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**west virginia department of environmental protection**

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## **ENGINEERING EVALUATION / FACT SHEET**

### **BACKGROUND INFORMATION**

Application No.: R13-13-1353G  
Plant ID No.: 107-00182  
Applicant: The Chemours Company FC, LLC  
Facility Name: Washington Works  
Location: Wood County  
NAICS Codes: 325211, 325120, 325222  
Application Type: Class II Administrative Update  
Received Date: May 12, 2015  
Engineer Assigned: Mike Egnor  
Fee Amount: \$300.00  
Date Received: May 19, 2015  
Complete Date: May 27, 2015  
Due Date: August 19, 2015  
Applicant Ad Date: May 22, 2015  
Newspaper: *The Parkersburg News*  
UTM's: Easting: 442.3767 km Northing: 4346.8331 km Zone: 17  
Description: This application changes the applicant name and Plant ID No, adds VOC emissions of 0.06 pph and 0.15 tpy for source T5HG, remove sources T5HK and T5HL and Permit Conditions pertaining to these sources as they no longer handle ozone-depleting compounds (ODC) or any other regulated air pollutant, and replace references to Consent Order CO-R21-97-47 with Permit R13-3223. Additionally, the monitoring for particulate matter from once per month with a maximum of forty-five days between consecutive readings has been changed to at least once per month.

There is an increase of 0.06 pph and 0.15 tpy VOC emissions associated with this Class II administrative update and a decrease of 0.5 pph and 1.97 tpy of ODC (Ozone Depleting Compounds) associated with this Class II administrative update.

### **DESCRIPTION OF PROCESS**

Background:

VOC emissions are now designated from source T5HG. Sources T5HK and T5HL as well as associated emissions are being removed from this Permit as they no longer emit regulated air pollutants. The facility changed its name from DuPont to Chemours and ID No from 107-00001 to 107-00182. Permit R13-3223 replaced Consent Order CO-R21-97-47. The monitoring for particulate matter from once per month with a maximum of forty-five days between consecutive readings has been changed to at least once per month.

#### Process Description:

The T5 area produces fluoropolymer resin. The basic processes used are polymerization, drying, and modification. The resin is produced by water based emulsion polymerization in one of two reactor units. Water, monomer (primarily tetrafluoroethylene), process aids, and other minor ingredients are introduced to the reactor. The reaction starts under elevated pressure, but proceeds to an endpoint at sub-ambient pressure. The resin is removed as slurry and is stored in one of several tanks pending further treatment and drying.

The polymer slurry is processed and dried. The wet polymer passes through one of two dryers. Emissions from either dryer pass through cyclone separators to recover particulate matter. Both cyclone systems employ a water spray to improve effectiveness. The material recovered from the cyclones is returned to the process. Dried resin is transferred to a pack-out room where it is drummed using automated equipment.

Line #2 contains an additional processing step. The added material used in this process is not VOC, nor is it an ozone-depleting compound. This material is recovered within the system. The treated polymer is then dried using the Line #2 dryer.

In preparation for renewing Title V permit R30-10700182, Part 2, Chemours has applied for a Class II permit amendment to make necessary changes to permit R13-1353F.

The requested changes are listed below:

1. To establish VOC emission limits within the permit for source T5HG. Within application R13-1353E, submitted on November 9, 2012, DuPont previously requested VOC limits of 0.06 pph and 0.15 tpy VOCs from source T5HG at emission point T5HGE. These limits were never transcribed into R13-1353, nor into R30-10700001. This Class II Permit Amendment application is intended, in part, to address this.
2. To remove T5HK and T5HL from the existing permits, as sources of ODCs. Sources T5HK and T5HL previously handled an ozone-depleting compound (ODC), however, EPA phased out the use of the compound for process use, therefore, the compound was replaced with a material not classified as a regulated air pollutant. Notification of this replacement was made to WV DEP, who in turn issued permit determination PD14-007 on January 30, 2014. As a result of this change, the

removal from the permit references to sources T5HK and T5HL, and their associated condenser (T5HKC) and emission point (T5HKE). Removing these sources will cause a decrease in the amount of ODC potentially emitted to atmosphere by 0.5 pph, 1.97 tpy from emission point T5HKE; and in the amounts of 0.2 pph and 0.30 tpy from emission point T5HIE.

3. Remove references to Consent Order CO-R21-97-47 in permit condition B.7. on page 8, replacing with references to permit R13-3223.
4. 45 CSR 7 – Compliance condition modification request – Condition B.3.:  
 In the current permit the requirement for monitoring for particulate matter, found in permit condition B.3 which requires “Monitoring shall be conducted at least once per month with a maximum of forty-five (45) days between consecutive readings”. Chemours has experienced a significant issue with the interpretation of the condition such that we consistently perform the observations as required. The additional text that sets the 45 day maximum interval has been seen, despite educational efforts, to mean that there is up to a 45 day period after the last reading to take the next reading. Chemours is requesting that the compliance condition be simplified to require a monthly visual observation for visible particulate emissions. The elimination of the perceived conflicting 45 day period will enable Chemours personnel to ensure the readings are performed at the correct interval and that focus can be given to the Operations personnel to ensure the reading is always taken early in the operational month before production schedule or challenges alter the operational timing and cause a missed reading. The suggested limited text change from above is to “Monitoring shall be conducted at least once per month.”

Updates to the Emission Units Table are provided below.

Emission Units Table:

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed / Modified	Type and Date of Change	Control Device
T5HK	T5HKE	Tank	1998	Admin Change	T5HKC- Condenser
T5HL	T5HKE T5HLE	Tank	1998	Admin Change	T5HKC- Condenser

### SITE INSPECTION

The Chemours Washington Works site is a well known facility to WV DAQ and the writer has been to the facility numerous times. The Fluoropolymer area of the plant received a targeted on site inspection by Becky Johnson of DAQ’s Compliance & Enforcement section on August 28, 2012. At the time of the inspection this area was found to be in compliance.

A site visit is not needed for this Class II Administrative Update application.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Chemours uses the engineering calculation software TK Solver to calculate emissions using a combination of equations and analytical measurements. The VOC emission reduction calculations were reviewed by the writer. Emissions are calculated based on the ideal gas law or on the equation of state for non-ideal situations. For annual emissions that are based on events, air measurements determine the emissions per event and then the number of events per year are used to calculate annual emissions.

Polymer rates may have a surrogate such as motor amps, screw speed, etc for hourly emissions or number of batches for annual emissions. Emissions per pound of polymer are either engineering estimates, determined by off gas analysis, scaling up from a pilot plant, or simple stack measurements.

Emissions

The emissions that are affected by the requested changes in this application are provided in the table below. The writer has reviewed and verified the emissions calculations.

Emissions Summary Table:

Emission Point ID	Emission Unit ID	Emission Description	Control Device	Regulated Pollutant	Maximum Potential Emissions	
					lbs/hr	tpy
T5HGE	T5HG	(#1 Dryer)	T5HGC (Cyclone)	PM	0.5	1.22
				PM <sub>10</sub>	0.1	0.22
				APFO <sup>1</sup>	0.022	0.04
				VOC	0.06	0.15
T5HIE	T5HI	(#2 Dryer)	T5HIC (Cyclone)	PM	0.7	0.92
				PM <sub>10</sub>	0.2	0.17
				ODC	0.0	0.0
				APFO <sup>1</sup>	0.028	0.03
				VOC	0.1	0.11
T5HKE	T5HK T5HL	(Process Tank) (Process Tank)	T5HKC (Condenser)	ODC	0.0	0.0

<sup>1</sup> - Ammonium perfluorooctanoate (CAS 3825-26-1)

The table below provides the change in emissions associated with this application.

Emissions Change Table:

Emission Point ID	Emission Unit ID	Regulated Pollutant	Current Emission Limits		R13-1353G Proposed Emission Limits		Change in R13-1353G permitted emissions	
			lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy
T5HGE	T5HG	VOC	0.0	0.0	0.06	0.15	0.06	0.15
T5HIE	T5HI	ODC	0.2	0.30	0.0	0.0	- 0.2	- 0.30
T5HKE	T5HK T5HL	ODC	0.5	1.97	0.0	0.0	- 0.5	- 1.97

## REGULATORY APPLICABILITY

A discussion regarding the regulatory requirements specific to the changes associated with this Class II Administrative Update application is provided below.

### State Regulations:

**45CSR13 PERMITS FOR CONSTRUCTION, MODIFICATION, RELOCATION AND OPERATION OF STATIONARY SOURCES OF AIR POLLUTANTS, NOTIFICATION REQUIREMENTS, ADMINISTRATIVE UPDATES, TEMPORARY PERMITS, GENERAL PERMITS, PERMISSION TO COMMENCE CONSTRUCTION, AND PROCEDURES FOR EVALUATION**

The changes proposed in this application meet the definition of a Class II Administrative Update according to 45CSR §13-4.2.b.1. The increase in emissions is less than 6 lbs/hr and 10 tpy of any regulated air pollutant, is less than 144 ppd of any regulated pollutant, and is less than 2 lbs/hr or 5 tpy of hazardous air pollutants considered on an aggregated basis.

The applicant has met the requirements of 45CSR13 by placing a Class I legal notice in *The Parkersburg News* on May 18, 2015, providing a complete permit application, and paying the required \$300 application fee.

**45CSR14 PERMITS FOR CONSTRUCTION AND MAJOR MODIFICATION OF MAJOR STATIONARY SOURCES OF AIR POLLUTION FOR THE PREVENTION OF SIGNIFICANT DETERIORATION (PSD)**

As of January 2, 2011, pursuant to actions taken by the USEPA, Greenhouse Gases (GHGs) became a regulated pollutant under the major

NSR program. As such, an evaluation must be done for any increase in GHG emissions resulting from construction or modification to determine PSD applicability per 40 CFR 52.21. There are no new emissions of components listed in table A-1 of 40 CFR 92.2; therefore, PSD for GHG does not apply.

#### 45CSR21 CONTROL OF VOC EMISSIONS

45CSR21-40.3.c requires RACT analysis on a case by case basis for those VOC emissions greater than 6 pph which are constructed, modified, or begin operation after the date 45CSR 21 becomes effective. Permit R13-3223 requires RACT analysis for any increase in VOC from sources listed in R13-3223. Source T5HG is not on the R13-3223 list, nor will it increase in emissions above the 6 pph limit.

#### 45CSR30 REQUIREMENTS FOR OPERATING PERMITS

The T5 area operates under their Title V permit, R30-10700001- 2010, Part 2 of 14. The applicant submitted a joint application for a Class II Administrative Update of R13-1353G and a minor modification to the Title V permit.

#### TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

There are no new hazardous air pollutants associated with this application.

#### AIR QUALITY IMPACT ANALYSIS

The proposed changes in this Class II Administrative Update permit application do not meet the definition of a major modification according to the definitions in 45CSR14 and 45CSR19; therefore, modeling is not required for this permit application.

#### MONITORING OF OPERATIONS

Condition B.3 which requires monitoring for particulate matter "...at least once per month with a maximum of forty-five (45) days..." to "...at least once per month." This is to ensure consistency with particulate matter monitoring throughout the site.

#### CHANGES TO PERMIT R13-1353G

- General changes such as permit versions, dates, revisions, facility name, ID no., etc.

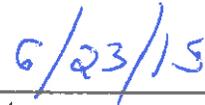
- Revised Table A.1 as follows: (1) Added VOC emissions of 0.06 pph and 0.15 tpy for source T5HG; (2) Removed sources T5HK and T5HL; Removed ODC emissions from Source T5HI
- Removed Conditions A.9, A.10, Table A.10, and B.8 from the Permit.
- Changed reference in Condition B.7 from "Consent Order CO-R21-97-47" to "R13-3223"
- Changed monitoring requirements in Condition B.3 to remove the phrase "with a maximum of forty-five days between consecutive readings".

#### RECOMMENDATION TO DIRECTOR

The writer recommends that the Class II Administrative Update Permit R13-1353G be granted to Chemours, Washington Works facility located in Wood County, WV. Based on the information provided in the permit application, the applicant meets all applicable federal and state air regulations pertaining to the requested change.



Mike Egnor  
Engineer



Date