HAND DELIVERED EC#2040

Chemours™

The Chemours Company FC, LLC
901 W. DuPont Ave.
Belle, WV 25015-1555

May 31, 2016

Director, Division of Air Quality
WV Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304

RE: R13 Permit Application Belle Plant

Dear Director,

Please find enclosed an R13 permit application for a temporary flare.

Two paper copies are included: one confidential and one redacted. Also included are two discs, one containing the confidential application and the other containing the redacted application. We will pay the application fee by credit card when the 48-hour email is received.

Please contact me if there are questions or comments. I can be reached at (304) 357-1171 or leanne.schottle.wheeler@chemours.com.

Sincerely,

LeAnne S. Wheeler
Environmental Coordinator

B.D. Mckeone – WVDEP – DAQ – Permitting
Mike Egnor – WVDEP – DAQ – Title V Permitting – Cover Letter Only

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF AIR QUALITY

601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.dep.wv.gov/daq

APPLICATION FOR NSR PERMIT AND TITLE V PERMIT REVISION (OPTIONAL)

PLEASE CHECK ALL THAT APPLY TO **NSR (45CSR13)** (IF KNOWN):

☐ **CONSTRUCTION** ☐ **MODIFICATION** ☐ **RELOCATION**
☐ **CLASS I ADMINISTRATIVE UPDATE** ☒ **TEMPORARY**
☐ **CLASS II ADMINISTRATIVE UPDATE** ☐ **AFTER-THE-FACT**

PLEASE CHECK TYPE OF **45CSR30 (TITLE V)** REVISION (IF ANY):

☐ **ADMINISTRATIVE AMENDMENT** ☐ **MINOR MODIFICATION**
☐ **SIGNIFICANT MODIFICATION**

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS **ATTACHMENT S** TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant *(as registered with the WV Secretary of State's Office):*
The Chemours Company FC, LLC

2. Federal Employer ID No. ***(FEIN):***
911077773

3. Name of facility *(if different from above):*
Belle Plant

4. The applicant is the:
☐ **OWNER** ☐ **OPERATOR** ☒ **BOTH**

5A. Applicant's mailing address:
901 West DuPont Avenue
Belle, WV 25015

5B. Facility's present physical address:
901 West DuPont Avenue
Belle, WV 25015

6. **West Virginia Business Registration.** Is the applicant a resident of the State of West Virginia? ☐ **YES** ☒ **NO**

- If **YES,** provide a copy of the **Certificate of Incorporation/Organization/Limited Partnership** (one page) including any name change amendments or other Business Registration Certificate as **Attachment A.**
- If **NO,** provide a copy of the **Certificate of Authority/Authority of L.L.C./Registration** (one page) including any name change amendments or other Business Certificate as **Attachment A.**

7. If applicant is a subsidiary corporation, please provide the name of parent corporation:

8. Does the applicant own, lease, have an option to buy or otherwise have control of the *proposed site?* ☒ **YES** ☐ **NO**

- If **YES,** please explain: Own
- If **NO,** you are not eligible for a permit for this source.

9. Type of plant or facility (stationary source) to be **constructed, modified, relocated, administratively updated** or **temporarily permitted** (e.g., coal preparation plant, primary crusher, etc.): Temporary permit for a flare

10. North American Industry Classification System **(NAICS)** code for the facility:
326199

11A. DAQ Plant ID No. (for existing facilities only):
039-00001

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
R30-03900001-2011 (Group 5 of 5)

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

12A.

- For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- For **Construction** or **Relocation permits,** please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP** as **Attachment B**.

Exit U.S. Route 60 at the Belle exit; turn right onto old Route 60; travel 500 feet west; turn left to enter the main gate of the DuPont Belle plant.

12.B. New site address (if applicable):	12C. Nearest city or town:	12D. County:
N/A	Belle	Kanawha
12.E. UTM Northing (KM): 451.848	12F. UTM Easting (KM): 4,232.589	12G. UTM Zone: 17

13. Briefly describe the proposed change(s) at the facility:
At the beginning of August through November, the site plans to empty, clean and inspect the existing refrigerated 7MM gallon Ammonia Tank. A temporary flare will be brought onsite to control ammonia odor during clean-out.

14A. Provide the date of anticipated installation or change: 8/1/2016 – If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: / /	14B. Date of anticipated Start-Up if a permit is granted: 8/1/2016

14C. Provide a **Schedule** of the planned **Installation** of/**Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:
Hours Per Day: 24 Days Per Week: 7 Weeks Per Year: 26

16. Is demolition or physical renovation at an existing facility involved? ☐ **YES** ☒ **NO**

17**. Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see www.epa.gov/ceppo), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18**. Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process *(if known).* A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance *(if known).* Provide this information as **Attachment D.**

Section II. Additional attachments and supporting documents.

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan,** e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to ***Plot Plan Guidance***) **.**

– Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F.**

23. Provide a **Process Description** as **Attachment G.**

– Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H.**

– For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I.**

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J.**

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K.**

28. Check all applicable **Emissions Unit Data Sheets** listed below:

☐ Bulk Liquid Transfer Operations	☐ Haul Road Emissions	☐ Quarry
☐ Chemical Processes	☐ Hot Mix Asphalt Plant	☐ Solid Materials Sizing, Handling and Storage Facilities
☐ Concrete Batch Plant	☐ Incinerator	☒ Storage Tanks
☐ Grey Iron and Steel Foundry	☐ Indirect Heat Exchanger	
☐ General Emission Unit, specify		

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L.**

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

☐ Absorption Systems	☐ Baghouse	☒ Flare
☐ Adsorption Systems	☐ Condenser	☐ Mechanical Collector
☐ Afterburner	☐ Electrostatic Precipitator	☐ Wet Collecting System

☐ Other Collectors, specify

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M.**

30. Provide all **Supporting Emissions Calculations** as **Attachment N,** or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O.**

- Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and ***Example Legal Advertisement*** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33**. Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

☒ **YES** ☐ **NO**

- If **YES,** identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's *"**Precautionary Notice – Claims of Confidentiality"*** guidance found in the ***General Instructions*** as **Attachment Q.**

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

☐ Authority of Corporation or Other Business Entity	☐ Authority of Partnership
☐ Authority of Governmental Agency	☐ Authority of Limited Partnership

Submit completed and signed **Authority Form** as **Attachment R.**

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

Certification of Truth, Accuracy, and Completeness

I, the undersigned ☐ **Responsible Official** / ☒ **Authorized Representative,** hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE _____ *(Please use blue ink)* DATE: 05/21/2016 *(Please use blue ink)*

35B. Printed name of signee: Timothy L. Byrd		35C. Title: Plant Manager
35D. E-mail: Timothy.L.Byrd-1@chemours.com	36E. Phone: 304-357-1171	36F. FAX: 304-357-1625
36A. Printed name of contact person (if different from above): LeAnne Wheeler		36B. Title: Environmental Coordinator
36C. E-mail: LEANNE.SCHOTTLE.WHEELER@chemours.com	36D. Phone: 304-357-1111	36E. FAX: 304-357-1625

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

- ☒ **Attachment A: Business Certificate**
- ☒ **Attachment B: Map(s)**
- ☒ **Attachment C: Installation and Start Up Schedule**
- ☒ **Attachment D: Regulatory Discussion**
- ☒ **Attachment E: Plot Plan**
- ☒ **Attachment F: Detailed Process Flow Diagram(s)**
- ☒ **Attachment G: Process Description**
- ☒ **Attachment H: Material Safety Data Sheets (MSDS)**
- ☒ **Attachment I: Emission Units Table**
- ☒ **Attachment J: Emission Points Data Summary Sheet**
- ☐ **Attachment K: Fugitive Emissions Data Summary Sheet**
- ☒ **Attachment L: Emissions Unit Data Sheet(s)**
- ☒ **Attachment M: Air Pollution Control Device Sheet(s)**
- ☒ **Attachment N: Supporting Emissions Calculations**
- ☒ **Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans**
- ☒ **Attachment P: Public Notice**
- ☒ **Attachment Q: Business Confidential Claims**
- ☐ **Attachment R: Authority Forms**
- ☐ **Attachment S: Title V Permit Revision Information**
- ☒ **Application Fee**

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:

- ☐ ***Forward 1 copy of the application to the Title V Permitting Group and:***
- ☐ ***For Title V Administrative Amendments:***
  - ☐ ***NSR permit writer should notify Title V permit writer of draft permit,***
- ☐ ***For Title V Minor Modifications:***
  - ☐ ***Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,***
  - ☐ ***NSR permit writer should notify Title V permit writer of draft permit.***
- ☐ ***For Title V Significant Modifications processed in parallel with NSR Permit revision:***
  - ☐ ***NSR permit writer should notify a Title V permit writer of draft permit,***
  - ☐ ***Public notice should reference both 45CSR13 and Title V permits,***
  - ☐ ***EPA has 45 day review period of a draft permit.***

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

ATTACHMENT A: BUSINESS CERTIFICATE

WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION CERTIFICATE

ISSUED TO:
THE CHEMOURS COMPANY FC, LLC
8480 DUPONT RD
WASHINGTON, WV 26181-8398

BUSINESS REGISTRATION ACCOUNT NUMBER: **2303-3963**

This certificate is issued on: 10/27/2014

This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with Chapter 11, Article 12, of the West Virginia Code

The person or organization identified on this certificate is registered to conduct business in the State of West Virginia at the location above.

This certificate is not transferrable and must be displayed at the location for which issued

This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them. CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

atL006 v.4
L1658939968

STATE OF WEST VIRGINIA
State Tax Department, Revenue Division
P. O. Box 2666
Charleston, WV 25330-2666

Earl Ray Tomblin, Governor **Mark W. Matkovich, Tax Commissioner**

THE CHEMOURS COMPANY FC, LLC
1007 MARKET ST # D-13039
WILMINGTON DE 19898-1100

Letter Id: L1658939968
Issued: 10/27/2014
Account #: 2303-3963

RE: Business Registration Certificate

The West Virginia State Tax Department would like to thank you for registering your business. Enclosed is your Business Registration Certificate. This certificate shall be permanent until cessation of business or until suspended, revoked or cancelled. Changes in name, ownership or location are considered a cessation of business; a new Business Registration Certificate and applicable fees are required. Please review the certificate for accuracy.

This certificate must be prominently displayed at the location for which issued. Engaging in business without conspicuously posting a West Virginia Business Registration Certificate in the place of business is a crime and may subject you to fines per W.Va. Code § 11-9.

When contacting the State Tax Department, refer to the appropriate account number listed on the back of this page. The taxes listed may not be all the taxes for which you are responsible. Account numbers for taxes are printed on the tax returns mailed by the State Tax Department. Failure to timely file tax returns may result in penalties for late filing.

Should the nature of your business activity or business ownership change, your liability for these and other taxes will change accordingly.

To learn more about these taxes and the services offered by the West Virginia State Tax Department, visit our web site at www.wvtax.gov.

Enclosure

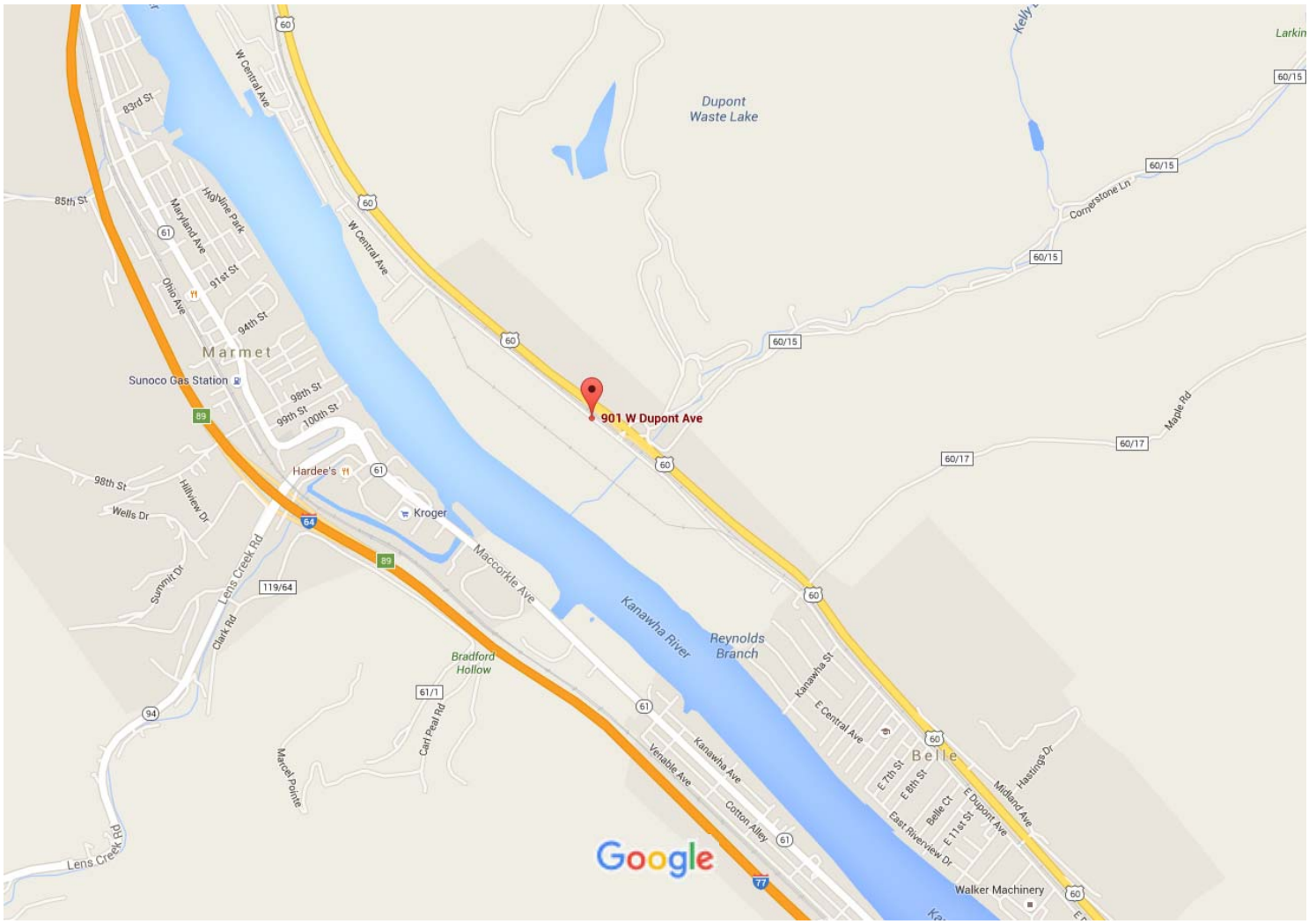
atL006 v.4

Save a stamp and your time. You can now view, file and pay taxes at https://mytaxes.wvtax.gov
More taxes will be available for online access in the future.

TAX	FILING FREQUENCY	ACCOUNT NUMBER
Business Registration Tax		2303-3963
Combined Sales & Use Tax	Combined Sales & Use Monthly	2306-6997
Pass Through Entity Tax	Partnership Annual	2303-3964
Withholding Tax	Withholding Quarterly	2306-5525

ATTACHMENT B: AREA MAP

Google Maps 901 W Dupont Ave



Map data ©2016 Google 1000 ft

Google Maps

ATTACHMENT C: INSTALLATION AND START UP SCHEDULE

Attachment C Installation and Start Up Schedule

Belle Plant R13 Permit Application for a Temporary Flare

The facility anticipates the temporary flare will be onsite August 1, 2016 and will be used intermittingly through December 2016. The flare will be started up on the same day or shortly after arrival.

ATTACHMENT D: REGULATORY DISCUSSION

Attachment D Regulatory Discussion

Belle Plant R13 Permit Application for a Temporary Flare

The proposed flare is subject to the following rules and regulations.

45 CSR 6 Control of Air Pollution From Combustion of Refuse

Belle is proposing to bring a temporary flare onsite for use during the cleanout of the 70 MM gallon refrigerated Ammonia Tank (AM79). The flare is subject to section 4, emission standards for incinerators. The flare will have negligible hourly particulate matter emissions. Therefore, the facility's flare should demonstrate compliance with this section. The facility will monitor the amount of natural gas and propane flow to the flare and the hours of operation of the flare.

The facility will be subject to the opacity requirements of this standard. The facility will monitor the opacity of the flare while in use.

45 CSR 13 Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation

A 45 CSR 13 temporary construction permit applies to this source because the flare will be subject to a substantive requirement under 45 CSR 6. The flare does not meet the exemption as specified in 45 CSR 6 Section 10. In addition, it is expected that this temporary flare may exceed the 10 day cumulative period limit specified in 45 CSR 6.1.b.1.

45 CSR 31 Confidential Information

Chemours continues to claim business confidentiality protection for this business. The claim has not expired by its term, or been waived or withdrawn. The confidential information should continue to be maintained as such for an indefinite time period.

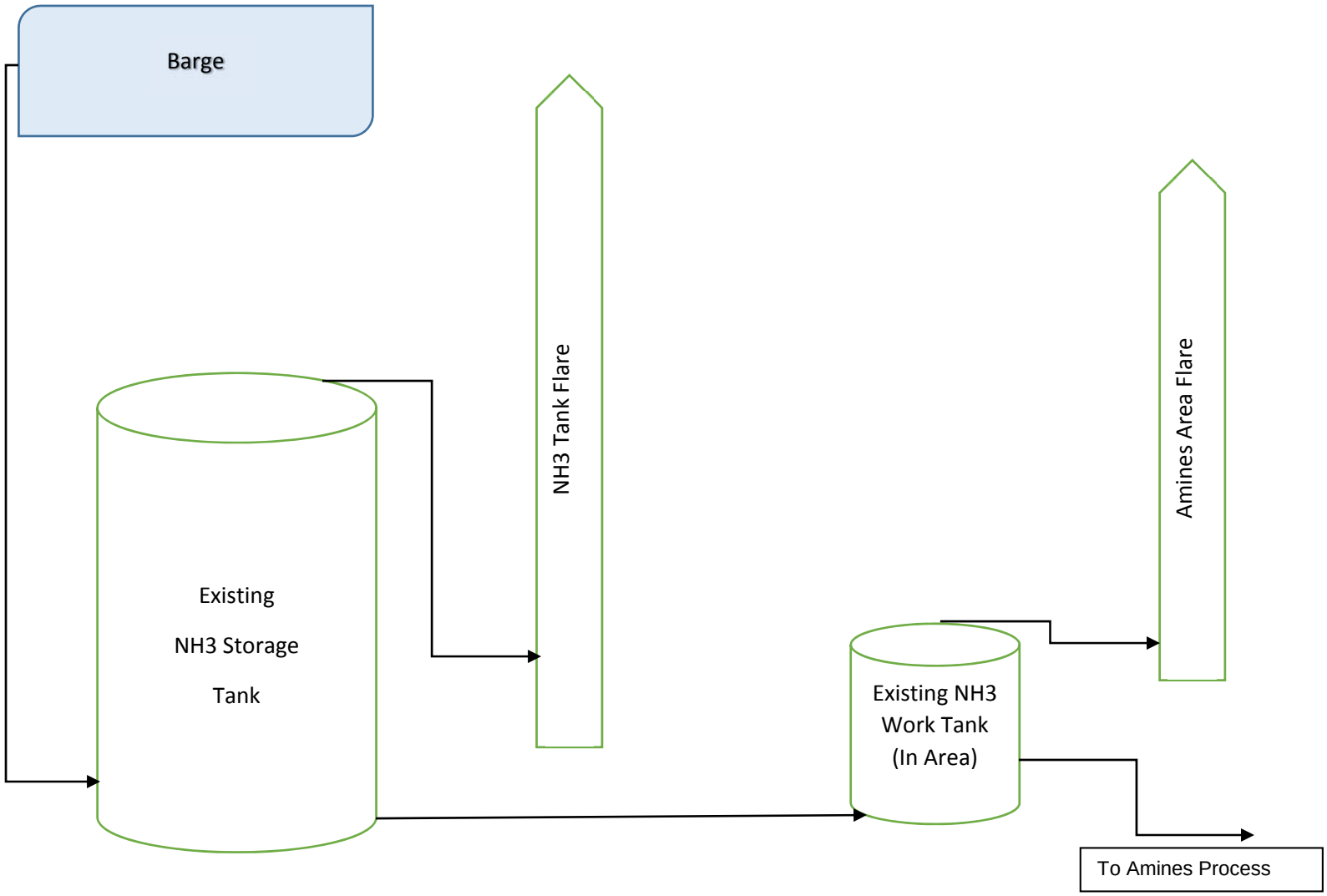
ATTACHMENT E: PLOT PLAN

CHEMOURS - BELLE PLANT

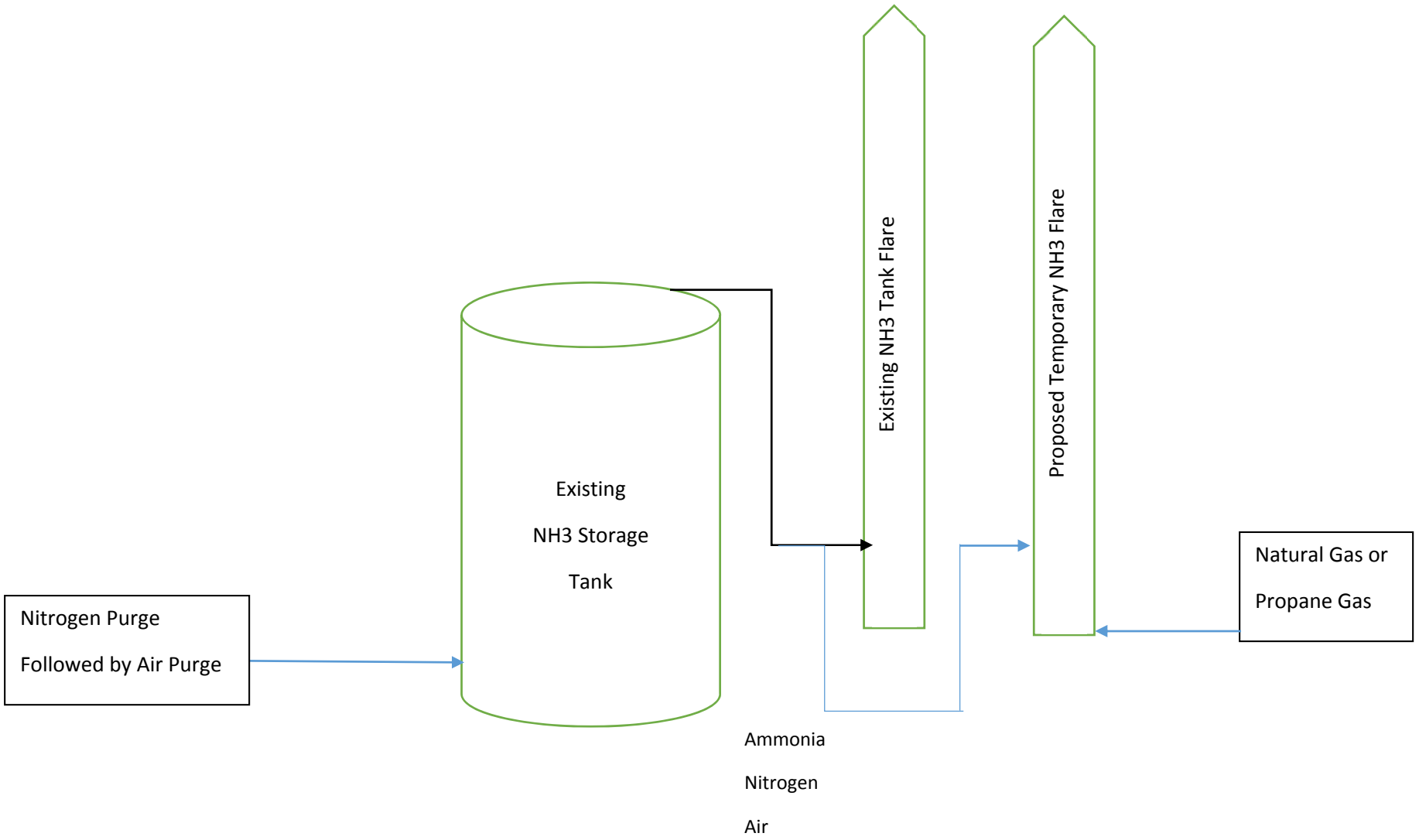
"REDACTED COPY
CLAIM OF CONFIDENTIALITY"

ATTACHMENT F: PROCESS FLOW DIAGRAM

Current NH3 Supply to the Process



Temporary NH3 Flare for Purging and Recommissioning



ATTACHMENT G: PROCESS DESCRIPTION

Attachment G
Belle Plant Temporary Ammonia Flare for Cleanout

Ammonia (NH_3) is used as an ingredient in the Methyl Amines Products (MAP) at the Belle Plant. The current supply system (shown in the Process Flow Diagram) utilizes a 7MM gallon refrigerated storage tank. During the 2016 turnaround, the site plans to empty, clean, and inspect this existing refrigerated 7MM gallon tank. The site currently has an existing permitted flare on site to help control the pressure in the tank when it is in operation. The existing flare, combusts ammonia and natural gas.

During the 2016 turnaround, the tank will be emptied and inspected. In order to empty and inspect the tank, the site will need to combust the remaining ammonia vapor in the tank. The tank will be swept with nitrogen to purge the ammonia and also to keep the tank out of the lower flammability range. When the tank has been sufficiently swept with nitrogen, air will be swept through the tank to bring the tank's oxygen content back to acceptable limits for vessel entry. During the recommissioning, the tank will be purged with nitrogen to keep the tank out of the lower flammability range and then refilled with ammonia.

The ammonia vapor, nitrogen and air purged through the tank will vent to the temporary flare. Due to the nitrogen and ammonia mixture present in the tank during purging and recommissioning, the site's current permitted flare is not capable of combusting the waste gas stream efficiently. Once the tank has been recommissioned and has a lower nitrogen content, the temporary flare will be removed from the site and the tank pressure will be controlled by the existing permitted flare.

ATTACHMENT H: MATERIAL SAFETY DATA SHEETS (MSDS)

The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

Material Safety Data Sheet

Ammonia

B0000132 Revised 13-OCT-1999

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

Corporate MSDS Number	: DU000002
CAS Number	: 7664-41-7
Formula	: NH3
Molecular Weight	: 17.03
CAS Name	: AMMONIA
Grade	: ANHYDROUS

Tradenames and Synonyms

NH3
Anhydrous Ammonia
Ammonia, Anhydrous

Company Identification

MANUFACTURER/DISTRIBUTOR

DuPont Chemical Solutions Enterprise
1007 Market Street
Wilmington, DE 19898

PHONE NUMBERS

Product Information	: 1-800-441-7515 (outside the U.S. 302-774-1000)
Transport Emergency	: CHEMTREC 1-800-424-9300(outside U.S. 703-527-3887)
Medical Emergency	: 1-800-441-3637 (outside the U.S. 302-774-1000)

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
*AMMONIA	7664-41-7	99.5
WATER	7732-18-5	<0.5

* Disclosure as a toxic chemical is required under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

HAZARDS IDENTIFICATION

Potential Health Effects

Causes skin and eye burns; eye damage may be permanent, including blindness. Causes nose, throat, and lung irritation. Contact with liquid may cause frostbite. Gross overexposure may be fatal.

HUMAN HEALTH EFFECTS:

Skin contact may cause skin irritation with discomfort or rash. Skin contact with liquified compressed gas will cause frostbite and dermatitis. Eye contact may cause eye irritation with discomfort, tearing, or blurring of vision. Inhalation may cause irritation of the upper respiratory passages, or nonspecific discomfort such as headache. Ingestion may cause corrosive injury to the mouth, esophagus, and stomach, leading to pain, vomiting, and circulatory collapse. Perforation of the gastrointestinal tract can occur.

Higher exposures may lead to skin burns or ulceration; eye corrosion with corneal or conjunctival ulceration, or blindness; temporary lung irritation effects with possible modest initial symptoms such as cough, discomfort, difficulty in breathing or shortness of breath, followed in hours by severe shortness of breath requiring prompt medical attention; nonspecific discomfort such as nausea, headache, or weakness. Fatality may occur from gross overexposure. The compound has been infrequently associated with skin sensitization in humans.

The concentration of ammonia that is Immediately Dangerous to Life and Health (IDLH) is 300 ppm in air.

Individuals with preexisting diseases of the lungs, skin, or eyes may have increased susceptibility to the toxicity of excessive exposures.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

INHALATION

If inhaled, immediately remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

In case of contact, immediately flush skin with plenty of water for at least 15 minutes, while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before reuse.

Treat for frostbite if necessary by gently warming the affected area.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION

If swallowed, do not induce vomiting. Give large quantity of water. Call a physician immediately. Never give anything by mouth to an unconscious person.

FIRE FIGHTING MEASURES

Flammable Properties

Flammable limits in Air, % by Volume

LEL	: 15
UEL	: 28
Autoignition	: 651 C (1204 F)

Vapor forms explosive mixture with air.

Fire and Explosion Hazards:

Presence of oil or other combustibles increase fire hazard. Follow appropriate National Fire Protection Association (NFPA) codes.

Extinguishing Media

Water Spray, Water Fog.

(FIRE FIGHTING MEASURES - Continued)

Fire Fighting Instructions

Evacuate personnel to a safe area. Wear self-contained breathing apparatus. Wear full protective equipment. Shut off source of fuel, if possible and without risk. Use water spray. Cool tank/container with water spray. Runoff from fire control may be a pollution hazard.

Keep personnel removed and upwind of fire. Dilute released material with water spray from a distance to prevent splashing on personnel. Use water on ammonia gas. DO NOT put water on liquid ammonia. If allowed to evaporate or if leaks are dispersed in air, be sure gas/vapor is dissipated below flammable limits.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus. Keep upwind of leak - evacuate until gas has dispersed.

Initial Containment

Remove source of heat, sparks, flame, impact, friction or electricity. Allow to evaporate. Dissipate vapor with water spray. Prevent material from entering sewers, waterways, or low areas.

Spill Clean Up

Neutralize with dilute acids.

Accidental Release Measures

Comply with Federal, State, and local regulations on reporting releases. The CERCLA Reportable Quantity is 100 lbs.

Caution: Neutralization may generate heat from reaction of acid and ammonia.

DuPont Emergency Exposure Limits (EEL) are established to facilitate site or plant emergency evacuation, and to specify airborne concentrations of brief durations which should not result in permanent adverse health effects or interfere with escape. These limits are used in conjunction with engineering controls/monitoring and as an aid in

(ACCIDENTAL RELEASE MEASURES - Continued)

planning for episodic releases and spills. For more information, contact DuPont. The Emergency Exposure Limits (EEL) for ammonia are 300 ppm for 1 minute with a not to exceed ceiling of 300 ppm and 100 ppm for 2-60 minutes.

HANDLING AND STORAGE

Handling (Personnel)

Do not breathe vapor or mist. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.

Handling (Physical Aspects)

Keep away from heat, sparks and flames.

Storage

Keep container in a cool place. Keep container tightly closed. Store in accordance with Federal Regulations. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

Store in cool, well ventilated area.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use a totally enclosed system. Keep container tightly closed.

Do not mix with materials listed as incompatible or reactive (see Hazardous Reactivity section). Use sufficient ventilation to keep employee exposure below recommended exposure limits.

Personal Protective Equipment

EYE/FACE PROTECTION

Wear coverall chemical splash goggles and face shield when the possibility exists for eye and face contact due to splashing or spraying of material.

RESPIRATORS

A NIOSH approved air purifying respirator with an ammonia cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an

(EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

PROTECTIVE CLOTHING

Wear impervious clothing to prevent ANY contact with this product, such as gloves, apron, boots or whole bodysuit made from neoprene, as appropriate.

Exposure Guidelines

Exposure Limits

Ammonia

PEL	(OSHA)	: 50 ppm, 35 mg/m3, 8 Hr. TWA
TLV	(ACGIH)	: 25 ppm, 17 mg/m3, 8 Hr. TWA STEL 35 ppm, 24 mg/m3
AEL *	(DuPont)	: 25 ppm, 8 & 12 Hr. TWA 50 ppm, 15 minute TWA

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Boiling Point	: -33 C (-27 F) @ 760 mm Hg
Vapor Pressure	: 7,500 mm/Hg @ 25 C (77 F)
Vapor Density	: 0.6 (Air = 1.0) at 0 deg C (32 deg F)
% Volatiles	: 100 WT%
Solubility in Water	: 31.8 WT% @ 25 C (77 F)
Form	: Gas at ambient conditions
Color	: Colorless
Specific Gravity	: 0.682 @ -33.4C (-28.1F)
Odor	: Intensely pungent; Threshold : 5 ppm; Readily Detectable: 20-25 ppm

---

STABILITY AND REACTIVITY

Chemical Stability

Reacts with halogens, mercury, gold and silver to form explosive compounds.

(STABILITY AND REACTIVITY - Continued)

Incompatibility with Other Materials

Incompatible with strong oxidizers, calcium, hypochlorite bleaches, gold, silver, mercury, and their salts, halogens and acids.

Decomposition

Decomposition temperature: 450-500 C (842-932 F)

Decomposes by reaction with acids. Hazardous gases/vapors produced are hydrogen.

Polymerization

Polymerization will not occur.

Other Hazards

Alloys of copper and zinc and mercury thermometers should not be used in ammonia service.

TOXICOLOGICAL INFORMATION

Animal Data

Inhalation 1-hour LC50: 7,338 ppm in rats
Oral LD50 : 350 mg/kg in rats

Ammonia is corrosive to skin and eyes. Toxic effects described in animals from exposure by inhalation at concentrations of 300 mg/m3 and greater include irritation of the respiratory tract with difficulty in breathing and eye irritation. At concentrations of 455 mg/m3 and greater, effects include respiratory and eye irritation, and corneal opacities. Limited acceptable information on mutagenicity showed that ammonia was negative in a bacterial cell culture.

ECOLOGICAL INFORMATION

Ecotoxicological Information

Aquatic Toxicity

96-hour LC50, rainbow trout: 0.39 mg/L

DISPOSAL CONSIDERATIONS

Waste Disposal

Do not flush to surface water or sanitary sewer system.

Treatment, storage, transportation and disposal must be in accordance with applicable Federal, State, and local regulations. If permitted, non-usable free liquid and contaminated water may be disposed of in an approved biological treatment system.

TRANSPORTATION INFORMATION

Shipping Information

DOT

Proper Shipping Name	: AMMONIA ANHYDROUS, LIQUIFIED
Hazard Class	: 2.2
I.D. No. (UN/NA)	: UN 1005
DOT Label(s)	: NONFLAMMABLE GAS
Special Information	: POISON-INHALATION HAZARD, ZONE D

DOT/IMO

Proper Shipping Name	: AMMONIA ANHYDROUS, LIQUIFIED
Hazard Class	: 2.3
UN No.	: 1005
DOT/IMO Label	: POISON GAS
Special Information	: POISON-INHALATION HAZARD, ZONE D

Reportable Quantity : 100 lb

Shipping Containers

Tank Trucks.

Barge

REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status : Reported/Included.

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute	: Yes
Chronic	: Yes
Fire	: No
Reactivity	: No
Pressure	: Yes

(REGULATORY INFORMATION - Continued)

LISTS:

SARA Extremely Hazardous Substance	-Yes
CERCLA Hazardous Material	-Yes
SARA Toxic Chemicals	-Yes

AMMONIA is specifically listed in Appendix A of 29 CFR 1910.119. Use of ammonia may require compliance with 29 CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals.

OTHER INFORMATION

NFPA, NPCA-HMIS

NFPA Rating

Health	: 3
Flammability	: 1
Reactivity	: 0

NPCA-HMIS Rating

Health	: 3
Flammability	: 1
Reactivity	: 0

Personal Protection rating to be supplied by user depending on use conditions.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsible for MSDS	: MSDS Coordinator
>	: DuPont Chemical Solutions Enterprise
Address	: Wilmington, DE 19898
Telephone	: (800) 441-7515

# Indicates updated section.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS

ATTACHMENT I: EMISSION UNIT TABLE

Attachment I

Emission Units Table

(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
AM79	AE.002	Ammonia Storage Tank	2016	N/A - Clean Out	N/A - Clean Out	TEMPCD1

[1] For Emission Units (or Sources) use the following numbering system:1S, 2S, 3S,... or other appropriate designation.
[2] For Emission Points use the following numbering system:1E, 2E, 3E, ... or other appropriate designation.
[3] New, modification, removal
[4] For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.

ATTACHMENT J: EMISSION POINTS DATA SUMMARY SHEET

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. *(Must match Emission Units Table-& Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions [4]		Maximum Potential Controlled Emissions [5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used [6]	Emission Concentration [7] (ppmv or mg/m[4])
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
AE.002	Vertical Stack	AM79	Ammonia Storage tank	TEMPCD 1	Flare	C	8760	CO	N/A	N/A	12.4	54.3	Gas	EE	
								NOx	N/A	N/A	6.03	26.43	Gas	EE	
								PM-CON	N/A	N/A	0.13	0.56	Gas	EE	
								PM-FIL	N/A	N/A	0.13	0.56	Gas	EE	
								PMTotal	N/A	N/A	0.13	0.56	Gas	EE	
								SO2	N/A	N/A	0.01	0.04	Gas	EE	

								VOC	N/A	N/A	0.10	0.40	Gas	EE	
								Benzene	N/A	N/A	0.00004	0.0002	Gas	EE	
								Formaldehyde	N/A	N/A	0.00126	0.0055	Gas	EE	
								Toluene	N/A	N/A	0.00006	0.0003	Gas	EE	
								Total HAPS	N/A	N/A	0.00135	0.0059	Gas	EE	
								CO2e	N/A	N/A	4,674	20,473	Gas	EE	

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

[1] Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

[2] Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).

[3] List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. **LIST** Acids, CO, CS_2, VOCs, H_2S, Inorganics, Lead, Organics, O_3, NO, NO_2, SO_2, SO_3, all applicable Greenhouse Gases (including CO_2 and methane), etc. **DO NOT LIST** H_2, H_2O, N_2, O_2, and Noble Gases.

[4] Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[5] Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[6] Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 2: Release Parameter Data								
Emission Point ID No. *(Must match Emission Units Table)*	Inner Diameter (ft.)	Exit Gas			Emission Point Elevation (ft)		UTM Coordinates (km)	
		Temp. (^oF)	Volumetric Flow [1] (acfm) *at operating conditions*	Velocity (fps)	Ground Level *(Height above mean sea level)*	Stack Height [2] *(Release height of emissions above ground level)*	Northing	Easting
AE.002	0.5 ft	1400 F	280 cfm	22 fps		30 ft	451.848	4,232.589

[1] Give at operating conditions. Include inerts.
[2] Release height of emissions above ground level.

ATTACHMENT L: EMISSION UNIT DATA SHEET

Attachment L

EMISSIONS UNIT DATA SHEET
STORAGE TANKS

Provide the following information for each new or modified bulk liquid storage tank as shown on the *Equipment List Form* and other parts of this application. A tank is considered modified if the material to be stored in the tank is different from the existing stored liquid.

IF USING US EPA'S TANKS EMISSION ESTIMATION PROGRAM (AVAILABLE AT www.epa.gov/tnn/tanks.html), APPLICANT MAY ATTACH THE SUMMARY SHEETS IN LIEU OF COMPLETING SECTIONS III, IV, & V OF THIS FORM. HOWEVER, SECTIONS I, II, AND VI OF THIS FORM MUST BE COMPLETED. US EPA'S AP-42, SECTION 7.1, "ORGANIC LIQUID STORAGE TANKS," MAY ALSO BE USED TO ESTIMATE VOC AND HAP EMISSIONS (http://www.epa.gov/tnn/chief/).

I. GENERAL INFORMATION (required)

1. Bulk Storage Area Name Ammonia Area	2. Tank Name Ammonia Storage Tank
3. Tank Equipment Identification No. (as assigned on *Equipment List Form*) AM79	4. Emission Point Identification No. (as assigned on *Equipment List Form*) AE.002
5. Date of Commencement of Construction (for existing tanks) 1966	
6. Type of change ☐ New Construction ☐ New Stored Material ☒ Other Tank Modification	
7. Description of Tank Modification (if applicable) Empty existing tank and then purge with nitrogen and air to rid the tank of ammonia vapors. Ammonia vapors will be controlled by a temporary flare. Tank will be recommisioned in Fall 2016.	
7A. Does the tank have more than one mode of operation? (e.g. Is there more than one product stored in the tank?) ☐ Yes ☒ No	
7B. If YES, explain and identify which mode is covered by this application (Note: A separate form must be completed for each mode).	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.):	

II. TANK INFORMATION (required)

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. 20,000 tons	
9A. Tank Internal Diameter (ft)	9B. Tank Internal Height (or Length) (ft)
10A. Maximum Liquid Height (ft) N/A - Tank will be empty	10B. Average Liquid Height (ft) N/A - Tank will be empty
11A. Maximum Vapor Space Height (ft)	11B. Average Vapor Space Height (ft)
12. Nominal Capacity (specify barrels or gallons). This is also known as "working volume" and considers design liquid levels and overflow valve heights. N/A Tank will be empty	

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13A. Maximum annual throughput (gal/yr) N/A - Tank will be empty	13B. Maximum daily throughput (gal/day) N/A - Tank will be empty
14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume) N/A - Tank will be empty	
15. Maximum tank fill rate (gal/min) N/A - Tank will be empty	
16. Tank fill method ☐ Submerged ☐ Splash ☐ Bottom Loading	
17. Complete 17A and 17B for Variable Vapor Space Tank Systems ☒ Does Not Apply	
17A. Volume Expansion Capacity of System (gal)	17B. Number of transfers into system per year

18. Type of tank (check all that apply):
☒ Fixed Roof X vertical ___ horizontal ___ flat roof ___ cone roof ___ dome roof
___ other (describe)
☐ External Floating Roof ___ pontoon roof ___ double deck roof
☐ Domed External (or Covered) Floating Roof
☐ Internal Floating Roof ___ vertical column support ___ self-supporting
☐ Variable Vapor Space ___ lifter roof ___ diaphragm
☐ Pressurized ___ spherical ___ cylindrical
☐ Underground
☐ Other (describe)

III. TANK CONSTRUCTION & OPERATION INFORMATION (optional if providing TANKS Summary Sheets)

19. Tank Shell Construction: ☐ Riveted ☐ Gunite lined ☐ Epoxy-coated rivets ☒ Other (describe) Double Wall Tank		
20A. Shell Color White	20B. Roof Color White	20C. Year Last Painted
21. Shell Condition (if metal and unlined): ☒ No Rust ☐ Light Rust ☐ Dense Rust ☐ Not applicable		
22A. Is the tank heated? ☐ YES ☒ NO		
22B. If YES, provide the operating temperature (°F)		
22C. If YES, please describe how heat is provided to tank.		
23. Operating Pressure Range (psig): to		
24. Complete the following section for **Vertical Fixed Roof Tanks** ☐ Does Not Apply		
24A. For dome roof, provide roof radius (ft)		
24B. For cone roof, provide slope (ft/ft)		
25. Complete the following section for **Floating Roof Tanks** ☐ Does Not Apply		
25A. Year Internal Floaters Installed:		
25B. Primary Seal Type: (check one) ☐ Metallic (Mechanical) Shoe Seal ☐ Vapor Mounted Resilient Seal	☐ Liquid Mounted Resilient Seal ☐ Other (describe):	
25C. Is the Floating Roof equipped with a Secondary Seal? ☐ YES ☐ NO		
25D. If YES, how is the secondary seal mounted? (check one) ☐ Shoe ☐ Rim ☐ Other (describe):		
25E. Is the Floating Roof equipped with a weather shield? ☐ YES ☐ NO		

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25F. Describe deck fittings; indicate the number of each type of fitting:		
ACCESS HATCH		
BOLT COVER, GASKETED:	UNBOLTED COVER, GASKETED:	UNBOLTED COVER, UNGASKETED:
AUTOMATIC GAUGE FLOAT WELL		
BOLT COVER, GASKETED:	UNBOLTED COVER, GASKETED:	UNBOLTED COVER, UNGASKETED:
COLUMN WELL		
BUILT-UP COLUMN – SLIDING COVER, GASKETED:	BUILT-UP COLUMN – SLIDING COVER, UNGASKETED:	PIPE COLUMN – FLEXIBLE FABRIC SLEEVE SEAL:
LADDER WELL		
PIP COLUMN – SLIDING COVER, GASKETED:	PIPE COLUMN – SLIDING COVER, UNGASKETED:	
GAUGE-HATCH/SAMPLE PORT		
SLIDING COVER, GASKETED:	SLIDING COVER, UNGASKETED:	
ROOF LEG OR HANGER WELL		
WEIGHTED MECHANICAL ACTUATION, GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	SAMPLE WELL-SLIT FABRIC SEAL (10% OPEN AREA)
VACUUM BREAKER		
WEIGHTED MECHANICAL ACTUATION, GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	
RIM VENT		
WEIGHTED MECHANICAL ACTUATION GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	
DECK DRAIN (3-INCH DIAMETER)		
OPEN:	90% CLOSED:	
STUB DRAIN		
1-INCH DIAMETER:		
OTHER (DESCRIBE, ATTACH ADDITIONAL PAGES IF NECESSARY)		

26. Complete the following section for Internal Floating Roof Tanks ☐ Does Not Apply	
26A. Deck Type: ☐ Bolted ☐ Welded	
26B. For Bolted decks, provide deck construction:	
26C. Deck seam: ☐ Continuous sheet construction 5 feet wide ☐ Continuous sheet construction 6 feet wide ☐ Continuous sheet construction 7 feet wide ☐ Continuous sheet construction 5 × 7.5 feet wide ☐ Continuous sheet construction 5 × 12 feet wide ☐ Other (describe)	
26D. Deck seam length (ft)	26E. Area of deck (ft^2)
For column supported tanks: 26F. Number of columns:	26G. Diameter of each column:

IV. SITE INFORMANTION (optional if providing TANKS Summary Sheets)

27. Provide the city and state on which the data in this section are based. Charleston, WV
28. Daily Average Ambient Temperature (°F)
29. Annual Average Maximum Temperature (°F)
30. Annual Average Minimum Temperature (°F)
31. Average Wind Speed (miles/hr)
32. Annual Average Solar Insulation Factor (BTU/(ft^2·day))
33. Atmospheric Pressure (psia)

V. LIQUID INFORMATION (optional if providing TANKS Summary Sheets)

34. Average daily temperature range of bulk liquid:	
34A. Minimum (°F)	34B. Maximum (°F)
35. Average operating pressure range of tank:	
35A. Minimum (psig)	35B. Maximum (psig)
36A. Minimum Liquid Surface Temperature (°F)	36B. Corresponding Vapor Pressure (psia)
37A. Average Liquid Surface Temperature (°F)	37B. Corresponding Vapor Pressure (psia)
38A. Maximum Liquid Surface Temperature (°F)	38B. Corresponding Vapor Pressure (psia)

39. Provide the following for <u>each</u> liquid or gas to be stored in tank. Add additional pages if necessary.

39A. Material Name or Composition			
39B. CAS Number			
39C. Liquid Density (lb/gal)			
39D. Liquid Molecular Weight (lb/lb-mole)			
39E. Vapor Molecular Weight (lb/lb-mole)			

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Maximum Vapor Pressure 39F. True (psia) 39G. Reid (psia)			
Months Storage per Year 39H. From 39I. To			

VI. EMISSIONS AND CONTROL DEVICE DATA (required)

40. Emission Control Devices (check as many as apply): ☐ Does Not Apply

- ☐ Carbon Adsorption[1]
- ☐ Condenser[1]
- ☒ Conservation Vent (psig)
  - Vacuum Setting 0.122 psig Pressure Setting 1.0 psig
- ☐ Emergency Relief Valve (psig)
- ☐ Inert Gas Blanket of
- ☐ Insulation of Tank with
- ☐ Liquid Absorption (scrubber)[1]
- ☐ Refrigeration of Tank
- ☐ Rupture Disc (psig)
- ☐ Vent to Incinerator[1]
- ☒ Other[1] (describe): Flare

[1] Complete appropriate Air Pollution Control Device Sheet.

41. Expected Emission Rate (submit Test Data or Calculations here or elsewhere in the application).

Material Name & CAS No.	Breathing Loss (lb/hr)	Working Loss Amount	Working Loss Units	Annual Loss (lb/yr)	Estimation Method[1]
Ammonia	663 lb/hr	N/A	N/A	N/A	Based on amount flare will combust

[1] EPA = EPA Emission Factor, MB = Material Balance, SS = Similar Source, ST = Similar Source Test, Throughput Data, O = Other (specify)

☒ Remember to attach emissions calculations, including TANKS Summary Sheets if applicable

ATTACHMENT M: AIR POLLUTION CONTROL DEVICE SHEET

Attachment M
Air Pollution Control Device Sheet
(FLARE SYSTEM)

Control Device ID No. (must match Emission Units Table): TEMPCD1

Equipment Information

1. Manufacturer: PURGIT

   Model No. F-4

2. Method:
   - ☐ Elevated flare
   - ☐ Ground flare
   - ☒ Other

   Describe

   Temporary - See attached vendor literature.

3. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency.

4. Method of system used:
   ☐ Steam-assisted ☐ Air-assisted ☐ Pressure-assisted ☒ Non-assisted

5. Maximum capacity of flare:
   1000 scf/min
   scf/hr

6. Dimensions of stack:
   Diameter .5 ft.
   Height 30 ft.

7. Estimated combustion efficiency:
   (Waste gas destruction efficiency)
   Estimated: 99.9 %
   Minimum guaranteed: 98 %

8. Fuel used in burners:
   - ☒ Natural Gas
   - ☐ Fuel Oil, Number
   - ☒ Other, Specify: Propane

9. Number of burners:
   Rating: 40MM BTU/hr

10. Will preheat be used? ☐ Yes ☒ No

11. Describe method of controlling flame:

    Gas / air ratio

12. Flare height: 30 ft

13. Flare tip inside diameter: .5 ft

14. Natural gas flow rate to flare pilot flame per pilot light: scf/min
    21 scf/hr

15. Number of pilot lights:
    Total 1 BTU/hr

16. Will automatic re-ignition be used?
    ☒ Yes ☐ No

17. If automatic re-ignition will be used, describe the method:

    Pilot ignition sparks every 5 seconds. fuel and air are supplied to the pilot separate from the flare stack and waste gas. K-type thermcouple on pilot tip monitors pilot condition and relays that to 'ready' light and audible and visual alarms.

18. Is pilot flame equipped with a monitor? ☒ Yes ☐ No
    If yes, what type?
    - ☒ Thermocouple
    - ☐ Infra-Red
    - ☐ Ultra Violet
    - ☐ Camera with monitoring control room
    - ☐ Other, Describe:

19. Hours of unit operation per year: 192 hours for Chemours WV job.

Steam Injection

20. Will steam injection be used? ☐ Yes ☒ No	21. Steam pressure PSIG Minimum Expected: Design Maximum:
22. Total Steam flow rate: LB/hr	23. Temperature: °F
24. Velocity ft/sec	25. Number of jet streams
26. Diameter of steam jets: in	27. Design basis for steam injected: LB steam/LB hydrocarbon
28. How will steam flow be controlled if steam injection is used?	

Characteristics of the Waste Gas Stream to be Burned

29.

Name	Quantity Grains of H_2S/100 ft^3	Quantity (LB/hr, ft^3/hr, etc)	Source of Material
NH3	n/a	250 FT3/min	Ammonia Storage Tank (AM79)

30. Estimate total combustible to flare: LB/hr or ACF/hr (Maximum mass flow rate of waste gas) scfm	
31. Estimated total flow rate to flare including materials to be burned, carrier gases, auxiliary fuel, etc.: 280 CFM LB/hr or ACF/hr	
32. Give composition of carrier gases: Propane or Natural Gas	
33. Temperature of emission stream: °F Heating value of emission stream: BTU/ft^3 Mean molecular weight of emission stream: MW = lb/lb-mole	34. Identify and describe all auxiliary fuels to be burned. propane, 2500 BTU/scf natural gas, 1250 BTU/scf BTU/scf BTU/scf
35. Temperature of flare gas: 1400 °F	36. Flare gas flow rate: 250 scf/min
37. Flare gas heat content: greater than 300 BTU/ft^3	38. Flare gas exit velocity: 22 ft/second scf/min
39. Maximum rate during emergency for one major piece of equipment or process unit: scf/min	
40. Maximum rate during emergency for one major piece of equipment or process unit: BTU/min	
41. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification):	
42. Describe the collection material disposal system:	

43. Have you included ***Flare Control Device*** in the Emissions Points Data Summary Sheet? Yes

44. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING:	RECORDKEEPING:
Monitor the presence of a pilot flame. Visual emission checks	Pilot flame operation Pilot flame outage Visible emission checks
REPORTING:	TESTING:
None	None

MONITORING:	Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.
RECORDKEEPING:	Please describe the proposed recordkeeping that will accompany the monitoring.
REPORTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.
TESTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.

45. Manufacturer's Guaranteed Capture Efficiency for each air pollutant.

46. Manufacturer's Guaranteed Control Efficiency for each air pollutant.

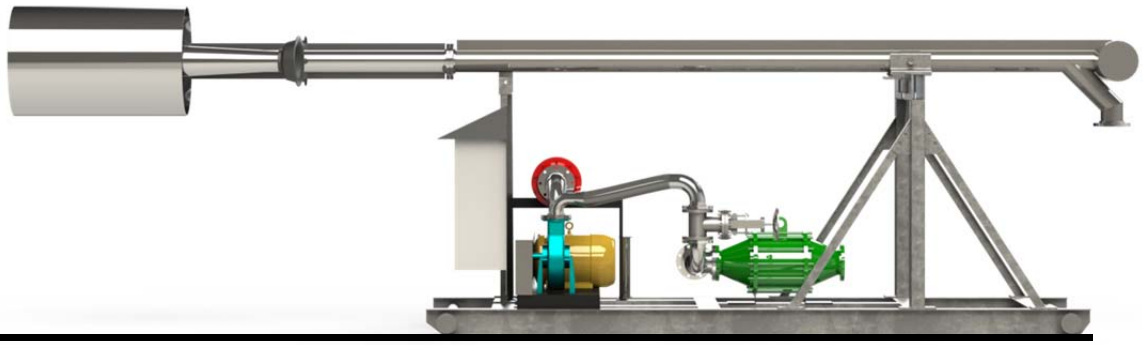
99+% destruction efficiency

47. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.

PURGIT F-4 MOBILE COMBUSTOR

System overview –

The F4 mobile combustor unit is designed to be easily delivered to a jobsite, quickly assembled in under 30 minutes and customizable for a variety of applications. The F-4 combustor system is equipped with either an air assisted tip or the optional propane or natural gas assisted flare tip for lower BTU applications. The F-4 system can flare vapors with 99+% destruction efficiency using its 6" mixing tip and gas assist option. The system has an automatic pilot system with a thermocouple to ensure that the flare remains lit. Flashback sensors are installed throughout the system to automatically shut down the vapor header and sound an alarm in the case of a malfunction.



Features –

- Mobile with quick setup
- Flashback alarm system
- Vapor mixing flare tip
- Automatic pilot ignition/re-ignition system

Equipment –

- 10K CFM combustion air blower
- Protectoseal Detonation arrestor - 26006 (Coast Guard approved)
- Tornado 6" Flame arrestor - 71206-D-C4R
- Triac 6" Power Seal fire safe shut down valve HPBFV

System Specifications –

- Approx. 7500 lbs. gross weight
- 40MM BTU/Hr capacity
- 8' folded height
- 28' folded length
- 32' operating height
- 16' operating length
- 6' total width

Material –

- All structural components are constructed using zink coated steel
- All pipe in contact with vapor flow is 304 stainless steel
- Detonation and flame arrestors are carbon steel with 316SS grid
- 6" ANSI 150 lbs flange connection

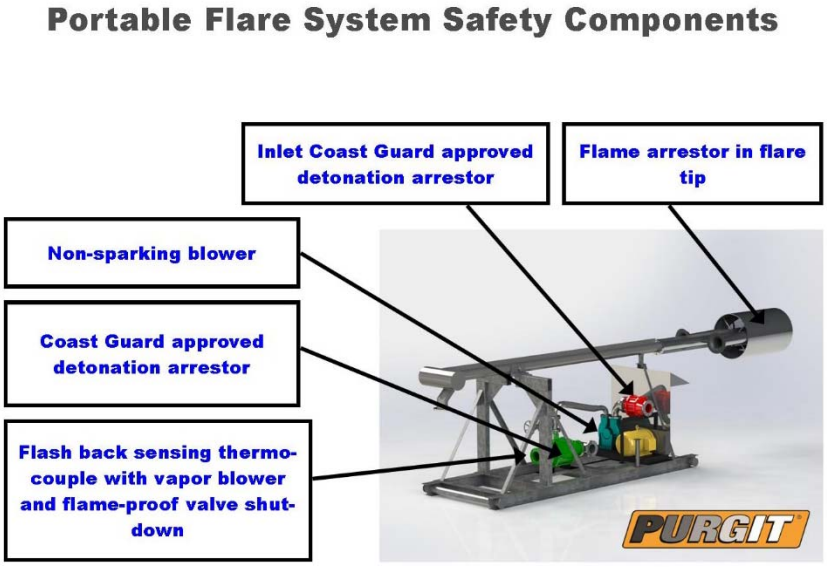
Hilliard Emission Controls, Inc.
101 North Spooner
Pasadena, Texas 77506
713-621-3132 sales@purgit.com

PURGIT F-4 MOBILE COMBUSTOR

Equipment Description and Operational Procedures

Propane Vaporizer:

1. **Vaporizer can be necessary to supply the flare with enough vapor propane.**
2. **Connect liquid valve on propane storage tank to the vaporizer liquid inlet.**
3. **Make sure gas outlet valve on vaporizer is closed. Open inlet liquid valve.** NOTE: it is important that the inlet hose/valve is open and unrestricted during operation.
4. **Check the area for flammable gas. Light the pilot on the vaporizer.**
5. **Set the outlet regulator to 10 psi. or to the pressure required for the necessary flow required according to the heat value of the waste gas.**
6. **Open the gas outlet valve when the flare pilot and assist gas system is ready.**



Flare ignition system:

1. **Attach a 12 volt car battery or a battery charger to the power wires on the control box. Red positive, Black negative.**
2. **Connect a propane tank or vaporizer (vapor connection) to the pilot and open the small valve on the regulator manifold - set the propane pressure to 3-5 psi.**
3. **Light the pilot by turning the power to 'ON'.**
4. **If the pilot does not start (green light), look for a loose wire or one of the gas passages may be plugged. There is a very small passageway in the pilot gas assembly and sand can easily stop it up. Keep the lines and regulators capped when the system is not in use. Do not let sand get in the hoses or the regulators or manifold. Open the control box to confirm that the thermocouple in the pilot system is reading 'hot'.**

Detonation arrester:

1. **The detonation arrester is a device that will keep a flame from flashing back down the flare pipeline to the tank. The detonation arrester has grid sections made of stainless steel with very small holes, like a filter.**
2. **The ideal condition is that there is very little pressure differential across the detonation arrester grids. Low pressure gauges (0 to 15 psi.) could be installed on the inlet side and the outlet side to check for the differential.**

Flare operation procedure:

1. **Clear the area of unnecessary personnel. Advise remaining personnel of the potential hazards of the gas to be flared. Check the area for flammable gas.**
2. **Winch the flare to the upright position using the provided onboard winch.**
3. **Connect the flare to the detonation arrester and connect the detonation arrester to the knockout drum (if necessary) with appropriate hoses. Make sure all hose gaskets are in place.**
4. **Ignite pilot on propane vaporizer and establish pressure to flare gas assist system and flare pilot system.**
5. **With the flare pilot lit and ready open the main assist gas valve to the flare and visually confirm that the flare is lit.**
6. **The flare is now ready for waste gas stream. Adjust the propane flow according to the heat value of the waste gas and the heat value required by the facility permit.**

ATTACHMENT N: SUPPORTING CALCULATIONS

Attachment N: Supporting Emission Calculations

Emission factors for this flare operation were estimated using AP-42 Section 13 for Industrial Flares

Emission factors for PM and SO2were estimated using AP-42 Section 1.4 for Natural Gas Combustion

Pollutant	Emission Factor Value	Emission Factor Units	Reference
NOx	0.068	lb/106 Btu	AP-42 Table 13.5-1
PM	7.6	lb/106 scf	AP-42 Table 1.4-2
PM-CON	5.7	lb/106 scf	AP-42 Table 1.4-2
PM-FIL	1.9	lb/106 scf	AP-42 Table 1.4-2
CO	0.31	lb/106Btu	AP-42 Table 13.5-2
SO2	0.6	lb/106 scf	AP-42 Table 1.4-2
VOC	5.5	lb/106 scf	AP-42 Table 1.4-2
Benzene	0.0021	lb/106scf	AP-42 Table 1.4-3
Formaldehyde	0.075	lb/106scf	AP-42 Table 1.4-3
Toluene	0.0034	lb/106scf	AP-42 Table 1.4-3
CO2	53.06	kg/MMBtu	40 CFR 98 Subpart C-1
N2O	0.0001	kg/MMBtu	40 CFR 98 Subpart C-2
Methane	0.001	kg/MMBtu	40 CFR 98 Subpart C-2

Total Waste Gas sent to Flare	280	scf/min
Rating of Flare	40	MMBtu/hr

Estimate of Emissions

	pph	tpy	pph	tpy
NOx	2.72	11.91	6.03	26.43
PM	0.13	0.56		
PM-CON	0.10	0.42		
PM-FIL	0.03	0.14		
CO	12.40	54.31		
SO2	0.01	0.04		
VOC	0.09	0.40		
Benzene	0.00004	0.0002		
Formaldehyde	0.00126	0.0055		
Toluene	0.00006	0.0003		
Total HAPs	0.00135	0.0059		
CO2	4669.28	20451.45		
N2O	0.01	0.04		
Methane	0.09	0.39		
GHG emissions	4674.10	20472.57		

Since the facility will be combusting NH3, it is assumed that NOx is 0.5 wt percent of inlet NH3.

Ammonia Waste Gas Flow to the Flare	250	scfm

Mass flow rate of Ammonia to the Flare

m = (60) (MW) (PV)					m=	663	lb/hr	
	RT							
m =	mass flow rate in lb per hour							
MW =	molecular weight in lb per lbmole							
P =	standard pressure = 14.7 psia							
V =	flow rate in scfm							
R =	gas constant = 10.73 psia ft^3 $lbmol^{-1}$ R^{-1}							
T =	standard temperature = 528 R							
NOx Emissions:		3.31	lb/hr					
		14.52	tpy					

Table 4. Flare Factors

Waste Stream	**Destruction/Removal Efficiency (DRE)**		
VOC	98 percent (generic)		
	99 percent for compounds containing no more than 3 carbons that contain no elements other than carbon and hydrogen in addition to the following compounds: methanol, ethanol, propanol, ethylene oxide and propylene oxide		
H_2S	98 percent		
NH_3	case by case		
CO	case by case		
Air Contaminants	**Emission Factors**		
thermal NO_x	steam-assist:	high Btu	0.0485 lb/MMBtu
		low Btu	0.068 lb/MMBtu
	other:	high Btu	0.138 lb/MMBtu
		low Btu	0.0641 lb/MMBtu
fuel NO_x	NO_x is 0.5 wt percent of inlet NH_3, other fuels case by case		
CO	steam-assist:	high Btu	0.3503 lb/MMBtu
		low Btu	0.3465 lb/MMBtu
	other:	high Btu	0.2755 lb/MMBtu
		low Btu	0.5496 lb/MMBtu
PM	none, required to be smokeless		
SO_2	100 percent S in fuel to SO_2		

*The only exeption ot this is if inorganics might be emitted from the flare. In the case of landfills, the AP-42 PM factor may be used. In other cases, the emissions should be based on the composition of the waste stream routed to the flare.

ATTACHMENT O:
MONITORING/RECORDKEEPING/REPORTING/TESTING PLANS

Attachment O

Monitoring, Recordkeeping, Reporting

The facility will monitor and record the following.

- Opacity of the flare
- Presence of a pilot flame operation
- Pilot flame outage

ATTACHMENT P: PUBLIC NOTICE

LEGAL ADVERTISEMENT

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that The Chemours Company FC, LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Temporary Permit for flare located on the Belle Plant at 901 West DuPont Avenue, in Kanwaha County, West Virginia. The latitude and longitude coordinates are: 38.243, -81.556.

The applicant estimates the potential to discharge the following Regulated Air Pollutants will be:

Pollutants	Totals (tpy)
NOx	26.4
PM	0.6
PM-CON	0.6
PM-FIL	0.6
CO	54.3
SO2	0.1
VOC	0.4
Total HAPs	0.01
CO2e	20,473

Startup of operation is planned to begin on or about the 1st day of August, 2016. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1227, during normal business hours.

Dated this the 1st day of June, 2016.

By: The Chemours Company FC, LLC
Timothy L. Byrd
Plant Manger
901 West DuPont Avenue
Belle, WV 25015

ATTACHMENT Q: BUSINESS CONFIDENTIAL CLAIMS

Cover Document for Confidential Information

Company Name	The Chemours Company FC, LLC	**Responsible Official**		
Company Address	901 W. DuPont Ave.	**Confidential Information Designee in State of WV**	**Name**	Timothy L. Byrd
	Belle, WV 25015		**Title**	Plant Manager
			Address	901 West DuPont Ave.
Person/Title Submitting Confidential Information	LeAnne S. Wheeler			Belle, WV 25015
	Site Environmental Coordinator		**Phone**	304-357-1200
			Fax	304-357-1204

Reason for Submittal Of Confidential Information Permit application for Amines Tank Farm

Identification of Confidential Information	**Rationale for Confidential Claim 45CSR31-4.1a-e**	**Confidential Treatment Time Period**
Attachment E Plot Plan Drawings Attachment L Emission Unit Data	a. Chemours continues to claim business confidentiality protection for this business. The claim has not expired by its term, or been waived or withdrawn. The confidential information should continue to be maintained as such for an indefinite time period. See attached for b-e	Permanent

Responsible Official Signature:	
Responsible Official Title:	Plant Manager
Date Signed:	05/21/2016

NOTE: Must be signed and dated in **BLUE INK**.

Rationale for Confidentiality Claim (Cont.)

b. Information claimed confidential is not available to the general public. Within the company, Chemours has distributed technical information on a need-to-know basis and has used its business confidentiality policy to prevent inadvertent dissemination of information. This policy includes:

    * Marking of business confidential documents,
    * Limited distribution of documents,
    * Shredding of confidential documents before disposal.

    Employees are aware of the competitive nature of their business and are trained in guarding confidential information. Within Chemours, a corporate program – "PIP" (Proprietary Information Protection) – is used to raise awareness for handling and disclosure of confidential information, which is documented in, document number GS-10346, "Guidelines for Safe Guarding Chemours Company Documents and Information".

c. Information revealing the process technology in this submittal is not reasonably obtainable by persons other than Chemours employees who need to know. To maintain the confidentiality of such information, Chemours employees involved with confidential information sign a confidentiality agreement as stipulated by Chemours Legal. Transmittal of confidential information is done by certified mail or is delivered in person by a Chemours employee.

d. There is no statute that has been reviewed that requires disclosure of information claimed to be confidential.

e. Chemours claims business confidentiality protection for the information submitted since disclosure would allow competent engineers within a competitor's company to determine the manner or process by which Chemours produces this product and would provide competitors information without paying for technology or conducting research and development necessary to obtain the technology.