__ 1,2-Dichloropropane	0.85	18
__ cis-1,3-Dichloropropene	0.036	18
__ trans-1,3-Dichloropropene	0.036	18
__ Dieldrin	0.017	0.13
__ Diethyl phthalate	0.20	28
__ p-Dimethylaminoazobenzene	0.13	NA
__ 2,4-Dimethylaniline (2,4-xylidine)	0.010	0.66
__ 2,4-Dimethyl phenol	0.036	14
__ Dimethyl phthalate	0.047	28
__ Di-n-butyl phthalate	0.057	28
__ 1,4-Dinitrobenzene	0.32	2.3
__ 4,6-Dinitro-o-cresol	0.28	160
__ 2,4-Dinitrophenol	0.12	160
__ 2,4-Dinitrotoluene	0.32	140
__ 2,6-Dinitrotoluene	0.55	28
__ Di-n-octyl phthalate	0.017	28
__ Di-n-propylnitrosoamine	0.40	14
__ 1,4-Dioxane	12.0	170
__ Diphenylamine	0.92	13
__ Diphenylnitrosoamine	0.92	13
__ 1,2-Diphenylhydrazine	0.087	NA
__ Disulfoton	0.017	6.2
__ Dithiocarbamates (total)	0.028	28
__ Endosulfan I	0.023	0.066
__ Endosulfan II	0.029	0.13
__ Endosulfan sulfate	0.029	0.13
__ Endrin	0.0028	0.13
__ Endrin aldehyde	0.025	0.13
__ EPTC	0.042	1.4
__ Ethyl acetate	0.34	33
__ Ethyl benzene	0.057	10

__ Ethyl cyanide (Propanenitrile)	0.24	360
__ Ethyl ether	0.12	160
__ bis(2-Ethylhexyl) phthalate	0.28	28
__ Ethyl methacrylate	0.14	160
__ Ethylene oxide	0.12	NA
__ Famphur	0.017	15
__ Fluoranthene	0.068	3.4
__ Fluorene	0.059	3.4
__ Formetanate hydrochloride	0.056	1.4
__ Heptachlor	0.0012	0.066
__ Heptachlor epoxide	0.016	0.066
__ Hexachlorobenzene	0.055	10
__ Hexachlorobutadiene	0.055	5.6
__ 1,2,3,4,6,7,8-HpCDD**	0.000035	0.0025
__ 1,2,3,4,6,7,8-HpCDF**	0.000035	0.0025
__ 1,2,3,4,7,8,9-HpCDF**	0.000035	0.0025
__ Hexachlorobutadiene	0.055	5.6
__ Hexachlorocyclopentadiene	0.057	2.4
__ HxCDDs (Hexachlorodibenzo-p-dioxins)	0.000063	0.001
__ HxCDFs (Hexachlorodibenzofurans)	0.000063	0.001
__ Hexachloroethane	0.055	30
__ Hexachloropropylene	0.035	30
__ Indeno(1,2,3-c,d)pyrene	0.0055	3.4
__ Iodomethane	0.19	65
__ Isobutyl alcohol (Isobutanol)	5.6	170
__ Isodrin	0.021	0.066
__ Isosafrole	0.081	2.6
__ Kepone	0.0011	0.13
__ Methacrylonitrile	0.24	84
__ Methanol	5.6	0.75 mg/L [TCLP]
__ Methapyrilene	0.081	1.5
__ Methiocarb	0.056	1.4
__ Methomyl	0.028	0.14
__ Methoxychlor	0.25	0.18
__ 3-Methylchlolanthrene	0.0055	15
__ 4,4-Methylene-bis(2-chloroaniline)	0.50	30
__ Methylene chloride	0.089	30
__ Methyl ethyl ketone	0.28	36
__ Methyl isobutyl ketone	0.14	33
__ Methyl methacrylate	0.14	160
__ Methyl methansulfonate	0.018	NA
__ Methyl parathion	0.014	4.6
__ Metolcarb	0.056	1.4
__ Mexacarbate	0.056	1.4
__ Molinate	0.042	1.4
__ Naphthalene	0.059	5.6
__ 2-Naphthylamine	0.52	NA
__ o-Nitroaniline	0.27	14

__ p-Nitroaniline	0.028	14
__ Nitrobenzene	0.068	14
__ 5-Nitro-o-toluidine	0.32	28
__ o-Nitrophenol	0.028	13
__ p-Nitrophenol	0.12	29
__ N-Nitrosodiethylamine	0.40	28
__ N-Nitrosodimethylamine	0.40	2.3
__ N-Nitroso-di-n-butylamine	0.40	17
__ N-Nitrosomethylethylamine	0.40	2.3
__ N-Nitrosomorpholine	0.40	2.3
__ N-Nitrosopiperidine	0.013	35
__ N-Nitrosopyrrolidine	0.013	35
__ OCDD**	0.000063	0.005
__ OCDF**	0.000063	0.005
__ Oxamyl	0.056	0.28
__ Parathion	0.014	4.6
__ Total PCBs (sum of all PCB isomers)***	0.10	10
__ Pebulate	0.042	1.4
__ Pentachlorobenzene	0.055	10
__ PeCDDs (Pentachlorodibenzo-p-dioxins)	0.000063	0.001
__ PeCDFs (Pentachlorodibenzofurans)	0.000035	0.001
__ Pentachloroethane	0.055	6.0
__ Pentachloronitrobenzene	0.055	4.8
__ Pentachlorophenol	0.089	7.4
__ Phenacetin	0.081	16
__ Phenanthrene	0.059	5.6
__ Phenol	0.039	6.2
__ o-Phenylenediamine	0.056	5.6
__ 1,3-Phenylenediamine	0.010	0.66
__ Phorate	0.021	4.6
__ Phthalic acid	0.055	28
__ Phthalic anhydride	0.055	28
__ Physostigmine	0.056	1.4
__ Physostigmine salicylate	0.056	1.4
__ Promecarb	0.056	1.4
__ Pronamide	0.093	1.5
__ Propham	0.056	1.4
__ Propoxur	0.056	1.4
__ Prosulfocarb	0.042	1.4
__ Pyrene	0.067	8.2
__ Pyridine	0.014	16
__ Safrole	0.081	22
__ Silvex (2,4,5-TP)	0.72	7.9
__ 1,2,4,5-Tetrachlorobenzene	0.055	14
__ TCDDs (Tetrachlorodibenzo-p-dioxins)	0.000063	0.001
__ TCDFs (Tetrachlorodibenzofurans)	0.000063	0.001
__ 1,1,1,2-Tetrachloroethane	0.057	6.0
__ 1,1,2,2-Tetrachloroethane	0.057	6.0
__ Tetrachloroethylene	0.56	6.0
__ 2,3,4,6-Tetrachlorophenol	0.030	7.4
__ Thiodicarb	0.019	1.4
__ Thiophanate-methyl	0.056	1.4
__ Toluene	0.080	10
__ Toxaphene	0.0095	2.6
__ Triallate	0.042	1.4
__ Tribromomethane (Bromoform)	0.63	15
__ 2,4,6-Tribromophenol	0.035	7.4
__ 1,2,4-Trichlorobenzene	0.055	19
__ 1,1,1-Trichloroethane	0.054	6.0
__ 1,1,2-Trichloroethane	0.054	6.0
__ Trichloroethylene	0.054	6.0
__ Trichloromonofluoromethane	0.020	30
__ 2,4,5-Trichlorophenol	0.18	7.4
__ 2,4,6-Trichlorophenol	0.035	7.4
__ 2,4,5-Trichlorophenoxyacetic acid (245T)	0.72	7.9
__ 1,2,3-Trichloropropane	0.85	30
__ 1,1,2-Trichloro-1,2,2-trifluoroethane	0.057	30
__ Triethylamine	0.081	1.5
__ Tris(2,3-dibromopropyl) phosphate	0.11	0.10
__ Vernolate	0.042	1.4
__ Vinyl chloride	0.27	6.0
__ Xylene(s) (sum of mixed isomers)	0.32	30

II. INORGANIC CONSTITUENTS:

__ Antimony	1.9	1.15 mg/L [TCLP]
__ Arsenic	1.4	5.0 mg/L [TCLP]
__ Barium	1.2	21 mg/L [TCLP]
__ Beryllium	0.82	1.22 mg/L [TCLP]
__ Cadmium	0.69	0.11 mg/L [TCLP]
__ Chromium (Total)	2.77	0.60 mg/L [TCLP]
__ Cyanides (Total)	1.2	590
__ Cyanides (Amenable)	0.86	30
__ Lead	0.69	0.75 mg/L [TCLP]
__ Mercury (Nonwastewaters from Retort)	NA	0.20 mg/L [TCLP]
__ Mercury (All others)	0.15	0.025 mg/L [TCLP]
__ Nickel	3.98	11 mg/L [TCLP]
__ Silver	0.43	0.14 mg/L [TCLP]
__ Thallium	1.4	0.20 mg/L [TCLP]

**
1,2,3,4,6,7,8-HpCDD = 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin;
1,2,3,4,6,7,8-CDF = 1,2,3,4,6,7,8-Heptachlorodibenzofuran;
1,2,3,4,7,8,9-HpCDF = 1,2,3,4,7,8,9-Heptachlorodibenzofuran;
OCDD = 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin;
OCDF = 1,2,3,4,6,7,8,9-Octachlorodibenzofuran

***
The "Total PCBs" standard is temporarily deferred for soil exhibiting a characteristic due to D004-D011 only.

ATTACHMENT E-5

NOTIFICATION AND CERTIFICATION FORM

Chemours

Chemours Secure Environmental Treatment

Generator's Waste ID No._____

Notification and Certification Form

Land Disposal Restrictions
For Chemours Chambers Works Internal Use Only

1. Generator's EPA ID No. NJD002385730
   Generator The Chemours Company FC, LLC
   Generator's Address
   Chambers Works
   Deepwater, New Jersey 08023

2. Is this waste subject to the Land Disposal Restrictions set forth in 40 CFR 268? ☐ Yes ☐ No
   If no, check reason: ☐ Non-Hazardous ☐ Newly identified or newly listed (write waste codes in the table below)

3. Identify all characteristic, listed, newly identified, and newly listed U.S. EPA hazardous waste codes that apply (as defined by 40 CFR 261). For each waste code, identify the subcategory, treatability group, and indicate how the waste must be managed based on the options found on pages 2 and 3.

U.S. EPA HAZARDOUS WASTE CODE(S) Per 40 CFR 261	SUBCATEGORY Enter the subcategory description Per 40 CFR 268.40. If not applicable, check "None"		TREATABILITY GROUP (Check only one)		HOW MUST THE WASTE BE MANAGED? Enter the letter from page 2 and 3*
	Description	None	Waste-Water	Non-Waste-Water	
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	

(Use Attachment I if more room is needed to list all applicable waste codes)

4. Is waste analysis information attached? ☐ Yes ☐ Not available

5. If this shipment includes spent solvents (F001-F005), include Attachment II, Treatment Standards for F001-F005 Spent Solvents.

6. If this shipment includes multisource leachate (F039), include Attachment III, Treatment Standards for F039 Multisource Leachate Wastes.

7. If this shipment includes 40 CFR 268.37, D001 ignitable wastes for which the CMBST or RORGS treatment technology is not specified, 40 CFR 268.37, D002 corrosive wastes, 40 CFR 268.38, D004-D043 wastes and/or hazardous or nonhazardous treatment residues from any of these wastes, include Attachment IV, Universal Treatment Standards for D001, D002, and/or D004-D043 Wastes.

8. If this shipment includes 40 CFR 268.45, hazardous debris wastes to be treated per the alternative treatment standards of 40 CFR 268.45, Table 1, include Attachment V, Alternative Treatment Standards for Hazardous Debris.

9. If this waste is subject to the contaminated soil standards in 40 CFR 268.49, include Attachment IV, Universal Treatment Standards for Underlying Hazardous Constituents.

10. If this shipment includes 40 CFR 268.42(c) Appendix IV Lab Pack Wastes, all applicable EPA hazardous waste codes must be included in the table above.

11. If the waste will be disposed of in a hazardous waste landfill, check the appropriate box to indicate the type of sorbent used per 40 CFR 264.314 and 264.316.
    ☐ No sorbents used ☐ Biodegradable sorbent ☐ Nonbiodegradable sorbent

Land Disposal Restrictions
Notification and Certification Form
For Chemours Chambers Works Internal Use Only

***HOW MUST THE WASTE BE MANAGED?** (Choose from the following options to complete the table on page 1)

A. Restricted waste requires treatment.

B. Restricted waste meets applicable treatment standards.

GENERATOR'S CERTIFICATION [40 CFR 268.7(a)(2)(ii)]
I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

C. Waste is newly listed or newly identified.

D. Restricted waste is exempt from the LDR. Check the reason below and write in the date the waste is subject to prohibitions.

☐ The waste has been granted a Site-Specific Variance. _____
☐ The waste has been given a Case-by-Case Extension. _____
☐ The waste is subject to a National Capacity Variance. _____

E. Restricted waste has been treated to remove the hazardous characteristic D001, D002, and/or D004-D043 and requires treatment of underlying hazardous constituents.

CHARACTERISTIC WASTE - UNDERLYING HAZARDOUS CONSTITUENTS [40 CFR 268.7(b)(5)(iv)]
I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

F. Restricted waste is a lab pack [40 CFR 268 Appendix IV].

GENERATOR'S APPENDIX IV LAB PACK CERTIFICATION [40 CFR 268.7(a)(8)]
I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack contains only wastes which have not been excluded under Appendix IV to 268 or solid wastes not subject to regulation under 40 CFR 261. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

G. Restricted waste is classified as debris [40 CFR 268.45] and will be treated per the alternative treatment standards available for debris wastes.

DEBRIS TREATED PER THE ALTERNATIVE STANDARDS [40 CFR 268.7(d)(3)(iii)]
I certify under penalty of law that the debris has been treated in accordance with the requirements of 40 CFR 268.45. . I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Land Disposal Restrictions
Notification and Certification Form
For Chemours Chambers Works Internal Use Only

H. Restricted waste was generated from the treatment of restricted wastes in a treatment facility that meets LDR performance standards.

TREATMENT FACILITY PERFORMANCE STANDARDS [40 CFR 268.7(b)(5)(I)]
I certify under penalty of law that I have personally examined and am familiar with the treatment and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR 268, Subpart D, and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d) without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

I. Restricted waste was generated by a treatment facility and has been successfully treated by a specific treatment technology to meet applicable LDR treatment standards.

TREATMENT FACILITY TECHNOLOGY STANDARDS [40 CFR 268.7(b)(5)(ii)]
I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.42. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

J. Restricted waste was generated by a treatment facility and has been successfully treated to meet concentration-based LDR treatment standards.

TREATMENT FACILITY CONCENTRATION-BASED CERTIFICATION [40 CFR 268.7(b)(5)(iii)]
I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by incineration in units operated in accordance with 40 CFR 264, Subpart O or 40 CFR 265, Subpart O, or by combustion in fuel substitution units operating in accordance with applicable technical requirements, and I have been unable to detect nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

K. Restricted waste is classified as contaminated soil [40 CFR 268.49] and will be treated per the alternative treatment standards available for contaminated soil.

CONTAMINATED SOIL PER THE ALTERNATIVE STANDARDS [40 CFR 268.49]
I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.49. This waste contains underlying hazardous constituents that will be treated to remove at least 90% of the constituent, or to a level not to exceed 10x the universal treatment standard indicated in 40 CFR 268.48, whichever is greater. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

CERTIFICATION

I certify that, to the best of my knowledge, the information provided in this document is true, accurate, and complete.

Authorized Signature	Name	Title	Date

Subpart H – Financial Requirements

40 CFR 264.140 Applicability

(a) 40 CFR 264.142, 264.143, and 264.147 – 151 requirements apply to the Chem Waste Storage Pad and 1178 Building.

(b) Not applicable because the Chem Waste Storage Pad and 1178 Building are not disposal facilities, piles, surface impoundments, tanks or containment buildings required to meet landfill requirements.

(c) Not applicable because Chemours is a corporation.

(d) Not applicable because the Regional Administrator has not, as of this application, put alternative requirements for financial assurance in effect for these facilities.

40 CFR 264.142 Cost Estimate for Closure

(a) The closure cost estimate as of September 2017, is provided in Attachment H-2. It is based on the cost of hiring a third party to close the facility. The cost estimate does not take credit for any salvage value.

(b) The closure cost estimate is adjusted for inflation annually, within 60 days of the anniversary date of the establishment of the financial instruments used to comply with 40 CFR 264.143.

(c) Not applicable because no request is being submitted to modify the closure plan.

(d) The closure cost estimate is kept at the 1244 building, Secure Environmental Treatment, with the RCRA permit records.

40 CFR 264.143 Financial Assurance for Closure

(f) The financial assurance documentation pursuant to Subpart H Financial Requirements for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, and pertaining to the Chemical Waste Storage Facility (Chem Waste Pads A, B, and C, and 1178 Building) is provided in Attachment H-1. Chambers Works conforms to the "Financial test and corporate guarantee for closure". The Financial Assurance is adjusted annually using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce. Included is assurance of liability coverage and closure and post-closure care costs required by Subpart H of 40 CFR Parts 264 and 265.

40 CFR 264.144 Cost Estimate for Post-Closure Care

Not applicable because the Chem Waste Storage Pad and 1178 Building are not disposal surface impoundments, disposal miscellaneous units, land treatment units, landfill units, or waste piles and therefore do not have post-closure care requirements.

40 CFR 264.145 Financial Assurance for Post-Closure Care

Not applicable because the Chem Waste Storage Pad and 1178 Building do not have post-closure care requirements.

40 CFR 264.146 Use of a Mechanism for Financial Assurance of Both Closure and Post-Closure Care

Not applicable because the Chem Waste Storage Pad and 1178 Building do not have post-closure care requirements.

40 CFR 264.147 Liability Requirements

(a) Chambers Works conforms to the financial test specified in 40 CFR 264.147(f), as demonstrated through Attachment H-1.

ATTACHMENT H-1

RCRA FINANCIAL ASSURANCE DOCUMENTATION

Kelly K. Burns
Corporate Paralegal
The Chemours Company
1007 Market Street, Room 8078-2
Wilmington, DE 19899
(302) 773-0036 (office)
(302) 355-3193 (fax)
Kelly.k.burns@chemours.com

March 29, 2018

SENT VIA CERTIFIED MAIL

Vincent Caliguire
NJDEP SHW Escrow
Mail Code 401-02C
401 East State Street
Trenton, NJ 08625-0420

RE: Financial Assurance for The Chemours Company FC, LLC
Bond SU1112850 - Post Closure (SWMUs21,25,26,28)
Bond SU1112851 - Post Closure (A & B Basins)
Bond SU1112852 - Closure/Post Closure (Landfill C & Chem Waste Pad)
Chambers Works, NJ Plant Site
EPA ID# NJD002385730

Dear Vince:

The above referenced Bonds remain in effect as the financial assurance mechanisms for the Chambers Works, NJ plant site.

I have enclosed 3 Riders increasing the bond amount to account for the annual inflation factor adjustment.

Thank you.

Sincerely,

Kelly Burns

Kelly K. Burns
Corporate Paralegal

KKB/bfg
Enclosures

7014 3490 0001 8506 2697

7014 3490 0001 8506 2697

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®

OFFICIAL USE

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Sent To Vincent Caliguire
NJ DEP SHW Escrow / MC: 401-02C
Street & Apt. No., or PO Box No. 401 E. State St
City, State, ZIP+4 Trenton NJ 08625-0420

PS Form 3800, July 2014 See Reverse for Instructions

Vincent Caliguire
NJDEP SHW Escrow
Mail Code: 401-02C
401 East State Street
Trenton, NJ 08625-0420

The Chemours Company
1007 Market Street
Wilmington, DE 19899

Chemours™

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.

Vincent Caliguire
NJDEP SHW Escrow
Mail Code: 401-02C
401 East State Street
Trenton, NJ 08625-0420

9590 9402 2119 6132 1532 17

2. Article Number (Transfer from service label)
7014 3490 0001 8506 2697

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Return Receipt for Merchandise
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

SURETY RIDER

To be attached to and form a part of

Bond No. SU1112860

dated / effective 4/1/2012
(MONTH-DAY-YEAR)

executed by The Chemours Company FC, LLC, as Principal,
(PRINCIPAL)

and by Arch Insurance Company, as Surety,

in favor of New Jersey Department of Environmental Protection
(OBLIGEE)

In consideration of the mutual agreements herein contained the Principal and the Surety hereby consent to changing

The Bond Amount to:

Two Hundred Forty-eight Thousand Three Hundred Fifty And 22/100 ($248,350.22)

Nothing herein contained shall vary, alter or extend any provision or condition of this bond except as herein expressly stated.

This rider is effective 3/23/2018
(MONTH-DAY-YEAR)

Signed and Sealed 3/23/2018
(MONTH-DAY-YEAR)

THE CHEMOURS COMPANY FC, LLC
LIMITED LIABILITY COMPANY
SEAL
2014
DELAWARE

The Chemours Company FC, LLC
(PRINCIPAL)

By: _____
(PRINCIPAL)

Arch Insurance Company
(SURETY)

By: _____
Cori Riddle, Attorney-In-Fact

S-0443/GEEF 10/99

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON BLUE BACKGROUND.

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated. Not valid for Mortgage, Note, Loan, Letter of Credit, Bank Deposit, Currency Rate, Interest Rate or Residential Value Guarantees.

POWER OF ATTORNEY

Know All Persons By These Presents:

That the Arch Insurance Company, a corporation organized and existing under the laws of the State of Missouri, having its principal administrative office in Jersey City, New Jersey (hereinafter referred to as the "Company") does hereby appoint:

Cori Riddle, Francis J. Curran, Marina A. Kenney and Sally Phillips of Philadelphia, PA (EACH)

its true and lawful Attorney(s)in-Fact, to make, execute, seal, and deliver from the date of issuance of this power for and on its behalf as surety, and as its act and deed:

Any and all bonds, undertakings, recognizances and other surety obligations, in the penal sum not exceeding Ninety Million Dollars ($90,000,000.00).

This authority does not permit the same obligation to be split into two or more bonds in order to bring each such bond within the dollar limit of authority as set forth herein.

The execution of such bonds, undertakings, recognizances and other surety obligations in pursuance of these presents shall be as binding upon the said Company as fully and amply, to all intents and purposes, as if the same had been duly executed and acknowledged by its regularly elected officers at its principal administrative office in Jersey City, New Jersey.

This Power of Attorney is executed by authority of resolutions adopted by unanimous consent of the Board of Directors of the Company on September 15, 2011, true and accurate copies of which are hereinafter set forth and are hereby certified to by the undersigned Secretary as being in full force and effect:

"VOTED, That the Chairman of the Board, the President, or the Executive Vice President, or any Senior Vice President, of the Surety Business Division, or their appointees designated in writing and filed with the Secretary, or the Secretary shall have the power and authority to appoint agents and attorneys-in-fact, and to authorize them subject to the limitations set forth in their respective powers of attorney, to execute on behalf of the Company, and attach the seal of the Company thereto, bonds, undertakings, recognizances and other surety obligations obligatory in the nature thereof, and any such officers of the Company may appoint agents for acceptance of process."

This Power of Attorney is signed, sealed and certified by facsimile under and by authority of the following resolution adopted by the unanimous consent of the Board of Directors of the Company on September 15, 2011:

VOTED, That the signature of the Chairman of the Board, the President, or the Executive Vice President, or any Senior Vice President, of the Surety Business Division, or their appointees designated in writing and filed with the Secretary, and the signature of the Secretary, the seal of the Company, and certifications by the Secretary, may be affixed by facsimile on any power of attorney or bond executed pursuant to the resolution adopted by the Board of Directors on September 15, 2011, and any such power so executed, sealed and certified with respect to any bond or undertaking to which it is attached, shall continue to be valid and binding upon the Company.

In Testimony Whereof, the Company has caused this instrument to be signed and its corporate seal to be affixed by their authorized officers, this 8th day of November, 2016.

Attested and Certified

Arch Insurance Company

Patrick K. Nails, Secretary

Arch Insurance Company CORPORATE SEAL 1971 Missouri

David M. Finkelstein, Executive Vice President

STATE OF PENNSYLVANIA SS

COUNTY OF PHILADELPHIA SS

I, Helen Szafran, a Notary Public, do hereby certify that Patrick K. Nails and David M. Finkelstein personally known to me to be the same persons whose names are respectively as Secretary and Executive Vice President of the Arch Insurance Company, a Corporation organized and existing under the laws of the State of Missouri, subscribed to the foregoing instrument, appeared before me this day in person and severally acknowledged that they being thereunto duly authorized signed, sealed with the corporate seal and delivered the said instrument as the free and voluntary act of said corporation and as their own free and voluntary acts for the uses and purposes therein set forth.

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
HELEN SZAFRAN, Notary Public
City of Philadelphia, Phila. County
My Commission Expires October 3, 2017

Helen Szafran, Notary Public
My commission expires 10/03/2017

CERTIFICATION

I, Patrick K. Nails, Secretary of the Arch Insurance Company, do hereby certify that the attached Power of Attorney dated November 8, 2016 on behalf of the person(s) as listed above is a true and correct copy and that the same has been in full force and effect since the date thereof and is in full force and effect on the date of this certificate; and I do further certify that the said David M. Finkelstein, who executed the Power of Attorney as Executive Vice President, was on the date of execution of the attached Power of Attorney the duly elected Executive Vice President of the Arch Insurance Company.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the Arch Insurance Company on this 23rd day of March, 2018.

Patrick K. Nails, Secretary

This Power of Attorney limits the acts of those named therein to the bonds and undertakings specifically named therein and they have no authority to bind the Company except in the manner and to the extent herein stated.

PLEASE SEND ALL CLAIM INQUIRIES RELATING TO THIS BOND TO THE FOLLOWING ADDRESS:

Arch Insurance – Surety Division
3 Parkway, Suite 1500
Philadelphia, PA 19102

Arch Insurance Company CORPORATE SEAL 1971 Missouri

SURETY RIDER

To be attached to and form a part of

Bond No. SU1112851

dated effective 4/1/2012
(MONTH-DAY-YEAR)

executed by The Chemours Company FC, LLC, as Principal,
(PRINCIPAL)

and by Arch Insurance Company, as Surety,

In favor of New Jersey Department of Environmental Protection
(OBLIGEE)

In consideration of the mutual agreements herein contained the Principal and the Surety hereby consent to changing

The Bond Amount to:

Three Hundred Nine Thousand Five Hundred Twenty-four And 98/100 ($309,524.98)

Nothing herein contained shall vary, alter or extend any provision or condition of this bond except as herein expressly stated.

This rider is effective 3/23/2018
(MONTH-DAY-YEAR)

Signed and Sealed 3/23/2018
(MONTH-DAY-YEAR)

THE CHEMOURS COMPANY FC, LLC
LIMITED LIABILITY COMPANY
SEAL
2014
DELAWARE

The Chemours Company FC, LLC
(PRINCIPAL)

By: _____
(PRINCIPAL)

Arch Insurance Company
(SURETY)

By: _____
Corl Riddle, Attorney-In-Fact

S-0443/GEEF 10/99

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON BLUE BACKGROUND.

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated. Not valid for Mortgage, Note, Loan, Letter of Credit, Bank Deposit, Currency Rate, Interest Rate or Residential Value Guarantees.

POWER OF ATTORNEY

Know All Persons By These Presents:

That the Arch Insurance Company, a corporation organized and existing under the laws of the State of Missouri, having its principal administrative office in Jersey City, New Jersey (hereinafter referred to as the "Company") does hereby appoint:

Cori Riddle, Francis J. Curran, Marina A. Kenney and Sally Phillips of Philadelphia, PA (EACH)

its true and lawful Attorney(s)in-Fact, to make, execute, seal, and deliver from the date of issuance of this power for and on its behalf as surety, and as its act and deed:

Any and all bonds, undertakings, recognizances and other surety obligations, in the penal sum not exceeding Ninety Million Dollars ($90,000,000.00).

This authority does not permit the same obligation to be split into two or more bonds in order to bring each such bond within the dollar limit of authority as set forth herein.

The execution of such bonds, undertakings, recognizances and other surety obligations in pursuance of these presents shall be as binding upon the said Company as fully and amply to all intents and purposes, as if the same had been duly executed and acknowledged by its regularly elected officers at its principal administrative office in Jersey City, New Jersey.

This Power of Attorney is executed by authority of resolutions adopted by unanimous consent of the Board of Directors of the Company on September 15, 2011, true and accurate copies of which are hereinafter set forth and are hereby certified to by the undersigned Secretary as being in full force and effect:

"VOTED, That the Chairman of the Board, the President, or the Executive Vice President, or any Senior Vice President, of the Surety Business Division, or their appointees designated in writing and filed with the Secretary, or the Secretary shall have the power and authority to appoint agents and attorneys-in-fact, and to authorize them subject to the limitations set forth in their respective powers of attorney, to execute on behalf of the Company, and attach the seal of the Company thereto, bonds, undertakings, recognizances and other surety obligations obligatory in the nature thereof, and any such officers of the Company may appoint agents for acceptance of process."

This Power of Attorney is signed, sealed and certified by facsimile under and by authority of the following resolution adopted by the unanimous consent of the Board of Directors of the Company on September 15, 2011:

VOTED, That the signature of the Chairman of the Board, the President, or the Executive Vice President, or any Senior Vice President, of the Surety Business Division, or their appointees designated in writing and filed with the Secretary, and the signature of the Secretary, the seal of the Company, and certifications by the Secretary, may be affixed by facsimile on any power of attorney or bond executed pursuant to the resolution adopted by the Board of Directors on September 15, 2011, and any such power so executed, sealed and certified with respect to any bond or undertaking to which it is attached, shall continue to be valid and binding upon the Company.

In Testimony Whereof, the Company has caused this instrument to be signed and its corporate seal to be affixed by their authorized officers, this 8th day of November, 2016.

Attested and Certified

Arch Insurance Company

Patrick K. Nails, Secretary

Arch Insurance Company CORPORATE SEAL 1971 Missouri

David M. Finkelstein, Executive Vice President

STATE OF PENNSYLVANIA SS

COUNTY OF PHILADELPHIA SS

I, Helen Szafran, a Notary Public, do hereby certify that Patrick K. Nails and David M. Finkelstein personally known to me to be the same persons whose names are respectively as Secretary and Executive Vice President of the Arch Insurance Company, a Corporation organized and existing under the laws of the State of Missouri, subscribed to the foregoing instrument, appeared before me this day in person and severally acknowledged that they being thereunto duly authorized signed, sealed with the corporate seal and delivered the said instrument as the free and voluntary act of said corporation and as their own free and voluntary acts for the uses and purposes therein set forth.

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
HELEN SZAFRAN, Notary Public
City of Philadelphia, Phila. County
My Commission Expires October 3, 2017

Helen Szafran, Notary Public
My commission expires 10/03/2017

CERTIFICATION

I, Patrick K. Nails, Secretary of the Arch Insurance Company, do hereby certify that the attached Power of Attorney dated November 8, 2016 on behalf of the person(s) as listed above is a true and correct copy and that the same has been in full force and effect since the date thereof and is in full force and effect on the date of this certificate; and I do further certify that the said David M. Finkelstein, who executed the Power of Attorney as Executive Vice President, was on the date of execution of the attached Power of Attorney the duly elected Executive Vice President of the Arch Insurance Company.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the Arch Insurance Company on this 23rd day of March, 2018.

Patrick K. Nails, Secretary

This Power of Attorney limits the acts of those named therein to the bonds and undertakings specifically named therein and they have no authority to bind the Company except in the manner and to the extent herein stated.

PLEASE SEND ALL CLAIM INQUIRIES RELATING TO THIS BOND TO THE FOLLOWING ADDRESS:

Arch Insurance – Surety Division
3 Parkway, Suite 1500
Philadelphia, PA 19102

Arch Insurance Company CORPORATE SEAL 1971 Missouri

SURETY RIDER

To be attached to and form a part of

Bond No. SU1112852

dated effective 4/1/2012
(MONTH-DAY-YEAR)

executed by The Chemours Company FC, LLC, as Principal,
(PRINCIPAL)

and by Arch Insurance Company, as Surety,

in favor of New Jersey Department of Environmental Protection
(OBLIGEE)

in consideration of the mutual agreements herein contained the Principal and the Surety hereby consent to changing

The Bond Amount to:

Nine Million Six Hundred Forty Eight Thousand Seven Hundred Sixty Three & 55/100 ($9,648,763.55)

The Closure Amount is changed to: $1,102,270.02
The Post-Closure Amount is changed to: $8,546,493.53

Nothing herein contained shall vary, alter or extend any provision or condition of this bond except as herein expressly stated.

This rider is effective 03/23/2018
(MONTH-DAY-YEAR)

Signed and Sealed 03/23/2018
(MONTH-DAY-YEAR)

The Chemours Company FC, LLC
(PRINCIPAL)

By: _____
(PRINCIPAL)

THE CHEMOURS COMPANY FC, LLC
LIMITED LIABILITY COMPANY
SEAL
2014
DELAWARE

Arch Insurance Company
(SURETY)

By: _____
Cori Riddle, Attorney-In-Fact

S-0443/GEEF 10/99

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON BLUE BACKGROUND.

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated. Not valid for Mortgage, Note, Loan, Letter of Credit, Bank Deposit, Currency Rate, Interest Rate or Residential Value Guarantees.

POWER OF ATTORNEY

Know All Persons By These Presents:

That the Arch Insurance Company, a corporation organized and existing under the laws of the State of Missouri, having its principal administrative office in Jersey City, New Jersey (hereinafter referred to as the "Company") does hereby appoint:

Cori Riddle, Francis J. Curran, Marina A. Kenney and Sally Phillips of Philadelphia, PA (EACH)

its true and lawful Attorney(s)in-Fact, to make, execute, seal, and deliver from the date of issuance of this power for and on its behalf as surety, and as its act and deed:

Any and all bonds, undertakings, recognizances and other surety obligations, in the penal sum not exceeding Ninety Million Dollars ($90,000,000.00).

This authority does not permit the same obligation to be split into two or more bonds in order to bring each such bond within the dollar limit of authority as set forth herein.

The execution of such bonds, undertakings, recognizances and other surety obligations in pursuance of these presents shall be as binding upon the said Company as fully and amply to all intents and purposes, as if the same had been duly executed and acknowledged by its regularly elected officers at its principal administrative office in Jersey City, New Jersey.

This Power of Attorney is executed by authority of resolutions adopted by unanimous consent of the Board of Directors of the Company on September 15, 2011, true and accurate copies of which are hereinafter set forth and are hereby certified to by the undersigned Secretary as being in full force and effect:

"VOTED, That the Chairman of the Board, the President, or the Executive Vice President, or any Senior Vice President, of the Surety Business Division, or their appointees designated in writing and filed with the Secretary, or the Secretary shall have the power and authority to appoint agents and attorneys-in-fact, and to authorize them subject to the limitations set forth in their respective powers of attorney, to execute on behalf of the Company, and attach the seal of the Company thereto, bonds, undertakings, recognizances and other surety obligations obligatory in the nature thereof, and any such officers of the Company may appoint agents for acceptance of process."

This Power of Attorney is signed, sealed and certified by facsimile under and by authority of the following resolution adopted by the unanimous consent of the Board of Directors of the Company on September 15, 2011:

VOTED, That the signature of the Chairman of the Board, the President, or the Executive Vice President, or any Senior Vice President, of the Surety Business Division, or their appointees designated in writing and filed with the Secretary, and the signature of the Secretary, the seal of the Company, and certifications by the Secretary, may be affixed by facsimile on any power of attorney or bond executed pursuant to the resolution adopted by the Board of Directors on September 15, 2011, and any such power so executed, sealed and certified with respect to any bond or undertaking to which it is attached, shall continue to be valid and binding upon the Company.

In Testimony Whereof, the Company has caused this instrument to be signed and its corporate seal to be affixed by their authorized officers, this 8th day of November, 2016.

Attested and Certified

Arch Insurance Company

Patrick K. Nails, Secretary

Arch Insurance Company CORPORATE SEAL 1971 Missouri

David M. Finkelstein, Executive Vice President

STATE OF PENNSYLVANIA SS

COUNTY OF PHILADELPHIA SS

I, Helen Szafran, a Notary Public, do hereby certify that Patrick K. Nails and David M. Finkelstein personally known to me to be the same persons whose names are respectively as Secretary and Executive Vice President of the Arch Insurance Company, a Corporation organized and existing under the laws of the State of Missouri, subscribed to the foregoing instrument, appeared before me this day in person and severally acknowledged that they being thereunto duly authorized signed, sealed with the corporate seal and delivered the said instrument as the free and voluntary act of said corporation and as their own free and voluntary acts for the uses and purposes therein set forth.

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
HELEN SZAFRAN, Notary Public
City of Philadelphia, Phila. County
My Commission Expires October 3, 2017

Helen Szafran, Notary Public
My commission expires 10/03/2017

CERTIFICATION

I, Patrick K. Nails, Secretary of the Arch Insurance Company, do hereby certify that the attached Power of Attorney dated November 8, 2016 on behalf of the person(s) as listed above is a true and correct copy and that the same has been in full force and effect since the date thereof and is in full force and effect on the date of this certificate; and I do further certify that the said David M. Finkelstein, who executed the Power of Attorney as Executive Vice President, was on the date of execution of the attached Power of Attorney the duly elected Executive Vice President of the Arch Insurance Company.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the Arch Insurance Company on this 23rd day of March, 2018.

Patrick K. Nails, Secretary

This Power of Attorney limits the acts of those named therein to the bonds and undertakings specifically named therein and they have no authority to bind the Company except in the manner and to the extent herein stated.

PLEASE SEND ALL CLAIM INQUIRIES RELATING TO THIS BOND TO THE FOLLOWING ADDRESS:

Arch Insurance – Surety Division
3 Parkway, Suite 1500
Philadelphia, PA 19102

Arch Insurance Company CORPORATE SEAL 1971 Missouri

ATTACHMENT H-2

CLOSURE COST ESTIMATES

In Testimony Whereof, the Company has caused this instrument to be signed and its corporate seal to be affixed by their authorized officers, this 8th day of November, 2016.

Attested and Certified

Arch Insurance Company

Patrick K. Nails, Secretary

David M. Finkelstein, Executive Vice President

STATE OF PENNSYLVANIA SS

COUNTY OF PHILADELPHIA SS

I, Helen Szafran, a Notary Public, do hereby certify that Patrick K. Nails and David M. Finkelstein personally known to me to be the same persons whose names are respectively as Secretary and Executive Vice President of the Arch Insurance Company, a Corporation organized and existing under the laws of the State of Missouri, subscribed to the foregoing instrument, appeared before me this day in person and severally acknowledged that they being thereunto duly authorized signed, sealed with the corporate seal and delivered the said instrument as the free and voluntary act of said corporation and as their own free and voluntary acts for the uses and purposes therein set forth.

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
HELEN SZAFRAN, Notary Public
City of Philadelphia, Phila. County
My Commission Expires October 3, 2017

Helen Szafran, Notary Public
My commission expires 10/03/2017

CERTIFICATION

I, Patrick K. Nails, Secretary of the Arch Insurance Company, do hereby certify that the attached Power of Attorney dated November 8, 2016 on behalf of the person(s) as listed above is a true and correct copy and that the same has been in full force and effect since the date thereof and is in full force and effect on the date of this certificate; and I do further certify that the said David M. Finkelstein, who executed the Power of Attorney as Executive Vice President, was on the date of execution of the attached Power of Attorney the duly elected Executive Vice President of the Arch Insurance Company.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the Arch Insurance Company on this 23rd day of March, 2018.

Patrick K. Nails, Secretary

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PLEASE SEND ALL CLAIM INQUIRIES RELATING TO THIS BOND TO THE FOLLOWING ADDRESS:

Arch Insurance – Surety Division
3 Parkway, Suite 1500
Philadelphia, PA 19102

Table

Update Chem Waste Closure Cost Estimate

1178 Building	2008 Closure Plan Estimate	2015 Financial Assurance	2015-2016 Actual Spend
Treat existing waste	$ 37,149	$ -	$ 500.00
Veolia - power washing, vac truck, labor	$ 14,613	$ 16,789	$ 10,240.78
Wash water sampling	$ 6,669	$ 7,662	$ -
Lancaster Labs analytical	$ 3,697	$ 4,248	$ 679.00
Wash water disposal	$ 3,624	$ 4,164	$ -
AECOM - certified closure report	$ 4,349	$ 4,997	$ 5,528.00
Total =	$ 70,101	$ 37,859	$ 16,947.78

Chem Waste Area	2008 Closure Plan Estimate	2017 Inflation Adj. Estimate	2017 Scope Adj. Estimate	2017 Scope Notes
Treat existing waste at Chem Waste	$ 1,812	$ 2,151	$ 47,326	Assumes 118 drums for incineration
High pressure wash Chem Waste pads	$ 5,219	$ 6,196	$ 6,196	
Vacuum truck to remove high press wash	$ 5,219	$ 6,196	$ 6,196	
Wash water sampling	$ 6,669	$ 7,917	$ 7,917	
Wash water testing	$ 9,858	$ 11,703	$ 11,703	
Wash water disposal	$ 36,242	$ 43,024	$ -	Assumes wash water treated on-site
Labor	$ 10,438	$ 12,391	$ 12,391	
Inspection/Certification	$ 4,349	$ 5,163	$ 5,163	
Piping and pumps				
Rinsate sampling	$ 1,667	$ 1,979	$ 1,979	
Rinsate testing	$ 6,161	$ 7,314	$ 7,314	
Rinsate disposal - assume on-site	$ 1,812	$ 2,151	$ -	Assumes rinse water treated on-site
Labor	$ 2,088	$ 2,479	$ 2,479	
Inspection/Certification	$ 1,450	$ 1,721	$ 1,721	
Total =	$ 92,984	$ 110,384	$ 110,384	

Cumulative 2008-2017 Inflation Factor = 1.187

Cumulative 2008-2015 Inflation Factor = 1.149

9/27/2017

Subpart I – Use and Management of Containers

40 CFR 264.170 Applicability

This section applies to the Chem Waste Storage Area. Containers may include but are not limited to drums, cylinders, tank trailers, tote tanks, roll off boxes. Additional material stored at the facility may include palletized lead-acid batteries and fluorescent lamp tubes in cardboard boxes. Materials of construction for containers may include steel, stainless steel, polyethylene, fiber packs, or bags for solid materials. 1178 Building is no longer in use and is pending NJDEP approval for demolition.

40 CFR 264.171 Condition of Containers

All containers are inspected upon receipt by the Chem Waste Area. Containers in storage are inspected Monday through Friday, excluding holidays to assure they are in good condition. Damaged containers are addressed immediately upon identification, through overpacking, venting, or transferring the material to another container.

40 CFR 264.172 Compatibility of Waste with Containers

The materials of construction for containers used on-site include, but are not limited to, steel, stainless steel and polyethylene. Lined containers are also stored (e.g., steel with poly-liner) and lined tank trailers are used for off-site waste shipments where required by DOT. Fiber packs (as well as poly or steel) are used as overpacks for smaller waste containers. Overpacks and lab-packs contain packaging materials such as oil-dry, vermiculite, sawdust or other packaging compatible per DOT with the waste materials being shipped. Fluorescent tubes are stored and shipped in cardboard boxes.

40 CFR 264.173 Management of Containers

(a) All containers are kept closed and sealed with the following exceptions:
- Material is being removed from the container
- Material in the container is being sampled
- Bulging drums are vented
- Other analysis of the material in the container is needed (e.g., depth of material measurement)

(b) All containers are handled in a method designed to minimize the potential for damage. During storage, a minimum aisle width of 30 inches is maintained for inspection and ease of access. Fluorescent tube boxes that are stored on the pad in a utility shed to protect cardboard boxes from weather are not subject to the 30-inch aisle space requirement or requirements to store wastes on pallets.

40 CFR 264.174 Inspections

Storage areas are inspected on a daily basis. All containers are visually checked for leaks and other indicators of damage. A sample inspection form is provided as Attachment B-2. Inspection is addressed in more detail in section B.

40 CFR 264.175 Containment

(a) The Chem Waste Storage Pads and 1178 Building have secondary containment capacity. 1178 Building is no longer in use and is pending NJDEP approval for demolition.

(b)(1) The Chem Waste storage area base is constructed of reinforced concrete above a layer of gravel. At the Chem Waste storage area, the floor of the storage area is sloped toward the sump in the center of the pad. The sump feeds the regional tank through a manually operated pump. The regional tank pumps to the wastewater treatment plant. The base is inspected for cracks and gaps. Inspections are documented on checklists maintained by the Chem Waste area.

1178 building is constructed with a reinforced concrete floor and concrete block walls. Since the building has sides and a roof, precipitation does not accumulate. 1178 Building is no longer in use and is pending NJDEP approval for demolition.

(b)(2) At the Chem Waste storage area, the base is sloped toward the trench in the center of the pad. In both areas, the drums are stored on pallets, preventing their contact with any accumulated liquids.

(b)(3) The container storage area has a capacity of 664,500 gallons (Area A - 580,500 gallon capacity for containers (approximately 9,900 drums), Area B - 28,000 gallon capacity tote tanks or trailers, and Area C - 56,000 gallon capacity tote tanks or trailers). The respective required containment volumes are 58,050, 2,800, and 5,600 gallons.

1178 building has a storage capacity of 82000 gallons, requiring a minimum of 8200 gallons containment. 1178 Building is no longer in use and is pending NJDEP approval for demolition.

The containment systems design basis follows New Jersey regulatory requirements N.J.A.C. 7:1E(c). Pad A and B are provided with in situ containment of 6" rain fall event plus the largest container. Pad C is provided with a diversion that can contain and transfers the spill scenario plus rain rate of 1.25" per hour via sump and pump. Each pad feeds to the A regional wastewater tank, which in turn transfers to the wastewater treatment plant.

(b)(4) Any run-on at the Chem Waste storage area flows to the sump, transfers to the regional tank, and then the wastewater treatment plan. There is no precipitation run-on at the 1178 Building, as the building is enclosed.

(b)(5) At the Chem Waste area, any spilled or leaked waste and any accumulated precipitation flow toward the sump. From the sump, material is transferred to the regional tank, and then on to the wastewater treatment plant. This system allows sufficient capacity that overflow of the collection system is not an issue. 1178 Building is no longer in use and is pending NJDEP approval for demolition.

(c) Not applicable because containers stored at the Chem Waste Storage Pad may have free liquids. 1178 Building is no longer in use and is pending NJDEP approval for demolition.

(d) Not applicable. Chemours Chambers Works does not seek permission to store wastes bearing F020, F021, F022, F023, or F026 codes. Permission is sought for storage of small volume lab packs of on-site generated F027 waste (obsolete commercial chemical products meeting the F027 listing) and the containment provided at the Chem Waste Storage Pad conforms to the requirements of 40 CFR 264.175(b)(1-5) as noted above.

40 CFR 264.176 Special Requirements for Ignitable or Reactive Waste

The Chem Waste Storage Pad perimeter is greater than 2000 feet from the nearest point on the site's eastern fence line. The western edge of the 1178 building is approximately 500 feet from the site's western fence line.

40 CFR 264.177 Special Requirements for Incompatible Wastes

(a) There is no mixing of wastes in the same container at the Chem Waste Storage Pad. The 1178 Building is no longer in use and is pending NJDEP approval for demolition.

(b) It is the responsibility of the generator to assure that hazardous wastes are not placed in an unwashed container that previously held an incompatible waste or material.

(c) Aisle spacing between rows of pallets and the slope of the pad prevents spills or leaks from contacting adjacent material storage and causing reaction of incompatible materials.

40 CFR 264.178 Closure

Removal of drums at closure is addressed in the closure plan for the facility.

40 CFR 264.179 Air Emission Standards

The Chem Waste Storage Area manages all hazardous waste in waste containers in accordance with the applicable requirements of subparts AA, BB, and CC of this part. 1178 is no longer in use and is pending NJDEP approval for demolition.

40 CFR 264 Subpart AA--Air Emission Standards For Process Vents

Not applicable. The Chem Waste Storage Area has no closed vent systems, process vents or emission control devices. 1178 is no longer in use and is pending NJDEP approval for demolition.

40 CFR 264 Subpart BB--Air Emission Standards For Equipment Leaks

Not applicable. The Chem Waste Storage Area has no tanks, pumps, piping or other processing equipment.

Subpart CC – Air Emission Standards for Tanks, Surface Impoundments, and Containers

The demonstration in this section is required because the operations at the Chem Waste Storage Area are not exempted per 40 CFR 264.1080(b), (d)-(f). 1178 is no longer in use and is pending NJDEP approval for demolition.

40 CFR 264.1086 Standards: Containers

(b) Containers of a variety of sizes are handled at the Chem Waste area. All containers are Department of Transportation (DOT) certified for transport of hazardous materials, meeting the requirements of Container Level 1 and Container Level 2 controls. There are no stabilization processes that occur in the containers, and therefore, no Container Level 3 controls are required. 1178 is no longer in use and is pending NJDEP approval for demolition.

(c)(1) All containers requiring Level 1 controls meet the requirements of the DOT for transport of hazardous materials or meet Level 1 controls by remaining closed when in use (e.g., bung, lid, tarp, hatch as a clover or closure device).

(c)(2) The material of construction of the containers is selected in accordance with the requirements of the DOT for compatibility.

(c)(3) All containers are kept closed and sealed with the following exceptions:

- Material is being removed from the container
- Material in the container is being sampled
- Bulging drums are vented
- Other analysis of the material in the container is needed (e.g., depth of material measurement)

(c)(4) An inspection of the Chem Waste area is performed Monday through Friday, excluding holidays. All containers are checked for leaks and other damage, and opened lids and/or bungs. This inspection is intended to ensure, in part, that all containers are properly sealed and are in satisfactory condition. 1178 is no longer in use and is pending NJDEP approval for demolition.

(d)(1) Any containers requiring Level 2 controls (greater than 121.5 gallons in light liquid service) will meet the requirements of the DOT for transport of hazardous materials, or undergo a pressure/vacuum test every 12 months to determine it operates as vapor tight, or undergo leak detection monitoring using Method 27 to determine it is operating with no detectable emissions.

(d)(2) The rule requires that each drum is not opened until immediately before it is pumped out, and is closed immediately upon completion of the emptying tasks in order to minimize emissions of vapors. 1178 is no longer in use and is pending NJDEP approval for demolition.

In the case where discrete quantities or batches are removed from the container, but the container does not meet the definition of empty per 261.7(b), Chem Waste Area operators promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever comes first.

(d)(3) All containers are kept closed and sealed with the following exceptions:

- Material is being removed from the container
- Material in the container is being sampled
- Bulging drums are vented
- Other analysis of the material in the container is needed (e.g., depth of material measurement)

(d)(4) An inspection of the area is performed Monday through Friday, excluding holidays. All containers are checked for leaks and other damage, and opened lids and/or bungs. This inspection is intended to ensure, in part, that all containers are properly sealed and are in satisfactory condition.

(e) No containers requiring Level 3 controls are utilized.

(f) All DOT containers utilized at the facility meet the requirements of 49 CFR Part 178 for packaging.

(g) Chemours uses the services of an LDAR monitoring contractor to demonstrate compliance with the "no detectable organic emissions" requirement of 40 CFR 1086(d)(1)(ii) for Level 2 containers that are not DOT-compliant or otherwise operated to conform to the "no detectable organic emissions" requirements

(h) Method 27 testing is performed in accordance with the specifications in 40 CFR Part 60, Appendix A where Chemours seeks to demonstrate that Subpart CC containers are operating with no detectable emissions by way of pressure/vacuum testing every 12 months.

40 CFR 264.1087 Standards: Closed-Vent Systems and Control Devices

Not applicable to the Chem Waste area because there are no closed-vent systems or control devices associated with this storage operation. Not applicable to 1178 because it is no longer in use, and pending NJDEP approval for demolition.

40 CFR 264.1088 Inspection and Monitoring Requirements

Not applicable because the Chem Waste area operations do not include air pollution control equipment. Not applicable to 1178 because it is no longer in use, and pending NJDEP approval for demolition.

40 CFR 264.1089 Recordkeeping Requirements

(b) Not applicable because the storage operations do not include any tanks.

(c) Not applicable because the storage operations do not include any surface impoundments.

(d) Not applicable because no Container Level 3 controls are required.

(e) Not applicable because a closed vent and control system is not used in support of the storage operations.

(f) Not applicable because the storage operations are not exempted from the provisions of 40 CFR 264.1082(c).

(g) Not applicable because the storage operations do not have a cover, nor one that is designated as "unsafe to inspect and monitor".

(h) Not applicable because the storage operations are not subject to control device standards in 40 CFR Part 60, Subpart VV (Synthetic Organic Chemicals Manufacturing Industry) or 40 CFR Part 61 Subpart V (National Emission Standard for Equipment Leaks).

(i) Not applicable because no exemption is sought from the requirements to use air emission controls specified in 40 CFR 264.1084 through 264.1087 when managing wastes containing organic peroxide compounds.

(j) Not applicable because the storage operations conform to the air emission controls specified in 40 CFR 264.1086.

40 CFR 264.1090 Reporting Requirements

(a) Not applicable because exemption is not sought from the air emission control requirements specified in 40 CFR 264.1082(c).

(b) Not applicable because the storage operations do not involve any tankage.

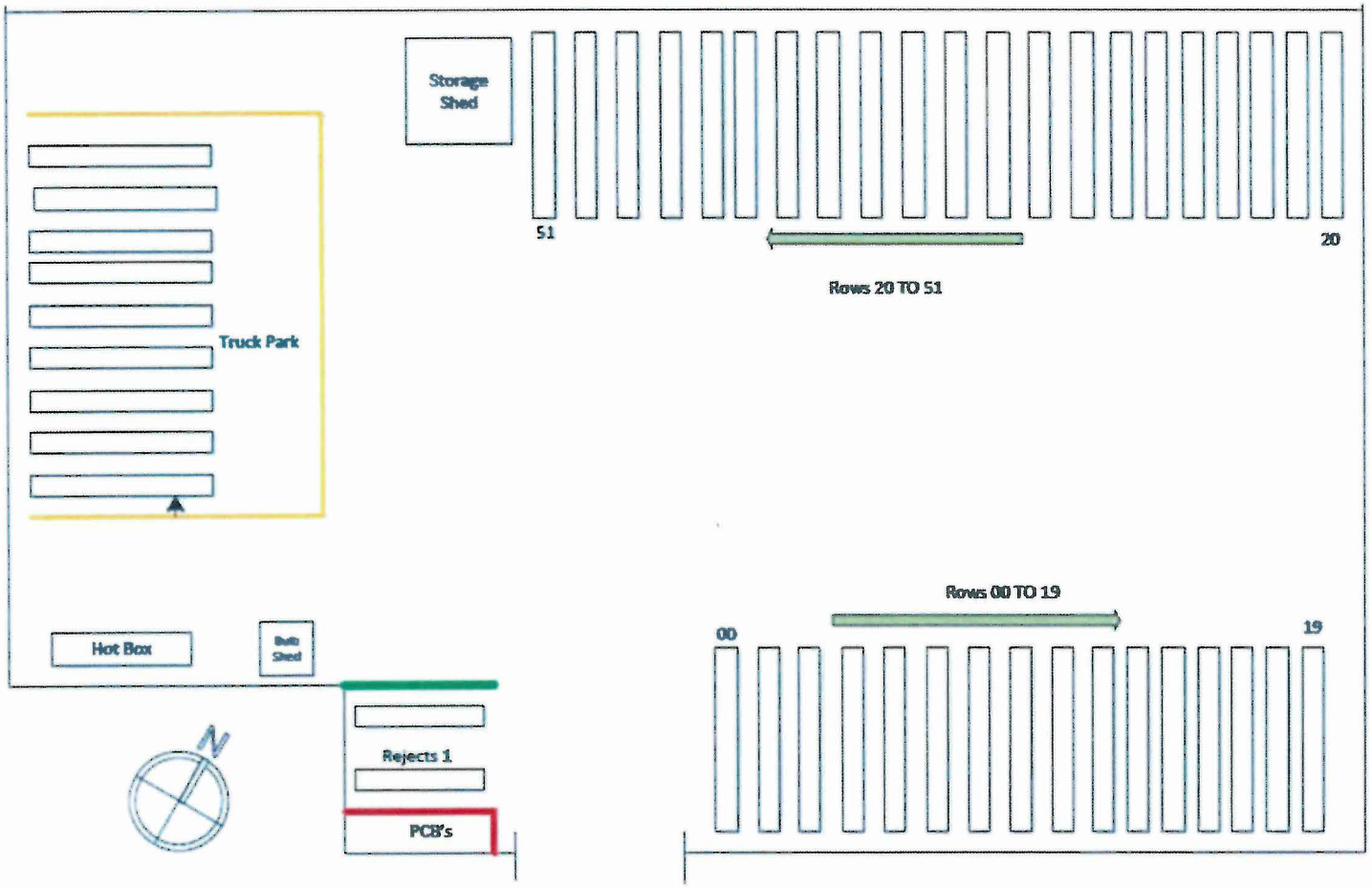
(c) Not applicable because the storage operations do not involve a closed-vent system and control device identified in 40 CFR 264.1035(c)(4) such as a thermal vapor incinerator, catalytic vapor incinerator, boiler or process heater, flare, condenser, or carbon adsorption system that regenerates that carbon bed directly onsite in the control device; or a flare as identified in 40 CFR 264.1033(d)

(d) Not applicable because the storage operations do not involve a closed-vent system and control device identified in 40 CFR 264.1035(c)(4) such as a thermal vapor incinerator, catalytic vapor incinerator, boiler or process heater, flare, condenser, or carbon adsorption system that regenerates that carbon bed directly onsite in the control device; or a flare as identified in 40 CFR 264.1033(d).

ATTACHMENT I-2

CHEM WASTE STORAGE PAD SKETCH
WASTE ARRANGEMENT

Chem Waste Pad A



N
Nonhazardous
Dewatering Pad
Pad B
Truck Spots
Pad A
90-Day
Storage Pad
Pad C
T-5 Spot
1304 Building
Chemours Chambers Works
Chem Waste Area

40 CFR 270 The Hazardous Waste Permit Program

40 CFR 270.14 – Contents of Part B: General Requirements

(b)(1) Containerized chemical and hazardous wastes generated on-site are accumulated at the Chem Waste Storage area pending shipment to off-site treatment, storage, and disposal facilities. 1178 is no longer in use and pending NJDEP approval for demolition.

(b)(2) The chemical and physical analyses illustrative of the types of hazardous wastes to be handled at Chem Waste are provided as Attachment 270-1. The on-site waste listing is current through April 2018.

(b)(3) The Waste Analysis Plan is provided in Section B – 40 CFR 264.13 Waste Analysis.

(b)(4) Security procedures are demonstrated in Section B – 40 CFR 264.14 Security.

(b)(5) The inspection schedule appears as Attachment B-2.

(b)(6) No waiver is sought from the preparedness and prevention requirements of 40 CFR 264 subpart C.

(b)(7) The contingency plan appears at Attachment D-1.

(b)(8)(i) Operators on site are required to maintain current training in forklift operation.

(b)(8)(ii) The Chem Waste Storage areas are concrete, sloped from the outside perimeter toward drainage trenching which conveys precipitation to a sump for transfer to the site wastewater treatment system. The Chem Waste Storage areas are surrounded by curbing. 1178 Building is enclosed (roof, wall, floor) precluding the possibility of runoff. 1178 Building is also no longer in use and pending NJDEP approval for demolition.

(b)(8)(iii) To prevent contamination of water supplies, waste storage operations are performed on the concrete floor surfaces of the Chem Waste Storage Pad. Except when sampling, removing waste, or making measurements, the area procedures require containers in the storage areas to be kept securely closed. 1178 is no longer in use, pending NJDEP approval for demolition.

(b)(8)(iv) The chemical waste storage operation uses forklifts for container movement.

(b)(8)(v) Area procedures specify protective clothing to be worn to prevent undue exposure to hazardous waste.

(b)(8)(vi) The practices and equipment described in the 40 CFR 264.59 and Subpart CC sections above prevent releases of hazardous waste and hazardous waste constituents to the atmosphere.

(b)(9) The practices and equipment described in the 40 CFR 264.17 section above describe the precautions to prevent accidental ignition or reaction of ignitable, reactive, or incompatible wastes.

(b)(10) A traffic study for the adjacent entrance to the Chambers Works facility is provided as Attachment 270-2. Typical weekday truck volume through the Broadway gate entrance is 150 trucks. On any given day, one to three trucks may arrive at the Chem Waste Storage area; the average is about 3.5 trucks per week.

(b)(11)(i) Chambers Works is located in Pennsville and Carneys Point Townships, Salem County, New Jersey. New Jersey is not listed in Appendix VI of 40 CFR Part 264.

(b)(11)(iii) The Chem Waste Storage Area and 1178 Building are both located within the 100-year flood plain as shown on FEMA Map #34033C0053C (Panel 53 of 355) and Map #34033C0034C (Panel 34 of 355), included here as Attachment 270-3.

(b)(11)(iv) The Chem Waste Storage Pad is located within the area delineated as a "Special Flood Hazard Area subject to inundation by the 1% annual chance flood", Zone AE where the base flood elevation has been determined to be 9 feet. It is outside of the area of moderate wave action. The Chem Waste Storage pad has a concrete curb topped with Jersey barriers around it and its concrete floor slopes to a central trench that drains to a sump with pumps to transfer drainage to the wastewater treatment plant. Steel I-beam barricades are ready to be put in place to prevent containers from floating out of the enclosure if extreme flooding is anticipated. 1178 Building is no longer in use. It is pending NJDEP approval for demolition.

(b)(12) Training is described in section 40 CFR 264.16 above.

(b)(13) The closure plan is provided as Attachment G-1.

(b)(14) Not applicable as neither the Chem Waste Storage area nor the 1178 Building are closed hazardous waste disposal units.

(b)(15) The most recent closure cost estimate appears in Attachment H-1.

(b)(16) Not applicable as post-closure care will not be required for the storage facilities.

(b)(17) Not applicable as Chemours Chambers Works uses the financial test provided in Attachment H-1. Chambers Works conforms to the "Financial test and corporate guarantee for closure."

(b)(18) Chemours Chambers Works uses the financial test provided in Attachment H-1. Chambers Works conforms to the federal "Financial test and corporate guarantee for closure." New Jersey-specific financial guarantee mechanisms are not currently used.

(b)(19) A topographic map is provided as Attachment 270-4. It includes map scale and date, surface waters, surrounding land uses, map orientation, and drainage patterns. Because of the size of the Chambers Works site, the flood plain information is provided on three sheets in Attachment 270-3. The access control is shown on map DWM2052000 as Attachment 270-5. The monitoring and withdrawal wells are shown on the "Groundwater Sampling Plan Map" provided as Attachment 270-6.

(b)(20) Will be provided upon request.

(b)(21) Not applicable as this application is for storage, not land disposal.

(b)(22) Not applicable as a pre-application meeting was not held.

40 CFR 270.15 – Specific Part B Information Requirements for Containers

(a)(1) Drum storage pad A is 315.75 ft long at its longest point by 67 ft wide. The depth varies from 3" to 15 ½" deep, and slopes toward a sump in the center of the pad. It is constructed of reinforced concrete. Area A has 580,500 gallon capacity for containers (approximately 9,900 drums).

(a)(2) Pad A slopes toward a sump in the center, which has curbing to contain the largest container volume spill plus 6" of rainfall (24 hour event). The sump and pump are manually operated to pump to the regional tank. The regional tank is then pumped to the wastewater treatment plant.

(a)(3) Pad B has parking spots for four trailers and miscellaneous portable containers. Pad C has 56,000 gallon capacity tote tanks or parked trailers. Both pads B & C are curbed and collect spills via concrete trenches to sumps with pump that are automated level controlled. The diversion systems are designed to collect and divert the largest container plus rainfall per the New Jersey regulations per N.J.A.C. 7:1E-2.6(c). These collection systems transfer spills and rain to the regional tank, which then feeds the wastewater treatment plant.

(a)(4) Any run-on flows to the sump, transferred to the regional tank, and then the wastewater treatment plan.

(a)(5) As specified in (a)(2) above, liquids do not accumulate on the pad.

(b) Not applicable because the storage areas may hold containers containing free liquids.

(c) Figure DW36924 shows the layout of the drum pad, including areas for storage of incompatible wastes, and is included as Attachment I-1. The sketch included as Attachment I-2 shows general waste locations.

(d) All waste containers that come to the Chem Waste Storage Pad have been previously packaged in their respective process areas. No mixing occurs at the Chem Waste Pad. Each waste stream is documented via the internal Waste Characterization Form process.

(e) Per 40 CFR 270.27(a)(2), the Chem Waste Storage Pad is subject to the requirements for 40 CFR 264 subpart CC. For the Chem Waste Storage pad, the provisions noted above for 40 CFR 264. 1087 are not applicable since there are no vent systems. At the Chem Waste Storage area, all containers are Department of Transportation (DOT) certified for transport of hazardous materials, meeting the requirements of Container Level 1 and Container Level 2 controls. There are no stabilization processes that occur in the containers, and therefore, no Container Level 3 controls are required. All containers requiring Level 1 controls meet the requirements of the DOT for transport of hazardous materials or meet Level 1 controls by remaining closed when in use (e.g., bung, lid, tarp, hatch as a clover or closure device). All containers are kept closed and sealed except when material is being removed from the container, material in the container is being sampled, bulging drums are vented or other analysis of the material in the container is needed (e.g., depth of material measurement). 1178 Building is no longer in use and is pending NJDEP approval for demolition.

40 CFR 270.27 – Specific Part B Information Requirements for Air Emission Controls for Tanks, Surface Impoundments, and Containers

(a)(1) Not applicable because there are no floating roof covers nor tanks at the Chem Waste Storage Pad or 1178 Building.

(a)(2) Per 40 CFR 270.27(a)(2), the Chem Waste Storage Pad is subject to the requirements for 40 CFR 264 subpart CC. For the Chem Waste Storage pad, the provisions noted above for 40 CFR 264.1087 are not applicable since there are no vent systems. At the Chem Waste Storage Pad, all containers are Department of Transportation (DOT) certified for transport of hazardous materials, meeting the requirements of Container Level 1 and Container Level 2 controls. Level 2 containers may also demonstrate operation with no detectable emissions through pressure/vacuum testing once every 12 months or LDAR monitoring of hatches and closures per CC required methods. There are no stabilization processes that occur in the containers, and therefore, no Container Level 3 controls are required. All containers requiring Level 1 controls meet the requirements of the DOT for transport of hazardous materials or meet Level 1 controls by remaining closed when in use (e.g., bung, lid, tarp, hatch as a clover or closure device). All containers are kept closed and sealed except when material is being removed from the container, material in the container is being sampled, bulging drums are vented or other analysis of the material in the container is needed (e.g., depth of material measurement). 1178 Building is no longer in use and is pending NJDEP approval for demolition.

(a)(3) Not applicable because there is no enclosure used to control air emissions from tanks or Level 3 containers per 40 CFR 264.1084(d)(5) or 40 CFR 264.1086.(e)(1), respectively.

(a)(4) Not applicable because neither the Chem Waste Storage Pad nor 1178 Building incorporate a surface impoundment.

(a)(5) Not applicable because neither the Chem Waste Storage Pad nor the 1178 Building include a closed vent system and control device per 40 CFR 264.1087.

(a)(6) Not applicable since there are no process systems or vents on Chem Waste Storage pad or 1178 Building.

(a)(7) Not applicable since Chem Waste is currently not accepting off-site waste. 1178 Building is no longer in use. It is pending NJDEP approval for demolition.

ATTACHMENT 270-2

TRAFFIC STUDY

SIGNAL WARRANT ANALYSIS

NJ Route 130 (Shell Road) @ Canal Road

Salem County, New Jersey

Prepared For:

DuPont Chamber Works
New Jersey

Prepared By:

JOHNSON, MIRMIRAN & THOMPSON

121 Continental Drive, Suite 109
Newark, Delaware-19702

July 2007

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Table of Contents

EXECUTIVE SUMMARY.....1

1. Introduction.....2

2. Intersection Characteristics.....2

3. Traffic Volume and LOS Analysis.....5

4. Collision Data and Analysis.....8

5. Intersection Delay Analysis.....9

6. Qualitative Assessment.....10

7. Signal Warrant Analysis.....12

8. Recommendation.....15

List of Figures

Figure 1: Study Location Map.....3

Figure 2: Condition Diagram.....4

Figure 3: Peak Hour Volume.....6

APPENDIX A: Intersection Photographs

APPENDIX B: Traffic Counts and LOS Analyses

APPENDIX C: Crash Analysis Diagram

APPENDIX D: Delay Study Worksheets

APPENDIX E: Signal Warrant Evaluation Sheets

Executive Summary

A Traffic Signal Warrant Study was conducted for the 'T' intersection of NJ Route 130 (Shell Road) and Canal Road located in Salem County, New Jersey. The results of this analysis and which warrants were or were not met are indicated below:

Warrant #1 – Eight Hour Vehicular Volume-This warrant is not met for Condition A, Condition B nor the combination of Condition A and B.
Warrant #2 – Four-Hour Vehicular Volume-This warrant is met.
Warrant #3 – Peak Hour-This warrant is not met for Condition A, but is met for Condition B.
Warrant #4 – Pedestrian Volume-This warrant is not met.
Warrant #5 – School Crossing-This warrant is not met.
Warrant #6 – Coordinated Signal System - This warrant is met.
Warrant #7 – Crash Experience-This warrant is not met.
Warrant #8 – Roadway Network-This warrant is not met.

Based on the results of the signal warrant analysis, field observations, and engineering judgment, the following is recommended:
The Canal Road and Route 130 intersection satisfied four-hour and peak-hour signal warrant. The intersection also satisfied six hours out of the eight hour warrant. Though during the off peak period traffic volumes are not significant on the Canal Road approach, longer vehicle queues and higher volumes were observed during the peak periods. Moreover, more than 1000 vehicles/hour were counted on Route 130 in seven out of the eight hours in combination with limited sight distance need a longer gap to turn onto Route 130. Currently, a police officer controls traffic between 4 PM and 5 PM to allow Canal Road traffic to safely turn onto Route 130. Without the presence of a police officer longer queues were observed to be formed at the Canal Road approach. We recommend an actuated signal at this intersection in order to improve safety and reduce delay.

1. Introduction

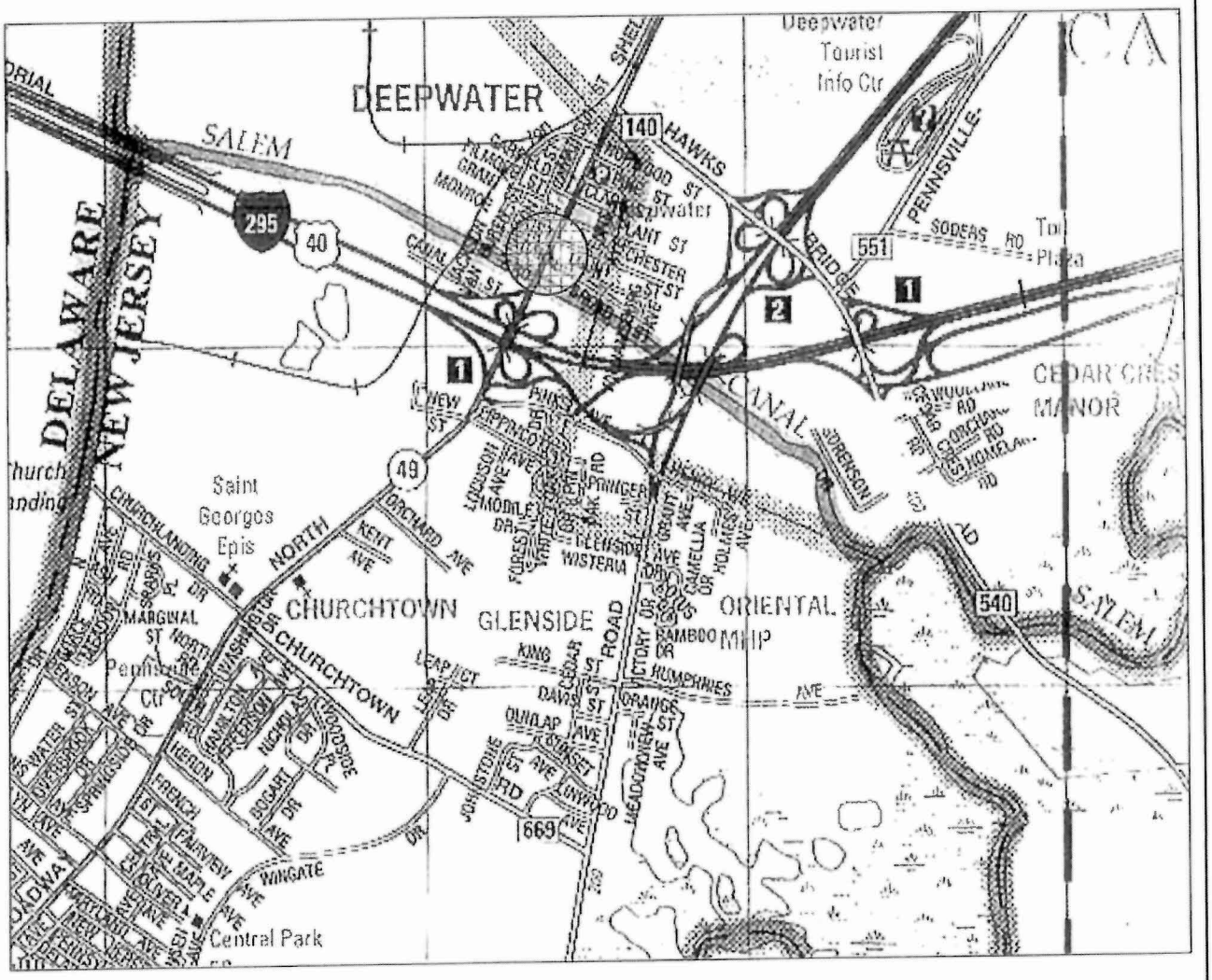
The DuPont Chamber Works requested Johnson Mirmiran & Thompson to perform a Traffic Signal Warrant Analysis at the intersection of NJ Route 130 (Shell Road) and Canal Road located in Salem County, New Jersey. The purpose of the analysis is to evaluate the necessity of installing a traffic signal at the intersection and determine if such a recommendation would benefit the motoring public.

The analysis methods used in completing this study are consistent with the Manual on Uniform Traffic Control Devices (MUTCD), New Jersey Department of Transportation (NJDOT) guidelines/ procedures, and engineering judgment. The remainder of this report documents existing conditions, vehicle counts, qualitative assessment, signal warrant analysis and recommendations.

2. Intersection Characteristics

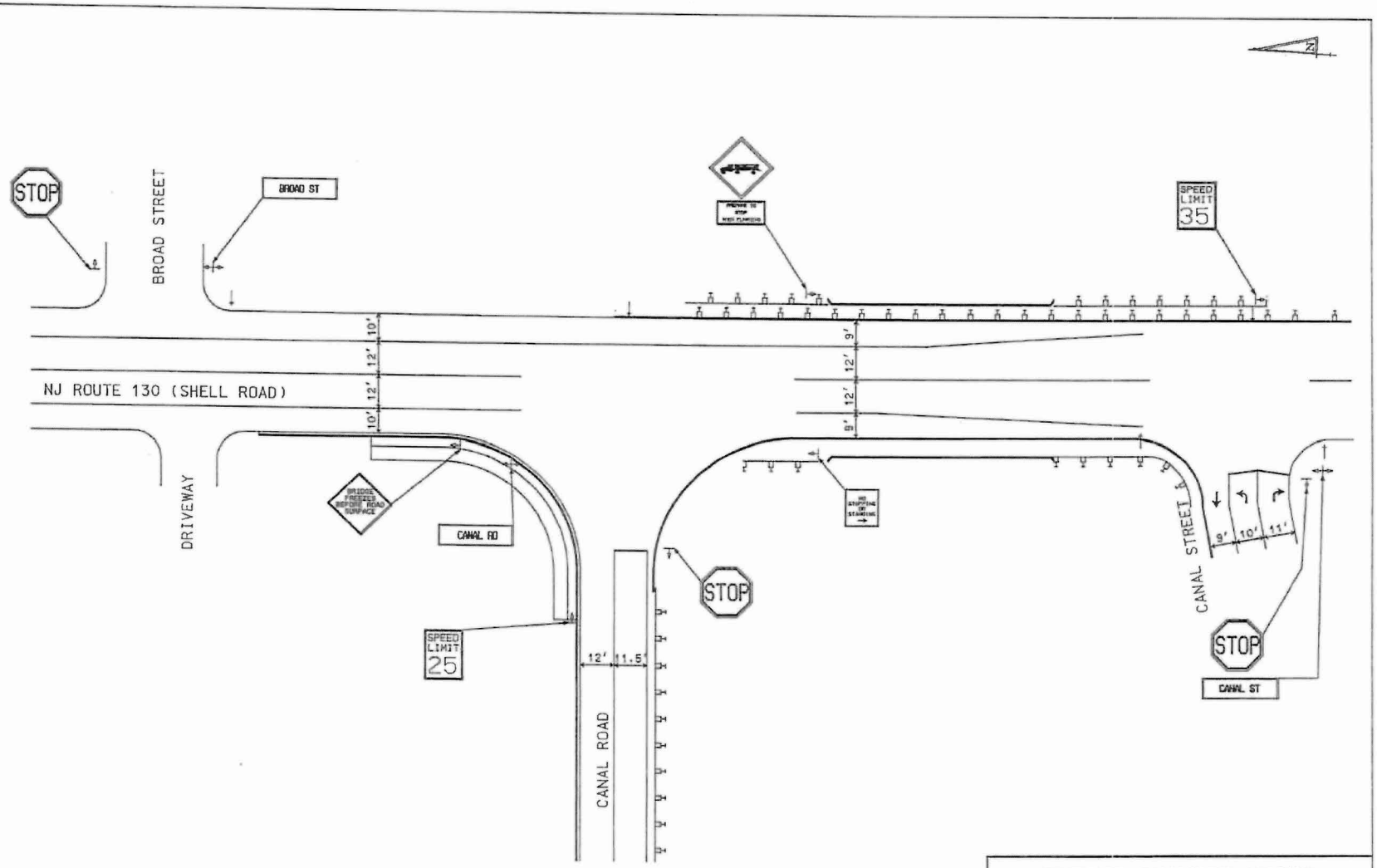
The T intersection of NJ Route 130 (Shell Road) and Canal Road is located in Salem County, New Jersey. The north/south roadway, Route 130, is a two-lane urban minor arterial, which includes two 12 foot travel lanes with a 10 foot shoulder on both sides of the roadway. No auxiliary turn lanes are in place at the intersection with the east/west roadway, Canal Road. The posted speed limit on Route 130 is 35 MPH. The distance to the nearest signals on Route 130 from Canal Road is approximately 2100 feet to the north at Hawks Bridge Road/Route 140 and approximately 1800 feet to the south of the intersection at Hook Road/Lippincott Avenue.

Canal Road is a two-lane local roadway which includes two 12 foot travel lanes with two feet shoulder on the south side of the roadway. Canal Road serves as an entrance to a residential neighborhood and continues to the entrance to DuPont Chamber works facility. There are no auxiliary turn lanes in place at the intersection with the Route 130. The posted speed limit on Canal Road is 25 miles per hour. There are no signalized intersections on Canal Road.



Study Location

Contract No: 24-044-01	NJ Route 130 (Shell Road) at Canal Road Study Location Map	Figure 1
July, 2007		



DUPONT CHAMBER WORKS		
SHELL ROAD (NJ ROUTE 130) @ CANAL ROAD CONDITION DIAGRAM		
SCALE 1" = 50'	FIGURE 2	DATE JULY, 2007

Sidewalk is provided at the northwest corner of the intersection, which extends seventy five feet beyond the intersection. Continuous sidewalk is also provided on the east side of Route 130 at the intersection. Lighting is provided along Route 130 near the vicinity of the intersection. The intersection has a straight and flat horizontal and vertical geometry. The roadway surfaces on all approaches appear to be in good condition. The pavement markings and signing on all legs of the intersection are in good condition.

A location map and the intersection condition diagram are provided on Figure 1 and Figure 2 on pages 3 and 4 respectively.

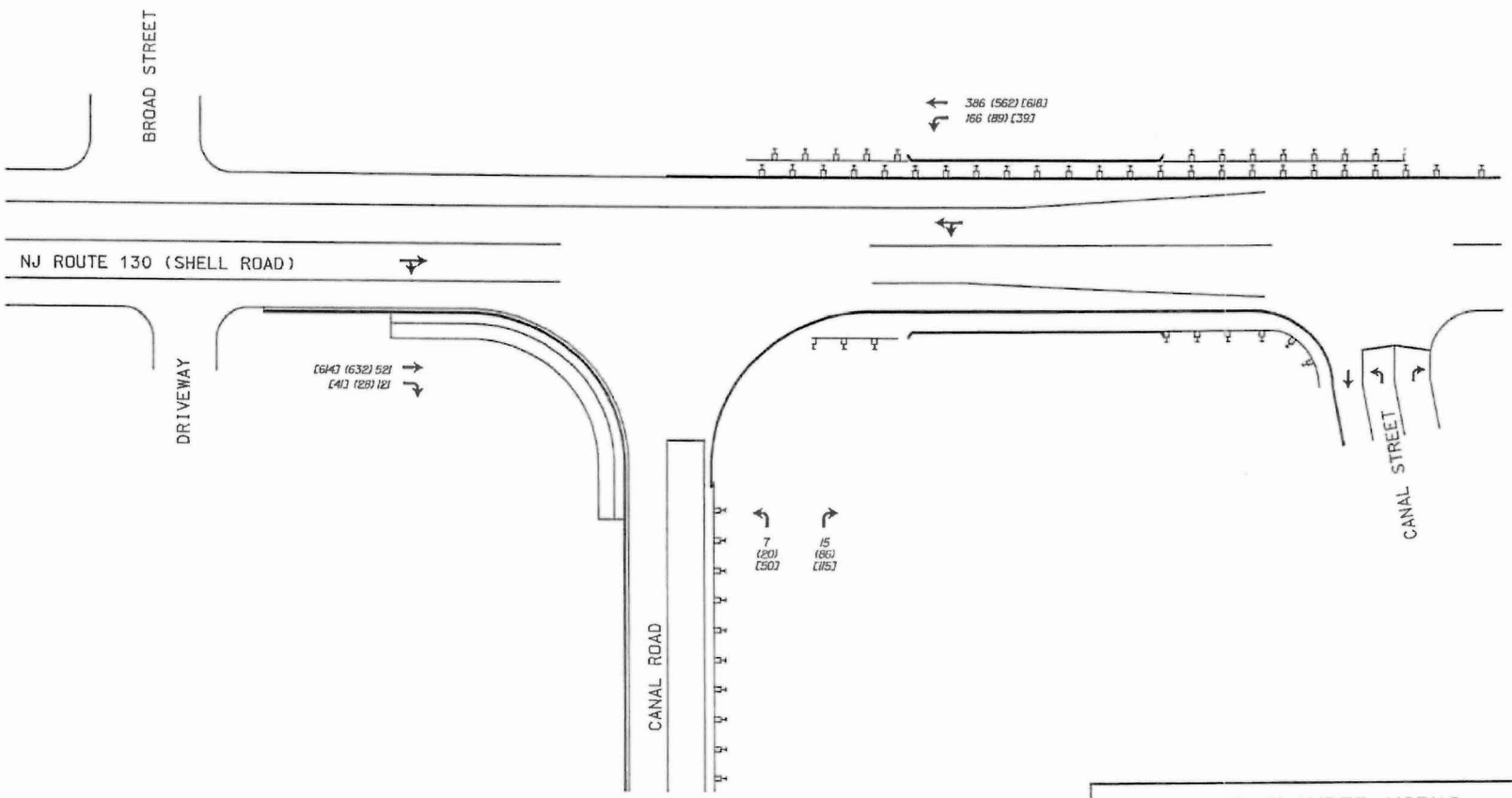
3. Traffic Volumes & LOS Analysis

Peak hour vehicle turning movement and pedestrian counts were performed at the intersection on a typical weekday. The turning movement counts were performed at this intersection from 6:00 AM to 9:00 AM, 11:00 AM to 1:00 PM and 3:00 PM to 6:00 PM. The count hours were set to capture the morning, afternoon and midday peak periods at the intersection. Based on the counts, the intersection peak hours for each time period were 7:15-8:15 in the AM peak hour, 11:45-12:45 in the midday peak hour and 5:00-6:00 in the PM peak hour. However, the stop controlled Canal Road approach has a separate peak hour due to the shift change in DuPont Chambers Works. The observed peak hour at Canal Road approach is 3:45 PM to 4:45 PM. The peak hours and the corresponding turning movement volumes are shown in the Figure 3.

There was little or no pedestrian activity observed crossing the NJ Route 130 at the study intersection, during the respective eight-hour count periods.

Daily Automatic Traffic Recorders (ATRs) were also installed at two locations on Canal Road from June 12 – June 14, 2007, which included one installation west of Jackson Road and another one east of Harrison Street. These classification counts collected vehicle volume and classifications at 15-minute intervals. Vehicles were classified according to the Federal Highway Administration (FHWA) 13-Category classification system.

AM PEAK HOUR: 7:15 - 8:15 AM
MID-DAY PEAK HOUR: 11:45 AM - 12:45 PM
PM PEAK HOUR: 5:00 - 6:00 PM



LEGEND:
AM (MID-DAY) [PM] PEAK

DUPONT CHAMBER WORKS		
SHELL ROAD (NJ ROUTE 130) @ CANAL ROAD PEAK HOUR VOLUMES		
SCALE 1" = 50'	FIGURE 3	DATE JULY, 2007

The vehicle classification data was analyzed by calculating the following items for each day at each location:

1. Vehicle Volume
2. Vehicle Classification Percentages.

This information was used to calculate Average Daily Traffic (ADT) and directional splits of traffic on Canal Road, truck percentages at the intersection and to supplement and verify the turning movement data.

Two types of capacity analyses were performed for the intersection. One method was a Critical Movement Summation (CMS) which measures the operational utilization of the intersection based on volume/capacity (v/c) ratio. Level of Service (LOS) calculations using this technique reveal that the intersection operates at LOS 'A' during the AM peak hour with a Critical Lane Volume (CLV) of 907, at LOS 'A' during the midday peak hour with a CLV of 937 and at LOS 'A' in the PM peak hour with a CLV of 905. In addition, the intersection is operating at LOS 'A' with a CLV of 845 during the Canal Road peak traffic. This analysis indicates that the intersection is operating within its operational capacity.

The other analysis method used is based on the *Highway Capacity Manual (HCM)* unsignalized intersection analysis by using the Highway Capacity Software (HCS). This method assigns LOS based on the calculated average vehicular delay. At the stop control approach of Canal Road, the LOS is D with an approach delay of 31.0 seconds/vehicle during the morning peak hour, the LOS is E with an approach delay of 42.3 seconds/vehicle during the midday peak hour and the LOS is F with an approach delay of 68.0 seconds/vehicle during the afternoon peak hour. During the Canal Road peak hour the approach LOS is F with associate delay of 126.0 seconds/vehicle. The summary of both analyses is included in the Appendix B.

The CLV method provides the operational utilization of the intersection, in other words whether an intersection has enough geometric capacity based on the critical volume that could pass through the intersection during peak hours. The HCS method is based on the average delay on the minor street

approach only. An intersection might have enough geometric capacity but could still operate with minor street LOS F due to the treatment of the minor street, which explains the discrepancy between the CLV and HCS analysis of the Canal Road intersection.

4. Collision Data and Analysis

A collision analysis was performed to determine if a traffic signal would correct the type of collisions occurring at the study intersection of Route 130 and Canal Road. Collision data was obtained from Pennsville Township for the period of January 1, 2006 to December 31, 2006. A review of the data revels the following:

ID #	Date	Type	Light Cond	Surface	Property Damage	Injury	Description/Reason
1	1/9/2006	Angle	Day	Dry	y	0	EB LT hit a NB Thru vehicle
2	1/14/2006	Hit Fixed Obj	Night	Wet	y	1	Unsafe speed-wet pavement
3	1/11/2006	Rear-End	Day	Dry	y	0	Driver innattention
4	4/17/2006	Rear-End	Day	Dry	y	0	Driver innattention
5	7/2/2006	Other	Day	Wet	y	0	Tree Branch fell on vehicle
6	8/8/2006	Rear-End	Day	Dry	y	0	Driver Inattention-Construction Zone
7	9/1/2006	Rear-End	Dusk	Wet	y	0	Veh stopped for animal in road

Seven (7) collisions were reported during this time period within the study limit. An inspection of the crash reports indicated that the collisions included four (4) rear end crashes, one angle crash and one hit-fixed-object crash, and one crash defined as "other," where a tree branch broke off and hit a vehicle. Three collisions are considered correctable by the installation of a traffic signal. The angle collision could be considered correctable since the collision was caused by a vehicle waiting on Canal Road to turn onto Route 130 and hitting a vehicle traveling on Route 130. The other crashes that may be correctable by a signal were the rear-end collisions. Both were the result of vehicles stopping unexpectedly and being hit by vehicles behind them. Installation of a signal would be more visible and give clear indication to approaching vehicles to stop.

There was one injury reported from these collisions, with the remaining six (6) being property

damage only (PDO) collisions. Five (5) of the crashes occurred during daylight hours and two (2) of them occurred during night or dusk conditions, although light conditions were not cited as a primary reason for either of the collisions. Four (4) of the crashes were on dry pavement, and the remaining three (3) occurred on wet pavement. Wet pavement conditions were cited as a contributing factor in the hit-fixed-object collision, as these conditions caused the vehicle to careen out of control and run off the roadway. It should be noted, however, that the vehicle was traveling at unsafe speeds, so the pavement conditions, while they were a contributing factor, were not the primary cause of the collision. A crash diagram is attached in Appendix C.

5. Intersection Delay Analysis

An intersection delay study was performed during the highest peak hour traffic volume on the minor street (Canal Road). The vehicle delay was measured in the field between 3:45PM to 4:45 PM during a typical weekday. Usually, there is an officer stationed at this intersection to control traffic. Through coordination with DuPont, the delay study was conducted on a day without an officer, so an accurate measure of delay could be obtained. Delay measured is the 'Time-in-Queue' delay, which is the total time from a vehicle joining an intersection queue to its discharge across the stop-line. The result of the delay study is summarized below:

Summary of Delay Study (06-27-2007)

NJ Route 130 (Shell Road) @ Canal Road – Eastbound Approach

Time Period	Max. Queue (Vehicles)	Avg. Delay (Seconds)	Approach Vol. (vph)	Total Delay (Veh-Seconds)	Total Delay (Veh-Hours)
3:45 – 4:45 PM	11	48.6	225	10,935	3.04

During this time period a total of 225 vehicles turned from eastbound Canal Road onto Route 130. Overall, the measured total delay was 3.04 vehicle-hours, with an average delay per approach vehicle of 48.6 seconds.

6. Qualitative Assessment

An engineer observed the intersection at Route 130 and Canal Road during the morning, midday and evening peak periods to assess existing operating conditions and to determine if installing a traffic signal would be potentially beneficial. The following conditions were observed:

The unsignalized intersection of Route 130 and Canal Road is controlled by a stop sign supplemented with a stop bar for Canal Road. The intersection is controlled manually between 4:00 PM to 5:00 PM by a police officer to let the driver turn safely onto Route 130 and subsequently reduce the delay on Canal Road.

Vehicles moving along Route 130 do not experience any operational or delay problems, with the exception occasional minor delays for left-turning vehicles on the northbound approach. Generally, however, vehicles on Route 130 were not observed to slow down as a result of Canal Road side street vehicles entering or crossing the intersection and they were observed to travel in platoon. Maximum queue lengths of 4 vehicles and 2 vehicles were observed on northbound Route 130 left-turn movement during the morning and evening peak periods, respectively. On many occasions at the Route 130 and Canal Road intersection, the northbound left turning vehicles were observed blocking the through movement due to inadequate gaps to turn left. Vehicles were also observed using the wide shoulder on Route 130 as a bypass lane. There were a significant number of large trucks observed in the Route 130 traffic stream, approximately 5% overall. Travel speeds along Route 130 were generally observed close to the 40 MPH, slightly higher than the 35 MPH posted speed limit. The Interstate I-295 interchange one is within a few hundred feet south of the Canal Road intersection. The northbound I-295 has only off ramp towards southbound Route 130/Route 49 but doesn't have any off ramp towards northbound Route 130 and do not directly influence the Canal Road intersection traffic pattern. The southbound I-295 has off ramps to both northbound and southbound Route 130. However, based on the field observation the impact of the ramp traffic on Canal Road intersection appears to be minimal.

There is a fire station located approximately 300 feet north of the Canal Road intersection along

Route 130. There are two flashing signals located on both directions of Route 130 to control the movement of emergency roadside vehicles. The northbound flashing signal is located at the Canal Road intersection and the southbound flashing signal is located north of the fire station. When a fire engine is entering or exiting the station the signal becomes red for easy access for the fire engine. At Canal Road intersection this operates as a de facto one directional signalized intersection.

Vehicles approaching Route 130 from Canal Road experienced delays and often had difficulty entering or crossing the intersection during morning and evening peak periods. A maximum queue length of 4 vehicles was observed during the morning and midday peak periods on eastbound Canal Road, and a queue length of 11 vehicles was observed during the evening peak periods. Adequate northbound and southbound gaps existed on Route 130 for vehicles entering or crossing during non-peak hours. On many occasions, right turning vehicles on Canal Road were observed using the shoulder as a de facto right turn lane.

There was very light to no pedestrian activity observed at the study intersection during the qualitative assessment. The pavement markings and signing on all legs of the intersection are in good condition. In addition, the existing distance between the stop bar and the edge of the Route 130 on the Canal Road approach is 42 feet, which lies beyond the limits recommended by AASHTO (14.4 to 17.8 feet). Finally, it was found that the existing stopping sight distance for the eastbound approach is not sufficient. Consideration should be given to improve the sight distance for vehicles approaching the Route 130 from Canal Road. In addition, since trucks are not allowed on Canal Road, consideration should also be given to reducing the large existing curb return radii. This would allow the stop bar to be placed closer to the intersection, eliminate the current de facto right-turn lane, reduce the crossing distance on Route 130, and eliminate safety concerns resulting from vehicles on Canal Road illegally trying to pass other vehicles in queue. This last safety issue is discussed in the collision analysis, where one crash that occurred within the last 12 months resulted specifically from one vehicle on Canal Road illegally attempting to pass another.

7. Signal Warrant Analysis

A signal warrant analysis was performed for the intersection of Route 130 (Shell Road) and Canal Road using the traffic volume data, collision data, and geometric conditions in accordance with the 2003 Manual on Uniform Traffic Control Devices (MUTCD).

Route 130 is considered the major street while Canal Road is considered the minor street. The 70% criterion was used for Warrants 1, 2 and 3 due to the location of the intersection, which is located in a community with a population of less than 10,000. In addition the traveling speed was observed to be around 40MPH on Route 130.

Since the minor street only has a single lane approach, both the left turning and the right turning movements were used in the analysis. Results from analysis of the eight warrants set forth in the MUTCD have been evaluated and the results are as follows:

Warrant #1 – Eight Hour Vehicular Volume

Condition A: Minimum Vehicular Volume:

Route 130 volumes meet the major street required volume of 350 vehicles/hour for all the eight hours. Canal Road volumes meet the minor street volume requirement of 105 vehicles/hour for only four hours. This condition is met for four hours and therefore the 8-hour volume criterion is not satisfied.

Condition B: Interruption of Continuous Traffic:

Route 130 volumes meet the major street required volume of 525 vehicles/hour for all the eight hours. Canal Road volumes meet the minor street required volume of 53 vehicles/hour for 6 hours. This condition is met for 6 hours and is not satisfied.

Combination of Conditions A and B:

Condition A (major street 280 vehicles/hour and minor street 84 vehicles/hour) is met for only 4 hours. Condition B (major street 420 vehicles/hour and minor street 42 vehicles/hour) is met for

only 6 hours. This condition, therefore, is met for only 4 hours and is not satisfied.

This warrant <u>is not met</u> for Condition A, Condition B, or the combination of Conditions A and B.

Warrant #2 – Four-Hour Vehicular Volume

The four highest hourly volumes from the eight-hour count were plotted using Figure 4C-2 in the 2003 MUTCD. All the four hours fell above the minimum curve line. For this warrant to be met, four of the plotted points must be on or above the minimum curve line. Therefore this warrant is satisfied.

This warrant <u>is met</u>.

Warrant #3 – Peak Hour

Condition A – Peak Hour Delay. The following three conditions must exist for the same hour for this condition to be met. The first condition is stopped delay. The measured delay on Canal Road during the peak hour (3:45 PM – 4:45 PM) was 3.04 vehicle-hours with an average delay per vehicle of 48.6 seconds. This delay is less than the required 4.0 vehicle-hours. The second criterion is a minor street approach volume over 100 vph. The peak approach volume is 225 vehicles during 3:45 PM to 4:45 PM from Canal Road, so the second condition is met. The third condition is that the intersection has a volume of over 650 vehicles for the corresponding peak hour. A total of 1350 vehicles approached the intersection during that hour. In order for this condition to be met, all three conditions must be met. Only two of the three conditions are met, therefore Condition A is not satisfied.

Condition B – Volumes. The highest volume hour was plotted using Figure 4C-4. Five highest volume hours fell above the minimum curve line. One of the plotted points is required to fall on or above the line for this condition to be met.

This warrant <u>is met</u> for Condition B

Warrant #4 – Pedestrian Volume

This warrant requires 190 pedestrians to cross in one hour or 100 pedestrians to cross per hour for a four-hour period. Only 2 pedestrians were observed crossing Route 130 during the eight-hour count period, therefore this warrant is not satisfied.

This warrant is not met.

Warrant #5 – School Crossing

The study location is not at a designated school crossing.

This warrant is not met.

Warrant #6 – Coordinated Signal System

The nearest signalized intersections on the north and south side of Canal Road intersection is within 2000 feet. The signalized intersections, north at Route 140 and south at Hook Road/ Lippincott Avenue, are operating as stand alone intersections. They are not part of any coordination system. By adding a signal at Canal Road it would be possible to improve vehicle platooning. For this warrant to be met on a two-way road the proposed and the adjacent traffic control signal need to collectively provide a progressive progression. Adding a signal at Canal Road intersection would improve traffic progression.

This warrant is met.

Warrant #7 – Crash Experience

There were only three crashes considered correctable by a traffic signal during the last 12-month reporting period. Five correctable crashes in a 12 –month reporting period is required for this warrant, therefore this warrant is not satisfied.

This warrant is not met.

Warrant #8 – Roadway Network

NJ Route 130 does have the characteristics of a major through highway, but Canal Road does not have characteristics of a major route.

This warrant is not met.

Signal warrant 2, 3A and 6 are satisfied at this location. Summary of the warrant analysis are provided in Appendix E.

8. Recommendations

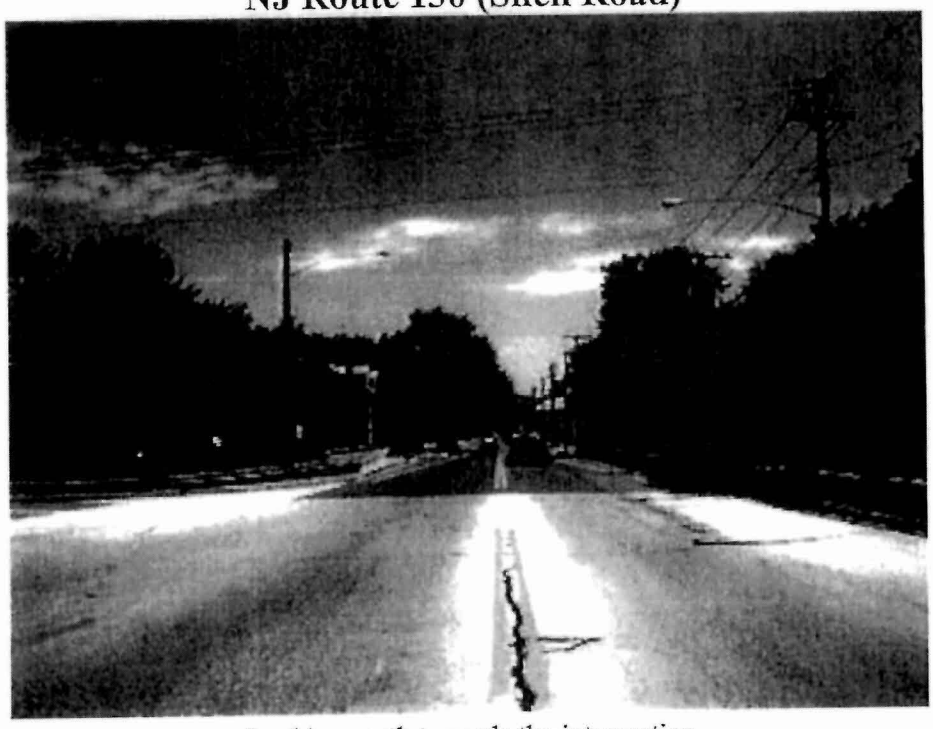
Based on the results of the signal warrant analysis, field observations, and engineering judgment, the following is recommended:

The Canal Road and Route 130 intersection satisfied four-hour and peak-hour signal warrant. The intersection also satisfied six hours out of the eight hour warrant. Though during the off peak period traffic volumes are not significant on the Canal Road approach, longer vehicle queues and higher volumes were observed during the peak periods. Moreover, more than 1000 vehicles/hour were counted on Route 130 in seven out of the eight hours in combination with limited sight distance need a longer gap to turn onto Route 130. Currently, a police officer controls traffic between 4 PM and 5 PM to allow Canal Road traffic to safely turn onto Route 130. Without the presence of the police officer longer queues were observed to be formed at the Canal Road approach. We recommend an actuated signal at this intersection in order to improve safety and reduce delay.

APPENDIX A

INTERSECTION PHOTOGRAPHS

NJ Route 130 (Shell Road)



Looking north towards the intersection

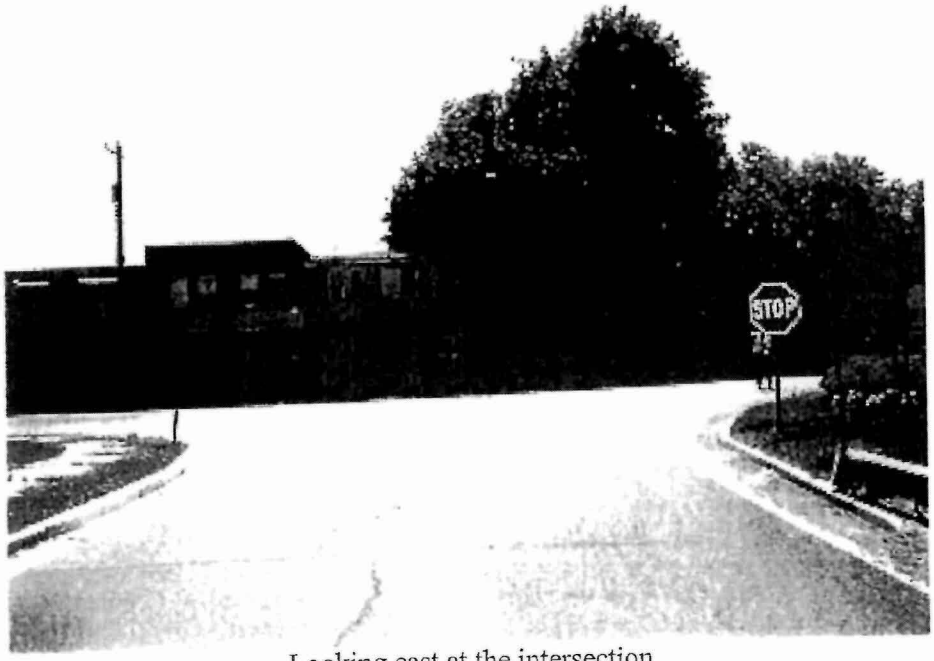
Looking north at the intersection

Looking south towards the intersection

Looking south at intersection

Canal Road

Looking east towards the intersection



Looking east at the intersection

APPENDIX B

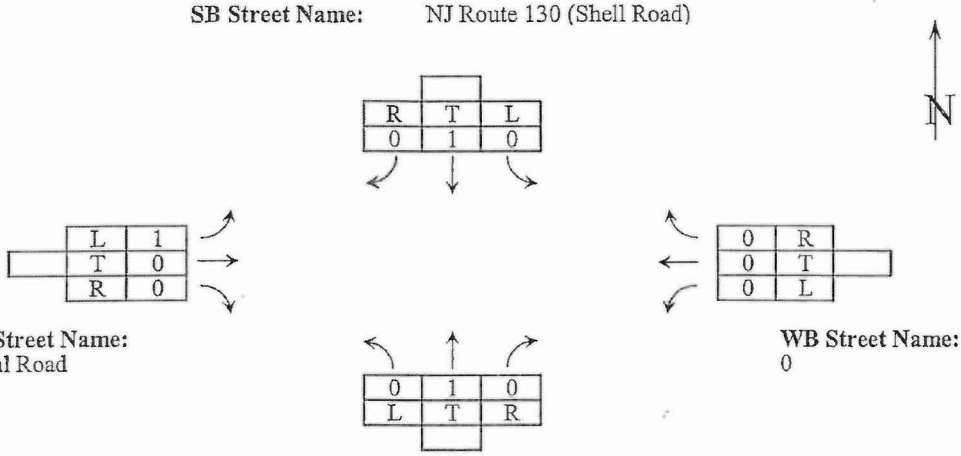
TRAFFIC COUNTS AND LOS ANALYSES

8-HOUR SUMMARY OF VEHICLE MOVEMENTS

Location:	NJ Route 130 (Shell Road) @ Canal Road	**Section:**	0
North/ South Street:	NJ Route 130 (Shell Road)	**M.P.**	0.160
East/ West Street:	Canal Road	**City:**	Deepwater
Observer(s):	NK & GY	**County:**	Salem
Weather:		**Date:**	June 13, 2007
Road Condition:	Good		

Remarks: _____

SB Street Name: NJ Route 130 (Shell Road)



EB Street Name:
Canal Road

WB Street Name:
0

NB Street Name: NJ Route 130 (Shell Road)

Time	Northbound					Southbound					Total	Eastbound					Westbound					Total
Begin/End	L	T	R	U	Total	L	T	R	U	Total	N/S	L	T	R	U	Total	L	T	R	U	Total	E/W
6-7	102	241	0	0	343	0	326	89	0	415	758	36	0	43	0	79						79
7-8	208	350	0	0	558	0	489	148	0	637	1195	5	0	11	0	16						16
8-9	52	433	0	0	485	0	497	28	0	525	1010	7	0	12	0	19						19
11-12	51	485	0	0	536	0	581	25	0	606	1142	35	0	86	0	121						121
12-1	81	576	0	0	657	0	625	25	0	650	1307	17	0	56	0	73						73
3-4	17	543	0	0	560	0	527	11	0	538	1098	46	0	101	0	147						147
4-5	5	542	0	0	547	0	570	8	0	578	1125	100	0	125	0	225						225
5-6	39	618	0	0	657	0	614	41	0	655	1312	50	0	115	0	165						165
	555	3788	0	0	4343	0	4229	375	0	4604	8947	296	0	549	0	845						845

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121 Continental Drive, Suite 109
Newark, DE 19702

File Name : 6-9 AM_Peak-adj
Site Code : 00000027
Start Date : 6/13/2007
Page No : 1

Groups Printed- Unshifted - Bank 2

	NJ Route 130 Northbound			NJ Route 130 Southbound			Canal Road Eastbound			
Start Time	Left	Thru	Truck	Thru	Right	Truck	Left	Right	Truck	Int. Total
06:00 AM	15	60	0	49	12	0	16	16	0	168
06:15 AM	17	49	0	78	25	0	13	16	0	198
06:30 AM	33	64	0	117	20	0	5	9	0	248
06:45 AM	37	68	0	82	32	0	2	2	0	223
Total	102	241	0	326	89	0	36	43	0	837
07:00 AM	59	70	0	84	38	0	0	1	0	252
07:15 AM	48	85	0	131	50	0	1	2	0	317
07:30 AM	52	91	0	140	30	0	4	4	0	321
07:45 AM	40	104	0	134	24	0	0	4	0	306
Total	199	350	0	489	142	0	5	11	0	1196
08:00 AM	14	106	0	116	10	0	2	5	0	253
08:15 AM	17	104	0	115	11	0	2	1	0	250
08:30 AM	14	108	0	134	3	0	0	4	0	263
08:45 AM	4	115	0	132	3	0	3	2	0	259
Total	49	433	0	497	27	0	7	12	0	1025
Grand Total	350	1024	0	1312	258	0	48	66	0	3058
Apprch %	25.5	74.5	0	83.6	16.4	0	42.1	57.9	0	
Total %	11.4	33.5	0	42.9	8.4	0	1.6	2.2	0	
Unshifted	350	931	0	1228	258	0	48	66	0	2881
% Unshifted	100	90.9	0	93.6	100	0	100	100	0	94.2
Bank 2	0	93	0	84	0	0	0	0	0	177
% Bank 2	0	9.1	0	6.4	0	0	0	0	0	5.8

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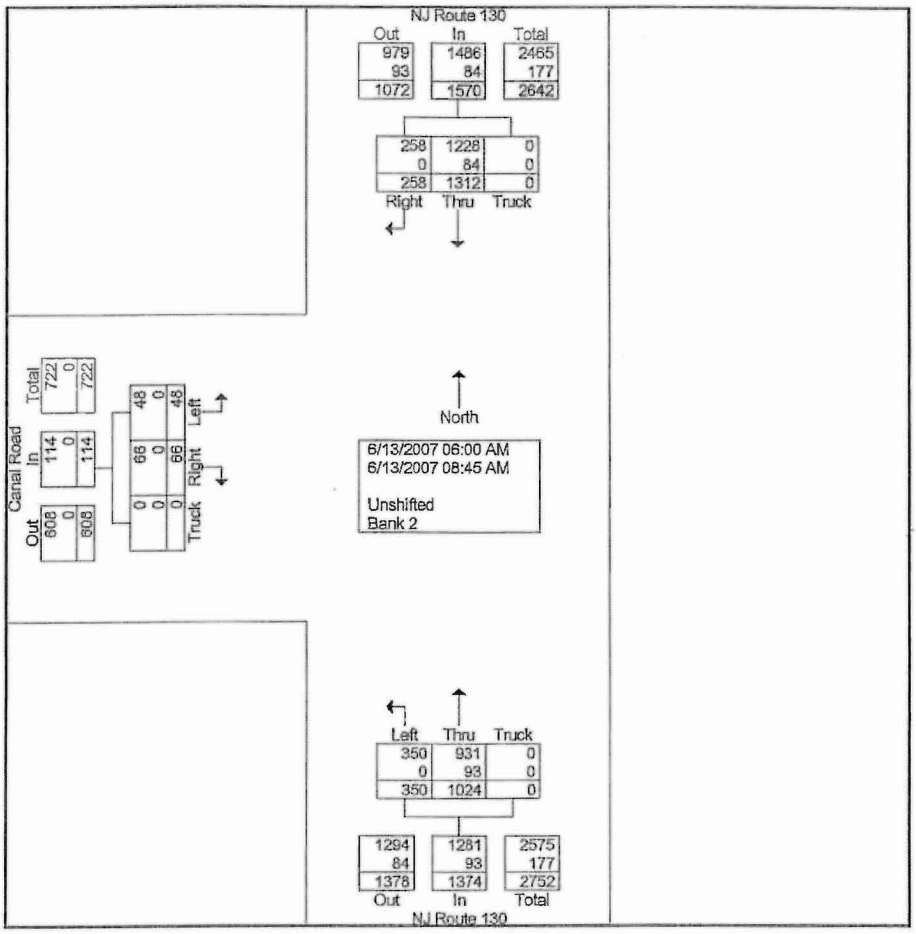
File Name : 6-9 AM_Peak-adj
Site Code : 00000027
Start Date : 6/13/2007
Page No : 2



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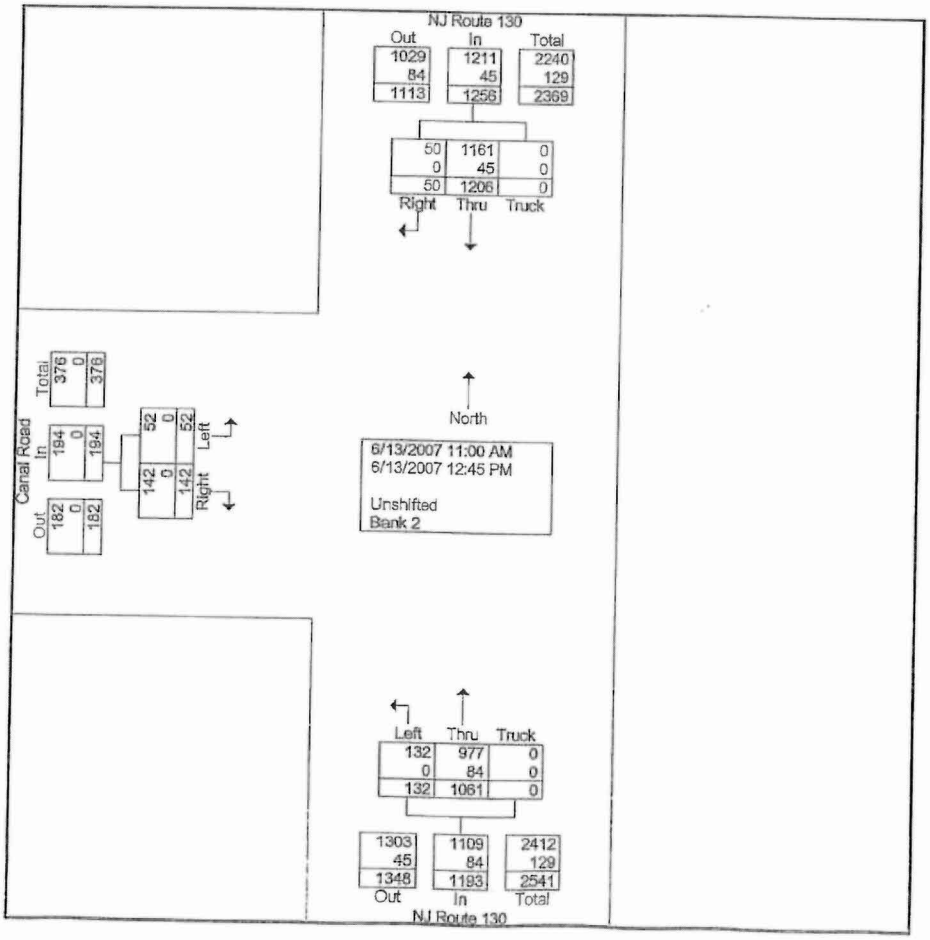
File Name : 11-1 Midday-adj
Site Code : 00000027
Start Date : 6/13/2007
Page No : 1

Groups Printed- Unshifted - Bank 2

	NJ Route 130 Northbound			NJ Route 130 Southbound			Canal Road Eastbound		
Start Time	Left	Thru	Truck	Thru	Right	Truck	Left	Right	Int. Total
11:00 AM	6	111	0	140	3	0	6	11	277
11:15 AM	11	125	0	122	8	0	8	16	290
11:30 AM	11	114	0	153	8	0	12	25	323
11:45 AM	23	135	0	166	6	0	9	34	373
Total	51	485	0	581	25	0	35	86	1263
12:00 PM	23	158	0	149	7	0	4	29	370
12:15 PM	27	119	0	155	3	0	4	12	320
12:30 PM	16	150	0	162	12	0	2	8	350
12:45 PM	15	149	0	159	3	0	7	7	340
Total	81	576	0	625	25	0	17	56	1380
Grand Total	132	1061	0	1206	50	0	52	142	2643
Apprch %	11.1	88.9	0	96	4	0	26.8	73.2	
Total %	5	40.1	0	45.6	1.9	0	2	5.4	
Unshifted	132	977	0	1161	50	0	52	142	2514
% Unshifted	100	92.1	0	96.3	100	0	100	100	95.1
Bank 2	0	84	0	45	0	0	0	0	129
% Bank 2	0	7.9	0	3.7	0	0	0	0	4.9



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File Name : 3_6 PM_Peak-adj
Site Code : 00001234
Start Date : 6/12/2007
Page No : 1

Groups Printed- Unshifted - Bank 2

	NJ Route 130 Northbound				NJ Route 130 Southbound				Canal Road Eastbound			
Start Time	Left	Through	Truck	App. Total	Through	Right	Truck	App. Total	Left	Right	App. Total	Int. Total
03:00 PM	2	127	0	129	111	3	0	114	8	20	28	271
03:15 PM	5	147	0	152	144	2	0	146	4	10	14	312
03:30 PM	5	130	0	135	125	3	0	128	12	33	45	308
03:45 PM	5	139	0	144	147	3	0	150	22	38	60	354
Total	17	543	0	560	527	11	0	538	46	101	147	1245
04:00 PM	2	147	0	149	131	3	0	134	37	32	69	352
04:15 PM	1	135 558	0	136	157 571	0 9	0	157	29	37	66	359
04:30 PM	1 9	131	0	132	136	3	0	139	20 100	30 137	50	321
04:45 PM	1	129	0	130	146	2	0	148	14	26	40	318
Total	5	542	0	547	570	8	0	578	100	125	225	1350
05:00 PM	8	146	0	154	178	11	0	189	16	33	49	392
05:15 PM	9	166	0	175	159	10	0	169	13	34	47	391
05:30 PM	15	163	0	178	129	13	0	142	9	22	31	351
05:45 PM	7	143	0	150	148	7	0	155	12	26	38	343
Total	39	618	0	657	614	41	0	655	50	115	165	1477
Grand Total	61	1703	0	1764	1711	60	0	1771	196	341	537	4072
Apprch %	3.5	96.5	0		96.6	3.4	0		36.5	63.5		
Total %	1.5	41.8	0	43.3	42	1.5	0	43.5	4.8	8.4	13.2	
Unshifted	61	1633	0	1694	1661	60	0	1721	196	341	537	3952
% Unshifted	100	95.9	0	96	97.1	100	0	97.2	100	100	100	97.1
Bank 2	0	70	0	70	50	0	0	50	0	0	0	120
% Bank 2	0	4.1	0	4	2.9	0	0	2.8	0	0	0	2.9

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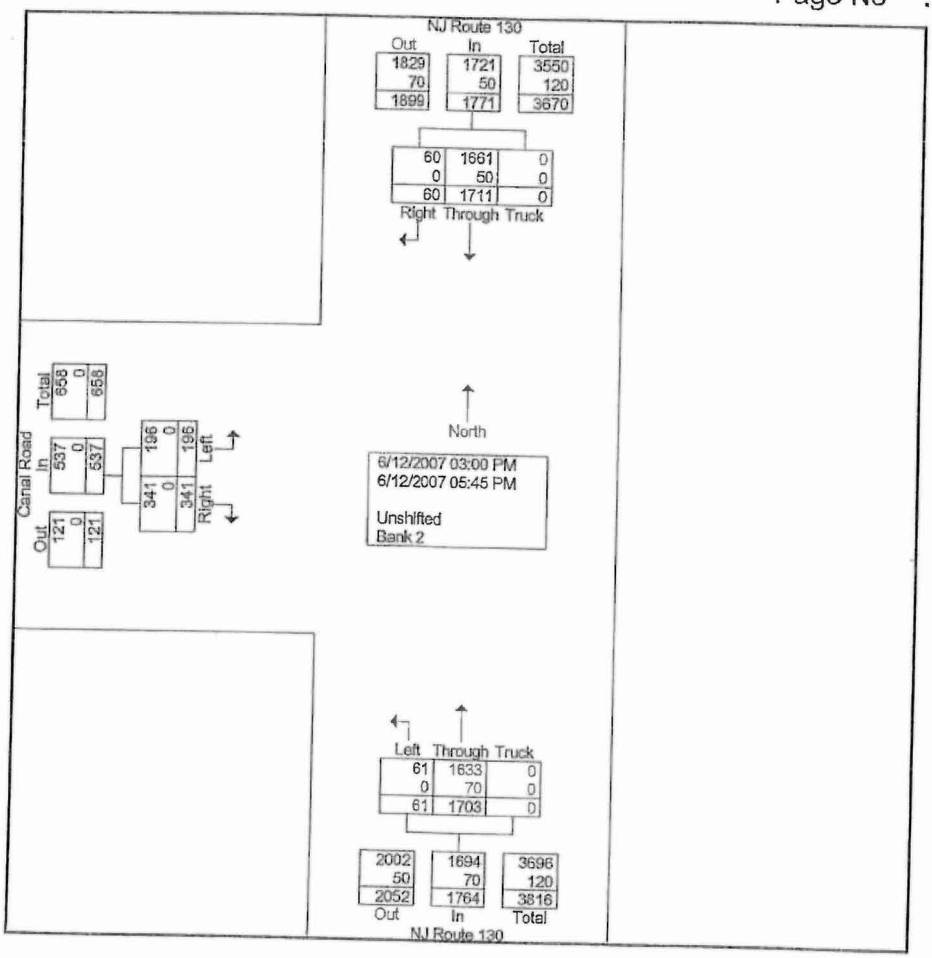
File Name : 3_6 PM_Peak-adj
Site Code : 00001234
Start Date : 6/12/2007
Page No : 2



Canal Road Average 24-Hour Count							
Location	Average Daily Traffic (ADT)	Eastbound			Westbound		
		ADT	Peak Hour		ADT	Peak Hour	
			AM	PM		AM	PM
West of NJ Route 130 Intersection	2381	1172	113	247	1209	307	82
			6:00 - 7:00 AM	3:15 - 4:15 PM		6:45 - 7:45 AM	5:00 - 6:00 PM
East of Dupont Entrance	2676	1465	79	256	1211	316	77
			6:00 - 7:00 AM	3:15 - 4:15 PM		6:30 - 7:30 AM	5:00 - 6:00 PM

Peak Hour is based on the data obtained from the 3 day count.

TWO-WAY STOP CONTROL SUMMARY

General Information

alyst	DPS
ncy/Co.	JMT
Date Performed	6/18/2007
Analysis Time Period	AM Peak Hour

Site Information

Intersection	NJ Route 130 & Canal Street
Jurisdiction	Pennsville Twp - Salem County
Analysis Year	Existing 2007

Project Description

East/West Street: Canal Street	North/South Street: NJ Route 130
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	166	386			521	121
Peak-Hour Factor, PHF	0.74	0.91	1.00	0.77	0.93	0.57
Hourly Flow Rate, HFR (veh/h)	15	0	20	0	0	0
Percent Heavy Vehicles	6	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
me (veh/h)	7		15			
eak-Hour Factor, PHF	0.44	0.92	0.75	1.00	0.86	0.79
Hourly Flow Rate, HFR (veh/h)	0	560	212	224	424	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	224						35	
C (m) (veh/h)	825						173	
v/c	0.27						0.20	
95% queue length	1.10						0.73	
Control Delay (s/veh)	11.0						31.0	
LOS	B						D	
oach Delay (s/veh)	--	--					31.0	
Approach LOS	--	--					D	

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	DPS
cy/Co.	JMT
Date Performed	6/18/2007
Analysis Time Period	Midday Peak Hour

Site Information

Intersection	NJ Route 130 & Canal Street
Jurisdiction	Pennsville Twp - Salem County
Analysis Year	2007 Existing

Project Description

East/West Street: *Canal Street* | North/South Street: *NJ Route 130*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	89	562			632	28
Peak-Hour Factor, PHF	0.82	0.89	1.00	0.77	0.95	0.58
Hourly Flow Rate, HFR (veh/h)	40	0	148	0	0	0
Percent Heavy Vehicles	8	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
ue (veh/h)	20		86			
Peak-Hour Factor, PHF	0.50	0.92	0.58	1.00	0.86	0.79
Hourly Flow Rate, HFR (veh/h)	0	665	48	108	631	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	108						188	
C (m) (veh/h)	860						275	
v/c	0.13						0.68	
95% queue length	0.43						4.57	
Control Delay (s/veh)	9.8						42.3	
LOS	A						E	
ach Delay (s/veh)	--	--				42.3		
Approach LOS	--	--				E		

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TWO-WAY STOP CONTROL SUMMARY

General Information

alyst	DPS
ncy/Co.	JMT
ate Performed	6/18/2007
Analysis Time Period	PM Peak Hour

Site Information

Intersection	NJ Route 130 & Canal Street
Jurisdiction	Pennsville Twp - Salem County
Analysis Year	Existing 2007

Project Description

East/West Street: *Canal Street*

North/South Street: *NJ Route 130*

Intersection Orientation: *North-South*

Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	39	618			614	41
Peak-Hour Factor, PHF	0.65	0.93	1.00	0.77	0.86	0.79
Hourly Flow Rate, HFR (veh/h)	64	0	135	0	0	0
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
me (veh/h)	50		115			
eak-Hour Factor, PHF	0.77	0.92	0.85	1.00	0.86	0.79
Hourly Flow Rate, HFR veh/h)	0	713	51	60	664	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
(veh/h)	60						199	
(m) (veh/h)	849						237	
/c	0.07						0.84	
5% queue length	0.23						6.58	
Control Delay (s/veh)	9.6						68.0	
OS	A						F	
ach Delay (s/veh)	--	--				68.0		
pproach LOS	--	--				F		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	MAW
ncy/Co.	JMT
Performed	6/18/2007
Analysis Time Period	3:45 PM - 4:45 PM

Site Information

Intersection	NJ Route 130 & Canal Street
Jurisdiction	Pennsville Twp - Salem County
Analysis Year	Existing 2007

Project Description

East/West Street: *Canal Street* | North/South Street: *NJ Route 130*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	9	552			571	9
Peak-Hour Factor, PHF	0.45	0.94	1.00	0.77	0.91	0.75
Hourly Flow Rate, HFR (veh/h)	147	0	152	0	0	0
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
e (veh/h)	108		137			
Peak-Hour Factor, PHF	0.73	0.92	0.90	1.00	0.86	0.79
Hourly Flow Rate, HFR (veh/h)	0	627	12	20	587	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
(veh/h)	20						299	
(m) (veh/h)	945						271	
/c	0.02						1.10	
95% queue length	0.06						12.48	
Control Delay (s/veh)	8.9						126.0	
LOS	A						F	
ach Delay (s/veh)	--	--				126.0		
pproach LOS	--	--				F		

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CRITICAL MOVEMENT SUMMARY

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future

121 Continental Dr, Suite 109, Newark DE 19713 Tel: (302) 266-9600 Fax: 302-2669080

Intersection of: NJ Route 130 N/S
and: Canal Road E/W

Conditions: 2007 AM/PM Peak Hours

Comments:

Analysis Date: 6/20/2007

Count Date: 6/12/2206 (MM/DD/YYYY)

Analyst: DPS

Filename: Q:\NDB\70256_DuPontSignalAnalysis\Working Data\Dept\Traffic\Capacity Analysis\[CMS An

NJ Route 130

SHARED LEFT TURN ADJ (SB)

LEFT VOL.	ADJ. FAC.	ADJ. VOL.	SHRD VOL.	TOT. VOL.
0	2	0	642	642
0	3	0	655	655

Canal Road

	A.M.	P.M.
L	0	0
T	521	614
R	121	41
RT CK=	-649	-705

RTL

SHARED LEFT TURN ADJ (WB)

LEFT VOL.	ADJ. FAC.	ADJ. VOL.	SHRD VOL.	TOT. VOL.

Canal Road

AM Peak Hour

	A.M.	P.M.
L	7	50
T	0	0
R	15	115
RT CK=	-189	-209

RTL

PM Peak Hour

	A.M.	P.M.
L	0	0
T	0	0
R	0	0
RT CK=	-166	-39

LTR

SHARED LEFT TURN ADJ (EB)

LEFT VOL.	ADJ. FAC.	ADJ. VOL.	SHRD VOL.	TOT. VOL.
7	1.1	7.7	15	22.7
50	1.1	55	115	170

	A.M.	P.M.
L	166	39
T	386	618
R	0	0
RT CK=	-891	-785

SHARED LEFT TURN ADJ (NB)

LEFT VOL.	ADJ. FAC.	ADJ. VOL.	SHRD VOL.	TOT. VOL.
166	3	498	386	884
39	3	117	618	735

NJ Route 130

NOTE:
* - FFR = FREE FLOWING RIGHTS

CRITICAL LANE ANALYSIS CALCULATIONS

MORNING PEAK HOUR

MVMT	VOLUME	LANE CORR.	LANE VOL.		OPP VOL.	LANE CORR.	LANE VOL.	CLV	
NB	884	1.00	884		0	1.00	0	884	*
SB	642	1.00	642		166	1.00	166	808	
EB	23	1.00	23		0	0.00	0	23	*
WB	0	0.00	0		7	1.00	7	7	

CLV = 907

LOS = A

V/C RATIO = 0.57

	NB	SB	EB	WB	
RT TN CK=	0 +	0 +	0 +	0 =	0
ADJ. CLV=	0	0	0	0	

EVENING PEAK HOUR

MVMT	VOLUME	LANE CORR.	LANE VOL.		OPP VOL.	LANE CORR.	LANE VOL.	CLV	
NB	735	1.00	735		0	1.00	0	735	*
SB	655	1.00	655		39	1.00	39	694	
EB	170	1.00	170		0	0.00	0	170	*
WB	0	0.00	0		50	1.00	50	50	

CLV= 905

LOS = A

V/C RATIO = 0.57

	NB	SB	EB	WB	
RT TN CK=	0 +	0 +	0 +	0 =	0
ADJ. CLV=	0	0	0	0	

LEVEL-OF-SERVICE

A	< 1000
B	1001-1150
C	1151-1300
D	1301-1450
E	1451-1600
F	>1600

LANE USE FACTOR

LANES	THRU	LEFTS
1	1.00	1.00
2	0.55	0.55
3	0.40	0.40
4	0.30	0.30

SHARED LEFT TURN ADJ.

OPP T+R	FACTOR
<199	1.10
200-599	2.00
600-799	3.00
800-999	4.00
>999	5.00

CRITICAL MOVEMENT SUMMARY

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future

121 Continental Dr, Suite 109, Newark DE 19713 Tel: (302) 266-9600 Fax: 302-2669080

Intersection of: NJ Route 130 N/S
and: Canal Road E/W

Conditions: 2007 Midday Peak Hour

Comments:

Analysis Date: 6/20/2007

Count Date: 6/12/2206 (MM/DD/YYYY)

Analyst: DPS

Filename: C:\NDB070258_DuPontSignal\Analysis\Working Data\Dep0\Traffic\Capacity Analysis\CMS Ant

NJ Route 130

SHARED LEFT TURN ADJ (SB)

LEFT VOL.	ADJ. FAC.	ADJ. VOL.	SHRD VOL.	TOT. VOL.
0	1.1	0	0	0
0	2	0	660	660

Canal Road

	A.M.	Midday
L	0	0
T	0	632
R	0	28
RT CK=	0	-680

RTL

SHARED LEFT TURN ADJ (WB)

LEFT VOL.	ADJ. FAC.	ADJ. VOL.	SHRD VOL.	TOT. VOL.

Canal Road

AM Peak Hour

	A.M.	Midday
L	0	20
T	0	0
R	0	86
RT CK=	0	-197

RTL

PM Peak Hour

	A.M.	Midday
L	0	0
T	0	0
R	0	0
RT CK=	0	-89

LTR

SHARED LEFT TURN ADJ (EB)

LEFT VOL.	ADJ. FAC.	ADJ. VOL.	SHRD VOL.	TOT. VOL.
0	1.1	0	0	0
20	1.1	22	86	108

	A.M.	Midday
L	0	89
T	0	562
R	0	0
RT CK=	0	-849

SHARED LEFT TURN ADJ (NB)

LEFT VOL.	ADJ. FAC.	ADJ. VOL.	SHRD VOL.	TOT. VOL.
0	1.1	0	0	0
89	3	267	562	829

NJ Route 130

NOTE:
* - FFR = FREE FLOWING RIGHTS

CRITICAL LANE ANALYSIS CALCULATIONS
MORNING PEAK HOUR

MVMT	VOLUME	LANE CORR.	LANE VOL.		OPP VOL.	LANE CORR.	LANE VOL.	CLV	
NB	0	1.00	0		0	1.00	0	0	*
SB	0	1.00	0		0	1.00	0	0	*
EB	0	1.00	0		0	0.00	0	0	*
WB	0	0.00	0		0	1.00	0	0	*

CLV = 0

LOS = A

V/C RATIO = 0.00

	NB	SB	EB	WB	
RT TN CK=	0 +	0 +	0 +	0 =	0
ADJ. CLV=	0	0	0	0	

MIDDAY PEAK HOUR

MVMT	VOLUME	LANE CORR.	LANE VOL.		OPP VOL.	LANE CORR.	LANE VOL.	CLV	
NB	829	1.00	829		0	1.00	0	829	*
SB	660	1.00	660		89	1.00	89	749	
EB	108	1.00	108		0	0.00	0	108	*
WB	0	0.00	0		20	1.00	20	20	

CLV= 937

LOS = A

V/C RATIO = 0.59

	NB	SB	EB	WB	
RT TN CK=	0 +	0 +	0 +	0 =	0
ADJ. CLV=	0	0	0	0	

LEVEL-OF-SERVICE

A	< 1000
B	1001-1150
C	1151-1300
D	1301-1450
E	1451-1600
F	>1600

LANE USE FACTOR

LANES	THRU	LEFTS
1	1.00	1.00
2	0.55	0.55
3	0.40	0.40
4	0.30	0.30

SHARED LEFT TURN ADJ.

OPP T+R	FACTOR
<199	1.10
200-599	2.00
600-799	3.00
800-999	4.00
>999	5.00

CRITICAL MOVEMENT SUMMARY

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future

121 Continental Dr, Suite 109, Newark DE 19713 Tel: (302) 266-9600 Fax: 302-2669080

Intersection of: NJ Route 130 N/S
and: Canal Road E/W

Conditions: 2007 Canal Road Peak Hour

Comments: 3:45 PM - 4:45 PM

Analysis Date: 6/20/2007

Count Date: 6/12/2206 (MM/DD/YYYY)

Analyst: DPS

Filename:

NJ Route 130

SHARED LEFT TURN ADJ (SB)

LEFT VOL.	ADJ. FAC.	ADJ. VOL.	SHRD VOL.	TOT. VOL.
0	1.1	0	0	0
0	2	0	580	580

Canal Road

	A.M.	Midday
L	0	0
T	0	571
R	0	9
RT CK=	0	-688

RTL

SHARED LEFT TURN ADJ (WB)

LEFT VOL.	ADJ. FAC.	ADJ. VOL.	SHRD VOL.	TOT. VOL.

Canal Road

	A.M.	Midday
L	0	0
T	0	0
R	0	0
RT CK=	0	-9

AM Peak Hour

	A.M.	Midday
L	0	108
T	0	0
R	0	137
RT CK=	0	-265

RTL

PM Peak Hour

LTR

SHARED LEFT TURN ADJ (EB)

LEFT VOL.	ADJ. FAC.	ADJ. VOL.	SHRD VOL.	TOT. VOL.
0	1.1	0	0	0
108	1.1	118.8	137	256

	A.M.	Midday
L	0	9
T	0	552
R	0	0
RT CK=	0	-578

SHARED LEFT TURN ADJ (NB)

LEFT VOL.	ADJ. FAC.	ADJ. VOL.	SHRD VOL.	TOT. VOL.
0	1.1	0	0	0
9	2	18	552	570

NJ Route 130

NOTE:
* - FFR = FREE FLOWING RIGHTS

CRITICAL LANE ANALYSIS CALCULATIONS
MORNING PEAK HOUR

MVMT	VOLUME	LANE CORR.	LANE VOL.		OPP VOL.	LANE CORR.	LANE VOL.	CLV	
NB	0	1.00	0		0	1.00	0	0	*
SB	0	1.00	0		0	1.00	0	0	*
EB	0	1.00	0		0	0.00	0	0	*
WB	0	0.00	0		0	1.00	0	0	*

CLV = 0

LOS = A

V/C RATIO = 0.00

	NB	SB	EB	WB	
RT TN CK=	0 +	0 +	0 +	0 =	0
ADJ. CLV=	0	0	0	0	

EVENING PEAK HOUR

MVMT	VOLUME	LANE CORR.	LANE VOL.		OPP VOL.	LANE CORR.	LANE VOL.	CLV	
NB	570	1.00	570		0	1.00	0	570	
SB	580	1.00	580		9	1.00	9	589	*
EB	256	1.00	256		0	0.00	0	256	*
WB	0	0.00	0		108	1.00	108	108	

CLV= 845

LOS = A

V/C RATIO = 0.53

	NB	SB	EB	WB	
RT TN CK=	0 +	0 +	0 +	0 =	0
ADJ. CLV=	0	0	0	0	

LEVEL-OF-SERVICE

A	< 1000
B	1001-1150
C	1151-1300
D	1301-1450
E	1451-1600
F	>1600

LANE USE FACTOR

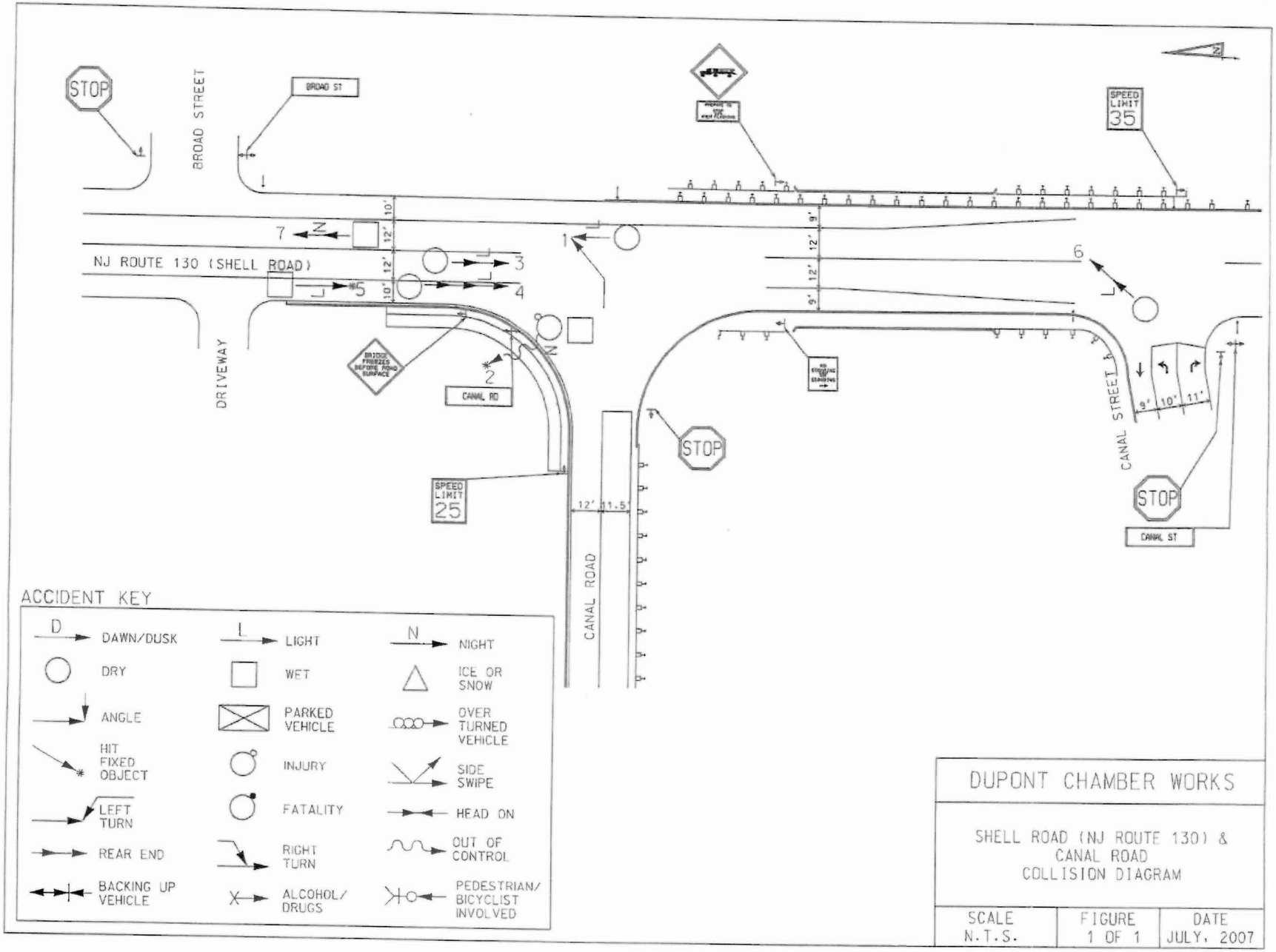
LANES	THRU	LEFTS
1	1.00	1.00
2	0.55	0.55
3	0.40	0.40
4	0.30	0.30

SHARED LEFT TURN ADJ.

OPP T+R	FACTOR
<199	1.10
200-599	2.00
600-799	3.00
800-999	4.00
>999	5.00

APPENDIX C

CRASH ANALYSIS DIAGRAM



DUPONT CHAMBER WORKS

SHELL ROAD (NJ ROUTE 130) & CANAL ROAD COLLISION DIAGRAM

SCALE	FIGURE	DATE
N.T.S.	1 OF 1	JULY, 2007

APPENDIX D

DELAY STUDY WORKSHEETS

JMT

TRAFFIC INVENTORY SECTION
INTERSECTION DELAY STUDY - FIELD SHEET

LOCATION: Canal Road / Route 130 APPROACH: EB Canal Road

DATE: 6/27/07 WEATHER: clear, dry START TIME: 4:00 PM

JOB NUMBER: _____ OBSERVERS: _____

LOCATION CHARATERISTICS:

NUMBER OF LANES: 1 TURNING LANES: _____ (L/R) TRANSIT STOP: _____ (Y/W)

NUMBER OF PEDESTRIANS: _____ (TOTAL FOR STUDY TIME) PARKING: _____ TRAFFIC CONTROL DEVICES: R1-1 (SS, TS, ETC.)

TYPE OF DELAY (FIXED /OPERATIONAL): _____

LIST SPECIFIC DELAY: Max^m Queue, 11 vehicle

TIME MINUTE STARTING	TOTAL NUMBER OF VEHICLES STOPPED IN APPROACH AT TIME / CLEARED VEHICLES				APPROACH VOLUME	
	+0 SEC	+15 SEC	+30 SEC	+45 SEC	NUMBER STOPPED	NUMBER NOT STOPPED
4:00 - 4:01	2	3	2	3		
4:01 - 4:02	3	4	6	2		
4:02 - 4:03	0	0	2	2		
4:03 - 4:04	4	5	3	1		
4:04 - 4:05	0	1	2	2		
4:05 - 4:06	0	1	1	2		
4:06 - 4:07	6	5	8	5		
4:07 - 4:08	6	5	6	9		
4:08 - 4:09	8	7	8	10		
4:09 - 4:10	5	4	3	3		
4:10 - 4:11	4	4	5	5		
4:11 - 4:12	6	5	8	9		
4:12 - 4:13	10	10	5	5		
4:13 - 4:14	4	6	9	6		
4:14 - 4:15	10	11	9	11		
SUBTOTAL	68	71	77	75	(B)	
TOTAL	(A) 291				(C)	

TOTAL DELAY = TOTAL NUMBER STOPPED X SAMPLING INTERVAL
=(A) 291 X 15 = 4,365 VEH - SEC = 1.21 VEH - HRS

AVERAGE DELAY PER STOPPED VEHICLE = TOTAL DELAY / NUMBER OF STOPPED VEHICLES
= _____ (B) = _____ SEC

AVERAGE DELAY PER APPROACH VEHICLES= TOTAL DELAY / APPROACH VOLUME
= 10,935 (C) 225 = 48.6 SEC

PERCENT OF VEHICLES STOPPED = NUMBER OF STOPPED VEHICLES / APPROACH VOLUME = (B) _____ (C) = _____ PERCENT

Total PM peak delay
1.21
1.14
0.29
0.45
3.04 veh. hrs

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JMT

TRAFFIC INVENTORY SECTION
INTERSECTION DELAY STUDY - FIELD SHEET

LOCATION: Canal Road / Route 130 APPROACH: _____

DATE: _____ WEATHER: _____ START TIME: _____

JOB NUMBER: _____ OBSERVERS: _____

LOCATION CHARATERISTICS:

NUMBER OF LANES: _____ TURNING LANES: _____ (L/R) TRANSIT STOP: _____ (Y/W)

NUMBER OF PEDESTRIANS: _____ (TOTAL FOR STUDY TIME) PARKING: _____ TRAFFIC CONTROL DEVICES: R1-1 (SS, TS, ETC.)

TYPE OF DELAY (FIXED /OPERATIONAL): _____

LIST SPECIFIC DELAY: Max^m queue, 11 vehicle

TIME MINUTE STARTING	TOTAL NUMBER OF VEHICLES STOPPED IN APPROACH AT TIME / CLEARED VEHICLES				APPROACH VOLUME	
	+0 SEC	+15 SEC	+30 SEC	+45 SEC	NUMBER STOPPED	NUMBER NOT STOPPED
4:15 - 4:16	9	8	9	8		
4:16 - 4:17	7	8	11	9		
4:17 - 4:18	4	4	3	4		
4:18 - 4:19	4	5	10	9		
4:19 - 4:20	5	6	6	5		
4:20 - 4:21	3	1	4	4		
4:21 - 4:22	3	3	5	9		
4:22 - 4:23	11	10	7	7		
4:23 - 4:24	8	9	8	7		
4:24 - 4:25	6	6	3	1		
4:25 - 4:26	2	2	0	0		
4:26 - 4:27	1	0	0	1		
4:27 - 4:28	1	0	1	1		
4:28 - 4:29	0	0	0	0		
4:29 - 4:30	1	4	6	4		
SUBTOTAL	65	66	73	69	(B)	
TOTAL	(A) 273				(C)	

TOTAL DELAY = TOTAL NUMBER STOPPED X SAMPLING INTERVAL
=(A) 273 X 15 = 4095 VEH - SEC = 1.14 VEH - HRS

AVERAGE DELAY PER STOPPED VEHICLE = TOTAL DELAY / NUMBER OF STOPPED VEHICLES
= _____ (B) = _____ SEC

AVERAGE DELAY PER APPROACH VEHICLES = TOTAL DELAY / APPROACH VOLUME
= _____ (C) = _____ SEC

PERCENT OF VEHICLES STOPPED = NUMBER OF STOPPED VEHICLES / APPROACH VOLUME = (B) _____ (C) = _____ PERCENT

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JMT

TRAFFIC INVENTORY SECTION
INTERSECTION DELAY STUDY - FIELD SHEET

LOCATION: Canal Road / Route 130 APPROACH: _____

DATE: _____ WEATHER: _____ START TIME: _____

JOB NUMBER: _____ OBSERVERS: _____

LOCATION CHARATERISTICS:

NUMBER OF LANES: _____ TURNING LANES: _____ (L/R) TRANSIT STOP: _____ (Y/W)

NUMBER OF PEDESTRIANS: _____ (TOTAL FOR STUDY TIME) PARKING: _____ TRAFFIC CONTROL DEVICES: R1-1 (SS, TS, ETC.)

TYPE OF DELAY (FIXED /OPERATIONAL): _____

LIST SPECIFIC DELAY: _____

TIME MINUTE STARTING	TOTAL NUMBER OF VEHICLES STOPPED IN APPROACH AT TIME / CLEARED VEHICLES				APPROACH VOLUME	
	+0 SEC	+15 SEC	+30 SEC	+45 SEC	NUMBER STOPPED	NUMBER NOT STOPPED
4:30 - 4:31	1	0	1	0		
4:31 - 4:32	0	0	2	0		
4:32 - 4:33	1	0	3	1		
4:33 - 4:34	0	1	0	0		
4:34 - 4:35	0	0	1	2		
4:35 - 4:36	1	0	0	4		
4:36 - 4:37	2	1	1	2		
4:37 - 4:38	1	1	2	2		
4:38 - 4:39	0	2	3	3		
4:39 - 4:40	2	1	2	1		
4:40 - 4:41	3	2	1	3		
4:41 - 4:42	0	2	0	0		
4:42 - 4:43	1	0	0	1		
4:43 - 4:44	2	3	4	3		
4:44 - 4:45	1	0	0	0		
SUBTOTAL	15	13	20	22	(B)	
TOTAL	(A) 70				(C)	

TOTAL DELAY = TOTAL NUMBER STOPPED X SAMPLING INTERVAL
=(A) 70 X 15 = 1050 VEH - SEC = 0.29 VEH - HRS

AVERAGE DELAY PER STOPPED VEHICLE = TOTAL DELAY / NUMBER OF STOPPED VEHICLES
= _____ / (B) = _____ SEC

AVERAGE DELAY PER APPROACH VEHICLES= TOTAL DELAY / APPROACH VOLUME
= _____ / (C) = _____ SEC

PERCENT OF VEHICLES STOPPED = NUMBER OF STOPPED VEHICLES / APPROACH VOLUME = (B) / (C) = _____ PERCENT

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JMT

TRAFFIC INVENTORY SECTION
INTERSECTION DELAY STUDY - FIELD SHEET

LOCATION: Canal Road/ Route 130 APPROACH: _____

DATE: _____ WEATHER: _____ START TIME: _____

JOB NUMBER: _____ OBSERVERS: _____

LOCATION CHARATERISTICS:

NUMBER OF LANES: _____ TURNING LANES: _____ (L/R) TRANSIT STOP: _____ (Y/W)

NUMBER OF PEDESTRIANS: _____ (TOTAL FOR STUDY TIME) PARKING: _____ TRAFFIC CONTROL DEVICES: R1-1 (SS, TS, ETC.)

TYPE OF DELAY (FIXED /OPERATIONAL): _____

LIST SPECIFIC DELAY: _____

TIME MINUTE STARTING	TOTAL NUMBER OF VEHICLES STOPPED IN APPROACH AT TIME / CLEARED VEHICLES				APPROACH VOLUME	
	+0 SEC	+15 SEC	+30 SEC	+45 SEC	NUMBER STOPPED	NUMBER NOT STOPPED
4:45 - 4:46	1	0	0	3		
4:46 - 4:47	1	0	0	0		
4:47 - 4:48	0	0	1	4		
4:48 - 4:49	8	5	5	7		
4:49 - 4:50	6	5	3	3		
4:50 - 4:51	1	0	0	1		
4:51 - 4:52	0	4	2	3		
4:52 - 4:53	1	1	1	0		
4:53 - 4:54	1	3	3	3		
4:54 - 4:55	4	4	2	1		
4:55 - 4:56	0	0	0	1		
4:56 - 4:57	0	0	0	0		
4:57 - 4:58	1	0	1	1		
4:58 - 4:59	0	1	2	0		
4:59 - 5:00	1	0	0	0		
SUBTOTAL	25	23	20	27	(B)	
TOTAL	(A) 95				(C)	

TOTAL DELAY = TOTAL NUMBER STOPPED X SAMPLING INTERVAL
=(A) 95 X 15 = 1425 VEH - SEC = 0.40 VEH - HRS

AVERAGE DELAY PER STOPPED VEHICLE = TOTAL DELAY / NUMBER OF STOPPED VEHICLES
= _____ / (B) = _____ SEC

AVERAGE DELAY PER APPROACH VEHICLES= TOTAL DELAY / APPROACH VOLUME
= _____ / (C) = _____ SEC

PERCENT OF VEHICLES STOPPED = NUMBER OF STOPPED VEHICLES / APPROACH VOLUME = (B) / (C) = _____ PERCENT

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APPENDIX E

SIGNAL WARRANT EVALUATION WORKSHEETS

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future
72 Loveton Circle Baltimore, Maryland 21152-0948

Supplemental Traffic Signal Needs Study Form
For Traffic Signal Warrant Evaluation

Location: NJ ROUTE 130 (SHELL ROAD) AT CANAL ROAD

Municipality / County: SALEM COUNTY

Study Date: 06/13/2007 Previous Study Date: _____

Study Requested By: DUPONT CHAMBERS WORKS

Study Performed By: JMT

2003 SIGNAL WARRANTS

Mark box for each warrant reviewed –

☒ 1	Eight-Hour Vehicular Volume			
	Condition A- Minimum Vehicular Volume	☐ YES	☒ NO	☐ N/A
	Condition B- Interruption of Continuous	☐ YES	☒ NO	☐ N/A
	Combination of Conditions A & B	☐ YES	☒ NO	☐ N/A
☒ 2	Four-Hour Vehicular Volume	☒ YES	☐ NO	☐ N/A
☒ 3	Peak Hour			
	A - Delay	☐ YES	☒ NO	☐ N/A
	B - Volumes (Figures 4C-3 or 4C-4)	☒ YES	☐ NO	☐ N/A
☒ 4	Pedestrian Volume	☐ YES	☒ NO	☐ N/A
☒ 5	School Crossing	☐ YES	☒ NO	☐ N/A
☒ 6	Coordinated Signal System	☒ YES	☐ NO	☐ N/A
☒ 7	Crash Experience	☐ YES	☒ NO	☐ N/A
☒ 8	Roadway Network	☐ YES	☒ NO	☐ N/A

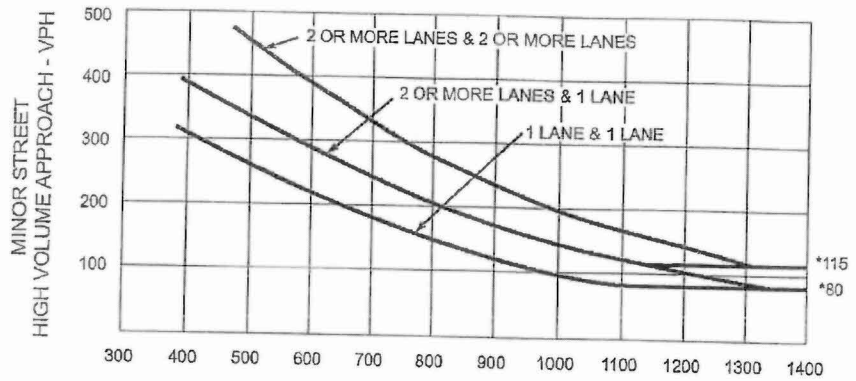
Notes:

☒ Location warranted signalization under warrant(s) 2, 3, AND 6

☐ Location does not warrant signalization based on data collected

AND ENGINEERING\CADD\Signal Warrant Sheets.dgn
DATE: 24-July-07
FILE: J:\MARKETING\
MUTCD 2003 STANDARDS

Figure 4C-1. Warrant 2 - Four-Hour Vehicular Volume

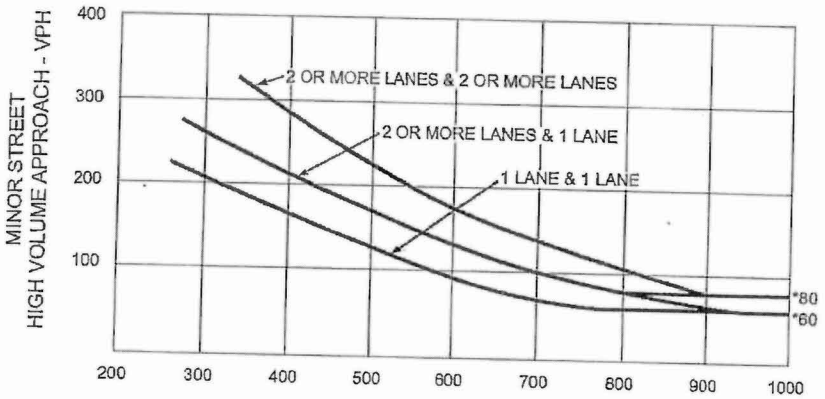


*Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

HOURS	VOLUMES	FIGURE 4C-1 SATISFIED	
_____	_____	☐ YES	☐ NO
_____	_____	☐ YES	☐ NO
_____	_____	☐ YES	☐ NO
_____	_____	☐ YES	☐ NO

Figure 4C-2. Warrant 2 - Four-Hour Vehicular Volume (70% Factor)

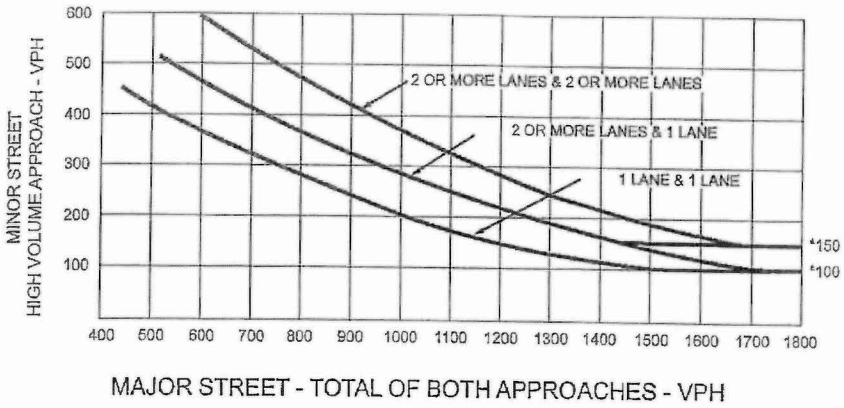
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

	HOURS	VOLUMES	FIGURE 4C-2 SATISFIED	
A)	11 AM - 12 PM	MAJOR / MINOR 1142 / 121	☑ YES	☐ NO
B)	3 - 4 PM	1098 / 147	☑ YES	☐ NO
C)	4 - 5 PM	1125 / 225	☑ YES	☐ NO
D)	5 - 6 PM	1312 / 165	☑ YES	☐ NO

Figure 4C-3. Warrant 3 - Peak Hour

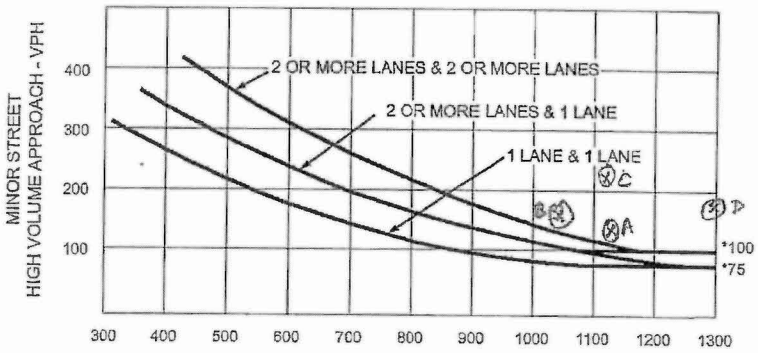


*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

HOURS	VOLUMES	FIGURE 4C-3 SATISFIED	
_____	_____	☐ YES	☐ NO
_____	_____	☐ YES	☐ NO
_____	_____	☐ YES	☐ NO
_____	_____	☐ YES	☐ NO

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

	HOURS	VOLUMES	FIGURE 4C-4 SATISFIED	
A)	11-12 PM	MAJOR / MINOR 1142/121	☑ YES	☐ NO
B)	3-4 PM	1098/147	☑ YES	☐ NO
C)	4-5 PM	1125/225	☑ YES	☐ NO
D)	5-6 PM	1312/165	☑ YES	☐ NO