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):***
46-5626518

3. Name of facility *(if different from above):*
Washington Works

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

5A. Applicant's mailing address:
Building 1 – Washington Works, Washington WV 26181-1217

5B. Facility's present physical address:
8480 DuPont Road, Washington WV 26181

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: E. I. duPont de Nemours & Company

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: Owns property
- 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.): Polymer manufacturing facility

10. North American Industry Classification System **(NAICS)** code for the facility:
325211

11A. DAQ Plant ID No. (for existing facilities only):
107-00182

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
R30-10700001-2010 Segment 1 of 14, R13-0181, R13-3223

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**.		
12.B. New site address (if applicable): Building 1, Washington Works, Washington WV. 26181	12C. Nearest city or town: Parkersburg	12D. County: Wood
12.E. UTM Northing (KM): 4346.908	12F. UTM Easting (KM): 442.436	12G. UTM Zone: 17
13. Briefly describe the proposed change(s) at the facility: Update of the permit to reflect "as-built" condition		
14A. Provide the date of anticipated installation or change: / / – 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: / /
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 52		
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
☐ Chemical Processes
☐ Concrete Batch Plant
☐ Grey Iron and Steel Foundry
☒ General Emission Unit, specify
☐ Haul Road Emissions
☐ Hot Mix Asphalt Plant
☐ Incinerator
☐ Indirect Heat Exchanger
☐ Quarry
☐ Solid Materials Sizing, Handling and Storage Facilities
☐ Storage Tanks

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
☐ Adsorption Systems
☐ Afterburner
☐ Baghouse
☐ Condenser
☐ Electrostatic Precipitator
☐ Flare
☐ Mechanical Collector
☐ 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 Robert J. Fehrenbacher *(Please use blue ink)* DATE: Oct. 15, 2015 *(Please use blue ink)*

35B. Printed name of signee: Robert J. Fehrenbacher		35C. Title: Plant Manager
35D. E-mail: robert.j.fehrenbacher@chemours.com	36E. Phone: 304-863-4305	36F. FAX: 304-863-2735
36A. Printed name of contact person (if different from above): David F. Altman		36B. Title: Sr. Environmental Control Consult.
36C. E-mail: david.f.altman@Chemours.com	36D. Phone: 304-863-4271	36E. FAX: 304-863-4862

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.

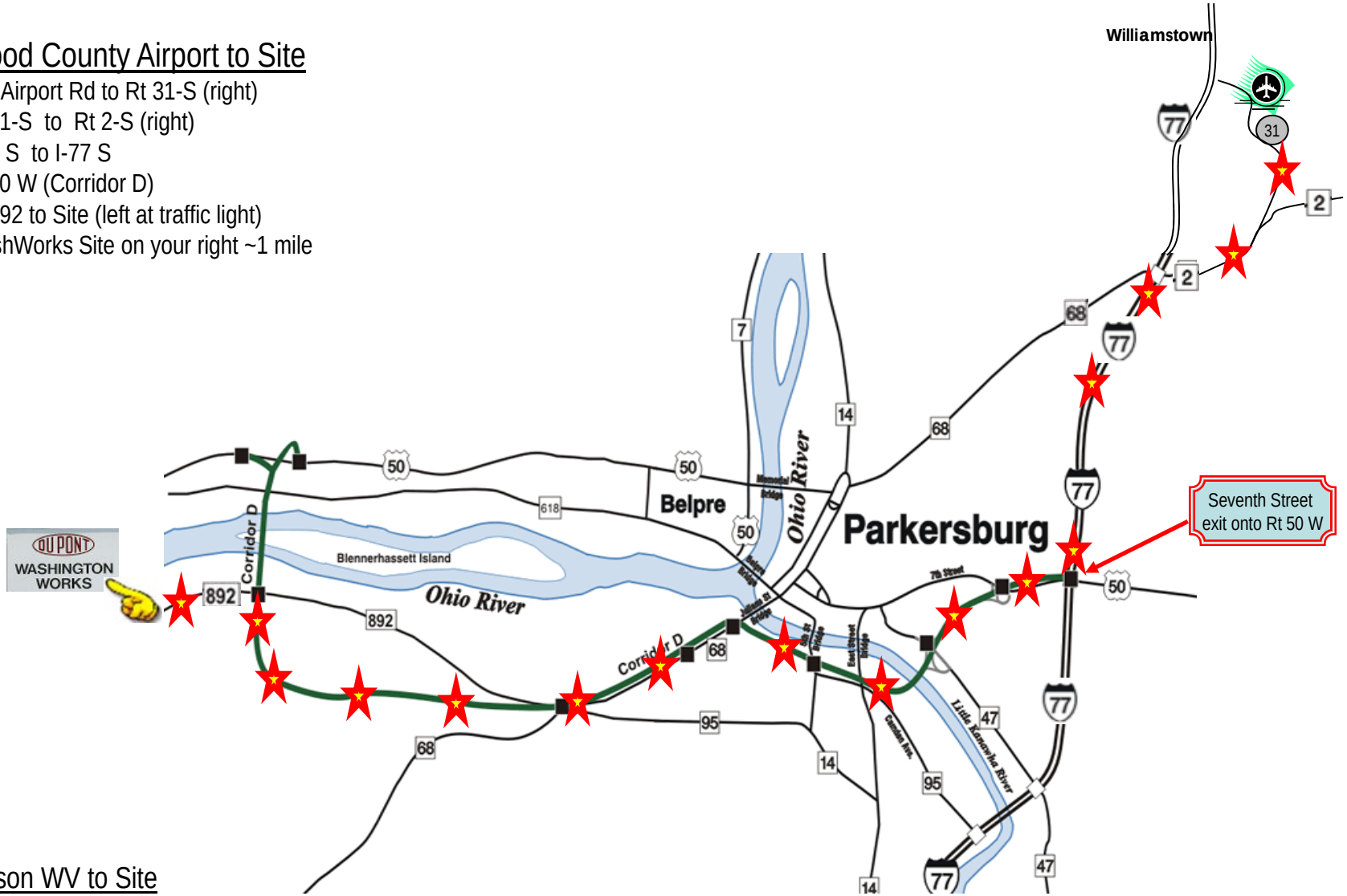
TAX	FILING FREQUENCY	ACCOUNT NUMBER
Business Registration Tax		2303-3963
Combined Sales & Use Tax	Combined Sales & Use Monthly	2306-6997
Pass Through Entity Tax	Partnership Annual	2303-3964
Withholding Tax	Withholding Quarterly	2306-5525

ATTACHMENT B

Site Location Map

Wood County Airport to Site

Exit Airport Rd to Rt 31-S (right)
Rt 31-S to Rt 2-S (right)
Rt 2 S to I-77 S
Rt 50 W (Corridor D)
Rt 892 to Site (left at traffic light)
WashWorks Site on your right ~1 mile



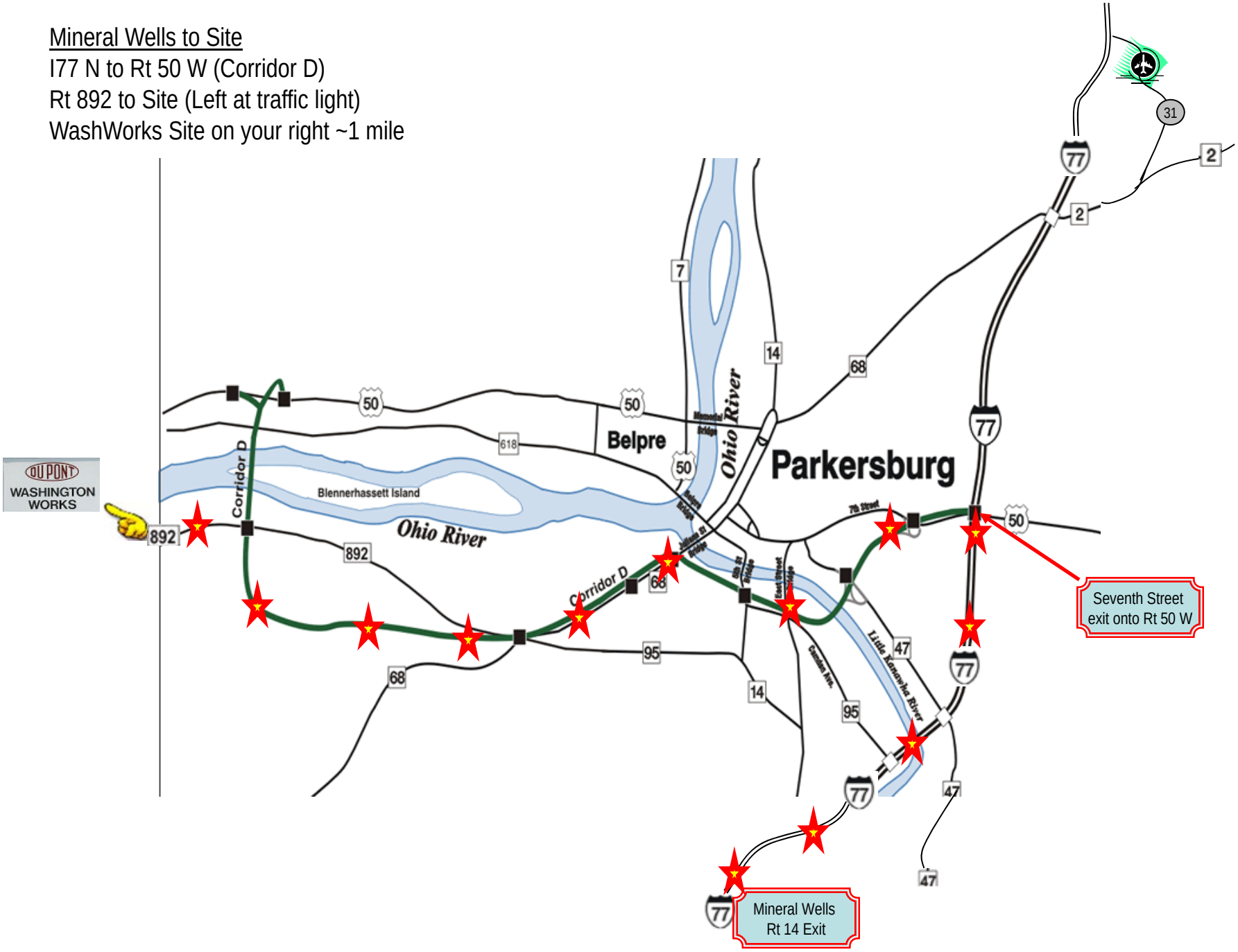
Charleson WV to Site

I-77 north from Charleston
Rt 50 W (Corridor D) take to Ohio
Rt 892 to Site (left at traffic light)
WashWorks Site on your right ~1 mile

Airport to Comfort Inn

Exit Airport Rd to Rt 31-S (right)
Rt 31-S to Rt 2-S (right)
Rt 2 S to Rt 68 S (Emerson Avenue)
Follow Rt 68 S to Rt 14 N
Comfort Inn is on left (near Red Lobster)

Mineral Wells to Site
I77 N to Rt 50 W (Corridor D)
Rt 892 to Site (Left at traffic light)
WashWorks Site on your right ~1 mile



Attachment C
Schedule

This application is an “as built” and has no implementation schedule

ATTACHMENT D

Applicable Requirements & Methods of Compliance

Administrative Amendment Summary

On October 24, 2005, WVDEP issued to DuPont Washington Works a permit R13-0181C for the Acrylics (A1) operating area. This permit was issued to allow DuPont to implement improvements to reduce emissions.

Since that time DuPont has announced plans to separate various businesses forming a new company called Chemours. For the remainder of this application the owner shall be referred to as Chemours.

The Acrylics operating area has implemented several additional improvements reducing emissions since the last R13 permit update. The improvements include elimination of methanol as solvent used in the process, elimination of ethylene glycol brine, and taking various tanks out of service reducing the potential emissions.

We are also reflecting change submitted on a Permit Determination concerning the splitting of the current laboratory from a single hood to two hoods to provide better work access for personnel. We are requesting the limit be title A LabHoods which would be comprised of sources A471S and A472S emitting repetitively from A471E and A472E.

Under 45 CSR 13, Section 4.2.a.8., changes in permit conditions may be made as necessary to allow changes in operating parameters, emission points, control equipment or any other aspect of a source which results in a decrease in the emission of any existing regulated air pollutant or any new regulated air pollutant. According to section 4.2.a., such a change would be a Class I administrative update.

Chemours therefore requests that the agency address the associated requirements within the permits for A1 Area as follows:

- Within permit R13-181C, remove the following items from Table 1:

Emission Unit ID	Emission Point ID	Emission Unit Description
A010.2S	A010E	1B Storage Tank
A050S	A050E	3S Storage Tank
A080.1S	A080E	4E Storage Tank
A105S	NA	8 Storage Tank
A120S	A120E	#1 Indoor Storage Tank
A130.1S	A130E A140E	#5 Indoor Storage Tank
A130.4S	A130E A140E	#3 Indoor Storage Tank
A130.5S	A130E A140E	DDM Indoor Storage Tank
A190S	A190E	Catalyst Run Tank
A200S	A200E	Ingredient 11 Run Tank
A270S	A270E	Brine Tank
A290.3S	A290E	Alternative Liquids Microscale Tank
A480S	A480E	S. PK Lab Hood
A470S	A470E	Laboratory Hood

- A few of the tanks taken out of service have been placed back into service for new purposes. Within permit R13-181C, the following items need to be added to Table 1 (note far left column just added for ease of reference and not to be added to modified Table 1):

Previous Emission Unit ID	Emission Unit ID	Emission Point ID	Emission Unit Description
A080.2S	A040.1S	A040E	4E Storage Tank
A130.1S	A110.1S	A110E	Indoor Storage Tank #5
A130.6S	A130.6S	A130.6E	DDM Indoor Storage Tank

- Within permit R13-181C that Table 4.1.2 be amended to reflect the following:

Table 4.1.2 Insignificant Sources and Activities

Emission Unit ID	Emission Point ID
A130.6S	A130.6E
A150S	A150E
A180S	A180E
A191S	A190E
A220S	A130E & A140E
A260.1S	N/A
A280S	A290E
A340S	A340E
A380S	A380E
A440.1-.5S	A460E
A LabHoods (A471S/A472S)	A471E/A472E

- Within permit R13-181C that Table 4.1.1 be amended to reflect the following:

Table 4.1.1 Emission Limits for "A" Area Acrylic Resins

Emission Point	Pollutant	Emission Limit	
		pph	tpy
A010E	VOC Ethyl Acrylate	0.2 0.17	0.02 0.011
A020E	VOC	2.5	0.04
A030E	VOC	1.7	0.04
A040E	VOC	1.7	0.04
A040.1E	VOC	1.7	0.04
A070E	VOC	5.3	0.14
A080E	VOC Methyl Methacrylate	4.2 4.16	1.41 1.408
A110E	VOC	0.1	0.01
A130E	VOC Methyl Methacrylate	1.5 0.81	0.1 0.09
A140E	VOC Methyl Methacrylate	1.5 0.81	0.1 0.09
A160E	PM_{10}	1.3	0.09
A260E	PM_{10}	0.6	0.01
A290E	VOC Acrylic Acid Ethyl Acrylate Methyl Methacrylate	11.8 0.01 1.2 8.82	29.4 0.016 3.0 22.1
A300E	VOC Acrylic Acid Ethyl Acrylate Methyl Methacrylate	0.6 0.01 0.06 0.41	1.360 0.001 0.134 1.025
A310E	VOC Acrylic Acid Ethyl Acrylate Methyl Methacrylate	0.24 0.01 0.03 0.18	0.587 0.001 0.06 0.441
A320E	VOC Acrylic Acid Ethyl Acrylate Methyl Methacrylate	0.17 0.01 0.02 0.09	0.29 0.001 0.03 0.221
A350E	PM_{10} VOC Acrylic Acid Ethyl Acrylate Methyl Methacrylate	1.8 0.1 0.01 0.01 0.02	4.36 0.13 0.001 0.024 0.042

Administrative Amendment Summary

Emission Point	Pollutant	Emission Limit pph	Emission Limit tpy
A390.1E	PM_{10} VOC Acrylic Acid Ethyl Acrylate Methyl Methacrylate	1.1 0.1 0.01 0.01 0.01	3.84 0.09 0.001 0.016 0.027
A390.2E	PM_{10} VOC Acrylic Acid Ethyl Acrylate Methyl Methacrylate	1.1 0.1 0.01 0.01 0.01	3.84 0.09 0.001 0.016 0.027
A390.8E	PM_{10}	0.1	0.13
A450E	VOC Acrylic Acid Ethyl Acrylate Methyl Methacrylate	0.3 0.01 0.03 0.18	0.72 0.001 0.06 0.441
A LabHoods A471E / A472E	Methylene Chloride Toluene Methanol	0.01 0.01 0.01	0.001 0.001 0.001

Listing of Insignificant Sources

Emission Unit ID	Description	Emission Point ID	VOC	PM_{10}
A130.6S	AQ Storage Tank	A130.6E	<10	N/A
A150S	Me-Sal Tank	A150E	<1	N/A
A180S	Initiator Mix Tank	A180E	<10	N/A
A191S	Initiator Run Tank	A190E	<10	N/A
A220S	PMA System	A130E & A140E	<1	N/A
A260.1S	Salt System	N/A	N/A	Neg.
A280S	Water Phase Tank	A290E	<10	N/A
A340S	#1 Centrifuge	A340E	<10	N/A
A380S	#2 Centrifuge	A380E	<10	N/A
A440.1-.5S	#1 - #5 Polykettles	A460E	<10	N/A
A471S	Acrylics Lab	A471E	<1	N/A
A472S	Acrylics Lab	A472E	<1	N/A

1.0 Emission Units

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed/ Modified	Design Capacity	Control Device
A010.1S	A010E	1A EA Storage Tank	1947	----	A010C
A020S	A020E	7E Storage Tank	1947	----	None
A030S	A030E	6W Storage Tank	1946	----	None
A040S	A040E	4W Storage Tank	1946	----	None
A040.1S	A040.1E	4E Storage Tank	1946	----	None
A070S	A070E	2 Storage Tank	1946	----	None
A080.1S	A080E	5 Storage Tank	1963	----	None
A110S	A110E	Indoor Storage Tank #6	1946	----	None
A110.1S	A110E	Indoor Storage Tank #5	1946	----	None
A130.2S	A130E/A140E	Indoor Storage Tank #4	1946	----	None
A130.3S	A130E/A140E	Indoor Storage Tank #2	1946	----	None
A130.6S	A130.6E	DDM Indoor Storage Tank	1946	----	None
A150S	A150E	Ingredient 10 Storage Tank	1946	----	None
A160.1S	A160E	Solids Storage Hopper	1968	----	None
A160.2S	A160E	Solids Storage Hopper	1968	----	None
A160.3S	A160E	Solids Storage Hopper	1968	----	None
A160.4S	A160E	Solids Storage Hopper	1968	----	None
A180S	A180E	Initiator Mix Tank	1980	----	A180C
A191S	A190E	Initiator Run Tank	1966	----	None
A220S	A130E/A140E	Ingredient 12 Run Tank	1975	----	None
A220.1S	A200E	Ingredient 12 Hold Tank	1946	----	None
A220.2S	A200E	Ingredient 12 Make Tank	1946	----	None
A260S	A260S	Ingredient 22 Storage Silo	1975	----	A260C
A260.1S	A200E	Ingredient 22 Mix Tank	1969	----	None
A260.2S	A200E	Ingredient 22 Storage Tank	1947	----	None
A280S	A290E	Water Phase Tank	1946	----	None
A290.1S	A290E	Monomer Phase Tank	1946	----	None
A290.2S	A290E	Micoscale Tank	1975	----	None
A290.4S	A160E	Solids Microscale Tank	1975	----	None
A300E	A300E	North Polykettle Room Exhaust	1947	----	None
A310.1S	A310E	#1 Slurry Tank	1958	----	None
A310.2S	A310E	#3 Slurry Tank	1965	----	None
A320S	A320E	#4 Blend Tank	1969	----	None
A340S	A340E	#1 Centrifuge	1946	----	None
A350.1S	A350E	#1 Predryer	1958	----	A350.1C
A350.2S	A350E	#1 Predryer Cyclone	1969	----	A350.1C
A350.3S	A350E	#1 Dryer	1947	----	A350.1C
A350.4S	A350E	#1 Dryer Fines Cyclone	1947	----	A350.1C
A350.5S	A350E	#1 Screener	1990	----	A350.2C

REDACTED

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed/ Modified	Design Capacity	Control Device
A350.6S	A350E	#1 Screener Overs Hopper	1991	----	A350.2C
A350.7S	A350E	#1 Product Transfer Cyclone	1969	----	A350.2C
A350.8S	A350E	#1 Packout	1968	----	A350.2C
A380S	A380E	#2 Centrifuge	1975	----	None
A390.1S	A390.1E/A390.2E	#2 Predryer	1975	----	A390.1C/A390.2C
A390.2S	A390.1E/A390.2E	#2 Predyer Cyclone	1975	----	A390.1C/A390.2C
A390.3S	A390.1E/A390.2E	#2 Dryer	1996	----	A390.1C/A390.2C
A390.4S	A390.8E	#2 Screener	2003	----	A390.8C
A390.6S	N/A	Manual Bagger	1975	----	A390.6C
A390.7S	A350E	#2 Packout	1969	----	A350.2C
A390.8S	A390.8E	#2 Product Transfer Cyclone	2003	----	A390.8C
A440.1S	A290E/A450E/A460E	#1 Polykettle	1975	----	None
A440.2S	A290E/A450E/A460E	#2 Polykettle	1975	----	None
A440.3S	A290E/A450E/A460E	#3 Polykettle	1975	----	None
A440.4S	A300E/A450E/A460E	#4Polykettle	1975	----	None
A440.5S	A300E/A450E/A460E	#5 Polykettle	2007	----	None
A471S	A471E	Acrylics Lab	2015	----	None
A472S	A472E	Acrylics Lab	2015	----	None
A900S	A900E	Metal Parts Degreaser	1999	----	None
A010C	A010E	Carbon Adsorber	1976		N/A
A180C	A180S	Filtered Exhaust	1980		N/A
A260C	A260E	Bag Filter	1975		N/A
A350.1C	A350E	Bag Filter	1976		N/A
A350.2C	A350E	Bag Filter	1976		N/A
A390.1C	A390.1E	Water Scrubber	1996		N/A
A390.2C	A390.2E	Bag Filter	1996		N/A
A390.6C	N/A	Bag Filter	2003		N/A
A390.8C	A390.8E	Bag Filter	2003		N/A

REDACTED

Table 4.1.1 Emission Limits for "A" Area Acrylic Resins

Emission Point	Pollutant	Emission Limit pph	Emission Limit tpy
A010E	VOC Ethyl Acrylate	0.2 0.17	0.02 0.011
A020E	VOC	2.5	0.04
A030E	VOC	1.7	0.04
A040E	VOC	1.7	0.04
A040.1E	VOC	1.7	0.04
A070E	VOC	5.3	0.14
A080E	VOC Methyl Methacrylate	4.2 4.16	1.41 1.408
A110E	VOC	0.1	0.01
A130E	VOC Methyl Methacrylate	1.5 0.81	0.1 0.09
A140E	VOC Methyl Methacrylate	1.5 0.81	0.1 0.09
A160E	PM_{10}	1.3	0.09
A260E	PM_{10}	0.6	0.01
A290E	VOC Acrylic Acid Ethyl Acrylate Methyl Methacrylate	11.8 0.01 1.2 8.82	29.4 0.016 3.0 22.1
A300E	VOC Acrylic Acid Ethyl Acrylate Methyl Methacrylate	0.6 0.01 0.06 0.41	1.360 0.001 0.134 1.025
A310E	VOC Acrylic Acid Ethyl Acrylate Methyl Methacrylate	0.24 0.01 0.03 0.18	0.587 0.001 0.06 0.441
A320E	VOC Acrylic Acid Ethyl Acrylate Methyl Methacrylate	0.17 0.01 0.02 0.09	0.29 0.001 0.03 0.221
A350E	PM_{10} VOC Acrylic Acid Ethyl Acrylate Methyl Methacrylate	1.8 0.1 0.01 0.01 0.02	4.36 0.13 0.001 0.024 0.042
A390.1E	PM_{10} VOC Acrylic Acid Ethyl Acrylate Methyl Methacrylate	1.1 0.1 0.01 0.01 0.01	3.84 0.09 0.001 0.016 0.027

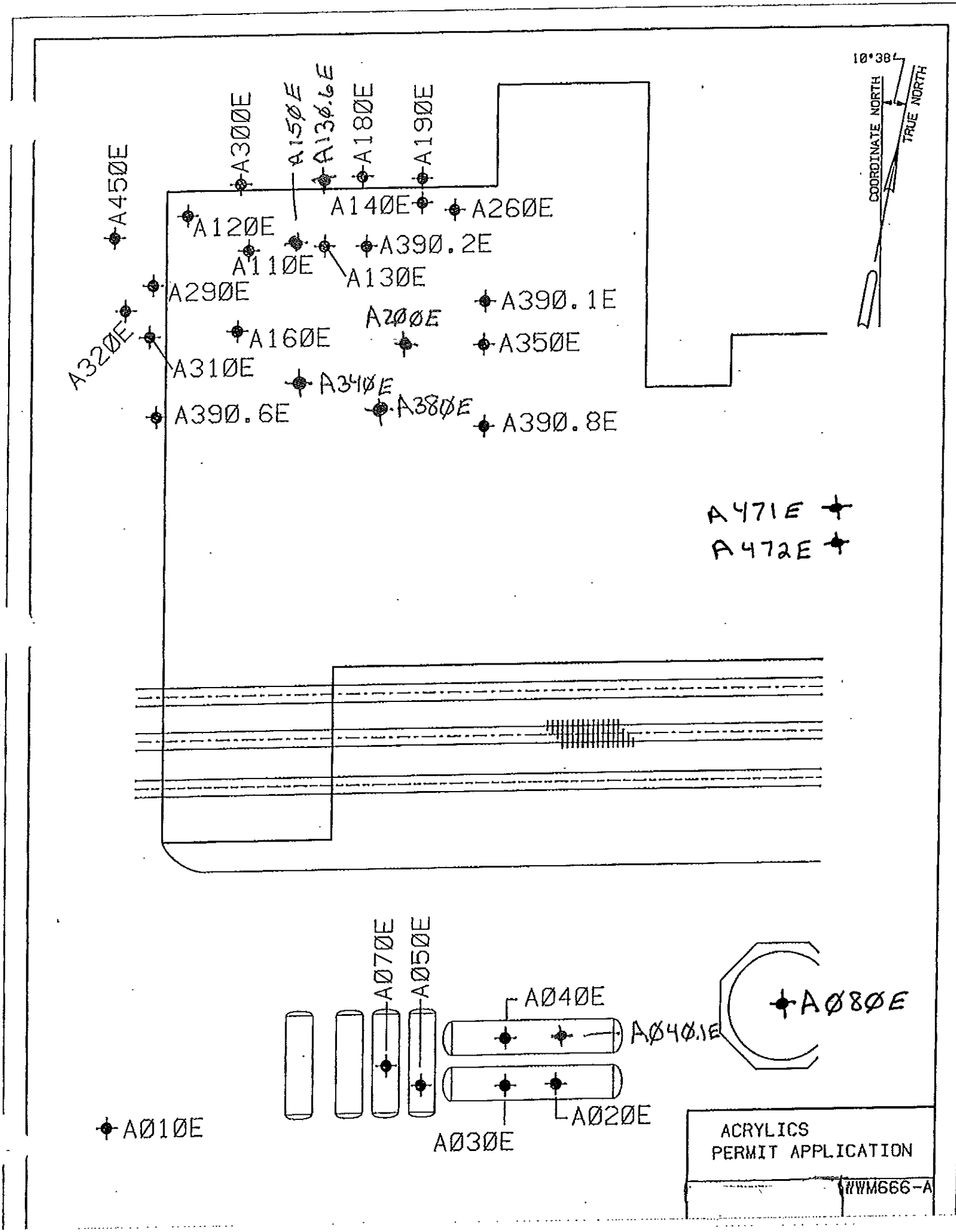
Emission Point	Pollutant	Emission Limit	
		pph	tpy
A390.2E	PM_{10} VOC Acrylic Acid Ethyl Acrylate Methyl Methacrylate	1.1 0.1 0.01 0.01 0.01	3.84 0.09 0.001 0.016 0.027
A390.8E	PM_{10}	0.1	0.13
A450E	VOCAcrylic AcidEthyl AcrylateMethyl Methacrylate	0.30.010.030.18	0.720.0010.060.441
A471E	Methylene Chloride	0.01	0.001
A472E	Methylene Chloride	0.01	0.001

Table 4.1.2 Insignificant Sources and Activities

Emission Unit ID	Emission Point ID
A130.6S	A130.6E
A150S	A150E
A180S	A180E
A191S	A190E
A220S	A130E & A140E
A260.1S	N/A
A280S	A290E
A340S	A340E
A380S	A380E
A440.1-.5S	A460E
A471S	A471E
A472S	A472E

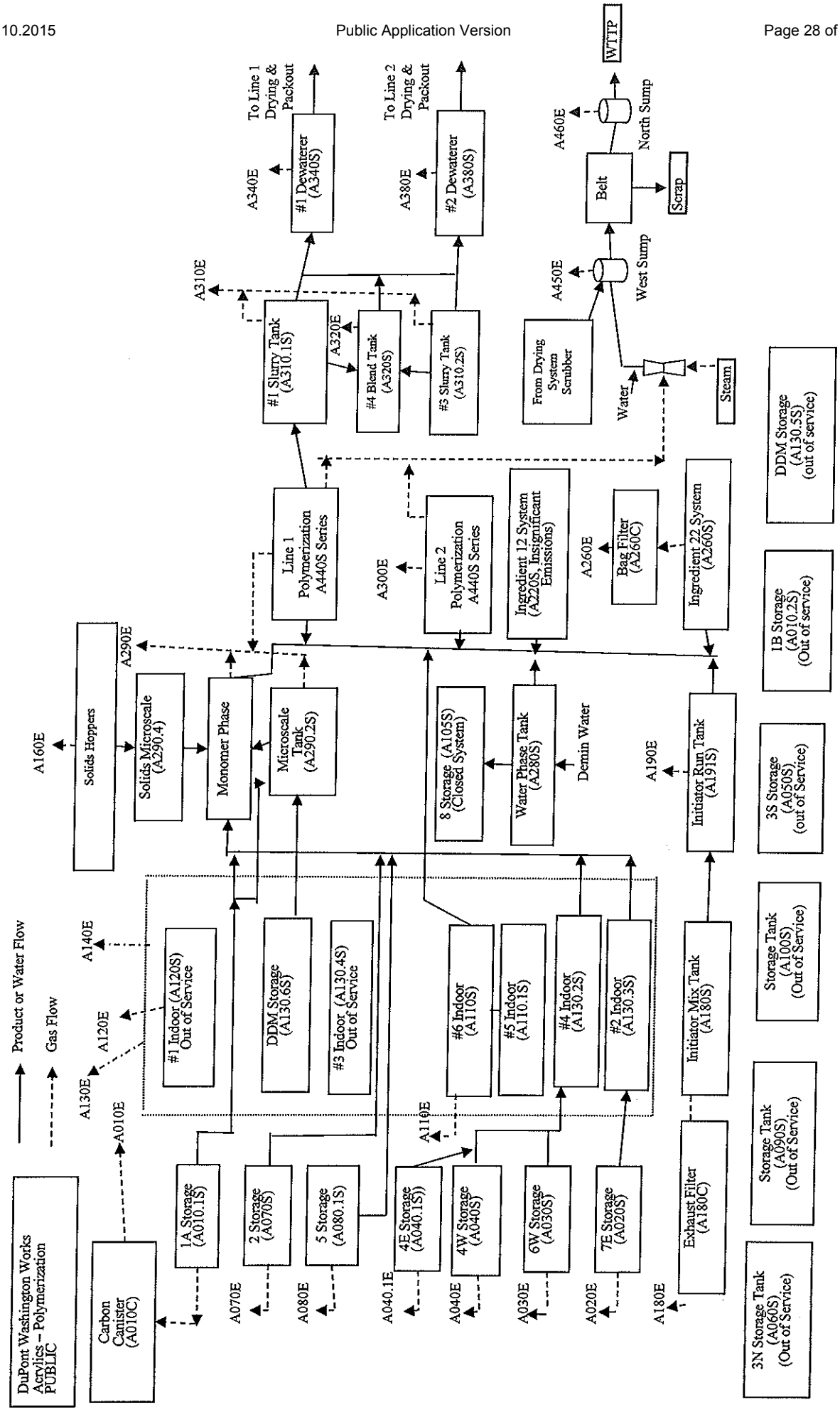
ATTACHMENT E

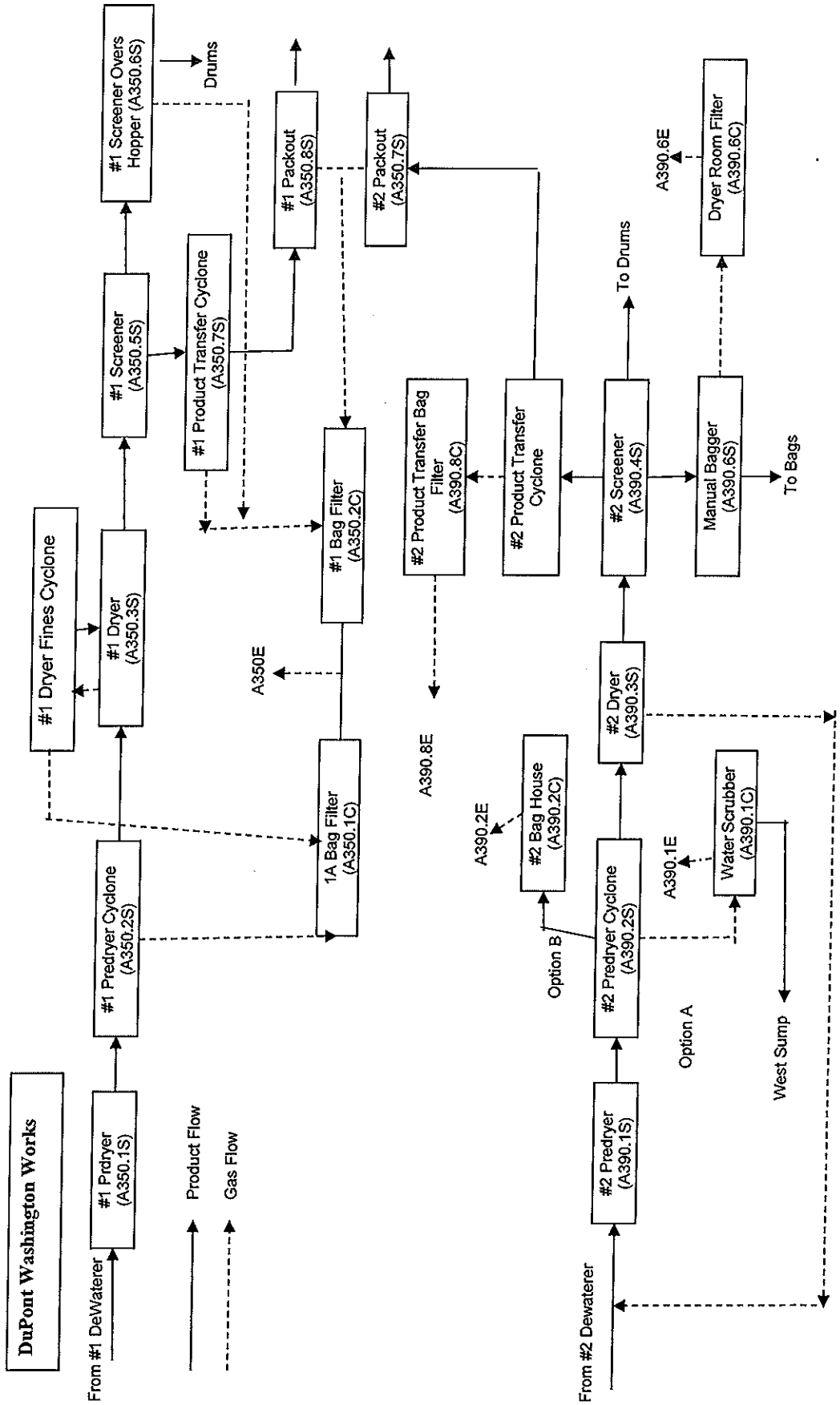
Plot Plan


10°38'
COORDINATE NORTH
TRUE NORTH
A450E
A300E
A150E
A136.6E
A180E
A190E
A140E
A260E
A120E
A390.2E
A110E
A130E
A290E
A390.1E
A200E
A320E
A160E
A350E
A310E
A340E
A380E
A390.6E
A390.8E
A471E
A472E
A070E
A050E
A040E
A040.1E
A080E
A010E
A020E
A030E
ACRYLICS
PERMIT APPLICATION
WM666-A

ATTACHMENT F

Process Flow Diagram


DuPont Washington Works
Acrylics – Polymerization
PUBLIC
Product or Water Flow
Gas Flow
Carbon Canister (A010C)
A010E
A130E
A120E
A140E
A160E
Solids Hoppers
Solids Microscale (A290.4)
A290E
Monomer Phase
Microscale Tank (A290.2S)
#1 Indoor (A120S) Out of Service
DDM Storage (A130.6S)
#3 Indoor (A130.4S) Out of Service
1A Storage (A010.1S)
2 Storage (A070S)
5 Storage (A080.1S)
A070E
A080E
A040.1E
4E Storage (A040.1S))
4W Storage (A040S)
6W Storage (A030S)
7E Storage (A020S)
A040E
A030E
A020E
A110E
#6 Indoor (A110S)
#5 Indoor (A110.1S)
#4 Indoor (A130.2S)
#2 Indoor (A130.3S)
Line 1 Polymerization A440S Series
Line 2 Polymerization A440S Series
A300E
8 Storage (A105S) (Closed System)
Water Phase Tank (A280S)
Demin Water
Ingredient 12 System (A220S, Insignificant Emissions)
A260E
Bag Filter (A260C)
Ingredient 22 System (A260S)
A190E
Initiator Run Tank (A191S)
Initiator Mix Tank (A180S)
Exhaust Filter (A180C)
A180E
A310E
#1 Slurry Tank (A310.1S)
A320E
#4 Blend Tank (A320S)
#3 Slurry Tank (A310.2S)
A340E
#1 Dewaterer (A340S)
To Line 1 Drying & Packout
A380E
#2 Dewaterer (A380S)
To Line 2 Drying & Packout
From Drying System Scrubber
A450E
West Sump
Water
Steam
Belt
Scrap
A460E
North Sump
WTTP
DDM Storage (A130.5S) (out of service)
IB Storage (A010.2S) (Out of service)
3S Storage (A050S) (out of Service)
Storage Tank (A100S) (Out of Service)
Storage Tank (A090S) (Out of Service)
3N Storage Tank (A060S) (Out of Service)


DuPont Washington Works
From #1 DeWaterer
#1 Prdryer (A350.1S)
Product Flow
Gas Flow
#1 Dryer Fines Cyclone
#1 Dryer (A350.3S)
#1 Predryer Cyclone (A350.2S)
#1 Screener (A350.5S)
#1 Screener Overs Hopper (A350.6S)
Drums
#1 Product Transfer Cyclone (A350.7S)
#1 Packout (A350.8S)
#2 Packout (A350.7S)
1A Bag Filter (A350.1C)
#1 Bag Filter (A350.2C)
A350E
#2 Product Transfer Bag Filter (A390.8C)
A390.8E
#2 Product Transfer Cyclone
#2 Predryer (A390.1S)
From #2 Dewaterer
#2 Predryer Cyclone (A390.2S)
Option B
#2 Bag House (A390.2C)
A390.2E
#2 Dryer (A390.3S)
#2 Screener (A390.4S)
To Drums
Manual Bagger (A390.6S)
To Bags
Water Scrubber (A390.1C)
A390.1E
Option A
West Sump
Dryer Room Filter (A390.6C)
A390.6E

ATTACHMENT G

Process Description

General Overview

The Acrylic Resins process has two production lines, Line #1 and Line #2. The main raw materials for this polymerization process are acrylic monomers, acrylates and methacrylates received in truck wagons, railcars, 55-gallon drums, or small volumes. Other miscellaneous raw materials (water, initiators, chain transfer agents, additives) are received by direct piping connection, in totes, bags, or lever-packs.

Pumps or transfer by pressure differential is used to move raw materials, semi-finished, and finished product through the process. Bulk monomers are stored in tanks filled by transfer pumps. These monomers are then either directly pumped into a batch weight-up tank or transferred into indoor storage tanks. For each polymerization batch a charge of monomers and additives are weighed up in a charge tank. The aqueous charge for each batch is weighed up in a separate vessel. Both the monomer and aqueous charges are then pressure transferred to the desired reaction vessel, referred to as a polykettle, through a common drop line.

Once the charge of raw materials has been successfully transferred to the desired polykettle, heat is applied to start the reaction. The suspension polymerization quickly occurs forming a water-polymer slurry.

Once cooled, the batch of slurry is transferred to a slurry handling system. Bulk water removal is then completed using a centrifuge. The polymer cake is transferred to a hot air drying system to remove the remaining water. The final screened product is then transferred to packaging lines.

Chemical Reaction

This process employs free radical suspension polymerization. Free radical polymerization is a method of polymerization by which a polymer forms by the successive addition of free radical building blocks. Free radicals can be formed via a number of different mechanisms usually involving separate initiator molecules. Following its generation, the initiating free radical adds (nonradical) monomer units, thereby growing the polymer chain. Suspension means that the reaction occurs in droplets of monomer suspended in a fluid which in this case is water.

Initiation is the first step of the polymerization process. During initiation, an active center is created from which a polymer chain is generated. Initiation has two steps. In the first step, one or two radicals are created from the initiating molecules. In the second step, radicals are transferred from the initiator molecules to the monomer units present. The initiator is heated until a bond is homolytically cleaved, producing two radicals.

During polymerization the polymer chain grows and propagates releasing heat of reaction until either the monomer source is consumed or until the polymer chain is terminated.

ATTACHMENT H

Material Safety Data Sheets

SDS for the process remain unchanged from previous submittal

ATTACHMENT I

Emission Units Table

ATTACHMENT I - Equipment List (includes all emission units at the facility except those designated as insignificant activities in Section 4, Item 24 of the General Forms)

Type Change	Date of Change	Emission Unit		Air Pollution Control Device		Emission Point ID1	
		ID #	Source	ID #	Device Type	ID #	Emission Type
Existing		A010.1S	1A EA Storage Tank	A010C	Carbon Absorber	A010E	Vertical Stack
Out of Service		A010.2S	1B EA Storage Tank	None	N/A	A010E	N/A
Existing		A020S	7E Storage Tank	None	N/A	A020E	Vertical Stack
Existing		A030S	6W Storage Tank	None	N/A	A030E	Vertical Stack
Existing		A040.1S	4E Storage Tank	None	N/A	A040.1E	Vertical Stack
Existing		A040S	4W Storage Tank	None	N/A	A040E	Vertical Stack
Out of Service		A050S	3S Storage Tank	None	N/A	A050E	N/A
Out of Service		A060S	3N Storage Tank	None	N/A	A060E	N/A
Existing		A070S	2 Storage Tank	None	N/A	A070E	Vertical Stack
Existing		A080.1S	5 Storage Tank	None	N/A	A080E	Vertical Stack
Out of Service		A090S	Storage Tank	None	N/A	A090E	N/A
Out of Service		A100S	Storage Tank	None	N/A	A100E	N/A
Existing		A110.1S	Indoor Storage Tank #5	None	N/A	A110E	Vertical Stack
Existing		A110S	Indoor Storage Tank #6	None	N/A	A110E	Vertical Stack
Out of Service		A120S	Indoor Storage Tank #6	None	N/A	A120E	N/A
Existing		A130.2S	Indoor Storage Tank #4	None	N/A	A130E	Vertical Stack
Existing		A130.2S	Indoor Storage Tank #4	None	N/A	A140E	Vertical Stack
Existing		A130.3S	Indoor Storage Tank #2	None	N/A	A130E	Vertical Stack
Existing		A130.3S	Indoor Storage Tank #2	None	N/A	A140E	Vertical Stack
Out of Service		A130.4S	Indoor Storage Tank #3	None	N/A	A130E/A140E	Vertical Stack
Out of Service		A130.5S	DDM Indoor Storage Tank	None	N/A	A130E/A140E	Vertical Stack
Existing		A130.6S	DDM Indoor Storage Tank	None	N/A	A130.6E	Vertical Stack
Existing		A150S*	Ingredient 10 Storage Tank	None	N/A	A150E	Vertical Stack
Existing		A160.1S	Solids Storage Hopper	None	N/A	A160E	Vertical Stack
Existing		A160.2S	Solids Storage Hopper	None	N/A	A160E	Vertical Stack
Existing		A160.3S	Solids Storage Hopper	None	N/A	A160E	Vertical Stack
Existing		A160.4S	Solids Storage Hopper	None	N/A	A160E	Vertical Stack
Existing		A180S*	Initiator Mix Tank	A180C	Filter	A180E	Vertical Stack
Existing		A191S*	Initiator Run Tank	None	N/A	A190E	Vertical Stack
Existing		A220.1S*	Ingredient 12 Hold Tank	None	N/A	A200E	Vertical Stack
Existing		A220.2S*	Ingredient 12 Make Tank	None	N/A	A200E	Vertical Stack
Existing		A220S*	Ingredient 12 Run Tank	None	N/A	A130E	Vertical Stack
Existing		A220S*	Ingredient 12 Run Tank	None	N/A	A140E	Vertical Stack
Existing		A260.1S*	Ingredient 22 Mix Tank	None	N/A	N/A	N/A
Existing		A260.2S*	Ingredient 22 Storage Tank	None	N/A	N/A	N/A
Existing		A260S	Ingredient 22 Storage Silo	A260C	Bag Filter	A260E	Vertical Stack

Type Change	Date of Change	Emission Unit		Air Pollution Control Device		Emission Point ID1	
		ID #	Source	ID #	Device Type	ID #	Emission Type
Existing		A280S*	Water Phase Tank	None	N/A	A290E	Vertical Stack
Existing		A290.1S	Monomer Phase Tank	None	N/A	A290E	Vertical Stack
Existing		A290.2S	Micoscale Tank	None	N/A	A290E	Vertical Stack
Existing		A290.4S	Solids Microscale Tank	None	N/A	A160E	Vertical Stack
Existing		A300E	North Polykettle Room Exhaust	None	N/A	A300E	Vertical Stack
Existing		A310.1S	#1 Slurry Tank	None	N/A	A310E	Vertical Stack
Existing		A310.2S	#3 Slurry Tank	None	N/A	A310E	Vertical Stack
Existing		A320S	#4 Blend Tank	None	N/A	A320E	Vertical Stack
Existing		A340S*	#1 Centrifuge	None	N/A	A340E	Vertical Stack
Existing		A350.1S	#1 Predryer	A350.1C	Bag Filter	A350E	Vertical Stack
Existing		A350.2S	#1 Predryer Cyclone	A350.1C	Bag Filter	A350E	Vertical Stack
Existing		A350.3S	#1 Dryer	A350.1C	Bag Filter	A350E	Vertical Stack
Existing		A350.4S	#1 Dryer Fines Cyclone	A350.1C	Bag Filter	A350E	Vertical Stack
Existing		A350.5S	#1 Screener	A350.2C	Bag Filter	A350E	Vertical Stack
Existing		A350.6S	#1 Screener Overs Hopper	A350.2C	Bag Filter	A350E	Vertical Stack
Existing		A350.7S	#1 Product Transfer Cyclone	A350.2C	Bag Filter	A350E	Vertical Stack
Existing		A350.8S	#1 Packout	A350.2C	Bag Filter	A350E	Vertical Stack
Existing		A380S*	#2 Centrifuge	None	N/A	A380E	Vertical Stack
Existing		A390.1S	#2 Predryer	A390.1C	Bag Filter	A390.2E	Vertical Stack
Existing		A390.1S	#2 Predryer	A390.2C	Water Scrubber	A390.1E	Vertical Stack
Existing		A390.2S	#2 Predyer Cyclone	A390.1C	Bag Filter	A390.2E	Vertical Stack
Existing		A390.2S	#2 Predyer Cyclone	A390.2C	Water Scrubber	A390.1E	Vertical Stack
Existing		A390.3S	#2 Dryer	A390.1C	Bag Filter	A390.2E	Vertical Stack
Existing		A390.3S	#2 Dryer	A390.2C	Water Scrubber	A390.1E	Vertical Stack
Existing		A390.4S	#2 Screener	A390.8C	Bag Filter	A390.8E	Vertical Stack
Existing		A390.6S	Manual Bagger	A390.6C	Filter	N/A	Vents inside Building
Existing		A390.7S	#2 Packout	A350.2C	Bag Filter	A350E	Vertical Stack
Existing		A390.8S	#2 Product Transfer Cyclone	A390.8C	Bag Filter	A390.8E	Vertical Stack
Existing		A440.1S	#1 Polykettle	None	N/A	A290E	Vertical Stack
Existing		A440.1S	#1 Polykettle	None	N/A	A450E	Vertical Stack
Existing		A440.2S	#2 Polykettle	None	N/A	A290E	Vertical Stack
Existing		A440.2S	#2 Polykettle	None	N/A	A450E	Vertical Stack
Existing		A440.3S	#3 Polykettle	None	N/A	A290E	Vertical Stack
Existing		A440.3S	#3 Polykettle	None	N/A	A450E	Vertical Stack
Existing		A440.4S	#4Polykettle	None	N/A	A300E	Vertical Stack
Existing		A440.4S	#4Polykettle	None	N/A	A450E	Vertical Stack
Existing		A440.5S	#5 Polykettle	None	N/A	A450E	Vertical Stack
Existing		A440.5S	#5 Polykettle	None	N/A	A300E	Vertical Stack
Existing		A471S*	Acrylics Lab	None	N/A	A471E	Vertical Stack

		Emission Unit		Air Pollution Control Device		Emission Point ID1	
Type Change	Date of Change	ID #	Source	ID #	Device Type	ID #	Emission Type
Existing		A472S*	Acrylics Lab	None	N/A	A742E	Vertical Stack
Existing		A00S*	Metal Parts Degreaser	None	N/A	A900E	Vertical Stack

* These sources are considered insignificant as described in Appendix N, Supporting Calculations Discussion.

Attachment J

Emission Points Data Summary Sheet

Emission point ID #	Source(s) Vented Through This Point		Device		Source		Regulated Pollutant	Uncontrolled		Controlled		Emission Form or Phase	Est. Method	Conc. PPMV or mol/m^3	Inner Diameter (ft)	Exit Gas Conditions			Elevation	
	ID #	Source	ID #	Device Type	Short Term	Max Hr/Yr		Lb/Hr	Ton/Yr	Lb/Hr	Ton/Yr					Temp °F	Vol Flow acfm	Velocity fps	Level	Height
A010E	A010.1S	1A EA Storage Tank	A010C	Carbon Absorber	1.5	8760	Ethyl Acrylate, VOC	4.2	0.53	0.2	0.011	Gas/Vapor	EE	2767	0.16	75	4.32	3.6		5
A020E	A020S	7E Storage Tank	None	N/A	0.8	8760	VOC	2.5	0.035	2.5	0.035	Gas/Vapor	EE	5828	0.16	75	18.05	15		12
A030E	A030S	6W Storage Tank	None	N/A	0.7	8760	VOC	1.61	0.039	1.61	0.039	Gas/Vapor	EE	3379	0.16	75	20.05	16.6		12
A040.1E	A040.1S	4E Storage Tank	None	N/A	0.7	8760	VOC	1.61	0.039	1.61	0.039	Gas/Vapor	EE	3379	0.16	75	20.05	16.6		12
A040E	A040S	4W Storage Tank	None	N/A	0.7	8760	VOC	1.61	0.039	1.61	0.039	Gas/Vapor	EE	3379	0.16	75	20.05	16.6		12
A070E	A070S	2 Storage Tank	None	N/A	1.5	8760	VOC	5.23	0.13	5.23	0.13	Gas/Vapor	EE	31084	0.16	75	8.82	7.3		18
A080E	A080.1S	5 Storage Tank	None	N/A	5	8760	methyl methacrylate VOC	4.2	1.41	4.2	1.41	Gas/Vapor	EE	14908	0.17	45	16.84	7.3		6
A110E	A110S A110.1S	Indoor Storage Tank #6 Indoor Storage Tank #5	None	N/A	1.7 1.7	8760	VOC	0.038 0.038	0.001 0.001	0.038 0.038	0.001 0.001	Gas/Vapor	EE	1704	0.07	75	1.55	6.7		30
A130E	A130.2S A130.3S A220S	Indoor Storage Tank #4 Indoor Storage Tank #2 Ingredient 12 Run Tank	None	N/A	0.7 0.6 0.5	8760	VOC	1.45	0.038	1.45	0.038	Gas/Vapor	EE	23838	4	75	6.56 4.01 5	0.009 0.005 0.006		40
A140E	A130.2S A130.3S A220S	Indoor Storage Tank #4 Indoor Storage Tank #2 Ingredient 12 Run Tank	None	N/A	0.7 0.6 0.5	8760	VOC	1.45	0.038	1.45	0.038	Gas/Vapor	EE	23838	4	75	6.56 4.01 5	0.009 0.005 0.006		40
A130.6E	A130.6S	DDM Indoor Storage Tank	None	N/A	0.5	8760	VOC	0.01	0.001	0.01	0.001	Gas/Vapor	EE	450	0.07	75				30
A160E	A160.1S A160.2S A160.3S A160.4S A290.4S	Solids Storage Hoppers and Solids Microscale Tank	None	N/A	0.08	2000	PM_{10}	1.23	0.097	1.23	0.097	Solid	EE		2.62	75	2025	5.4		50
A260E	A260S	Ingredient 22 Storage Silo	A260C	Bag Filter	3	50	PM_{10}	60	0.206	0.6	0.002	Solid	EE		0.6	240	790	49		40
A290E	A280S A290.1S A290.2S A440.1S A440.2S A440.3S	Water Phase Tank Monomer Phase Tank Microscale Tank #1 Polykettle #2 Polykettle #3 Polykettle	None	N/A	0.25	5000	VOC methyl methacrlate ethyl acrylate acrylic acid	11.8 8.82 1.2 0.006	29.4 22.1 3 0.015	11.8 8.82 1.2 0.006	29.4 22.1 3 0.015	Gas/Vapor	EE	303296 226701 30844 154	0.67	150	2.3	0.12		50
A300E	A440.4S A440.5S	#4 Polykettle #5 Polykettle	None	N/A	0.25	5000 5000	VOC methyl methacrlate ethyl acrylate acrylic acid	0.55 0.41 0.053 0.001	1.4 1.03 0.135 0.0004	0.55 0.41 0.053 0.001	1.4 1.03 0.135 0.0004	Gas/Vapor	EE	329083 245317 31712 60	0.67	185	0.1	0.005		50
A310E	A310.1S A310.2S	#1 Slurry Tank #3 Slurry Tank	None	N/A	0.08	7000	VOC methyl methacrlate ethyl acrylate acrylic acid	0.29 0.18 0.024 0.0001	0.72 0.44 0.06 0.0003	0.29 0.18 0.024 0.0001	0.72 0.44 0.06 0.0003	Gas/Vapor	EE	8094 5024 670 3	0.86	68	2.1	0.06		10
A320E	A320S	#4 Blend Tank	None	N/A		8760	VOC methyl methacrlate ethyl acrylate acrylic acid	0.144 0.088 0.012 0.00006	0.36 0.22 0.03 0.0002	0.144 0.088 0.012 0.00006	0.36 0.22 0.03 0.0002	Gas/Vapor	EE	4103 2507 342 2	0.7	68	2.1	0.09		45
A350E	A350.3S	#1 Dryer	None	N/A	C	7000	VOC methyl methacrlate ethyl acrylate acrylic acid	0.052 0.017 0.01 neg	0.13 0.041 0.024 neg	0.052 0.017 0.01 neg	0.13 0.041 0.024 neg	Gas/Vapor	EE	0.39 0.13 0.07 0.00	1.4	129	8000	86.6		50
	A350.2S A350.4S	#1 Predryer #1 Dryer Fines Cyclone	A350.1C	Bag Filter			PM_{10}	172.9	435.8	1.73	4.36	Solid								
	A350.6S A350.7S A350.8S A390.7S	#1 Screener Overs Hopper #1 Product Transfer Cyclone #1 Packout #2 Packout	A350.2C	Bag Filter																

A390.1E (Option A)	A390.3S	#2 Dryer	None	N/A	C	7000	VOC methyl methacrlate ethyl acrylate acrylic acid	0.023 0.007 0.004 neg	0.08 0.03 0.02 neg	0.023 0.007 0.004 neg	0.08 0.03 0.02 neg	Gas/Vapor	EE							
	A390.2S	#2 Predyer Cyclone	A390.1C	Water Scrubber			PM_{10}	105	383	1.05	3.83	Solid								
A390.2E (Option B)	A390.1S A390.2S A390.3S	#2 Dryer	None	N/A	C	7000	VOC methyl methacrlate ethyl acrylate acrylic acid	0.023 0.007 0.004 neg	0.08 0.03 0.02 neg	0.023 0.007 0.004 neg	0.08 0.03 0.02 neg	Gas/Vapor	EE							
	A390.2S	#2 Predyer Cyclone	A390.2C	Bag Filter			PM_{10}	105	383	1.05	3.83	Solid								
A390.8E	A390.4S A390.8S	#2 Screener #2 Product Transfer Cyclone	A390.8C	N/A	C	7000	PM_{10}	3.5	12.75	0.035	0.13	Gas/Vapor	EE							
A450E	A440.1S A440.2S A440.3S A440.4S A440.5S	#1 Polykettle #2 Polykettle #3 Polykettle #4 Polykettle #5 Polykettle	None	N/A	0.5	5000	VOC methyl methacrlate ethyl acrylate acrylic acid	0.029 0.018 0.024 0.0001	0.72 0.44 0.06 0.0003	0.029 0.018 0.024 0.0001	0.72 0.44 0.06 0.0003	Gas/Vapor	EE							

Note: UTM Coordinates are 4346800 Northing and 442310 Easting

Attachment K

Fugitive Emissions Data Summary Sheet

No Change from previous submission

Attachment L

Emission Unit Data Sheets

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 Acrylics South Tank Farm	2. Tank Name #4 E Storage Tank
3. Tank Equipment Identification No. (as assigned on *Equipment List Form*) A040.1S	4. Emission Point Identification No. (as assigned on *Equipment List Form*) A040.1E
5. Date of Commencement of Construction (for existing tanks) 1946	
6. Type of change ☐ New Construction ☒ New Stored Material ☐ Other Tank Modification	
7. Description of Tank Modification (if applicable) Updating Reg 13 permit	
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). N/A	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.): None	

II. TANK INFORMATION (required)

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. 15,308 Gallons	
9A. Tank Internal Diameter (ft) Claimed Confidential	9B. Tank Internal Height (or Length) (ft) Claimed Confidential
10A. Maximum Liquid Height (ft) Claimed Confidential	10B. Average Liquid Height (ft) Claimed Confidential
11A. Maximum Vapor Space Height (ft) Claimed Confidential	11B. Average Vapor Space Height (ft) Claimed Confidential
12. Nominal Capacity (specify barrels or gallons). This is also known as "working volume" and considers design liquid levels and overflow valve heights. Claimed Confidential	

REDACTED

13A. Maximum annual throughput (gal/yr) Claimed Confidential	13B. Maximum daily throughput (gal/day) Claimed Confidential
14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume) Claimed Confidential	
15. Maximum tank fill rate (gal/min) Claimed Confidential	
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 ___ vertical X 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)		
20A. Shell Color White	20B. Roof Color White	20C. Year Last Painted 2013
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): 0 to 0		
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

REDACTED

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

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 Pressure Setting
- ☐ 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):

[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		Annual Loss (lb/yr)	Estimation Method[1]
		Amount	Units		
VOC	Rates submitted in explaination of calcs.			79	TANKS

[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 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 Acrylics Indoor Tank Farm	2. Tank Name Indoor Storage Tank #5
3. Tank Equipment Identification No. (as assigned on *Equipment List Form*) A110.1S	4. Emission Point Identification No. (as assigned on *Equipment List Form*) A110E
5. Date of Commencement of Construction (for existing tanks) 1946	
6. Type of change ☐ New Construction ☒ New Stored Material ☐ Other Tank Modification	
7. Description of Tank Modification (if applicable) Updating Reg 13 permit	
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). N/A	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.): None	

II. TANK INFORMATION (required)

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. 2,115.2 Gallons	
9A. Tank Internal Diameter (ft) Claimed Confidential	9B. Tank Internal Height (or Length) (ft) Claimed Confidential
10A. Maximum Liquid Height (ft) Claimed Confidential	10B. Average Liquid Height (ft) Claimed Confidential
11A. Maximum Vapor Space Height (ft) Claimed Confidential	11B. Average Vapor Space Height (ft) Claimed Confidential
12. Nominal Capacity (specify barrels or gallons). This is also known as "working volume" and considers design liquid levels and overflow valve heights. Claimed Confidential	

REDACTED

13A. Maximum annual throughput (gal/yr) Claimed Confidential	13B. Maximum daily throughput (gal/day) Claimed Confidential
14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume) Claimed Confidential	
15. Maximum tank fill rate (gal/min) Claimed Confidential	
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 ___ vertical X 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)		
20A. Shell Color	20B. Roof Color	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): 0 to 0		
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		

REDACTED

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

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 Pressure Setting
- ☐ 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):

[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		Annual Loss (lb/yr)	Estimation Method[1]
		Amount	Units		
VOC	Rates submitted in explaination of calcs.			2.4	TANKS

[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 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 Acrylics Indoor Tank Farm	2. Tank Name DDM Indoor Storage Tank
3. Tank Equipment Identification No. (as assigned on *Equipment List Form*) A130.6S	4. Emission Point Identification No. (as assigned on *Equipment List Form*) A30.6E
5. Date of Commencement of Construction (for existing tanks) 1946	
6. Type of change ☐ New Construction ☒ New Stored Material ☐ Other Tank Modification	
7. Description of Tank Modification (if applicable) Updating Reg 13 permit	
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). N/A	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.): None	

II. TANK INFORMATION (required)

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. Less than 1300 Gallons	
9A. Tank Internal Diameter (ft) Claimed Confidential	9B. Tank Internal Height (or Length) (ft) Claimed Confidential
10A. Maximum Liquid Height (ft) Claimed Confidential	10B. Average Liquid Height (ft) Claimed Confidential
11A. Maximum Vapor Space Height (ft) Claimed Confidential	11B. Average Vapor Space Height (ft) Claimed Confidential
12. Nominal Capacity (specify barrels or gallons). This is also known as "working volume" and considers design liquid levels and overflow valve heights. Claimed Confidential	

REDACTED

13A. Maximum annual throughput (gal/yr) Claimed Confidential	13B. Maximum daily throughput (gal/day) Claimed Confidential
14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume) Claimed Confidential	
15. Maximum tank fill rate (gal/min) Claimed Confidential	
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)		
20A. Shell Color	20B. Roof Color	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): 0 to 0		
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		

REDACTED

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

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 Pressure Setting
- ☐ 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):

[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		Annual Loss (lb/yr)	Estimation Method[1]
		Amount	Units		
VOC	Rates submitted in explaination of calcs.			14	TANKS

[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 L
EMISSIONS UNIT DATA SHEET
CHEMICAL PROCESS

For chemical processes please fill out this sheet and all supplementary forms (see below) that apply. Please check all supplementary forms that have been completed.

☐ *Emergency Vent Summary Sheet*
☐ *Leak Sources Data Sheet*
☐ *Toxicology Data Sheet*
☒ *Reactor Data Sheet*
☐ *Distillation Column Data Sheet*

1. Chemical process area name and equipment ID number (as shown in *Equipment List Form*)
   Liquids Microscale, A290.2S

2. Standard Industrial Classification Codes (SICs) for process(es)

3. List raw materials and ☒ attach MSDSs
   ethyl acrylate, isobornyl methacrylate, 2-hydroxyethyl methacrylate, hydroxypropyl methacrylate, acrylic acid, glycidyl methacrylate, dimethyl aminoethyl methacrylate, methyl salicylate, pentaerythritol tetra 3-mercaptoproionate

4. List Products and Maximum Production and ☒ attach MSDSs

Description and CAS Number	Maximum Hourly (lb/hr)	Maximum Annual (ton/year)
ethyl acrylate (140-88-5) isobornyl methacrylate (7534-94-3) 2-hydroxyethyl methacrylate (868-77-9) hydroxypropyl methacrylate (27813-02-1) acrylic acid (79-10-7) glycidyl methacrylate (106-91-2) dimethyl aminoethyl methacrylate (2867-47-2) methyl salicylate (119-36-8) pentaerythritol tetra 3-mercaptoproionate (7575-23-7)	Claimed Confidential	Claimed Confidential

5. Complete the *Emergency Vent Summary Sheet* for all emergency relief devices. N/A

6. Complete the *Leak Source Data Sheet* and describe below or attach to application the leak detection or maintenance program to minimize fugitive emissions. Include detection instruments, calibration gases or methods, planned inspection frequency, and record-keeping, and similar pertinent information. If subject to a rule requirement (e.g. 40CFR60, Subpart VV), please list those here.
   No rule applies to the equipment involved in this process. Due to the noticeable and objectionable odor these monomers have leaks are not tolerated. Leaks are quickly detected and repaired. The Ethyl Acrylate line is subject to LDAR requirements and is tagged and routinely monitored for leaks. Automatic controls and alarm alerts are in place should a transfer to/from the tank take longer than expected (potential cause being a process leak).

7. Clearly describe below or attach to application Accident Procedures to be followed in the event of an accidental spill or release.
   The indoor drainage system is designed to transfer spills to the containment sump outside the building for safety. The spill or release source is immediately isolated if possible. Spills beyond the collection system are contained by use of synthetic absorbent materials such as PIG® products. The floor drains are directed to the area sump which in turn is filtered before being transferred to the site waste water treatment facility. In cases where a known release is experienced steps to isolate the material within the area sump can be taken. In these cases the released material can be vacuumed up and disposed of properly as either RCRA or non-RCRA wastes.

REDACTED

8A. Complete the *Toxicology Data Sheet* or attach to application a toxicology report (an up-to-date material safety data sheets (MSDS) may be used) outlining the currently known acute and chronic health effects of each compound or chemical entity emitted to the air. If these compounds have already been listed in Item 3, then a duplicate MSDS sheet is not required. Include data such as the OSHA time weighted average (TWA) or mutagenicity, teratogenicity, irritation, and other known or suspected effects should be addressed. Indicate where these are unknown, and provide references.

8B. Describe any health effects testing or epidemiological studies on these compounds that are being or may be conducted by the company or required under TSCA, RCRA or other federal regulations. Discuss the persistence in the environment of any emission (e.g. pesticides, etc.). N/A

9. **Waste Products** - Waste products status: (If source is subject to RCRA or 45CSR25, please contact the Hazardous Waste Section of WVDEP, OAQ at (304) 926-3647.) N/A

9A. Types and amounts of wastes to be disposed: none

9B. Method of disposal and location of waste disposal facilities: N/A

Carrier: Phone:

9C. Check here if approved USEPA/State Hazardous Waste Landfill will be used ☐

10. Maximum and Projected Typical Operating Schedule for process or project as a whole (circle appropriate units)

circle units:	(hr/batch)	(days), (batches/day), (batches/week)	(days/yr), (weeks/year)
10A. Maximum	Claimed Confidential	7 days	52 weeks
10B. Typical	Claimed Confidential	7 days	51 weeks

11. Complete a *Reactor Data Sheet* for each reactor in this chemical process. See attached

12. Complete a *Distillation Column Data Sheet* for each distillation column in this chemical process. N/A

13. **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
The Distributed Control System will alert the Operators when 4 batches have been weighed up in less than one hour. Batch weigh-ups dictate the emission rate with calculations based upon lbs/batch.

RECORDKEEPING
Production shift reports document the number of batches weighed up in one hour plus the total batches produced per month. Calculations will be made based upon the number of batches produced.

REPORTING
Reporting will be as requested by the WV DEP DAQ Director.

TESTING
No testing is proposed. The engineering estimates applied are conservative and based on past stack testing.

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 operation or air pollution control

RECORDKEEPING. Please describe the proposed recordkeeping that will accompany the monitoring.

REPORTING. Please describe the proposed frequency of reporting of the recordkeeping.

TESTING. Please describe any proposed emissions testing for this process equipment or air pollution control device

14. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
N/A

REDACTED

REACTOR DATA SHEET

Provide the following information for each piece of equipment that is a potential or actual source of emissions as shown on the *Equipment List Form* and other parts of application.

Identification Number (as shown on *Equipment List Form*): A290.2S

1. Name and type of equipment (e.g. CSTR, plug flow, batch, etc.)
   Liquid Microscale Weigh-up Tank

2. Type of operation ☒ Batch ☐ Continuous ☐ Semi-batch

3. Projected Actual Equipment Operating Schedule (complete appropriate lines):

24 hrs/day	7 days/week	51 weeks/year
hrs/batch	batches/day, weeks (Circle one)	day,weeks/yr (Circle one)

4. Feed Data Flow In = Claimed Confidential (CBI)

Material Name & CAS No.	Phase[a]	Specific Gravity	Vapor Pressure[b]	Charge Rate Normal	Charge Rate Max	Charge Rate Units	Fill Time (min/batch, run)[c]
ethyl acrylate (140-88-5)	L	0.93	29.5	CBI	CBI	Lbs/batch	Claimed Confidential
isobornyl methacrylate (7534-94-3)	L	0.983	1	5			
2-hydroxyethyl methacrylate (868-77-9)	L	1.07	0.01				
hydroxypropyl methacrylate (27813-02-1)	L	1.03	0.05				
acrylic acid (79-10-7)	L	1.05	3.1				
glycidyl methacrylate (106-91-2)	L	1.07	0.33				
dimethyl aminoethyl methacrylate (2867-47-2)	L	0.94	1				
methyl salicylate (119-36-8)	L	1.18	<1				
pentaerythritol tetra 3-mercaptoproionate (7575-23-7)	L	1.28	0.006				

a. S = Solid, L = Liquid, G = gas or vapor
b. At feed conditions, mm Hg
c. Total time that equipment is filling per batch or run (start-up), for tank or vessel-type equipment.

5. Provide all **chemical reactions** that will be involved (if applicable), including the residence time and any side reactions that may occur as well as gases that may be generated during these reactions. Indicate if the reaction(s) are exothermic or endothermic.
   No reactions

REDACTED

6. Maximum Temperature	7A. Maximum Pressure 7B. Max. Set Pressure for venting	
Claimed Confidential (CBI) °C	mmHg psig	mmHg psig

8. Output DataFlow Out = Claimed Confidential (CBI)

Material Name and CAS No.	Phase	Specific Gravity	Vapor Pressure	Hourly or Batch Output Rate		
				Normal	Maximum	Units
Flow out is equal to flow in. Claimed Confidential						

9. Complete the following emission data for equipment connected to a header exhaust system, giving emissions levels before entering header system (i.e. before control equipment).

☐ Check here if not applicable

Emission Point ID (exhaust point of header system):

Material Name and CAS No.	Maximum Potential Emission Rate (lb/hr)	Method **
Ethyl Acrylate (140-88-5)	0.024	EE
Acrylic Acid (79-10-7)	0.003	
VOC	0.0273	

** MB - material balance: EE - Engineering Estimate: TM - Test Measurement (submit test data): O - other (Explain)

REDACTED

10. Provide the following information pertaining to each condenser that may be attached to this reactor. Attach additional pages as necessary if more than one condenser is used for this reactor. Complete the Condenser Air Pollution Control Device Sheet if necessary.

☒ Check here if not applicable

10A. Cooling material

10B. Minimum and Maximum flowrate of cooling material (gal/hr)

10C. Inlet temperature of cooling material (°F)

10D. Outlet temperature of cooling material (°F)

10E. Pressure drop of gas to be condensed from inlet to outlet (psig)

10F. Inlet temperature of gas stream (°F)

10G. Outlet temperature of gas stream (°F)

10H. Number of passes

10I. Cooling surface area

11. Provide the following pertaining to auxiliary equipment that burns fuel (heaters, dryers, etc.):

☒ Check here if not applicable

11A. Type of fuel and maximum fuel burn rate, per hour:

11B. Provide maximum percent sulfur (S), ash content of fuel, and the energy content using appropriate units:

%S % Ash BTU/lb, std. ft^3/day, gal

(circle one)

11C. Theoretical combustion air requirement in SCFD per unit of fuel (circle appropriate unit) @ 70°F and 14.7 PSIA:

SCFD/lb, SCFD, gal (circle one)

11D. Percent excess air: %

11E. Type, amount, and BTU rating of burners and all other firing equipment that are planned to be used:

11F. Total maximum design heat input: $\times 10^6$ BTU/hr.

12. **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
The Distributed Control System will alert the Operators when 4 batches have been weighed up in less than one hour. Batch weigh-ups dictate the emission rate with calculations based upon lbs/batch.	Production shift reports document the number of batches weighed up in one hour plus the total batches produced per month. Calculations will be made based upon the number of batches produced.
REPORTING	TESTING
Reporting will be as requested by the WV DEP DAQ Director.	No testing is proposed. The engineering estimates applied are conservative and based on past stack testing.

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 OPERATION OR AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT OR AIR POLLUTION CONTROL DEVICE.

13. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
None

NOTE: An *AIR POLLUTION CONTROL DEVICE SHEET* must be completed for any air pollution device(s) (except emergency relief devices) used to control emissions from this reactor.

Attachment L
EMISSIONS UNIT DATA SHEET
CHEMICAL PROCESS

For chemical processes please fill out this sheet and all supplementary forms (see below) that apply. Please check all supplementary forms that have been completed.

☐ *Emergency Vent Summary Sheet*
☐ *Leak Sources Data Sheet*
☐ *Toxicology Data Sheet*
☒ *Reactor Data Sheet*
☐ *Distillation Column Data Sheet*

1. Chemical process area name and equipment ID number (as shown in *Equipment List Form*)
   #1 and #3 Slurry Tanks, A310.1S and A310.2S

2. Standard Industrial Classification Codes (SICs) for process(es)

3. List raw materials and ☒ attach MSDSs
   Acrylic resin
   Water
   Residual monomers: methyl methacrylate, ethyl acrylate, n-butyl methacrylate, isobornyl methacrylate, i-butyl methacrylate, 2-ethylhexyl acrylate, lauryl methacrylate, ethyl methacrylate, 2-hydroxyethyl methacrylate, hydroxypropyl methacrylate, isobutyl methacrylate, methacrylic acid, acrylic acid, glycidyl methacrylate, dimethyl aminoethyl methacrylate, plus other reacted raw materials from A290.1S, Monomer Phase Tank, may be found in trace amounts.

4. List Products and Maximum Production and ☒ attach MSDSs

Description and CAS Number	Maximum Hourly (lb/hr)	Maximum Annual (ton/year)
Acrylic resins of various compositions and CAS 3's, Typical examples: Lucite 4F (9011-14-7) Lucite 48SC (9003-42-3) Elvacite 2016 (28262-63-7)	Claimed Confidential (CBI)	Claimed Confidential (CBI)

5. Complete the *Emergency Vent Summary Sheet* for all emergency relief devices. N/A

6. Complete the *Leak Source Data Sheet* and describe below or attach to application the leak detection or maintenance program to minimize fugitive emissions. Include detection instruments, calibration gases or methods, planned inspection frequency, and record-keeping, and similar pertinent information. If subject to a rule requirement (e.g. 40CFR60, Subpart VV), please list those here.
   No rule applies to the equipment involved in this process. The resin at this point is the process is considered finished awaiting the final drying.

7. Clearly describe below or attach to application Accident Procedures to be followed in the event of an accidental spill or release.
   The spill or release source is immediately isolated if possible. These vessels the containment drains into a sump where the resin is filtered before being discharged to the site waste water treatment facility.

REDACTED

8A. Complete the *Toxicology Data Sheet* or attach to application a toxicology report (an up-to-date material safety data sheets (MSDS) may be used) outlining the currently known acute and chronic health effects of each compound or chemical entity emitted to the air. If these compounds have already been listed in Item 3, then a duplicate MSDS sheet is not required. Include data such as the OSHA time weighted average (TWA) or mutagenicity, teratogenicity, irritation, and other known or suspected effects should be addressed. Indicate where these are unknown, and provide references.

8B. Describe any health effects testing or epidemiological studies on these compounds that are being or may be conducted by the company or required under TSCA, RCRA or other federal regulations. Discuss the persistence in the environment of any emission (e.g. pesticides, etc.). N/A

9. **Waste Products** - Waste products status: (If source is subject to RCRA or 45CSR25, please contact the Hazardous Waste Section of WVDEP, OAQ at (304) 926-3647.) N/A

9A. Types and amounts of wastes to be disposed: none

9B. Method of disposal and location of waste disposal facilities: N/A

Carrier: Phone:

9C. Check here if approved USEPA/State Hazardous Waste Landfill will be used ☐

10. Maximum and Projected Typical Operating Schedule for process or project as a whole (circle appropriate units)

circle units:	(hrs/day) (hr/batch)	(days), (batches/day), (batches/week)	(days/yr), (weeks/year)
10A. Maximum	24 hrs	7 days	52 weeks
10B. Typical	24 hrs	7 days	51 weeks

11. Complete a *Reactor Data Sheet* for each reactor in this chemical process. See attached

12. Complete a *Distillation Column Data Sheet* for each distillation column in this chemical process. N/A

13. **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
The Distributive Control System and the Operator keep a count of the number of batches made per shift and each hour. The Slurry Tank emissions are estimated on the number of batches produced calculated based on the lbs/batch.	Production and shift reports documenting the number of batches made each shift plus ensure no more than 4 batches are produced per hour. The number of batches weighed up will be documented monthly and used as the basis to calculate emissions
REPORTING	**TESTING**
Reporting will be as requested by the WV DEP DAQ Director.	No testing is proposed. The engineering estimates applied are conservative and based on past stack testing.

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 operation or air pollution control

RECORDKEEPING. Please describe the proposed recordkeeping that will accompany the monitoring.

REPORTING. Please describe the proposed frequency of reporting of the recordkeeping.

TESTING. Please describe any proposed emissions testing for this process equipment or air pollution control device

14. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
N/A

REDACTED

REACTOR DATA SHEET

Provide the following information for each piece of equipment that is a potential or actual source of emissions as shown on the *Equipment List Form* and other parts of application.

Identification Number (as shown on *Equipment List Form*): A310.1S and A310.2S

1. Name and type of equipment (e.g. CSTR, plug flow, batch, etc.)
   #1 and #3 Slurry Tanks

2. Type of operation ☐ Batch ☒ Continuous ☐ Semi-batch

3. Projected Actual Equipment Operating Schedule (complete appropriate lines):

24 hrs/day	7 days/week	51 weeks/year
hrs/batch	batches/day, weeks (Circle one)	day,weeks/yr (Circle one)

4. Feed Data Flow In = Claimed Confidential (CBI)

Material Name & CAS No.	Phase[a]	Specific Gravity	Vapor Pressure[b]	Charge Rate Normal	Charge Rate Max	Charge Rate Units	Fill Time (min/batch, run)[c]
Water with minor amount of residual raw material	L	1.0	0.46	CBI	CBI	lbs	Claimed Confidential (CBI)
Granulating Agent	L	various	Neg.				
Acrylic Resins ~ many possible, three typical products:							
Lucite 4F (9011-14-7)	S	1.2	n/a				
Lucite 48SC (9003-42-3)	S	1.11	n/a				
Elvacite 2016 (28262-63-7)	S	1.19	n/a				

a. S = Solid, L = Liquid, G = gas or vapor
b. At feed conditions
c. Total time that equipment is filling per batch or run (start-up), for tank or vessel-type equipment.

5. Provide all **chemical reactions** that will be involved (if applicable), including the residence time and any side reactions that may occur as well as gases that may be generated during these reactions. Indicate if the reaction(s) are exothermic or endothermic.
   No reactions

REDACTED

6. Maximum Temperature	7A. Maximum Pressure 7B. Max. Set Pressure for venting	
Claimed Confidential (CBI) °C	mmHg psig	mmHg psig

8. Output DataFlow Out = Claimed Confidential (CBI)

Material Name and CAS No.	Phase	Specific Gravity	Vapor Pressure	Hourly or Batch Output Rate		
				Normal	Maximum	Units
Flow out is equal to flow in. Claimed Confidential (CBI) Claimed Confidential (CBI)						

9. Complete the following emission data for equipment connected to a header exhaust system, giving emissions levels before entering header system (i.e. before control equipment).

☐ Check here if not applicable

Emission Point ID (exhaust point of header system):

Material Name and CAS No.	Maximum Potential Emission Rate (lb/hr)	Method **
Ethyl Acrylate (140-88-5)	0.024	EE
Methyl Methacrylate (80-62-6)	0.176	
Acrylic Acid (79-10-7)	0.0001	
VOC	0.288	
Note: The max PTE listed is the sum of the emissions from both slurry tanks. Divide by two to individually determine the max PTE for A310.1S and A310.2S		

** MB - material balance: EE - Engineering Estimate: TM - Test Measurement (submit test data): O - other (Explain)

REDACTED

10. Provide the following information pertaining to each condenser that may be attached to this reactor. Attach additional pages as necessary if more than one condenser is used for this reactor. Complete the Condenser Air Pollution Control Device Sheet if necessary.

☒ Check here if not applicable

10A. Cooling material

10B. Minimum and Maximum flowrate of cooling material (gal/hr)

10C. Inlet temperature of cooling material (°F)

10D. Outlet temperature of cooling material (°F)

10E. Pressure drop of gas to be condensed from inlet to outlet (psig)

10F. Inlet temperature of gas stream (°F)

10G. Outlet temperature of gas stream (°F)

10H. Number of passes

10I. Cooling surface area

11. Provide the following pertaining to auxiliary equipment that burns fuel (heaters, dryers, etc.):

☒ Check here if not applicable

11A. Type of fuel and maximum fuel burn rate, per hour:

11B. Provide maximum percent sulfur (S), ash content of fuel, and the energy content using appropriate units:

%S % Ash BTU/lb, std. ft^3/day, gal

(circle one)

11C. Theoretical combustion air requirement in SCFD per unit of fuel (circle appropriate unit) @ 70°F and 14.7 PSIA:

SCFD/lb, SCFD, gal (circle one)

11D. Percent excess air: %

11E. Type, amount, and BTU rating of burners and all other firing equipment that are planned to be used:

11F. Total maximum design heat input: $\times 10^6$ BTU/hr.

12. **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
The Distributive Control System and the Operator keep a count of the number of batches made per shift and each hour. The Slurry Tank emissions are estimated on the number of batches produced calculated based on the lbs/batch.	Production and shift reports documenting the number of batches made each shift plus ensure no more than 4 batches are produced per hour. The number of batches weighed up will be documented monthly and used as the basis to calculate emissions.
REPORTING	TESTING
Reporting will be as requested by the WV DEP DAQ Director.	No testing is proposed. The engineering estimates applied are conservative and based on past stack testing.

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 OPERATION OR AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT OR AIR POLLUTION CONTROL DEVICE.

13. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
None

NOTE: An *AIR POLLUTION CONTROL DEVICE SHEET* must be completed for any air pollution device(s) (except emergency relief devices) used to control emissions from this reactor.

Attachment L
EMISSIONS UNIT DATA SHEET
CHEMICAL PROCESS

For chemical processes please fill out this sheet and all supplementary forms (see below) that apply. Please check all supplementary forms that have been completed.

☐ *Emergency Vent Summary Sheet*
☐ *Leak Sources Data Sheet*
☐ *Toxicology Data Sheet*
☒ *Reactor Data Sheet*
☐ *Distillation Column Data Sheet*

1. Chemical process area name and equipment ID number (as shown in *Equipment List Form*)
   #4 Blend Tank, A320S

2. Standard Industrial Classification Codes (SICs) for process(es)

3. List raw materials and ☒ attach MSDSs
   Acrylic resin
   Water
   Residual monomers: methyl methacrylate, ethyl acrylate, n-butyl methacrylate, isobornyl methacrylate, i-butyl methacrylate, 2-ethylhexyl acrylate, lauryl methacrylate, ethyl methacrylate, 2-hydroxyethyl methacrylate, hydroxypropyl methacrylate, isobutyl methacrylate, methacrylic acid, acrylic acid, glycidyl methacrylate, dimethyl aminoethyl methacrylate, plus other reacted raw materials from A290.1S, Monomer Phase Tank, may be found in trace amounts.

4. List Products and Maximum Production and ☒ attach MSDSs

Description and CAS Number	Maximum Hourly (lb/hr)	Maximum Annual (ton/year)
Acrylic resins of various compositions and CAS 3's, Typical examples: Lucite 4F (9011-14-7) Lucite 48SC (9003-42-3) Elvacite 2016 (28262-63-7)	Claimed Confidential (CBI)	Claimed Confidential (CBI)

5. Complete the *Emergency Vent Summary Sheet* for all emergency relief devices. N/A

6. Complete the *Leak Source Data Sheet* and describe below or attach to application the leak detection or maintenance program to minimize fugitive emissions. Include detection instruments, calibration gases or methods, planned inspection frequency, and record-keeping, and similar pertinent information. If subject to a rule requirement (e.g. 40CFR60, Subpart VV), please list those here.
   No rule applies to the equipment involved in this process. The resin at this point is the process is considered finished awaiting the final drying.

7. Clearly describe below or attach to application Accident Procedures to be followed in the event of an accidental spill or release.
   The spill or release source is immediately isolated if possible. These vessels the containment drains into a sump where the resin is filtered before being discharged to the site waste water treatment facility.

REDACTED

8A. Complete the *Toxicology Data Sheet* or attach to application a toxicology report (an up-to-date material safety data sheets (MSDS) may be used) outlining the currently known acute and chronic health effects of each compound or chemical entity emitted to the air. If these compounds have already been listed in Item 3, then a duplicate MSDS sheet is not required. Include data such as the OSHA time weighted average (TWA) or mutagenicity, teratogenicity, irritation, and other known or suspected effects should be addressed. Indicate where these are unknown, and provide references.

8B. Describe any health effects testing or epidemiological studies on these compounds that are being or may be conducted by the company or required under TSCA, RCRA or other federal regulations. Discuss the persistence in the environment of any emission (e.g. pesticides, etc.). N/A

9. **Waste Products** - Waste products status: (If source is subject to RCRA or 45CSR25, please contact the Hazardous Waste Section of WVDEP, OAQ at (304) 926-3647.) N/A

9A. Types and amounts of wastes to be disposed: none

9B. Method of disposal and location of waste disposal facilities: N/A

Carrier: Phone:

9C. Check here if approved USEPA/State Hazardous Waste Landfill will be used ☐

10. Maximum and Projected Typical Operating Schedule for process or project as a whole (circle appropriate units)

circle units:	(hrs/day) (hr/batch)	(days), (batches/day), (batches/week)	(days/yr), (weeks/year)
10A. Maximum	24 hrs	7 days	52 weeks
10B. Typical	24 hrs	7 days	51 weeks

11. Complete a *Reactor Data Sheet* for each reactor in this chemical process. See attached

12. Complete a *Distillation Column Data Sheet* for each distillation column in this chemical process. N/A

13. **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
The Distributive Control System and the Operator keep a count of the number of batches made per shift and each hour. The Slurry Tank emissions are estimated on the number of batches produced calculated based on the lbs/batch.

RECORDKEEPING
Production and shift reports documenting the number of batches made each shift plus ensure no more than 4 batches are produced per hour. The number of batches weighed up will be documented monthly and used as the basis to calculate emissions

REPORTING
Reporting will be as requested by the WV DEP DAQ Director.

TESTING
No testing is proposed. The engineering estimates applied are conservative and based on past stack testing.

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 operation or air pollution control

RECORDKEEPING. Please describe the proposed recordkeeping that will accompany the monitoring.

REPORTING. Please describe the proposed frequency of reporting of the recordkeeping.

TESTING. Please describe any proposed emissions testing for this process equipment or air pollution control device

14. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
N/A

REDACTED

REACTOR DATA SHEET

Provide the following information for each piece of equipment that is a potential or actual source of emissions as shown on the *Equipment List Form* and other parts of application.

Identification Number (as shown on *Equipment List Form*): A320S

1. Name and type of equipment (e.g. CSTR, plug flow, batch, etc.)
   #4 Blend Tank

2. Type of operation ☐ Batch ☒ Continuous ☐ Semi-batch

3. Projected Actual Equipment Operating Schedule (complete appropriate lines):

24 hrs/day	7 days/week	51 weeks/year
hrs/batch	batches/day, weeks (Circle one)	day,weeks/yr (Circle one)

4. Feed Data Flow In = Claimed Confidential (CBI)

Material Name & CAS No.	Phase[a]	Specific Gravity	Vapor Pressure[b]	Charge Rate Normal	Charge Rate Max	Charge Rate Units	Fill Time (min/batch, run)[c]
Water with minor amount of residual raw material	L	1.0	0.46	CBI	CBI	lbs	Claimed Confidential (CBI)
Granulating Agent	L	various	Neg.				
Acrylic Resins ~ many possible, three typical products:							
Lucite 4F (9011-14-7)	S	1.2	n/a				
Lucite 48SC (9003-42-3)	S	1.11	n/a				
Elvacite 2016 (28262-63-7)	S	1.19	n/a				

a. S = Solid, L = Liquid, G = gas or vapor
b. At feed conditions
c. Total time that equipment is filling per batch or run (start-up), for tank or vessel-type equipment.

5. Provide all **chemical reactions** that will be involved (if applicable), including the residence time and any side reactions that may occur as well as gases that may be generated during these reactions. Indicate if the reaction(s) are exothermic or endothermic.
   No Reactions

REDACTED

6. Maximum Temperature	7A. Maximum Pressure 7B. Max. Set Pressure for venting	
Claimed Confidential (CBI) °C	mmHg psig	mmHg psig

8. Output Data Flow Out = 650 gal/batch

Material Name and CAS No.	Phase	Specific Gravity	Vapor Pressure	Hourly or Batch Output Rate		
				Normal	Maximum	Units
Flow out is equal to flow in. Claimed Confidential (CBI) Claimed Confidential (CBI)						

9. Complete the following emission data for equipment connected to a header exhaust system, giving emissions levels before entering header system (i.e. before control equipment).

☐ Check here if not applicable

Emission Point ID (exhaust point of header system):

Material Name and CAS No.	Maximum Potential Emission Rate (lb/hr)	Method **
Ethyl Acrylate (140-88-5)	0.012	EE
Methyl Methacrylate (80-62-6)	0.088	
Acrylic Acid (79-10-7)	0.00006	
VOC	0.144	

** MB - material balance: EE - Engineering Estimate: TM - Test Measurement (submit test data): O - other (Explain)

REDACTED

10. Provide the following information pertaining to each condenser that may be attached to this reactor. Attach additional pages as necessary if more than one condenser is used for this reactor. Complete the Condenser Air Pollution Control Device Sheet if necessary.

☒ Check here if not applicable

10A. Cooling material

10B. Minimum and Maximum flowrate of cooling material (gal/hr)

10C. Inlet temperature of cooling material (°F)

10D. Outlet temperature of cooling material (°F)

10E. Pressure drop of gas to be condensed from inlet to outlet (psig)

10F. Inlet temperature of gas stream (°F)

10G. Outlet temperature of gas stream (°F)

10H. Number of passes

10I. Cooling surface area

11. Provide the following pertaining to auxiliary equipment that burns fuel (heaters, dryers, etc.):

☒ Check here if not applicable

11A. Type of fuel and maximum fuel burn rate, per hour:

11B. Provide maximum percent sulfur (S), ash content of fuel, and the energy content using appropriate units:

%S % Ash BTU/lb, std. ft^3/day, gal

(circle one)

11C. Theoretical combustion air requirement in SCFD per unit of fuel (circle appropriate unit) @ 70°F and 14.7 PSIA:

SCFD/lb, SCFD, gal (circle one)

11D. Percent excess air: %

11E. Type, amount, and BTU rating of burners and all other firing equipment that are planned to be used:

11F. Total maximum design heat input: $\times 10^6$ BTU/hr.

12. **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
The Distributive Control System and the Operator keep a count of the number of batches made per shift and each hour. The Slurry Tank emissions are estimated on the number of batches produced calculated based on the lbs/batch.	Production and shift reports documenting the number of batches made each shift plus ensure no more than 4 batches are produced per hour. The number of batches weighed up will be documented monthly and used as the basis to calculate emissions.
REPORTING	TESTING
Reporting will be as requested by the WV DEP DAQ Director.	No testing is proposed. The engineering estimates applied are conservative and based on past stack testing.

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 OPERATION OR AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT OR AIR POLLUTION CONTROL DEVICE.

13. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
None

NOTE: An *AIR POLLUTION CONTROL DEVICE SHEET* must be completed for any air pollution device(s) (except emergency relief devices) used to control emissions from this reactor.

Attachment L
EMISSIONS UNIT DATA SHEET
CHEMICAL PROCESS

For chemical processes please fill out this sheet and all supplementary forms (see below) that apply. Please check all supplementary forms that have been completed.

☐ *Emergency Vent Summary Sheet*
☐ *Leak Sources Data Sheet*
☐ *Toxicology Data Sheet*
☒ *Reactor Data Sheet*
☐ *Distillation Column Data Sheet*

1. Chemical process area name and equipment ID number (as shown in *Equipment List Form*)
   #1 Dryer, A350.3S

2. Standard Industrial Classification Codes (SICs) for process(es)

3. List raw materials and ☒ attach MSDSs
   Acrylic resin
   Water

4. List Products and Maximum Production and ☒ attach MSDSs

Description and CAS Number	Maximum Hourly (lb/hr)	Maximum Annual (ton/year)
Acrylic resins of various compositions and CAS 3's, Typical examples: Lucite 4F (9011-14-7) Lucite 48SC (9003-42-3) Elvacite 2016 (28262-63-7)	Claimed Confidential (CBI)	Claimed Confidential (CBI)

5. Complete the *Emergency Vent Summary Sheet* for all emergency relief devices. N/A

6. Complete the *Leak Source Data Sheet* and describe below or attach to application the leak detection or maintenance program to minimize fugitive emissions. Include detection instruments, calibration gases or methods, planned inspection frequency, and record-keeping, and similar pertinent information. If subject to a rule requirement (e.g. 40CFR60, Subpart VV), please list those here.
   No rule applies to the equipment involved in this process. The resin at this point is the process is considered finished awaiting the final drying.

7. Clearly describe below or attach to application Accident Procedures to be followed in the event of an accidental spill or release.
   The spill or release source is immediately isolated if possible. The floor drains around this vessel drain into a sump where the resin is filtered before being discharged to the site waste water treatment facility.

REDACTED

8A. Complete the *Toxicology Data Sheet* or attach to application a toxicology report (an up-to-date material safety data sheets (MSDS) may be used) outlining the currently known acute and chronic health effects of each compound or chemical entity emitted to the air. If these compounds have already been listed in Item 3, then a duplicate MSDS sheet is not required. Include data such as the OSHA time weighted average (TWA) or mutagenicity, teratogenicity, irritation, and other known or suspected effects should be addressed. Indicate where these are unknown, and provide references.

8B. Describe any health effects testing or epidemiological studies on these compounds that are being or may be conducted by the company or required under TSCA, RCRA or other federal regulations. Discuss the persistence in the environment of any emission (e.g. pesticides, etc.). N/A

9. **Waste Products** - Waste products status: (If source is subject to RCRA or 45CSR25, please contact the Hazardous Waste Section of WVDEP, OAQ at (304) 926-3647.) N/A

9A. Types and amounts of wastes to be disposed: none

9B. Method of disposal and location of waste disposal facilities: N/A

Carrier: Phone:

9C. Check here if approved USEPA/State Hazardous Waste Landfill will be used ☐

10. Maximum and Projected Typical Operating Schedule for process or project as a whole (circle appropriate units)

circle units:	(hrs/day) (hr/batch)	(days), (batches/day), (batches/week)	(days/yr), (weeks/year)
10A. Maximum	24 hrs	7 days	52 weeks
10B. Typical	24 hrs	7 days	51 weeks

11. Complete a *Reactor Data Sheet* for each reactor in this chemical process. See attached

12. Complete a *Distillation Column Data Sheet* for each distillation column in this chemical process. N/A

13. **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
Production rate lbs/hr is determined by the amount of material packaged in one day divided by 24.	Production shift reports document daily production. Calculations will be made on documented production rates.
REPORTING	TESTING
Reporting will be as requested by the WV DEP DAQ Director.	No testing is proposed. The engineering estimates applied are conservative and based on vendor literature.

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 operation or air pollution control

RECORDKEEPING. Please describe the proposed recordkeeping that will accompany the monitoring.

REPORTING. Please describe the proposed frequency of reporting of the recordkeeping.

TESTING. Please describe any proposed emissions testing for this process equipment or air pollution control device

14. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
N/A

REDACTED

REACTOR DATA SHEET

Provide the following information for each piece of equipment that is a potential or actual source of emissions as shown on the *Equipment List Form* and other parts of application.

Identification Number (as shown on *Equipment List Form*): A350.3S

1. Name and type of equipment (e.g. CSTR, plug flow, batch, etc.)
   #1 Dryer, rotary kiln

2. Type of operation ☐ Batch ☒ Continuous ☐ Semi-batch

3. Projected Actual Equipment Operating Schedule (complete appropriate lines):

24 hrs/day	7 days/week	51 weeks/year
hrs/batch	batches/day, weeks (Circle one)	day,weeks/yr (Circle one)

4. Feed Data Flow In = Claimed Confidential (CBI)

Material Name & CAS No.	Phase[a]	Specific Gravity	Vapor Pressure[b]	Charge Rate Normal	Charge Rate Max	Charge Rate Units	Fill Time (min/batch, run)[c]
Acrylic Resins ~ many possible, three typical products:							
Lucite 4F (9011-14-7)	S	1.2	n/a	CBI	CBI	Lbs/hr	
Lucite 48SC (9003-42-3)	S	1.11	n/a				
Elvacite 2016 (28262-63-7)	S	1.19	n/a				

a. S = Solid, L = Liquid, G = gas or vapor
b. At feed conditions
c. Total time that equipment is filling per batch or run (start-up), for tank or vessel-type equipment.

5. Provide all **chemical reactions** that will be involved (if applicable), including the residence time and any side reactions that may occur as well as gases that may be generated during these reactions. Indicate if the reaction(s) are exothermic or endothermic.
   No Reactions

REDACTED

6. Maximum Temperature	7A. Maximum Pressure 7B. Max. Set Pressure for venting	
Claimed Confidential (CBI) °C	mmHg psig	mmHg psig

8. Output DataFlow Out = Claimed Confidential (CBI)

Material Name and CAS No.	Phase	Specific Gravity	Vapor Pressure	Hourly or Batch Output Rate		
				Normal	Maximum	Units
Flow out is equal to flow in. Claimed Confidential (CBI)						

9. Complete the following emission data for equipment connected to a header exhaust system, giving emissions levels before entering header system (i.e. before control equipment).

☐ Check here if not applicable

Emission Point ID (exhaust point of header system):

Material Name and CAS No.	Maximum Potential Emission Rate (lb/hr)	Method **
Ethyl Acrylate (140-88-5)	0.010	EE
Methyl Methacrylate (80-62-6)	0.017	
VOC	0.052	

** MB - material balance: EE - Engineering Estimate: TM - Test Measurement (submit test data): O - other (Explain)

REDACTED

10. Provide the following information pertaining to each condenser that may be attached to this reactor. Attach additional pages as necessary if more than one condenser is used for this reactor. Complete the Condenser Air Pollution Control Device Sheet if necessary.

☒ Check here if not applicable

10A. Cooling material

10B. Minimum and Maximum flowrate of cooling material (gal/hr)

10C. Inlet temperature of cooling material (°F)

10D. Outlet temperature of cooling material (°F)

10E. Pressure drop of gas to be condensed from inlet to outlet (psig)

10F. Inlet temperature of gas stream (°F)

10G. Outlet temperature of gas stream (°F)

10H. Number of passes

10I. Cooling surface area

11. Provide the following pertaining to auxiliary equipment that burns fuel (heaters, dryers, etc.):

☒ Check here if not applicable

11A. Type of fuel and maximum fuel burn rate, per hour:

11B. Provide maximum percent sulfur (S), ash content of fuel, and the energy content using appropriate units:

%S % Ash BTU/lb, std. ft^3/day, gal

(circle one)

11C. Theoretical combustion air requirement in SCFD per unit of fuel (circle appropriate unit) @ 70°F and 14.7 PSIA:

SCFD/lb, SCFD, gal (circle one)

11D. Percent excess air: %

11E. Type, amount, and BTU rating of burners and all other firing equipment that are planned to be used:

11F. Total maximum design heat input: $\times 10^6$ BTU/hr.

12. **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
Production rate lbs/hr is determined by the amount of material packaged in one day divided by 24.	Production shift reports document daily production. Calculations will be made on documented production rates.
REPORTING	TESTING
Reporting will be as requested by the WV DEP DAQ Director.	No testing is proposed. The engineering estimates applied are conservative and based on vendor literature.

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 OPERATION OR AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT OR AIR POLLUTION CONTROL DEVICE.

13. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
None

NOTE: An *AIR POLLUTION CONTROL DEVICE SHEET* must be completed for any air pollution device(s) (except emergency relief devices) used to control emissions from this reactor.

Attachment L
EMISSIONS UNIT DATA SHEET
CHEMICAL PROCESS

For chemical processes please fill out this sheet and all supplementary forms (see below) that apply. Please check all supplementary forms that have been completed.

☐ *Emergency Vent Summary Sheet*
☐ *Leak Sources Data Sheet*
☐ *Toxicology Data Sheet*
☒ *Reactor Data Sheet*
☐ *Distillation Column Data Sheet*

1. Chemical process area name and equipment ID number (as shown in *Equipment List Form*)
   #2 Dryer, A390.3S

2. Standard Industrial Classification Codes (SICs) for process(es)

3. List raw materials and ☒ attach MSDSs
   Acrylic resin
   Water

4. List Products and Maximum Production and ☒ attach MSDSs

Description and CAS Number	Maximum Hourly (lb/hr)	Maximum Annual (ton/year)
Acrylic resins of various compositions and CAS 3's, Typical examples: Lucite 4F (9011-14-7) Lucite 48SC (9003-42-3) Elvacite 2016 (28262-63-7)	Claimed Confidential (CBI)	Claimed Confidential (CBI)

5. Complete the *Emergency Vent Summary Sheet* for all emergency relief devices. N/A

6. Complete the *Leak Source Data Sheet* and describe below or attach to application the leak detection or maintenance program to minimize fugitive emissions. Include detection instruments, calibration gases or methods, planned inspection frequency, and record-keeping, and similar pertinent information. If subject to a rule requirement (e.g. 40CFR60, Subpart VV), please list those here.
   No rule applies to the equipment involved in this process. The resin at this point is the process is considered finished awaiting the final drying.

7. Clearly describe below or attach to application Accident Procedures to be followed in the event of an accidental spill or release.
   The spill or release source is immediately isolated if possible. The floor drains around this vessel drain into a sump where the resin is filtered before being discharged to the site waste water treatment facility.

REDACTED

8A. Complete the *Toxicology Data Sheet* or attach to application a toxicology report (an up-to-date material safety data sheets (MSDS) may be used) outlining the currently known acute and chronic health effects of each compound or chemical entity emitted to the air. If these compounds have already been listed in Item 3, then a duplicate MSDS sheet is not required. Include data such as the OSHA time weighted average (TWA) or mutagenicity, teratogenicity, irritation, and other known or suspected effects should be addressed. Indicate where these are unknown, and provide references.

8B. Describe any health effects testing or epidemiological studies on these compounds that are being or may be conducted by the company or required under TSCA, RCRA or other federal regulations. Discuss the persistence in the environment of any emission (e.g. pesticides, etc.). N/A

9. **Waste Products** - Waste products status: (If source is subject to RCRA or 45CSR25, please contact the Hazardous Waste Section of WVDEP, OAQ at (304) 926-3647.) N/A

9A. Types and amounts of wastes to be disposed: none

9B. Method of disposal and location of waste disposal facilities: N/A

Carrier: Phone:

9C. Check here if approved USEPA/State Hazardous Waste Landfill will be used ☐

10. Maximum and Projected Typical Operating Schedule for process or project as a whole (circle appropriate units)

circle units:	(hrs/day) (hr/batch)	(days), (batches/day), (batches/week)	(days/yr), (weeks/year)
10A. Maximum	24 hrs	7 days	52 weeks
10B. Typical	24 hrs	7 days	51 weeks

11. Complete a *Reactor Data Sheet* for each reactor in this chemical process. See attached

12. Complete a *Distillation Column Data Sheet* for each distillation column in this chemical process. N/A

13. **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
Production rate lbs/hr is determined by the amount of material packaged in one day divided by 24.	Production shift reports document daily production. Calculations will be made on documented production rates.
REPORTING	TESTING
Reporting will be as requested by the WV DEP DAQ Director.	No testing is proposed. The engineering estimates applied are conservative and based on vendor literature.

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 operation or air pollution control

RECORDKEEPING. Please describe the proposed recordkeeping that will accompany the monitoring.

REPORTING. Please describe the proposed frequency of reporting of the recordkeeping.

TESTING. Please describe any proposed emissions testing for this process equipment or air pollution control device

14. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
N/A

REDACTED

REACTOR DATA SHEET

Provide the following information for each piece of equipment that is a potential or actual source of emissions as shown on the *Equipment List Form* and other parts of application.

Identification Number (as shown on *Equipment List Form*): A390.3S

1. Name and type of equipment (e.g. CSTR, plug flow, batch, etc.)
   #2 Dryer, rotary kiln

2. Type of operation ☐ Batch ☒ Continuous ☐ Semi-batch

3. Projected Actual Equipment Operating Schedule (complete appropriate lines):

24 hrs/day	7 days/week	51 weeks/year
hrs/batch	batches/day, weeks (Circle one)	day,weeks/yr (Circle one)

4. Feed Data Flow In = Claimed Confidential (CBI)

Material Name & CAS No.	Phase[a]	Specific Gravity	Vapor Pressure[b]	Charge Rate Normal	Charge Rate Max	Charge Rate Units	Fill Time (min/batch, run)[c]
Acrylic Resins ~ many possible, three typical products:							
Lucite 4F (9011-14-7)	S	1.2	n/a	CBI	***CBI***	Lbs/hr	
Lucite 48SC (9003-42-3)	S	1.11	n/a				
Elvacite 2016 (28262-63-7)	S	1.19	n/a				

a. S = Solid, L = Liquid, G = gas or vapor
b. At feed conditions
c. Total time that equipment is filling per batch or run (start-up), for tank or vessel-type equipment.

5. Provide all **chemical reactions** that will be involved (if applicable), including the residence time and any side reactions that may occur as well as gases that may be generated during these reactions. Indicate if the reaction(s) are exothermic or endothermic.
   No Reactions

REDACTED

6. Maximum Temperature	7A. Maximum Pressure 7B. Max. Set Pressure for venting	
Claimed Confidential (CBI) °C	mmHg psig	mmHg psig

8. Output Data Flow Out = Claimed Confidential (CBI)

Material Name and CAS No.	Phase	Specific Gravity	Vapor Pressure	Hourly or Batch Output Rate		
				Normal	Maximum	Units
Flow out is equal to flow in. Claimed Confidential (CBI)						

9. Complete the following emission data for equipment connected to a header exhaust system, giving emissions levels before entering header system (i.e. before control equipment).

☐ Check here if not applicable

Emission Point ID (exhaust point of header system):

Material Name and CAS No.	Maximum Potential Emission Rate (lb/hr)	Method **
Ethyl Acrylate (140-88-5)	0.004	EE
Methyl Methacrylate (80-62-6)	0.007	
VOC	0.23	

** MB - material balance: EE - Engineering Estimate: TM - Test Measurement (submit test data): O - other (Explain)

REDACTED

10. Provide the following information pertaining to each condenser that may be attached to this reactor. Attach additional pages as necessary if more than one condenser is used for this reactor. Complete the Condenser Air Pollution Control Device Sheet if necessary.

☒ Check here if not applicable

10A. Cooling material

10B. Minimum and Maximum flowrate of cooling material (gal/hr)

10C. Inlet temperature of cooling material (°F)

10D. Outlet temperature of cooling material (°F)

10E. Pressure drop of gas to be condensed from inlet to outlet (psig)

10F. Inlet temperature of gas stream (°F)

10G. Outlet temperature of gas stream (°F)

10H. Number of passes

10I. Cooling surface area

11. Provide the following pertaining to auxiliary equipment that burns fuel (heaters, dryers, etc.):

☒ Check here if not applicable

11A. Type of fuel and maximum fuel burn rate, per hour:

11B. Provide maximum percent sulfur (S), ash content of fuel, and the energy content using appropriate units:

%S % Ash BTU/lb, std. ft^3/day, gal

(circle one)

11C. Theoretical combustion air requirement in SCFD per unit of fuel (circle appropriate unit) @ 70°F and 14.7 PSIA:

SCFD/lb, SCFD, gal (circle one)

11D. Percent excess air: %

11E. Type, amount, and BTU rating of burners and all other firing equipment that are planned to be used:

11F. Total maximum design heat input: $\times 10^6$ BTU/hr.

12. **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
Production rate lbs/hr is determined by the amount of material packaged in one day divided by 24.	Production shift reports document daily production. Calculations will be made on documented production rates.
REPORTING	TESTING
Reporting will be as requested by the WV DEP DAQ Director.	No testing is proposed. The engineering estimates applied are conservative and based on vendor literature.

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 OPERATION OR AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT OR AIR POLLUTION CONTROL DEVICE.

13. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
None

NOTE: An *AIR POLLUTION CONTROL DEVICE SHEET* must be completed for any air pollution device(s) (except emergency relief devices) used to control emissions from this reactor.

Attachment L
EMISSIONS UNIT DATA SHEET
CHEMICAL PROCESS

For chemical processes please fill out this sheet and all supplementary forms (see below) that apply. Please check all supplementary forms that have been completed.

☐ *Emergency Vent Summary Sheet*
☐ *Leak Sources Data Sheet*
☐ *Toxicology Data Sheet*
☒ *Reactor Data Sheet*
☐ *Distillation Column Data Sheet*

1. Chemical process area name and equipment ID number (as shown in *Equipment List Form*)
   Polykettles, A440.1S, A440.2S, A440.3S, A440.4S, A440.5S

2. Standard Industrial Classification Codes (SICs) for process(es)

3. List raw materials and ☒ attach MSDSs
   methyl methacrylate, ethyl acrylate, n-butyl methacrylate, isobornyl methacrylate, i-butyl methacrylate, 2-ethylhexyl acrylate, lauryl methacrylate, ethyl methacrylate, dodecyl mercaptan, 2-hydroxyethyl methacrylate, hydroxypropyl methacrylate, isobutyl methacrylate, methacrylic acid, acrylic acid, glycidyl methacrylate, dimethyl aminoethyl methacrylate, hydroxyethyl cellulose, disodium phosphate, benzoyl peroxide, Vazo®, polyacrylic acid, sodium hypophosphite, stearic acid, stearyl alcohol plus other minor additives

4. List Products and Maximum Production and ☒ attach MSDSs

Description and CAS Number	Maximum Hourly (lb/hr)	Maximum Annual (ton/year)
Acrylic resins of various compositions and CAS 3's, Typical examples: Lucite 4F (9011-14-7) Lucite 48SC (9003-42-3) Elvacite 2016 (28262-63-7)	Claimed Confidential (CBI)	Claimed Confidential (CBI)

5. Complete the *Emergency Vent Summary Sheet* for all emergency relief devices. N/A

6. Complete the *Leak Source Data Sheet* and describe below or attach to application the leak detection or maintenance program to minimize fugitive emissions. Include detection instruments, calibration gases or methods, planned inspection frequency, and record-keeping, and similar pertinent information. If subject to a rule requirement (e.g. 40CFR60, Subpart VV), please list those here.
   Each polykettle is routinely pressure tested to detect fugitive emissions. In addition the Distributed Control System conducts a vacuum test before proceeding with each batch to ensure the polykettle is properly closed. Most of the raw materials have a strong objectionable odor so inherently leaks are not tolerated and quickly detected should they develop.

7. Clearly describe below or attach to application Accident Procedures to be followed in the event of an accidental spill or release.
   The spill or release source is immediately isolated if possible. Spills are contained by use of synthetic absorbent materials such as PIG® products. The floor drains are directed to the area sump which in turn is filtered before being transferred to the site waste water treatment facility. In cases where a known release is experienced steps to isolate the material within the area sump can be taken. In these cases the released material can be vacuumed up and disposed of properly as either RCRA or non-RCRA wastes.

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8A. Complete the *Toxicology Data Sheet* or attach to application a toxicology report (an up-to-date material safety data sheets (MSDS) may be used) outlining the currently known acute and chronic health effects of each compound or chemical entity emitted to the air. If these compounds have already been listed in Item 3, then a duplicate MSDS sheet is not required. Include data such as the OSHA time weighted average (TWA) or mutagenicity, teratogenicity, irritation, and other known or suspected effects should be addressed. Indicate where these are unknown, and provide references.

8B. Describe any health effects testing or epidemiological studies on these compounds that are being or may be conducted by the company or required under TSCA, RCRA or other federal regulations. Discuss the persistence in the environment of any emission (e.g. pesticides, etc.). N/A

9. **Waste Products** - Waste products status: (If source is subject to RCRA or 45CSR25, please contact the Hazardous Waste Section of WVDEP, OAQ at (304) 926-3647.) N/A

9A. Types and amounts of wastes to be disposed: none

9B. Method of disposal and location of waste disposal facilities: N/A

Carrier: Phone:

9C. Check here if approved USEPA/State Hazardous Waste Landfill will be used ☐

10. Maximum and Projected Typical Operating Schedule for process or project as a whole (circle appropriate units)

circle units:	(hrs/day)	(days), (batches/day), (batches/week)	(days/yr), (weeks/year)
10A. Maximum	24 hrs	7 days	52 weeks
10B. Typical	24 hrs	7 days	51 weeks

11. Complete a *Reactor Data Sheet* for each reactor in this chemical process. See attached

12. Complete a *Distillation Column Data Sheet* for each distillation column in this chemical process. N/A

13. **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
The Distributed Control System will alert the Operators when 4 batches have been weighed up in less than one hour. Batch weigh-ups dictate the emission rate with calculations based upon lbs/batch.	Production shift reports document the number of batches weighed up in one hour plus the total batches produced per month. Calculations will be made based upon the number of batches produced.
REPORTING	**TESTING**
Reporting will be as requested by the WV DEP DAQ Director.	No testing is proposed. The engineering estimates applied are conservative and based on past stack testing.

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 operation or air pollution control

RECORDKEEPING. Please describe the proposed recordkeeping that will accompany the monitoring.

REPORTING. Please describe the proposed frequency of reporting of the recordkeeping.

TESTING. Please describe any proposed emissions testing for this process equipment or air pollution control device

14. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
N/A

REDACTED

REACTOR DATA SHEET

Provide the following information for each piece of equipment that is a potential or actual source of emissions as shown on the *Equipment List Form* and other parts of application.

Identification Number (as shown on *Equipment List Form*): A440.1S-A440.5S

1. Name and type of equipment (e.g. CSTR, plug flow, batch, etc.)
   Polykettle batch reactors

2. Type of operation ☒ Batch ☐ Continuous ☐ Semi-batch

3. Projected Actual Equipment Operating Schedule (complete appropriate lines):

24 hrs/day	7 days/week	51 weeks/year
hrs/batch	batches/day, weeks (Circle one)	day,weeks/yr (Circle one)

4. Feed Data Flow In = Claimed Confidential (CBI)

Material Name & CAS No.	Phase[a]	Specific Gravity	Vapor Pressure[b]	Charge Rate Normal	Charge Rate Max	Charge Rate Units	Fill Time (min/batch, run)[c]
dodecyl mercaptan (112-55-0)		0.85	0.00005			lbs	Claimed Confidential (CBI)
Acrylic Acid (79-10-7)	L	1.05	0.1118			lbs	
Methacrylic acid(79-41-4)	L	1.02	0.0276			lbs	
Flow out from Monomer Phase Tank, A290.1S plus A290.2S & A290.4S and Water Phase Tank, A280S	L L	Typically 0.9	~ 1.1			gal/min	
Izo Initiator (78-67-1 typical)			Neg.	CBI	CBI	Lbs/min	
Benzoyl Peroxide (94-36-0)	L	1.1	Neg.			Lbs	
Hydroxyethyl Cellulose (9004-64-2)	S S	0.66 0.6	Neg.			Lbs	
Other non-specific dry ingredients with negligible vapor pressure	S	Various	Neg.			Lb	

a. S = Solid, L = Liquid, G = gas or vapor
b. At feed conditions
c. Total time that equipment is filling per batch or run (start-up), for tank or vessel-type equipment.

REDACTED

5. Provide all **chemical reactions** that will be involved (if applicable), including the residence time and any side reactions that may occur as well as gases that may be generated during these reactions. Indicate if the reaction(s) are exothermic or endothermic.

This process employs free radical suspension polymerization. Free radical polymerization is a method of polymerization by which a polymer forms by the successive addition of free radical building blocks. Free radicals can be formed via a number of different mechanisms usually involving separate initiator molecules. Following its generation, the initiating free radical adds (nonradical) monomer units, thereby growing the polymer chain. Suspension means that the reaction occurs in droplets of monomer suspended in a fluid which in this case is water.

Initiation is the first step of the polymerization process. During initiation, an active center is created from which a polymer chain is generated. Initiation has two steps. In the first step, one or two radicals are created from the initiating molecules. In the second step, radicals are transferred from the initiator molecules to the monomer units present. The initiator is heated until a bond is homolytically cleaved, producing two radicals.

During polymerization the polymer chain grows and propagates releasing heat of reaction until either the monomer source is consumed or until the polymer chain is terminated.

6. Maximum Temperature	7A. Maximum Pressure 7B. Max. Set Pressure for venting
Claimed Confidential (CBI) °C	psig 100 psig

8. Output Data Flow Out = Claimed Confidential (CBI)

Material Name and CAS No.	Phase	Specific Gravity	Vapor Pressure	Hourly or Batch Output Rate Normal	Maximum	Units
Water with minor amount of residual raw materials	L	1.0	0.46	Claimed Confidential (CBI)	Claimed Confidential (CBI)	lbs
Granulating agents	L	Various	Neg.			lbs
Acrylic Resins, many possible, three typical products:						
Lucite 4F (9011-14-7)	S	1.2	Neg.			lbs
Lucite 48SC (9003-42-3)	S	1.11	Neg.			lbs
Elvacite 2016 (28262-63-7)	S	1.19	Neg.			lbs

9. Complete the following emission data for equipment connected to a header exhaust system, giving emissions levels before entering header system (i.e. before control equipment).

☐ Check here if not applicable

Emission Point ID (exhaust point of header system): A450E

Material Name and CAS No.	Maximum Potential Emission Rate (lb/hr)	Method **
Ethyl Acrylate (140-88-5)	0.0315	EE
Methyl Methacrylate (80-62-6)	0.245	EE
VOC	0.331	EE
Acrylic Acid (79-10-7)	0.0002	EE

Emission Point ID (exhaust point of header system): A290E (A440.1S, A440.2S, & A440.3S only)

Material Name and CAS No.	Maximum Potential Emission Rate (lb/hr)	Method **
Ethyl Acrylate (140-88-5)	0.080	EE
Methyl Methacrylate (80-62-6)	0.615	EE
VOC	0.816	EE
Acrylic Acid (79-10-7)	0.0002	EE

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Emission Point ID (exhaust point of header system): A300E (A440.4S & A440.5S only)		
Material Name and CAS No.	Maximum Potential Emission Rate (lb/hr)	Method **
Ethyl Acrylate (140-88-5)	0.053	EE
Methyl Methacrylate (80-62-6)	0.41	EE
VOC	0.544	EE
Acrylic Acid (79-10-7)	0.0001	EE
** MB - material balance: EE - Engineering Estimate: TM - Test Measurement (submit test data): O - other (Explain)		

10. Provide the following information pertaining to each condenser that may be attached to this reactor. Attach additional pages as necessary if more than one condenser is used for this reactor. Complete the Condenser Air Pollution Control Device Sheet if necessary.

☒ Check here if not applicable

10A. Cooling material

10B. Minimum and Maximum flowrate of cooling material (gal/hr)

10C. Inlet temperature of cooling material (°F)

10D. Outlet temperature of cooling material (°F)

10E. Pressure drop of gas to be condensed from inlet to outlet (psig)

10F. Inlet temperature of gas stream (°F)

10G. Outlet temperature of gas stream (°F)

10H. Number of passes

10I. Cooling surface area

11. Provide the following pertaining to auxiliary equipment that burns fuel (heaters, dryers, etc.):

☒ Check here if not applicable

11A. Type of fuel and maximum fuel burn rate, per hour:

11B. Provide maximum percent sulfur (S), ash content of fuel, and the energy content using appropriate units:

%S % Ash BTU/lb, std. ft^3/day, gal

(circle one)

11C. Theoretical combustion air requirement in SCFD per unit of fuel (circle appropriate unit) @ 70°F and 14.7 PSIA:

SCFD/lb, SCFD, gal (circle one)

11D. Percent excess air: %

11E. Type, amount, and BTU rating of burners and all other firing equipment that are planned to be used:

11F. Total maximum design heat input: $\times 10^6$ BTU/hr.

12. **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
The Distributed Control System will alert the Operators when 4 batches have been weighed up in less than one hour. Batch weigh-ups dictate the emission rate with calculations based upon lbs/batch.	Production shift reports document the number of batches weighed up in one hour plus the total batches produced per month. Calculations will be made based upon the number of batches produced.
REPORTING	TESTING
Reporting will be as requested by the WV DEP DAQ Director.	No testing is proposed. The engineering estimates applied are conservative and based on past stack testing.

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 OPERATION OR AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT OR AIR POLLUTION CONTROL DEVICE.

13. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
None

NOTE: An *AIR POLLUTION CONTROL DEVICE SHEET* must be completed for any air pollution device(s) (except emergency relief devices) used to control emissions from this reactor.

Attachment M

Air Pollution Control Device Sheets

Attachment M
Air Pollution Control Device Sheet
(ADSORPTION SYSTEM)

Control Device ID No. (must match Emission Units Table): A010c, EA Carbon Canister

Equipment Information

1. Name of Control Device: Carbon Canisters for EA Tank	2. Manufacturer: Calgon Carbon Corp Model No. VentoSorb
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.	

Gas Stream Characteristics

4. Gas Flow Rate into the Collector:
ACFM 4.32 @ 85.7 °F
Relative Humidity 25% PSIA

5. Emission Rate of each Pollutant (Specify) into and out of Collector:

	IN			OUT		
Pollutant	**lb/hr**	**grains/acf**	**ppm (volume)**	**lb/hr**	**grains/acf**	**ppm (volume)**
A	4.18	112.9	52,631	0.2	2.16	1,006
B						
C						
D						
E						

6. LEL (lower explosive limit) for most volatile pollutant:

Pollutant	PPM
Ethyl acrylate	11,000

7. List vapor pressure (mmHg) at the operating temperature for each pollutant in inlet stream:

	Pollutant	Temp	MmHg
A	Ethyl acrylate CAS#140-88-5	85.7	48.8
B			
C			
D			
E			

Adsorbent Characteristics

8. Adsorbent:
Type: Carbon
Manufacturer: Calgon Carbon Corp
Grade No.: BPL 4X10
Specifications:

9. Maximum adsorbate loading:
0.4 lb pollutant/lb of adsorbent

10. Pressure drop across unit:
<1" (in inches of water)

11. Number of beds per unit:
2 canisters used in parrallel

12. Weight of adsorbent material per bed:
180 lb

13. Adsorbent media average particle size:
microns

14. Adsorber geometry:
Length: 55-gallon drum ft
Diameter: ft
Bed Depth: ft
Bed Surface Area: ft^2
Bed Volume: ft^3

15. Temperature Range Adsorption:
Min. Temp. 0 °F
Max. Temp. 85.7 °F
Average Temp. 55 °F

16. Cycle time for adsorption: N/A hr

17. Frequency of adsorbent replacement:
Every 6 months or before reaching satuation yr

18. Cycle time for drying before adsorbing:
hr

19. Saturation Capacity of Pollutant on adsorbent (supply units): 40 lbs per canister

20. Length of mass transfer zone: Unknown esimated at 34" in

Regenerative Systems

21. Type of regeneration: ☒ Replacement
☐ Stream
☐ Other, specify:

22. Method of Regeneration:
☐ Alternate use of entire units
☐ Alternate use of beds in a single unit
☐ Source shut down
☐ Other (describe):

23. Cycle time for regeneration: hr

24. Emission steam velocity through bed: ft/min

25. Steam flow rate: lb/min
Steam temp.: °F
Steam pressure: PSIA

26. Disposition of vapors during regeneration:

27. Guaranteed minimum efficiency per pollutant captured:

	Captured Pollutant	Minimum Efficiency
A	Ethyl acrylate	98 %
B		%
C		%
D		%
E		%

28. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification):

29. Describe the collection material disposal system:

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

31. **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:
None	On monthly basis tank material transfer amounts are used to estimate emissions to carbon canisters. Carbon canisters are replace on 6 month basis or before reaching satuation point based upon estimated emissions.
REPORTING:	TESTING:
Dates of canister replacement are reported semi-annually	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.

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

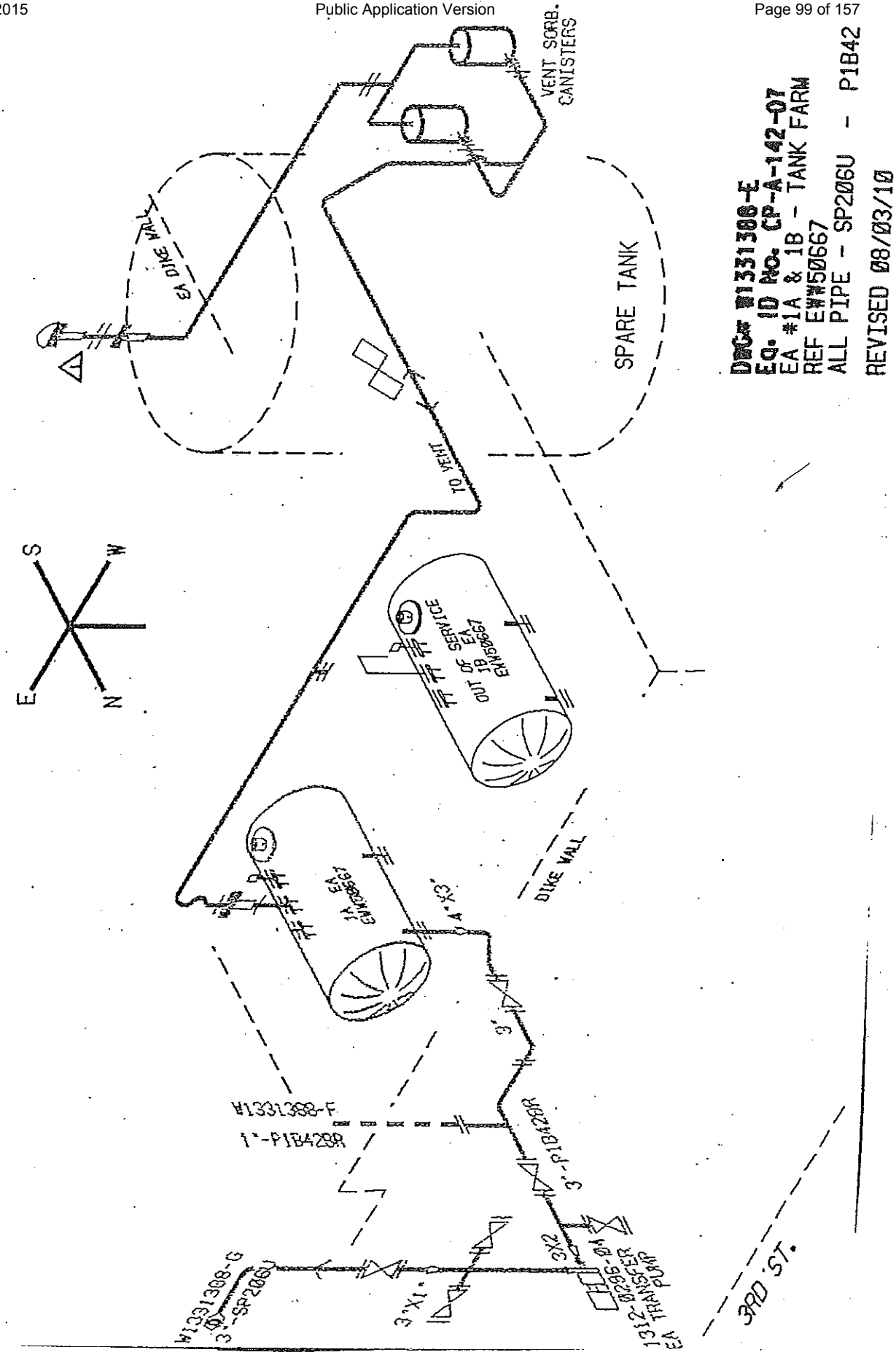
99.9%

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

98%

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

Replace on a frequency that is before breakthrough occurs


VENT SORB. CANISTERS
EA DIKE WALL
SPARE TANK
TO VENT
S
W
E
N
OUT OF SERVICE
EA 1B
EA 1A
DIKE WALL
4"X3"
3"
W1331388-F
1"-P1B42BR
3"-P1B42BR
W1331388-G
3"-SP206U
3"X1"
3"X2"
EA TRANSFER PUMP
3RD ST.
DWG# W1331388-E
EQ. ID NO. CP-A-142-07
EA #1A & 1B - TANK FARM
REF EW#50667
ALL PIPE - SP206U - P1B42
REVISED 08/03/10

Attachment N

Supporting Emissions Calculations

Supporting Calculations Discussion

The following methodology was used to calculate maximum emissions from the Acrylics operating units. Calculated emissions are the basis for the requested R13 Permit limits and are the basis for the Monitoring, Recordkeeping, and Reporting (MRR) for monthly and annual emissions and compliance records for R13 and Title V permitting requirements. Actual calculations are completed in a Microsoft Excel® spreadsheet titled MRR. Hardcopies of example worksheets from this spreadsheet are provided following the discussion section.

Storage Tanks (Outdoor and Indoor)

Annual maximum emissions from bulk monomer storage tanks were calculated using EPA TANKS 4 program. The TANKS 4 Detailed Emissions Reports, which include all basic data and calculated emissions, are included in Appendix N of this application package. For Monitoring, Recordkeeping, and Reporting (MRR) purposes, the TANKS 4.0.9 program will be run monthly using the most recent running 12 month total throughput.

Maximum hourly emissions for the storage tanks were calculated using procedures for vapor displacement from batch operations (Eq 11) taken from the Pharmaceutical MACT rule. This procedure, described below, can be found in the September 21, 1998 Federal Register (some equations – not the ones used here – were corrected and/or updated in the August 29, 2000 Federal Register).

$$E = (V/RT) \sum(p_i)(MW_i)$$

Where:

E = mass of material emitted
V = volume of gas displaced from the vessel
T = temperature of vessel vapor space
p_i = partial pressure of each individual volatile component
MW_i = molecular weight of each individual component

All the storage tanks in Acrylics store single component VOCs so the partial pressure of the component is the vapor pressure of the single component. For vessels, which hold multiple components, the individual partial pressures are calculated using Raoult's Law. The volume of gas displaced is equal to the volumetric fill rate for the tank.

For MRR purposes, in which emissions will be calculated monthly for each storage tank, the maximum hourly rate will be calculated as described in Equation above using the maximum temperature for the current month from the TANKS 4 database for Charleston, WV.

Solids Storage and Salt Silo

Some batches require the addition of solid material. These solid ingredients are stored in hoppers and added to the batch as needed. As Operators fill the Solids Storage hoppers, a minimal amount of dust is generated and removed by ventilation exhaust. Balancing the variation of amounts that may be added to the hoppers due to production requirements an engineering estimate of the lb of emission per lb of material transferred to the hoppers may be

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derived. Maximum hourly emission rate is based on the maximum amount of solids transferred in one hour and annual emissions are based on maximum annual consumption of each solid.

For MRR purposes, monthly emissions will be calculated based upon the consumption for the current month and maximum hourly emissions will be based on the maximum hourly transfer rate. Annual emissions will be based on the sum of all emissions from each solid material.

Batch Operations

The Acrylics manufacturing operation is a batch system weighing up charges of various ingredients then charging them to vessels for reaction. For purposes of emission calculations batch polymerization is broken down into various sub-operations: microscale filling, monomer phase tank filling, polykettle heating and vacuum system, slurry and blend tanks which contain polymerized material in slurry form from the polykettles, and polymer drying. Emissions are calculated for each type of operation per the following approach.

Microscale Batching: Ingredients that are required in small quantities are weighed up in the Microscale system. There is one tank, A290.2S, used to weigh up liquid charges. This tank is open with local exhaust emitting at point A290E. Emissions occur when liquids are transferred into the microscale tank. Calculations for this tank were done utilizing Eq 11 from the Pharmaceutical MACT rule the same as above for the storage tanks.

Monomer Phase Tank: Monomers are the principal ingredient for acrylic polymers with each batch charge weighed up within the Monomer Phase Tank, A290.1S, with the exhaust emitting at point A290E. Emissions from this source occur as a result of vapor displacement while filling. To reduce these emissions a project to increase the pressure rating of the Monomer Phase Tank was completed in 2005 to reduce breathing losses. This tank only opens to atmosphere for products where the Microscale batching is used. Calculations for this tank was completed utilizing Eq. 11 from the Pharmaceutical MACT rule, see example provided for Storage Tanks. .

Monomer Phase Tank (Inerting): As a safety measure the Monomer Phase Tank is maintained under an inert atmosphere. Before the project completed in 2005 the tank vapor was continuously swept with a nitrogen purge. After conversion this nitrogen purge only makes up whenever the tank is opened to accept charges from the Microscale. The continuous nitrogen sweep purge has been eliminated eliminating this as a routine source.

Polykettle Heating Cycle: For some products the reaction polykettles are heated before the polymerization reaction. During this heating cycle the polykettles vent to atmosphere (#1, #2, & #3 PKs to A290E and #4 & #5 PKs to A300E). Monomers in the polykettle are suspended in water prior to polymerization so emissions are minimized. Measured stack emissions from a 1991 stack test are used to develop emission factors for this operation.

Polykettle Vacuum System and West Sump: The West Sump (A450E) receives condensed steam from the PK Vacuum System (A440S) and some other miscellaneous sources. There are no calculation procedures available for estimating these emission sources. A stack measurement was completed in 1991 and is used as the basis for determining contributions from these sources as total emission factors.

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Methanol has been eliminated from this source reducing overall emissions.

Slurry and Blend Tanks: The Slurry Tanks (A310.1S and A310.2S) and the Blend Tank (A320S) are the tanks that receive polymerized product from the polykettles in the form of a polymer slurry in water. Methanol has been eliminated from this source reducing overall emissions.

Total Emissions per Batch: Based upon the calculations described an estimated emission was developed for VOC and HAPs on a per batch basis. The estimated emissions are used to calculate the maximum PTE from batch operations and used to calculate monthly and annual emissions based upon actual number of batches produced.

Line 1 and Line 2 Dryer System (VOCs and HAPs): The principal pollutant from the dryers is dust abated by the filtering systems however the dryers also drive off some residual monomer to the atmosphere. These systems were also used to drive off residual methanol until eliminated from the process in 2009. The emission are based upon the 1991 stack test results. The water separation and drying steps are continuous operations starting at the slurry tank so the emissions are based upon throughput rates rather than batch counts.

Line 1 and Line 2 Dryer System (PM10): After the two slurry tanks (A310.1S & A310.2S) and the Blend Tank (A320S) the polymer finishing operation is continuous through two production lines with different capacities. PM10 emissions are generally based on maximum production, yield loss and control device efficiencies.

Laboratory Emissions: The Acrylics area lab is used for production quality control. To complete the required testing some solvents are used. Three chemicals used in the lab may be used to represent all others used in the same lab. These are methylene chloride, methanol, and toluene. The chemicals are used in different analytical methods as the single solvent or in combination with each other in different ratios. Emissions leave the lab hoods through lab hoods to emission points A471E and A472E.

Insignificant Emissions: Twelve sources are identified as having trivial level of emissions. Emissions from some of these sources are calculated using means such as TANKS for other emissions are estimated using reasonably informed engineering judgement.

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

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Attachment O

Monitoring, Recordkeeping, Reporting and Testing Plans

Monitoring, Recordkeeping, and Reporting

Many process and production records are monitor and documented to ensure compliance with the stated limits. The documented values will be used to calculate emissions from engineering estimates.

The monitored parameters include:

- Monthly throughput of raw materials into the storage tanks.
- Monthly throughput of solid ingredients.
- The maximum number of batches weighed per hour.
- Total number of batches weighed each month.
- Maximum hourly production on Line #1 and Line #2 based on the amount of finished product packaged in a 12-hour shift.
- The Line #2 Dryer vent system used most frequently.
- The manual bagging production.

These parameters will be documented monthly along with the results of the associated emissions. Any reporting will be made upon request from the WV DEP Director or his/her duly authorized representative.

Monitoring

The permittee shall document compliance with 45 CSR R7-3.1 opacity standards by conducting and documenting monthly compliance demonstrations according to the following procedure.

The permittee shall conduct a visible check for visible emissions at least monthly. These checks shall be conducted by personnel trained in the practices and limitations of 40 CFR 60 Appendix A, Method 22 during periods of normal operation for a sufficient time interval to determine if there is a visible emission. If visible emissions are identified during this emission check, or at any other time, the permittee shall conduct a 40 CFR 60 Appendix A, Method 9 evaluation within three (3) days, unless the permittee can demonstrate a valid reason that the time frame should be extended. A Method 9 evaluation shall not be required if the visible emission condition is corrected within 24 hours and the units are operating at normal conditions.

Emissions from storage tanks shall be calculated using EPA's TANKS software. Emissions from other operations shall be calculated based upon batch counts, emission factors, and production rates as appropriate. These estimates shall be documented monthly in custom Microsoft Excel® spreadsheets titled MRR workbooks. Within these MRR workbooks comparison to established limits shall be made.

Reporting

These records shall be maintained for a total of five years and on site for a minimum of two years, and shall be made available to the WV DEP Director or his/her authorized

representative upon request. Deviations from established limits shall be reported to the WV DEP upon discovery of such excursions.

Testing

Testing will not be conducted unless specifically requested in writing from the WV DEP Director or his/her authorized representative.

Attachment P

Public Notice

This application is for a change that is a net decrease in emissions – hence no public notice is needed.

Attachment S

Title V Permit Revision Information

1. New Applicable Requirements Summary	
Mark all applicable requirements associated with the changes involved with this permit revision:	
☐ SIP	☐ FIP
☒ Minor source NSR (45CSR13)	☐ PSD (45CSR14)
☐ NESHAP (45CSR15)	☐ Nonattainment NSR (45CSR19)
☐ Section 111 NSPS (Subpart(s)_____)	☒ Section 112(d) MACT standards (40 CFR 63 Subpart FFFF – Misc. Organic NESHAP)
☐ Section 112(g) Case-by-case MACT	☐ 112(r) RMP
☐ Section 112(i) Early reduction of HAP	☐ Consumer/commercial prod. reqts., section 183(e)
☐ Section 129 Standards/Reqts.	☐ Stratospheric ozone (Title VI)
☐ Tank vessel reqt., section 183(f)	☐ Emissions cap 45CSR§30-2.6.1
☐ NAAQS, increments or visibility (temp. sources)	☒ 45CSR27 State enforceable only rule
☐ 45CSR4 State enforceable only rule	☐ Acid Rain (Title IV, 45CSR33)
☐ Emissions Trading and Banking (45CSR28)	☐ Compliance Assurance Monitoring (40CFR64) [1]
☐ NO_x Budget Trading Program Non-EGUs (45CSR1)	☐ NO_x Budget Trading Program EGUs (45CSR26)
[1] If this box is checked, please include **Compliance Assurance Monitoring (CAM) Form(s)** for each Pollutants Specific Emission Unit (PSEU) (See Attachment H to Title V Application). If this box is not checked, please explain why **Compliance Assurance Monitoring** is not applicable:	

2. Non Applicability Determinations

List all requirements, which the source has determined not applicable to this permit revision and for which a permit shield is requested. The listing shall also include the rule citation and a rationale for the determination.

a. 40 C.F.R. 60, Subpart K - "Standards of Performance For Storage Vessels For Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978." There are no petroleum liquid storage tanks in the Acrylic Resin Production Area.

b. 40 C.F.R. 60, Subpart Ka - "Standards of Performance for Storage Vessels For Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984." There are no petroleum liquid storage tanks in the Acrylic Resin Production Area.

c. 40 C.F.R. 60, Subpart Kb - "Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984." There are no volatile organic liquid storage tanks in the Acrylic Resin Production Area constructed after July 23, 1984 with a design capacity equal to or greater than 75 cubic meters (m^3).

d. 40 C.F.R. 60, Subpart VV - "Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry." The Acrylic Resin Production Area does not produce as intermediates or final products any of the materials listed in 40 C.F.R. §60.489.

e. 40 C.F.R. 60, Subpart DDD - "Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry." The Acrylic Resin Production Area does not manufacture polypropylene, polyethylene, polystyrene, or poly(ethylene terephthalate) for which this rule applies.

f. 40 C.F.R. 60, Subpart RRR - "Standards of Performance for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes." The Acrylic Resin Production Area does not produce any of the chemicals listed in 40 C.F.R. §60.707 as a product, co-product, by-product, or intermediate.

g. 40 C.F.R. 61, Subpart V - "National Emission Standards for Equipment Leaks (Fugitive Emissions Sources)." Applies to sources in VHAP service as defined in 40 C.F.R. §61.241. VHAP service involves chemicals that are not used in a manner that qualifies them under the rule in the Acrylic Resin Production Area.

h. 40 C.F.R. 63, Subpart H - "National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks." 40 C.F.R. 63 Subparts F, G, and H do not apply to manufacturing process units that do not meet the criteria in 40 C.F.R. §§63.100(b)(1), (b)(2), and (b)(3).

i. 40 C.F.R. 63, Subpart JJJ - "National Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins." The Acrylic Resin Production Area does not produce the materials listed in 40 C.F.R. §63.1310.

j. 40 C.F.R. 60, Subpart EEEE – "National Emission Standard for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)." The Acrylic Resin Production Area does not distribute organic liquids as defined by 40 C.F.R. §63.2406.

k. 40 C.F.R. 63, Subpart PPPP – "National Emission Standards for Hazardous Air Pollutants: Surface Coating of Plastic Parts and Products." The Acrylic Resin Production Area does not produce as an intermediate or final product that meets the definition of "surface coated" plastic part.

l. 40 C.F.R. 63, Subpart WWWW - "National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production." The Acrylic Resin Production Area does not engage in reinforced plastics composites production as defined in 40 C.F.R. §63.5785 and does not manufacture composite material as defined in 40 C.F.R. §63.5935.

m. 40 C.F.R. 63, Subpart ZZZZ – "National Emission Standards for Hazardous Air Pollutants: Reciprocating Internal Combustion Engines." The Acrylic Resin Production Area does not have a stationary Reciprocating Internal Combustion Engine (RICE) as defined by 40 C.F.R. §63.6675.

n. 40 C.F.R. 63, Subpart DDDDD – "National Emission Standards for Hazardous Air Pollutants: Industrial/Commercial/Institutional Boilers and Process Heaters." The Acrylic Resin Production Area does not own or operate an industrial, commercial, or institutional boiler or process heater as defined in 40 C.F.R. §63.7575 of the proposed rule

o. 40 C.F.R. 63, Subpart HHHHH – "National Emission Standards for Hazardous Air Pollutants: Miscellaneous Coating Manufacturing." The Acrylic Resin Production Area does not produce, blend, or manufacture coatings as part of the manufacturing process.

p. 40 C.F.R. 82, Subpart B - "Protection of Stratospheric Ozone." Requires recycling of Chlorofluorocarbons (CFCs) from motor vehicles and that technicians servicing equipment need to be licensed. The Acrylic Resin Production Area does not conduct motor vehicle maintenance involving CFCs on site.

q. 40 C.F.R. 82, Subpart C – "Protection of Stratospheric Ozone." Bans non-essential products containing Class I substances and bans non-essential products containing or manufactured with Class II substances. The Acrylic Resin Production Area does not use, manufacture, nor distribute these materials.

r. 45CSR2 – "To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers." The Acrylic Resin Production Area does not contain any fuel burning units.

s. 45CSR10 – "To Prevent and Control Air Pollution from the Emission of Sulfur Oxides." The Acrylic Resin Production Area does not contain any fuel burning units subject to the sulfur dioxide weight emission standards of 45CSR§10-3. Also, per 45CSR§10-4.1.e, manufacturing process source operations in the Acrylic Resin Production Area are exempt from the sulfur dioxide concentration limits of 45CSR§10-4.1 because the potential to emit of sulfur dioxide is less than 500 pounds per year.

t. 45CSR16 – "Standards of Performance for New Stationary Sources Pursuant to 40 C.F.R. 60." The Acrylic Resin Production Area is not subject to any requirements under 40 C.F.R. 60.

u. 45CSR17 – "To Prevent and Control Particulate Matter Air Pollution from Materials Handling, Preparation, Storage and Other Sources of Fugitive Particulate Matter." Per 45CSR§17-6.1, the Acrylic Resin Production Area is not subject to 45CSR17 because it is subject to the fugitive particulate matter emission requirements of 45CSR7.

☐ **Permit Shield Requested** *(not applicable to Minor Modifications)*

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

3. Suggested Title V Draft Permit Language

Are there any changes involved with this Title V Permit revision outside of the scope of the NSR Permit revision? ☐ Yes ☒ No If Yes, describe the changes below.

Also, please provide **Suggested Title V Draft Permit language** for the proposed Title V Permit revision (including all applicable requirements associated with the permit revision and any associated monitoring /recordkeeping/ reporting requirements), OR attach a marked up pages of current Title V Permit. Please include appropriate citations (Permit or Consent Order number, condition number and/or rule citation (e.g. 45CSR§7-4.1)) for those requirements being added / revised.

4. Active NSR Permits/Permit Determinations/Consent Orders Associated With This Permit Revision

Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
R13-3223	12-08-2014	4.1.2 Attachment A Listing
R13-3223	12-08-2014	4.1.3 Attachment A Listing
	/ /	

5. Inactive NSR Permits/Obsolete Permit or Consent Orders Conditions Associated With This Revision

Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
	MM/DD/YYYY	
	/ /	
	/ /	

6. Change in Potential Emissions from previous permit	
Pollutant	Change in Potential Emissions (+ or -), TPY
VOC	-0.381
PM2.5	No Change
PM10	No Change
TSP (Less Than 30 Microns)	No Change
Total HAP	-0.935
Methylene Chloride	No Change
Methanol	-0.935
Toluene	No Change

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

7. Certification For Use Of Minor Modification Procedures *(Required Only for Minor Modification Requests)*

Note:	*This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete. The criteria for allowing the use of Minor Modification Procedures are as follows:*

i. Proposed changes do not violate any applicable requirement;

ii. Proposed changes do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;

iii. Proposed changes do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient air quality impacts, or a visibility increment analysis;

iv. Proposed changes do not seek to establish or change a permit term or condition for which there is no underlying applicable requirement and which permit or condition has been used to avoid an applicable requirement to which the source would otherwise be subject (synthetic minor). Such terms and conditions include, but are not limited to a federally enforceable emissions cap used to avoid classification as a modification under any provision of Title I or any alternative emissions limit approved pursuant to regulations promulgated under § 112(j)(5) of the Clean Air Act;

v. Proposed changes do not involve preconstruction review under Title I of the Clean Air Act or 45CSR14 and 45CSR19;

vi. Proposed changes are not required under any rule of the Director to be processed as a significant modification;

Notwithstanding subparagraph 45CSR§30-6.5.a.1.A. (items i through vi above), minor permit modification procedures may be used for permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that such minor permit modification procedures are explicitly provided for in rules of the Director which are approved by the U.S. EPA as a part of the State Implementation Plan under the Clean Air Act, or which may be otherwise provided for in the Title V operating permit issued under 45CSR30.

Pursuant to 45CSR§30-6.5.a.2.C., the proposed modification contained herein meets the criteria for use of Minor permit modification procedures as set forth in Section 45CSR§30-6.5.a.1.A. The use of Minor permit modification procedures are hereby requested for processing of this application.

(Signed):	[signature] *(Please use blue ink)*	Date:	Oct. / 15 / 2015 *(Please use blue ink)*
Named (typed):	*Robert J. Fehrenbacher*	Title:	*Plant Manager*

Note: Please check if the following included (if applicable):

☐	Compliance Assurance Monitoring Form(s)
☐	Suggested Title V Draft Permit Language

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