

West Virginia Department of Environmental Protection
Division of Air Quality

Jim Justice
Governor

Austin Caperton
Cabinet Secretary

Permit to Operate



Pursuant to
Title V
of the Clean Air Act

Issued to:

~~Union Carbide Corporation~~

Specialty Products US, LLC

Institute Facility

Water Soluble Polymers (Group ~~5 of 8~~ 2 of 2)

~~R30-03900005-2017~~

R30-03900682-2017

William F. Durham

Director

Issued: December 19, 2017 • Effective: January 2, 2018
Expiration: December 19, 2022 • Renewal Application Due: June 19, 2022

Permit Number: ~~R30-03900005-2017~~
R30-03900682-2017
Permittee: ~~Union Carbide Corporation~~
Specialty Products US, LLC
Facility Name: **Institute Facility**
Business Unit: **Water Soluble Polymers (Group 5 of 8 2 of 2)**
Permittee Mailing Address: **P. O. Box 8361 1006, South Charleston Institute, WV 25303 25112**

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§ 22-5-1 et seq.) and 45CSR30 — Requirements for Operating Permits. The permittee identified at the above-referenced facility is authorized to operate the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

Facility Location:	Institute, Kanawha County, West Virginia
Mailing Address:	P. O. Box 8361 1006 , South Charleston Institute , WV 25303 25112
Telephone Number:	(304) 747-7000 1822
Type of Business Entity:	Corporation
Facility Description:	CELLOSIZETM HEC tanks and Production of POLYOX TM WSR.
SIC Codes:	2869
UTM Coordinates:	432.189 km Easting • 4,248.754 km Northing • Zone 17

Permit Writer: Mike Egnor

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§ 22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §22-5-14.

Issuance of this Title V Operating Permit does not supersede or invalidate any existing permits under 45CSR13, 14 or 19, although all applicable requirements from such permits governing the facility's operation and compliance have been incorporated into the Title V Operating Permit.

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1.0 Emission Units and Active R13, R14, and R19 Permits

1.1 Emission Units

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Control Device
POLYOX™ WSR				
T4904	230B	Tank 4904	2016	Scrubber B230
T4905	235K/221A	Tank 4905	1967	None/A221
T4906	235C/K/221A	Tank 4906	1967	None/A221
T4907	235D/K/221A	Tank 4907	1967	None/A221
T4920	235J	Tank 4920	1967	None
T4928 (V4928)	230Q/221A	Tank 4928	1967	None/Flare A221
T4929 (V4929)	235E	Tank 4929	1967	None
T4930 (V4930)	230AA	Tank 4930	1967	None
T4989 (V4989)	221A	Tank 4989	1967	Flare A221
T4990 (V4990)	221A	Tank 4990	1967	Flare A221
T4991	221A	Tank 4991	1967	Flare A221
T4992 (V4992)	235H	Tank 4992 (idle)	1967	None
T4993	235N	Tank 4993	1967	None
T4994	235F	Tank 4994	1967	None
T4995	No Vent	Tank 4995	1995	None
T4998	221A	Tank 4998	1967	A221
T23009	235A	Tank 23009	1987	None
T4901 (V4901)	230S	Tank 4901 (aka V4901 and T4901)	1967	None
TCR871	230E	Rack TCR871	Prior to 1970	None
E306	221A	Vessel 306	1968	Flare A221
V404	221A	Vessel 404	1967	Flare A221
C461	No Vent	Vessel 461 PEPO Reactor (V461)	2002	None

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Control Device
V518 (V518R, T518R, or T518R Low EO)	No Vent	Vessel 518R (idle)	1968	None
V4921	221A	Vessel 4921	1968	Flare A221
V4922	221A	Vessel 4922	1968	Flare A221
T4903 (V4903)	230B	Vessel T4903 (aka V4903)	1967	Scrubber B230
T4900	230G	Vessel T4900	1967	None
E530	230K	No. 1 Conveyor	1967	None
E531	230L	No. 2 Conveyor	1967	None
E532	230M	No. 3 Conveyor	1967	None
E504	230L	Blending	1967	None
STB	No Vents	Storage Bins	1967	None
L6DA	230R	Packaging Bin L6DA	1968	None
L6DB	230J	Packaging System	1968	E-707
E535	230V	Vac System	1985	None
D230A	No Vent	Hopper 1 (No vent to air)	1996	None
D230B	230GG/230U	Hopper 2	1975	E221A
E4902	230B	Equipment 4902 (T4902)	1967	None
155C	230H	Equipment 155C	NA	None
155B	230I	Equipment 155B	NA	None
E446R	221A	A/B – Vessel E446R A/B	1997	Flare A221
E447R	221A	Equipment E447R	1997	Flare A221
D462	230JJ	Vessel D462	2002	None
T1220	235O	Tank 1220	1942	None
V302 (POX2-302)	230O/221A	Vessel 302	1967	None/Flare A221
IRFP1	None	Industrial Refrigeration Unit #1	N/A	None
IRFP2	None	Industrial Refrigeration Unit #2	N/A	None
TTR_PX1	Vent Gas Returned to Process	Tank Truck Loading TTR_PX1	2012	None

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Control Device
Control Devices				
A221	221A	Flare (2,160 lbs/hr max)	1994	None
	230B	Packed Bed Scrubber B230	1967/Replaced 1999	None
	230GG	E221A Baghouse	1975	None
	230J	E-707 Baghouse (Packaging vent collection system)	1968	None

1.2. Active R13, R14, and R19 Permits

The underlying authority for any conditions from R13, R14, and/or R19 permits contained in this operating permit is cited using the original permit number (e.g. R13-1234). The current applicable version of such permit(s) is listed below.

Permit Number	Date of Issuance
R13-0171E	01/30/2012
R13-3404	9/28/2018

2.0 General Conditions

2.1 Definitions

- 2.1.1. All references to the "West Virginia Air Pollution Control Act" or the "Air Pollution Control Act" mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.
- 2.1.2. The "Clean Air Act" means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.
- 2.1.3. "Secretary" means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45CSR§30-2.12.). The Director of the Division of Air Quality is the Secretary's designated representative for the purposes of this permit.
- 2.1.4. Unless otherwise specified in a permit condition or underlying rule or regulation, all references to a "rolling yearly total" shall mean the sum of the monthly data, values or parameters being measured, monitored, or recorded, at any given time for the previous twelve (12) consecutive calendar months.

2.2 Acronyms

CAAA	Clean Air Act Amendments	NSPS	New Source Performance Standards
CBI	Confidential Business Information	PM	Particulate Matter
CEM	Continuous Emission Monitor	PM₁₀	Particulate Matter less than 10µm in diameter
CES	Certified Emission Statement	pph	Pounds per Hour
C.F.R. or CFR	Code of Federal Regulations	ppm	Parts per Million
CO	Carbon Monoxide	PSD	Prevention of Significant Deterioration
C.S.R. or CSR	Codes of State Rules	psi	Pounds per Square Inch
DAQ	Division of Air Quality	SIC	Standard Industrial Classification
DEP	Department of Environmental Protection	SIP	State Implementation Plan
FOIA	Freedom of Information Act	SO₂	Sulfur Dioxide
HAP	Hazardous Air Pollutant	TAP	Toxic Air Pollutant
HON	Hazardous Organic NESHAP	TPY	Tons per Year
HP	Horsepower	TRS	Total Reduced Sulfur
lbs/hr or lb/hr	Pounds per Hour	TSP	Total Suspended Particulate
LDAR	Leak Detection and Repair	USEPA	United States Environmental Protection Agency
m	Thousand	UTM	Universal Transverse Mercator
MACT	Maximum Achievable Control Technology	VEE	Visual Emissions Evaluation
mm	Million	VOC	Volatile Organic Compounds
mmBtu/hr	Million British Thermal Units per Hour		
mmft³/hr or mmcf/hr	Million Cubic Feet Burned per Hour		
NA or N/A	Not Applicable		
NAAQS	National Ambient Air Quality Standards		
NESHAPS	National Emissions Standards for Hazardous Air Pollutants		
NO_x	Nitrogen Oxides		

2.3. Permit Expiration and Renewal

- 2.3.1. Permit duration. This permit is issued for a fixed term of five (5) years and shall expire on the date specified on the cover of this permit, except as provided in 45CSR§30-6.3.b. and 45CSR§30-6.3.c.
[45CSR§30-5.1.b.]
- 2.3.2. A permit renewal application is timely if it is submitted at least six (6) months prior to the date of permit expiration.
[45CSR§30-4.1.a.3.]
- 2.3.3. Permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted consistent with 45CSR§30-6.2. and 45CSR§30-4.1.a.3.
[45CSR§30-6.3.b.]
- 2.3.4. If the Secretary fails to take final action to deny or approve a timely and complete permit application before the end of the term of the previous permit, the permit shall not expire until the renewal permit has been issued or denied, and any permit shield granted for the permit shall continue in effect during that time.
[45CSR§30-6.3.c.]

2.4. Permit Actions

- 2.4.1. This permit may be modified, revoked, reopened and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
[45CSR§30-5.1.f.3.]

2.5. Reopening for Cause

- 2.5.1. This permit shall be reopened and revised under any of the following circumstances:
- Additional applicable requirements under the Clean Air Act or the Secretary's legislative rules become applicable to a major source with a remaining permit term of three (3) or more years. Such a reopening shall be completed not later than eighteen (18) months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to 45CSR§§30-6.6.a.1.A. or B.
 - Additional requirements (including excess emissions requirements) become applicable to an affected source under Title IV of the Clean Air Act (Acid Deposition Control) or other legislative rules of the Secretary. Upon approval by U.S. EPA, excess emissions offset plans shall be incorporated into the permit.
 - The Secretary or U.S. EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
 - The Secretary or U.S. EPA determines that the permit must be revised or revoked and reissued to assure compliance with the applicable requirements.

[45CSR§30-6.6.a.]

2.6. Administrative Permit Amendments

- 2.6.1. The permittee may request an administrative permit amendment as defined in and according to the procedures specified in 45CSR§30-6.4.
[45CSR§30-6.4.]

2.7. Minor Permit Modifications

- 2.7.1. The permittee may request a minor permit modification as defined in and according to the procedures specified in 45CSR§30-6.5.a.
[45CSR§30-6.5.a.]

2.8. Significant Permit Modification

- 2.8.1. The permittee may request a significant permit modification, in accordance with 45CSR§30-6.5.b., for permit modifications that do not qualify for minor permit modifications or as administrative amendments.
[45CSR§30-6.5.b.]

2.9. Emissions Trading

- 2.9.1. No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for in the permit and that are in accordance with all applicable requirements.
[45CSR§30-5.1.h.]

2.10. Off-Permit Changes

- 2.10.1. Except as provided below, a facility may make any change in its operations or emissions that is not addressed nor prohibited in its permit and which is not considered to be construction nor modification under any rule promulgated by the Secretary without obtaining an amendment or modification of its permit. Such changes shall be subject to the following requirements and restrictions:
- a. The change must meet all applicable requirements and may not violate any existing permit term or condition.
 - b. The permittee must provide a written notice of the change to the Secretary and to U.S. EPA within two (2) business days following the date of the change. Such written notice shall describe each such change, including the date, any change in emissions, pollutants emitted, and any applicable requirement that would apply as a result of the change.
 - c. The change shall not qualify for the permit shield.
 - d. The permittee shall keep records describing all changes made at the source that result in emissions of regulated air pollutants, but not otherwise regulated under the permit, and the emissions resulting from those changes.
 - e. No permittee may make any change subject to any requirement under Title IV of the Clean Air Act (Acid Deposition Control) pursuant to the provisions of 45CSR§30-5.9.

- f. No permittee may make any changes which would require preconstruction review under any provision of Title I of the Clean Air Act (including 45CSR14 and 45CSR19) pursuant to the provisions of 45CSR§30-5.9.

[45CSR§30-5.9.]

2.11. Operational Flexibility

- 2.11.1. The permittee may make changes within the facility as provided by § 502(b)(10) of the Clean Air Act. Such operational flexibility shall be provided in the permit in conformance with the permit application and applicable requirements. No such changes shall be a modification under any rule or any provision of Title I of the Clean Air Act (including 45CSR14 and 45CSR19) promulgated by the Secretary in accordance with Title I of the Clean Air Act and the change shall not result in a level of emissions exceeding the emissions allowable under the permit.

[45CSR§30-5.8]

- 2.11.2. Before making a change under 45CSR§30-5.8., the permittee shall provide advance written notice to the Secretary and to U.S. EPA, describing the change to be made, the date on which the change will occur, any changes in emissions, and any permit terms and conditions that are affected. The permittee shall thereafter maintain a copy of the notice with the permit, and the Secretary shall place a copy with the permit in the public file. The written notice shall be provided to the Secretary and U.S. EPA at least seven (7) days prior to the date that the change is to be made, except that this period may be shortened or eliminated as necessary for a change that must be implemented more quickly to address unanticipated conditions posing a significant health, safety, or environmental hazard. If less than seven (7) days notice is provided because of a need to respond more quickly to such unanticipated conditions, the permittee shall provide notice to the Secretary and U.S. EPA as soon as possible after learning of the need to make the change.

[45CSR§30-5.8.a.]

- 2.11.3. The permit shield shall not apply to changes made under 45CSR§30-5.8., except those provided for in 45CSR§30-5.8.d. However, the protection of the permit shield will continue to apply to operations and emissions that are not affected by the change, provided that the permittee complies with the terms and conditions of the permit applicable to such operations and emissions. The permit shield may be reinstated for emissions and operations affected by the change:

- a. If subsequent changes cause the facility's operations and emissions to revert to those authorized in the permit and the permittee resumes compliance with the terms and conditions of the permit, or
- b. If the permittee obtains final approval of a significant modification to the permit to incorporate the change in the permit.

[45CSR§30-5.8.c.]

- 2.11.4. "Section 502(b)(10) changes" are changes that contravene an express permit term. Such changes do not include changes that would violate applicable requirements or contravene enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements.

[45CSR§30-2.39]

2.12. Reasonably Anticipated Operating Scenarios

2.12.1. The following are terms and conditions for reasonably anticipated operating scenarios identified in this permit.

- a. Contemporaneously with making a change from one operating scenario to another, the permittee shall record in a log at the permitted facility a record of the scenario under which it is operating and to document the change in reports submitted pursuant to the terms of this permit and 45CSR30.
- b. The permit shield shall extend to all terms and conditions under each such operating scenario; and
- c. The terms and conditions of each such alternative scenario shall meet all applicable requirements and the requirements of 45CSR30.

[45CSR§30-5.1.i.]

2.13. Duty to Comply

2.13.1. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

[45CSR§30-5.1.f.1.]

2.14. Inspection and Entry

2.14.1. The permittee shall allow any authorized representative of the Secretary, upon the presentation of credentials and other documents as may be required by law, to perform the following:

- a. At all reasonable times (including all times in which the facility is in operation) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times (including all times in which the facility is in operation) any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;
- d. Sample or monitor at reasonable times substances or parameters to determine compliance with the permit or applicable requirements or ascertain the amounts and types of air pollutants discharged.

[45CSR§30-5.3.b.]

2.15. Schedule of Compliance

- 2.15.1. For sources subject to a compliance schedule, certified progress reports shall be submitted consistent with the applicable schedule of compliance set forth in this permit and 45CSR§30-4.3.h., but at least every six (6) months, and no greater than once a month, and shall include the following:
- a. Dates for achieving the activities, milestones, or compliance required in the schedule of compliance, and dates when such activities, milestones or compliance were achieved; and
 - b. An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventative or corrective measure adopted.

[45CSR§30-5.3.d.]

2.16. Need to Halt or Reduce Activity not a Defense

- 2.16.1. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in determining penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operations.

[45CSR§30-5.1.f.2.]

2.17. Emergency

- 2.17.1. An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

[45CSR§30-5.7.a.]

- 2.17.2. Effect of any emergency. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of 45CSR§30-5.7.c. are met.

[45CSR§30-5.7.b.]

- 2.17.3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

- a. An emergency occurred and that the permittee can identify the cause(s) of the emergency;
- b. The permitted facility was at the time being properly operated;
- c. During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and

- d. Subject to the requirements of 45CSR§30-5.1.c.3.C.1, the permittee submitted notice of the emergency to the Secretary within one (1) working day of the time when emission limitations were exceeded due to the emergency and made a request for variance, and as applicable rules provide. This notice, report, and variance request fulfills the requirement of 45CSR§30-5.1.c.3.B. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

[45CSR§30-5.7.c.]

- 2.17.4. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

[45CSR§30-5.7.d.]

- 2.17.5. This provision is in addition to any emergency or upset provision contained in any applicable requirement.

[45CSR§30-5.7.e.]

2.18. Federally-Enforceable Requirements

- 2.18.1. All terms and conditions in this permit, including any provisions designed to limit a source's potential to emit and excepting those provisions that are specifically designated in the permit as "State-enforceable only", are enforceable by the Secretary, USEPA, and citizens under the Clean Air Act.

[45CSR§30-5.2.a.]

- 2.18.2. Those provisions specifically designated in the permit as "State-enforceable only" shall become "Federally-enforceable" requirements upon SIP approval by the USEPA.

2.19. Duty to Provide Information

- 2.19.1. The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records required to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

[45CSR§30-5.1.f.5.]

2.20. Duty to Supplement and Correct Information

- 2.20.1. Upon becoming aware of a failure to submit any relevant facts or a submittal of incorrect information in any permit application, the permittee shall promptly submit to the Secretary such supplemental facts or corrected information.

[45CSR§30-4.2.]

2.21. Permit Shield

- 2.21.1. Compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance provided that such applicable requirements are included and are specifically identified in this permit or the Secretary has determined that other requirements specifically identified are not applicable to the source and this permit includes such a determination or a concise summary thereof.

[45CSR§30-5.6.a.]

2.21.2. Nothing in this permit shall alter or affect the following:

- a. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance; or
- b. The applicable requirements of the Code of West Virginia and Title IV of the Clean Air Act (Acid Deposition Control), consistent with § 408 (a) of the Clean Air Act.
- c. The authority of the Administrator of U.S. EPA to require information under § 114 of the Clean Air Act or to issue emergency orders under § 303 of the Clean Air Act.

[45CSR§30-5.6.c.]

2.22. Credible Evidence

2.22.1. Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defenses otherwise available to the permittee including but not limited to any challenge to the credible evidence rule in the context of any future proceeding.

[45CSR§30-5.3.e.3.B. and 45CSR38]

2.23. Severability

2.23.1. The provisions of this permit are severable. If any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid by a court of competent jurisdiction, the remaining permit terms and conditions or their application to other circumstances shall remain in full force and effect.

[45CSR§30-5.1.e.]

2.24. Property Rights

2.24.1. This permit does not convey any property rights of any sort or any exclusive privilege.

[45CSR§30-5.1.f.4]

2.25. Acid Deposition Control

2.25.1. Emissions shall not exceed any allowances that the source lawfully holds under Title IV of the Clean Air Act (Acid Deposition Control) or rules of the Secretary promulgated thereunder.

- a. No permit revision shall be required for increases in emissions that are authorized by allowances acquired pursuant to the acid deposition control program, provided that such increases do not require a permit revision under any other applicable requirement.
- b. No limit shall be placed on the number of allowances held by the source. The source may not, however, use allowances as a defense to noncompliance with any other applicable requirement.
- c. Any such allowance shall be accounted for according to the procedures established in rules promulgated under Title IV of the Clean Air Act.

[45CSR§30-5.1.d.]

- 2.25.2. Where applicable requirements of the Clean Air Act are more stringent than any applicable requirement of regulations promulgated under Title IV of the Clean Air Act (Acid Deposition Control), both provisions shall be incorporated into the permit and shall be enforceable by the Secretary and U. S. EPA.
[45CSR§30-5.1.a.2.]

3.0 Facility-Wide Requirements

3.1 Limitations and Standards

- 3.1.1. **Open burning.** The open burning of refuse by any person is prohibited except as noted in 45CSR§6-3.1. [45CSR§6-3.1.]
- 3.1.2. **Open burning exemptions.** The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause or allow any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible. [45CSR§6-3.2.]
- 3.1.3. **Asbestos.** The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee, owner, or operator must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management and the Bureau for Public Health - Environmental Health require a copy of this notice to be sent to them. [40 C.F.R. §61.145(b) and 45CSR34]
- 3.1.4. **Odor.** No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public. [45CSR§4-3.1 State-Enforceable only.]
- 3.1.5. **Standby plan for reducing emissions.** When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45CSR11. [45CSR§11-5.2]
- 3.1.6. **Emission inventory.** The permittee is responsible for submitting, on an annual basis, an emission inventory in accordance with the submittal requirements of the Division of Air Quality. [W.Va. Code § 22-5-4(a)(14)]
- 3.1.7. **Ozone-depleting substances.** For those facilities performing maintenance, service, repair or disposal of appliances, the permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 C.F.R. Part 82, Subpart F, except as provided for Motor Vehicle Air Conditioners (MVACs) in Subpart B:
- a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the prohibitions and required practices pursuant to 40 C.F.R. §§ 82.154 and 82.156.
 - b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 C.F.R. § 82.158.

- c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 C.F.R. § 82.161.

[40 C.F.R. 82, Subpart F – Polyox Plant Industrial Refrigeration Equipment uses R134a that is not covered by Subpart F provisions]

- 3.1.8. **Risk Management Plan.** This stationary source, as defined in 40 C.F.R. § 68.3, is subject to Part 68. This stationary source shall submit a risk management plan (RMP) by the date specified in 40 C.F.R. Part 68.10. This stationary source shall certify compliance with the requirements of Part 68 as part of the annual compliance certification as required by 40 C.F.R. Part 70 or 71.

[40 C.F.R. 68]

- 3.1.9. The owner or operator of a plant shall maintain particulate matter control of the plant premises, and plant owned, leased or controlled access roads, by paving, application of asphalt, chemical dust suppressants or other suitable dust control measures. Good operating practices shall be implemented and when necessary particulate matter suppressants shall be applied in relation to stockpiling and general material handling to minimize particulate matter generation and atmospheric entrainment.

[45CSR§7-5.2]

3.2. Monitoring Requirements

- 3.2.1. None

3.3. Testing Requirements

- 3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary exercise his option to conduct such test(s), the operator shall provide all necessary sampling connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:

- a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63, if applicable, in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable.
- b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit.
- c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved

test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.

- d. The permittee shall submit a report of the results of the stack test within 60 days of completion of the test. The test report shall provide the information necessary to document the objectives of the test and to determine whether proper procedures were used to accomplish these objectives. The report shall include the following: the certification described in paragraph 3.5.1; a statement of compliance status, also signed by a responsible official; and, a summary of conditions which form the basis for the compliance status evaluation. The summary of conditions shall include the following:
 1. The permit or rule evaluated, with the citation number and language.
 2. The result of the test for each permit or rule condition.
 3. A statement of compliance or non-compliance with each permit or rule condition.

[WV Code §§ 22-5-4(a)(14-15) and 45CSR13]

3.4. Recordkeeping Requirements

- 3.4.1. **Monitoring information.** The permittee shall keep records of monitoring information that include the following:
 - a. The date, place as defined in this permit and time of sampling or measurements;
 - b. The date(s) analyses were performed;
 - c. The company or entity that performed the analyses;
 - d. The analytical techniques or methods used;
 - e. The results of the analyses; and
 - f. The operating conditions existing at the time of sampling or measurement.

[45CSR§30-5.1.c.2.A.]

- 3.4.2. **Retention of records.** The permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of monitoring sample, measurement, report, application, or record creation date. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Where appropriate, records may be maintained in computerized form in lieu of the above records.

[45CSR§30-5.1.c.2.B.]

- 3.4.3. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.
[45CSR§30-5.1.c. State-Enforceable only.]

3.5. Reporting Requirements

- 3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.
[45CSR§§30-4.4. and 5.1.c.3.D.]
- 3.5.2. A permittee may request confidential treatment for the submission of reporting required under 45CSR§30-5.1.c.3. pursuant to the limitations and procedures of W. Va. Code § 22-5-10 and 45CSR31.
[45CSR§30-5.1.c.3.E.]
- 3.5.3. Except for the electronic submittal of the annual compliance certification and semi-annual monitoring reports to the DAQ and USEPA as required in 3.5.5 and 3.5.6 below, all notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, or mailed first class or by private carrier with postage prepaid to the address(es), or submitted in electronic format by e-mail as set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

DAQ:

Director
WVDEP
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

US EPA:

~~Associate Director~~ **Section Chief**
~~Office of Air Enforcement and Compliance Assistance (3AP20)~~
U. S. Environmental Protection Agency,
Region III
Enforcement and Compliance Assurance
Division Air Section
(3ED21)
1650 Arch Street
Philadelphia, PA 19103-2029

DAQ Compliance and Enforcement¹:

DEPAirQualityReports@wv.gov

¹For all self-monitoring reports (MACT, GACT, NSPS, etc.), stack tests and protocols, Notice of Compliance Status reports, Initial Notifications, etc.

- 3.5.4. **Certified emissions statement.** The permittee shall submit a certified emissions statement and pay fees on an annual basis in accordance with the submittal requirements of the Division of Air Quality.
[45CSR§30-8.]

- 3.5.5. **Compliance certification.** The permittee shall certify compliance with the conditions of this permit on the forms provided by the DAQ. In addition to the annual compliance certification, the permittee may be required to submit certifications more frequently under an applicable requirement of this permit. The annual certification shall be submitted to the DAQ and USEPA on or before March 15 of each year, and shall certify compliance for the period ending December 31. The permittee shall maintain a copy of the certification on site for five (5) years from submittal of the certification. The annual certification shall be submitted in electronic format by e-mail to the following addresses:

DAQ:
DEPAirQualityReports@wv.gov

US EPA:
R3_APD_Permits@epa.gov

[45CSR§30-5.3.e.]

- 3.5.6. **Semi-annual monitoring reports.** The permittee shall submit reports of any required monitoring on or before September 15 for the reporting period January 1 to June 30 and on or before March 15 for the reporting period July 1 to December 31. All instances of deviation from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official consistent with 45CSR§30-4.4. The semi-annual monitoring reports shall be submitted in electronic format by e-mail to the following address:

DAQ:
DEPAirQualityReports@wv.gov

[45CSR§30-5.1.c.3.A.]

- 3.5.7. **Emergencies.** For reporting emergency situations, refer to Section 2.17 of this permit.

- 3.5.8. **Deviations.**

- a. In addition to monitoring reports required by this permit, the permittee shall promptly submit supplemental reports and notices in accordance with the following:
1. Any deviation resulting from an emergency or upset condition, as defined in 45CSR§30-5.7., shall be reported by telephone or telefax within one (1) working day of the date on which the permittee becomes aware of the deviation, if the permittee desires to assert the affirmative defense in accordance with 45CSR§30-5.7. A written report of such deviation, which shall include the probable cause of such deviations, and any corrective actions or preventative measures taken, shall be submitted and certified by a responsible official within ten (10) days of the deviation.
 2. Any deviation that poses an imminent and substantial danger to public health, safety, or the environment shall be reported to the Secretary immediately by telephone or telefax. A written report of such deviation, which shall include the probable cause of such deviation, and any corrective actions or preventative measures taken, shall be submitted by the responsible official within ten (10) days of the deviation.
 3. Deviations for which more frequent reporting is required under this permit shall be reported on the more frequent basis.

4. All reports of deviations shall identify the probable cause of the deviation and any corrective actions or preventative measures taken.
[45CSR§30-5.1.c.3.C.]
 - b. The permittee shall, in the reporting of deviations from permit requirements, including those attributable to upset conditions as defined in this permit, report the probable cause of such deviations and any corrective actions or preventive measures taken in accordance with any rules of the Secretary.
[45CSR§30-5.1.c.3.B.]
- 3.5.9. **New applicable requirements.** If any applicable requirement is promulgated during the term of this permit, the permittee will meet such requirements on a timely basis, or in accordance with a more detailed schedule if required by the applicable requirement.
[45CSR§30-4.3.h.1.B.]
- 3.5.10. **Reports of excess emissions.** Except as provided in 3.5.11, the owner or operator of any facility containing sources subject to 45CSR§21-5. shall, for each occurrence of excess emissions expected to last more than 7 days, within 1 business day of becoming aware of such occurrence, supply the Director by letter with the following information:
- a. The name and location of the facility;
 - b. The subject sources that caused the excess emissions;
 - c. The time and date of first observation of the excess emissions; and
 - d. The cause and expected duration of the excess emissions.
 - e. For sources subject to numerical emission limitations, the estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions; and
 - f. The proposed corrective actions and schedule to correct the conditions causing the excess emissions.
[45CSR§21-5.2; ~~CO-R21-97-41, III.3 (State-Enforceable only)~~ 45CSR13, R13-3404, 4.5.1]
- 3.5.11. **Variance.** If the provisions of 45CSR21 cannot be satisfied due to repairs made as the result of routine maintenance or in response to the unavoidable malfunction of equipment, the Director may permit the owner or operator of a source subject to 45CSR21 to continue to operate said source for periods not to exceed 10 days upon specific application to the Director. Such application shall be made prior to the making of repairs and, in the case of equipment malfunction, within 24 hours of the equipment malfunction. Where repairs will take in excess of 10 days to complete, additional time periods may be granted by the Director. In cases of major equipment failure, additional time periods may be granted by the Director provided a corrective program has been submitted by the owner or operator and approved by the Director. During such time periods, the owner or operator shall take all reasonable and practicable steps to minimize VOC emissions.
[45CSR§21-9.3; ~~CO-R21-97-41, III.3 (State-Enforceable only)~~ 45CSR13, R13-3404, 4.1.5]

3.6. Compliance Plan

- 3.6.1. None

3.7. Permit Shield

- 3.7.1. The permittee is hereby granted a permit shield in accordance with 45CSR§30-5.6. The permit shield applies provided the permittee operates in accordance with the information contained within this permit.
- 3.7.2. The following requirements specifically identified are not applicable to the source based on the determinations set forth below. The permit shield shall apply to the following requirements provided the conditions of the determinations are met.
 - a. 40 C.F.R. 63, Subpart EEEE – “National Emission Standards for Hazardous Air Pollutants: Organic Liquid Distribution (Non-Gasoline).” The POLYOX™ WSR Plant is not subject to the requirements of 40 C.F.R. 63, Subpart EEEE because the liquid vapor pressure of materials processed in the plant are less than 0.1 psia.
 - b. 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. All tanks in this Group 5 Permit are not subject to Kb because they were built before July 23, 1984 and/or have a capacity less than 75 m³.

4.0 Reserved

5.0 POLYOX™ WSR

5.1. Limitations and Standards

5.1.1. **Group 1 Process Vents.** For existing affected sources, the owner or operator shall reduce the total epoxide emissions from each Group 1 process vent using a flare. (V302, V404, V4921, and V4922) [45CSR34; 40 C.F.R. §§63.1425(b)(2) and (b)(2)(i)]

5.1.2. **Group 1 Process Wastewater.** The owner or operator of each affected source shall comply with the HON wastewater requirements of 40 C.F.R. §§63.132 through 63.147 for each process wastewater stream originating at an affected source, with the HON leak inspection requirements in 40 C.F.R. §63.148, and with the HON requirements in 40 C.F.R. §63.149 for equipment that is subject to 40 C.F.R. §63.149, with the differences noted in 40 C.F.R. §§63.1433(a)(1) through (20). The applicable provisions for a Group 1 process wastewater stream are as follows:
[45CSR34; 40 C.F.R. §§63.1433(a)]

5.1.2.1. For wastewater streams that are Group 1 for Table 9 of 40 C.F.R. 63, Subpart G compounds, the owner or operator shall reduce, by removal or destruction, the mass flow rate by at least the fraction removal (Fr) values specified in Table 9 of 40 C.F.R. 63, Subpart G. The removal/destruction efficiency shall be determined by the procedures specified in 40 C.F.R. §63.145(c) for noncombustion treatment processes.

Table 9 – Organic HAP’s Subject to the Wastewater Provisions for Process Units at New and Existing Sources and Corresponding Fraction Removed (Fr) Values

Chemical Name	CAS No. ^a	Fr
Ethylene Oxide	75218	0.98

^aCAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

[45CSR34; 40 C.F.R. §63.138(e)(2) and Table 9 of 40 C.F.R. 63, Subpart G]

(Vessel 401 Tails)

5.1.3. **Group 2 Process Wastewater.** The owner or operator of each affected source shall comply with the HON wastewater requirements of 40 C.F.R. §§63.132 through 63.147 for each process wastewater stream originating at an affected source, with the HON leak inspection requirements in 40 C.F.R. §63.148, and with the HON requirements in 40 C.F.R. §63.149 for equipment that is subject to 40 C.F.R. §63.149, with the differences noted in 40 C.F.R. §§63.1433(a)(1) through (20). The applicable provisions for a Group 2 process wastewater stream are as follows:
[45CSR34; 40 C.F.R. §63.1433(a)]

5.1.3.1. **Group 2 Process Wastewater Streams.** For wastewater streams that are Group 2 for Table 9 of 40 C.F.R. 63, Subpart G compounds, the owner or operator shall comply with the recordkeeping requirements specified in 5.4.4.
[45CSR34; 40 C.F.R. §63.132(a)(3)]

(Tank 4929 Discharge to Sewer and Scrubber 230 Tails {B230})

5.1.4. **Maintenance Wastewater.** The owner or operator of each 40 C.F.R. 63, Subpart PPP affected source, shall comply with the HON maintenance wastewater requirements of 40 C.F.R. §63.105, with the exceptions noted in 40 C.F.R. §§63.1433 (b)(1) through (3). The applicable provisions for maintenance wastewater are as follows:

[45CSR34; 40 C.F.R. §§63.1433(a) and (b)]

5.1.4.1. Each owner or operator of a source subject to 40 C.F.R. §63.105, Subpart F shall comply with the requirements of 5.1.4.1.a and 5.1.4.1.b for maintenance wastewaters containing those organic HAP's listed in table 9 of 40 C.F.R. 63, Subpart G and meet the definition of organic HAP in 40 C.F.R. §63.1423.

[45CSR34; 40 C.F.R. §63.105(a); 40 C.F.R. §63.1433(b)(1)]

a. The owner or operator shall prepare a description of maintenance procedures for management of wastewaters generated from the emptying and purging of equipment in the process during temporary shutdowns for inspections, maintenance, and repair (i.e., a maintenance-turn-around) and during periods which are not shutdowns (i.e., routine maintenance). The descriptions shall:

[45CSR34; 40 C.F.R. §63.105(b)]

i. Specify the process equipment or maintenance tasks that are anticipated to create wastewater during maintenance activities.

[45CSR34; 40 C.F.R. §63.105(b)(1)]

ii. Specify the procedures that will be followed to properly manage the wastewater and control organic HAP emissions to the atmosphere; and

[45CSR34; 40 C.F.R. §63.105(b)(2)]

iii. Specify the procedures to be followed when clearing materials from process equipment.

[45CSR34; 40 C.F.R. §63.105(b)(3)]

b. The owner or operator shall modify and update the information required by 5.1.4.1.a as needed following each maintenance procedure based on the actions taken and the wastewaters generated in the preceding maintenance procedure.

[45CSR34; 40 C.F.R. §63.105(c)]

5.1.5. **Equipment Leaks.** The permittee shall comply with all applicable standards of 40 C.F.R. 63, Subpart H – “National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks”, except §63.165 and as specified in paragraphs (b) through (h) of 40 C.F.R. §63.1434.

(c) *Requirements for pressure relief devices.* Except as specified in paragraph (c)(4) of this section, the owner or operator must comply with the operating and pressure release requirements specified in paragraphs (c)(1) and (2) of this section for pressure relief devices in organic HAP gas or vapor service. Except as specified in paragraph (c)(4) of this section, the owner or operator must also comply with the pressure release management requirements specified in paragraph (c)(3) of this section for all pressure relief devices in organic HAP service.

(1) *Operating requirements.* Except during a pressure release event, operate each pressure relief device in organic HAP gas or vapor service with an instrument reading of less than 500 ppm above background as detected by Method 21 of 40 CFR part 60, appendix A.

(2) *Pressure release requirements.* For pressure relief devices in organic HAP gas or vapor service, comply with paragraphs (c)(2)(i) or (ii) of this section, as applicable.

(i) If the pressure relief device does not consist of or include a rupture disk, conduct instrument monitoring, as detected by Method 21 of 40 CFR part 60, appendix A, no later than 5 calendar days after the pressure release to verify that the pressure relief device is operating with an instrument reading of less than 500 ppm above background, except as provided in §63.171.

(ii) If the pressure relief device consists of or includes a rupture disk, install a replacement disk as soon as practicable after a pressure release, but no later than 5 calendar days after the pressure release, except as provided in §63.171.

(3) *Pressure release management.* Except as specified in paragraph (c)(4) of this section, pressure releases to the atmosphere from pressure relief devices in organic HAP service are prohibited, and the owner or operator must comply with the requirements specified in paragraphs (c)(3)(i) and (ii) of this section for all pressure relief devices in organic HAP service.

(i) For each pressure relief device in organic HAP service, the owner or operator must equip each pressure relief device with a device(s) or use a monitoring system that is capable of:

(A) Identifying the pressure release;

(B) Recording the time and duration of each pressure release; and

(C) Notifying operators immediately that a pressure release is occurring. The device or monitoring system may be either specific to the pressure relief device itself or may be associated with the process system or piping, sufficient to indicate a pressure release to the atmosphere. Examples of these types of devices and systems include, but are not limited to, a rupture disk indicator, magnetic sensor, motion detector on the pressure relief valve stem, flow monitor, or pressure monitor.

(ii) If any pressure relief device in organic HAP service releases to atmosphere as a result of a pressure release event, the owner or operator must calculate the quantity of organic HAP released during each pressure release event and report this quantity as required in §63.1439(e)(6)(ix). Calculations may be based on data from the pressure relief device monitoring alone or in combination with process parameter monitoring data and process knowledge.

(4) *Pressure relief devices routed to a control device, process, or drain system.* If a pressure relief device in organic HAP service is designed and operated to route all pressure releases through a closed vent system to a control device, process, or drain system, the owner or operator is not required to comply with paragraphs (c)(1), (2), or (3) (if applicable) of this section. Both the closed vent system and control device (if applicable) must meet the requirements of §63.172. The drain system (if applicable) must meet the requirements of §63.136.

[45CSR34; 40 C.F.R. §§63.1434(a) and (c); 40 C.F.R. 63, Subpart H; 45CSR§27-4.1 (State-Enforceable only); ~~CO-R27-99-14 A(92), III.3 (State-Enforceable only)~~ **45CSR13, R13-3404, 4.1.7 (State-Enforceable only)].**

5.1.6. Reserved.

5.1.7. No person shall cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any process source operation which is greater than twenty (20) percent opacity, except as noted in 5.1.8. (230GG and 230J).

[45CSR§7-3.1]

- 5.1.8. The provisions of 5.1.7 shall not apply to smoke and/or particulate matter emitted from any process source operation which is less than forty (40) percent opacity for any period or periods aggregating no more than five (5) minutes in any sixty (60) minute period. (230GG and 230J) [45CSR§7-3.2]
- 5.1.9. No person shall cause, suffer, allow or permit particulate matter to be vented into the open air from any type source operation or duplicate source operation, or from all air pollution control equipment installed on any type source operation or duplicate source operation in excess of the quantity specified under the appropriate source operation type in Table 45-7A of 45CSR7.

Emission Point	Emission Source	45CSR§7-4.1 Limit lb/hr
230GG	230B	0.7
230J	E-707	10

(230GG and 230J)
 [45CSR§7-4.1.]

- 5.1.10. The permittee shall not cause, suffer, allow or permit any manufacturing process or storage structure generating fugitive particulate matter to operate that is not equipped with a system, which may include, but not be limited to, process equipment design, control equipment design or operations and maintenance procedures, to minimize the emission of fugitive particulate matter. To minimize means such system shall be installed, maintained and operated to ensure the lowest fugitive particulate emissions reasonably achievable. (230V) [45CSR§7-5.1]
- 5.1.11. Due to unavoidable malfunction of equipment, emissions exceeding those set forth in 45CSR7 may be permitted by the Director for periods not to exceed ten (10) days upon specific application to the Director. Such application shall be made within twenty-four (24) hours of the malfunction. In cases of major equipment failure, additional time periods may be granted by the Director provided a corrective program has been submitted by the owner or operator and approved by the Director. [45CSR§7-9.1]
- 5.1.12. The permittee shall comply with the following applicable requirements from CO R21-97-41 for the POLYOX™ WSR Plant:

5.1.12.1. ~~On or after the effective date of Consent Order CO R21-97-41 (October 20, 1997), the COMPANY shall, reduce VOC emissions in accordance with the alternate emissions reduction plan (AERP). The permittee shall reduce emissions as set forth in Attachment A of CO R21-97-41; and shall continue to comply with such emissions reduction requirements and the emission limits set forth in Attachment A as Consent Order CO R21-97-41 expressly provides. Compliance with the emission limits set forth in Attachment A of Consent Order CO R21-97-41 shall be demonstrated by test or monitoring data, approved emission factors, material balances, and/or representative calculations in accordance with 45CSR21. The Attachment A limits from Consent Order CO R21-97-41 for the POLYOX™ WSR Plant are provided in APPENDIX A of this permit. [45CSR§21-40 (State-Enforceable only); CO R21-97-41, III.1 and Attachment A (State-Enforceable only); June 14, 2006 letter from J. L. Blatt, November 14, 2011 letter from T. J. London]~~

The Permittee shall implement an alternative emission reduction plan (AERP) to reduce volatile organic compound emissions from point sources that have maximum theoretical emissions equal to or greater than 6 lbs/hr as identified in Appendix A.

[45CSR§21-40.3.b (State-Enforceable only); 45CSR13, R13-3404, 4.1.1 (State-Enforceable only)]

5.1.12.2. ~~At all times, including periods of start up, shutdown, and malfunction, the COMPANY shall maintain and operate the VOC emitting sources and associated air pollution control devices subject to the provisions of Consent Order CO R21 97 41 in a manner consistent with good air pollution control practices for minimizing emissions. Compliance with the emission limits set forth in Attachment A of Consent Order CO R21 97 41 shall be demonstrated at all times unless exception periods are provided for in accordance with this paragraph. The COMPANY shall comply with 3.5.10 and 3.5.11 (45CSR§§21 5.2 and 9.3) with respect to all periods of non-compliance with the emission limitations and emission reduction requests set forth in Attachment A of Consent Order CO R21 97 41 resulting from unavoidable malfunctions of equipment. In the event that the emission limitation and/or emission reduction requirements for a source listed in Attachment A of CO R21 97 41 cannot be met during routine start ups, shutdowns, or routine maintenance activities, the COMPANY shall, within 180 days of the effective date of Consent Order CO R21 97 41 (October 20, 1997), submit an operation and VOC emissions mitigation plan for such periods. If such plan is submitted, it shall contain the information outlined in Attachment B of CO R21 97 41 and provided in APPENDIX A of this permit, and shall become an Appendix to Consent Order CO R21 97 41. The Director may require reasonable revisions to the COMPANY's plan if he or she finds the routine start up, shutdown, or maintenance resulting in excess VOC emissions not addressed by the plan occur or that the plan fails to provide for operation in a manner consistent with good air pollution control practices for minimizing emissions. VOC emissions and associated control procedures conforming to the COMPANY's plan submitted under this provision shall not be subject to the variance approval process of 3.5.11 (45CSR§21 9.3) provided that the COMPANY maintains test, monitoring, operating, and maintenance records containing sufficient information and detail to enable the COMPANY and the Director to verify compliance with the plan and associated VOC emissions control requirements. These records shall be maintained on-site for not less than three (3) years and be made available to the Director or his or her authorized representative upon request. The Director also may request submission of copies of such records.~~

~~[45CSR§21-40 (State-Enforceable only); CO R21-97-41, III.3 and Attachment B (State-Enforceable only)]~~

Operation and Maintenance of Air Pollution Control Equipment.

The Permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment listed in Section 1.0 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this Permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.

[45CSR§13-5.10; 45CSR13, R13-3404, 4.1.3]

5.1.12.3. ~~Unless granted a variance pursuant to 3.5.11, the COMPANY shall operate all emission control equipment for those emission sources listed in Attachment A of Consent Order CO R21 97 41, at all times when the production unit is in operation or when any VOC emitting activity is occurring. In the event that the control equipment is inoperable, the production unit shall be shut down or the activity shall be discontinued as expeditiously as possible.~~

~~[45CSR§21-40 (State-Enforceable only); CO R21-97-41, IV.7 (State-Enforceable only)]~~

5.1.13. ~~45CSR§21-37 Requirements for Equipment Leaks.~~ The permittee shall comply with all applicable requirements of ~~45CSR§21-37~~ “Leaks from Synthetic Organic Chemical, Polymer, and Resin Manufacturing Equipment.” The pertinent equipment leak standards include Sections ~~45CSR§§21-37.3 through 37.8~~. To the extent that implementation of the requirements of 40 C.F.R. 60, 40 C.F.R. 61, or 40 C.F.R. 63 results in monitoring and repair, consistent with 45CSR§21-37, of all components in VOC service in any synthetic organic chemical, polymer, or resin manufacturing process unit, compliance with these federally enforceable standards will satisfy the requirements of ~~45CSR§21-37~~.

~~[45CSR§§21-37.3 through 37.8 and 37.1.e (State-Enforceable only); CO-R21-97-41, III.2 (State-Enforceable only)]~~

The Permittee shall implement an emission control plan for equipment leaks (fugitive emissions) using the methods and criteria of Rule 21, Section 37 or alternative methods and criteria approved by the Director.

[45CSR§§21-40.3.a.2, 37.1.c, 37.3 through 37.9 (State-Enforceable Only); 45CSR13, R13-3404, 4.1.2 (State-Enforceable Only)]

5.1.14. Emissions to the air of ethylene oxide and propylene oxide from the POLYOX™ WSR Plant shall not exceed the following:

The Permittee shall implement best available technology to control emissions of toxic air pollutants. Any source of equipment specifically subject to a federal regulation or standard shall not be required to comply with provisions more stringent than such regulation or standard. To demonstrate implementation of Rule 27 best available technology, the Permittee shall limit ethylene and propylene oxide emissions as set forth in Table 5.1.14.

Ethylene Oxide

Table 5.1.14			
Emission Source	Emission Point	Ethylene Oxide Emission Limit after BAT	
		lb/hr	lb/yr
POLYOX™ Flare V4921 V4922 T4928 (aka Vessel 4928) T4989 (aka Vessel 4989) T4990 (aka Vessel 4990) V302 (aka Vessel POX2-302) V404	221A	Vents to Flare (R13-0171) ¹	Vents to Flare (R13-0171) ¹
V302 (aka POX2-302)	230O	6.3 ²	129 ²
T4928 (aka Vessel 4928)	230Q	0.2	2
T4929 (aka Vessel 4929)	235E	0²	0²
T4930 (aka Vessel 4930)	230AA	0²	0²
POLYOX™ Solids Handling Systems E530 - #1 Conveyor E531 - #2 Conveyor E532 - #3 Conveyor E504 - Blender L6DA - Packaging System Package System (no longer exists rerouted to process) Baghouse E707 E535 - Vac System	230K 230L 230M 230L 230R 230H 230J 230V	0.6	722 ²

¹ Emission limits for Flare are specified by Permit R13-0171 **E. not to exceed 0.80 lbs/hr, 0.16 tons/year.**

² Emissions updated November 2014

Propylene Oxide

Emission Source	Emission Point	Propylene Oxide Emission Limit after BAT	
		lb/hr	lb/yr
T4903 (aka Vessel 4903)	230B	1	7
T4901 (aka Vessel 4901)	230S	4.4	200 [†]

[†] Emissions updated November 2011

~~[45CSR§27-3.1 (State-Enforceable only); CO R27-99-14 A(92), III.2 and Attachment B (State-Enforceable only); November 14, 2011 letter from T. J. London and July 23, 2012 email from Freddie Sizemore]~~

[45CSR§27-3.1 (State-Enforceable only); 45CSR13, R13-3404, 4.1.6 and 4.1.8 (State-Enforceable only)]

- 5.1.15. The emissions from the flare, designated as A221, venting through emission point 221A shall not exceed the limits shown in the following table:

Pollutant	Hourly (lbs/hr)	Annual¹ (TPY)
PM ₁₀	0.03	0.05
PM	0.03	0.05
SO ₂	0.63	1.05
NO _x	1.36	1.64
CO	7.41	8.94
VOCs	6.76	6.25
Ethylene Oxide	0.80	0.16

Note: Emissions from the Flare are from the POLYOX™ Process covered under Consent Order CO R21-97-41.

¹Based on annual VOC flow rate of 625,294 pounds per year.

Compliance with this streamlined limit assures compliance with the less stringent hourly particulate matter emission limit from 45CSR§6-4.1.

[45CSR13, R13-0171, 5.1.1; 45CSR§6-4.1; 45CSR§10-5.1; 45CSR§27-5.1]

- 5.1.16. The flare, designated as A221, shall be operated continuously when VOCs and/or HAPs are present in the process header vent gas that is routed to the flare.

[45CSR13, R13-0171, 5.1.2]

- 5.1.17. The permittee shall maintain a minimum net heating value of 200 Btu/scf (7.45 MJ/scm) or greater for the gas stream in the flare gas header routed to the flare, designated as A221 when VOCs/HAPs are present.

[45CSR13, R13-0171, 5.1.3]

- 5.1.18. The permittee shall operate the flare, designated as A221, with a flare gas exit velocity of less than 60 feet per second (18.3 m/sec).

[45CSR13, R13-0171, 5.1.4]

- 5.1.19. The permittee shall install, operate, and maintain a monitoring device (including, but not limited to, a thermocouple, ultra-violet beam sensor, or infrared sensor) capable of continuously detecting that at least one pilot flame or the flare flame is present for the flare A221.
 [45CSR13, R13-0171, 5.1.5]
- 5.1.20. The flare A221 shall not emit visible particulate matter from emission point 221A greater than or equal to 20% opacity except for visible particulate matter emissions less than 40% for a period or periods aggregating no more than 8 minutes per start-up.
 [45CSR13, R13-0171, 5.1.6; 45CSR§§6-4.3 and 4.4]
- 5.1.21. The following sources have been declared as part of the permittee’s Alternative Emission Reduction Plan (AERP) in an effort for the facility to comply with the VOC emission limits set forth in 45CSR§21-40.1.c, but are not limited to those identified in the following table:

Table 5.1.21 – 45CSR21 AERP Sources		
Equipment Unit Description	Emission Unit ID	Emission Point ID
Flare Header	---	221A

[45CSR13, R13-0171, 7.1.6]

- 5.1.22. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate flare A221 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.
 [45CSR13, R13-0171, 5.1.10; 45CSR§13-5.11; 45CSR34; 40 C.F.R. §§63.6(e)(1) and (2)]

5.2. Monitoring Requirements

- 5.2.1. **Group 1 Process Vents.** The permittee shall install a device (including but not limited to a thermocouple, ultra-violet beam sensor, or infrared sensor) capable of continuously detecting the presence of a pilot flame. All monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturers’ specifications or other written procedures that provide adequate assurance that the equipment would reasonable be expected to monitor accurately. (V302, V404, V4921, and V4922) [45CSR34; 40 C.F.R. §§63.1429(a) and 63.1429(a)(2)]
- 5.2.2. **Group 1 Process Wastewater Streams.** The owner or operator of each affected source shall comply with the HON wastewater requirements of 40 C.F.R. §§63.132 through 63.147 for each process wastewater stream originating at an affected source, with the HON leak inspection requirements in 40 C.F.R. §63.148, and with the HON requirements in 40 C.F.R. §63.149 for equipment that is subject to 40 C.F.R. §63.149, with the differences noted in 40 C.F.R. §§63.1433(a)(1) through (20). The monitoring requirements for a Group 1 process wastewater stream are as follows:
 [45CSR34; 40 C.F.R. §63.1433(a)]
 - 5.2.2.1. To demonstrate compliance with requirement 5.1.2, the permittee shall continuously monitor the reactor temperature, caustic feed flow, and extractor tails water feed flow for the C-461 Reactor. Temperature will be monitored by a thermocouple, and flowmeters will be used to monitor caustic flow and extractor tails feed flow. A flow ratio controller will use a prescribed set point to adjust the caustic flow based on changes in the feed flow in order to maintain the proper ratio to ensure the required 98% destruction. A computer control system will store the monitoring data with readings taken at the proper frequency to ensure continuous monitoring. The parameter monitoring levels

were established via a performance curve of temperature versus caustic flow/feed flow ratio to maintain the required destruction percentage and an engineering assessment was conducted based on reactor geometry, high flow conditions, and first order reaction kinetics to generate the performance curve. The parameter monitoring levels and performance curve were submitted by letter dated August 16, 2002. All monitoring equipment shall be installed, calibrated, and maintained according to the manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.

[45CSR34; 40 C.F.R. §§63.143(d), 63.143(g), 63.146(b)(8)(ii), and 63.1438(d); Letter from Judith M. Katz (EPA Region III) to J.L. Blatt (Union Carbide Corporation) dated November 13, 2001; Letter from Jeff L. Blatt (Union Carbide Corporation) to Judith M. Katz (EPA Region III) dated August 16, 2002]

(Vessel 401 Tails)

- 5.2.3. For the purposes of demonstrating compliance with 5.1.15, 5.1.16, and 5.1.19 of this permit, the permittee shall continuously monitor the presence of either a pilot light or flare flame while VOCs and HAPs are present in the process header that is routed to the flare. Records of such monitoring shall be maintained in accordance with 3.4.2.
[45CSR13, R13-0171, 5.2.1.]
- 5.2.4. For the purpose of demonstrating compliance with 5.1.15 and 5.1.17 of this permit, the permittee shall monitor and record, at least once per day when VOCs are present in the flare header vent gas, the natural gas flow rate to the flare. The natural gas flow rate shall be a minimum of 0.5 scfm (1.3 lbs/hr) when VOCs are present in the flare header vent gas. Records of such monitoring shall be maintained in accordance with 3.4.2.
[45CSR13, R13-0171, 5.2.2]
- 5.2.5. For the purpose of determining compliance with the opacity limits of 45CSR§6-4.3 and condition 5.1.20 of this permit, the permittee shall conduct visible emission checks and/or opacity monitoring and recordkeeping.

At a minimum, the observer must be knowledgeable regarding the effects of background contrast, ambient lighting, observer position relative to lighting, wind, and the presence of uncombined water (condensing water vapor) on the visibility of emissions. Training materials resources include but not limited to the following: References 1 and 2 from 40CFR Part 60, Appendix A, Method 22 or from the lecture portion of the 40CFR Part 60, Appendix A, Method 9 certification course.

Visible emission checks shall be conducted at least once per calendar month. If no visible emissions are detected for three consecutive months, observations/checks may be conducted quarterly. If visible emissions are detected during quarterly observations, monthly readings must be implemented until three consecutive month readings of no visible emissions are recorded. These checks of the flare stack shall be performed for a sufficient time interval, but no less than one (1) minute, to determine if any visible emissions are present. Visible emission checks shall be performed during periods of facility/unit operation and appropriate weather conditions.

If visible emissions from the flare cannot be eliminated within 48 hours of observation noting the visible emission, the permittee shall conduct additional observations within 72 hours to quantify the degree of visible emission using Method 9 or other method/procedure approved by the Director.

[45CSR13, R13-0171, 5.2.3]

5.3. Testing Requirements

- 5.3.1. **Equipment Leaks.** The permittee shall comply with all applicable test methods and procedures of 40 C.F.R. 63, Subpart H – “National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks” as specified in 40 C.F.R. §63.180, except §63.165 and as specified in paragraphs (b) through (h) of 40 C.F.R. §63.1434. **[45CSR34; 40 C.F.R. §63.1434(a); 40 C.F.R. 63, Subpart H; 40 C.F.R. §63.180; 45CSR13, R13-3404, 4.1.9]**
- 5.3.2. At such reasonable times as the Director may designate, the operator of any incinerator shall be required to conduct or have conducted stack tests to determine the particulate matter loading, by using 40 C.F.R. 60, Appendix A, Method 5 or other equivalent EPA approved method approved by the Director, in exhaust gases. Such tests shall be conducted in such manner as the Director may specify and be filed on forms and in a manner acceptable to the Director. The Director, or the Director’s authorized representative, may at the Director’s option witness or conduct such stack tests. Should the Director exercise his option to conduct such tests, the operator will provide all the necessary sampling ports to be located in such manner as the Director may require, power for test equipment and the required safety equipment such as scaffolding, railings and ladders to comply with generally accepted good safety practices. (A221) **[45CSR§6-7.1]**
- 5.3.3. At such reasonable times as the Director may designate, the operator of any manufacturing process source operation may be required to conduct or have conducted stack tests to determine the particulate matter loading in exhaust gases. Such tests shall be conducted in such manner as the Director may specify and be filed on forms and in a manner acceptable to the Director. The Director, or his duly authorized representative, may at his option witness or conduct such stack tests. Should the Director exercise his option to conduct such tests, the operator will provide all the necessary sampling connections and sampling ports to be located in such manner as the Director may require, power for test equipment and the required safety equipment such as scaffolding, railings and ladders to comply with generally accepted good safety practices. **[45CSR§7-8.1]**
- 5.3.4. The Director, or his duly authorized representative, may conduct such other tests as he or she may deem necessary to evaluate air pollution emissions. **[45CSR§7-8.2]**
- 5.3.5. ~~The permittee shall comply with all applicable provisions of 45CSR§21-41 regarding test methods and compliance procedures to demonstrate compliance with 5.1.12, except as otherwise approved by the Director. [45CSR§21-41; CO-R21-97-41, III.5 (State-Enforceable only)]~~
The Permittee agrees to comply with the applicable provisions of 45CSR§21-41 regarding test methods and compliance procedures, except as otherwise approved by the Director. If requested by the Director, testing shall be in accordance with applicable test methods specified in Rule 21 Sections 41 through 46 or by other means approved by the Director. Compliance with the emission limits set forth in Appendix A of this Permit shall be demonstrated by test or monitoring data, approved emission factors, material balances, and/or representative calculations in accordance with 45CSR21.
[45CSR§§21-40.5 (State-enforceable only) and 41; 45CSR13, R13-3404, 4.1.4]

- 5.3.6. **45CSR§21-37 Testing Requirements for Equipment Leaks.** The permittee shall comply with all applicable test methods and procedures of 45CSR§21-37 – “Leaks from Synthetic Organic Chemical, Polymer, and Resin Manufacturing Equipment” as specified in 45CSR§21-37.9. To the extent that implementation of the requirements of 40 C.F.R. 60, 40 C.F.R. 61, or 40 C.F.R. 63 results in monitoring and repair, consistent with 45CSR§21-37, of all components in VOC service in any synthetic organic chemical, polymer, or resin manufacturing process unit, compliance with these federally enforceable standards will satisfy the requirements of 45CSR§21-37.
~~[45CSR§§21-37.1.c and 37.9 (State-Enforceable only); CO-R21-97-41, III.2 (State-Enforceable only)]~~

5.4. Recordkeeping Requirements

- 5.4.1. **Group 1 Process Vents.** The owner or operator complying with the process vent control requirements of 5.1.1 using a flare shall keep the following records, as applicable, readily accessible:
[45CSR34; 40 C.F.R. §§63.1430(b) and (b)(1)]

5.4.1.1. The flare design (i.e., steam-assisted, air-assisted, or non-assisted);
[45CSR34; 40 C.F.R. §63.1430(b)(1)(i)]

5.4.1.2. All visible emission readings, heat content determinations, flow rate determinations, and exit velocity determination made during the flare specification determination required by 40 C.F.R. §63.1437(c); and
[45CSR34; 40 C.F.R. §63.1430(b)(1)(ii)]

5.4.1.3. All periods during the flare specification determination required by 40 C.F.R. §63.1437(c) when all pilot flames are absent.
[45CSR34; 40 C.F.R. §63.1430(b)(1)(iii)]

(V302, V404, V4921, and V4922)

- 5.4.2. **Group 1 Process Vents.** The owner or operator shall maintain the following records specified in Table 5 of 40 C.F.R. 63, Subpart PPP:
[45CSR34; 40 C.F.R. §63.1430(d)(1)(i)]

5.4.2.1. Hourly records of whether the monitor was continuously operating during batch emission episodes selected for control and whether a flame was continuously present at the pilot light during the hour.
[45CSR34; Table 5 of 40 C.F.R. 63, Subpart PPP]

5.4.2.2. Record the times and durations of all periods during batch emission episodes when all flames at the pilot light of a flare are absent or the monitor is not operating.
[45CSR34; Table 5 of 40 C.F.R. 63, Subpart PPP]

(V302, V404, V4921, and V4922)

- 5.4.3. **Group 1 Process Wastewater Streams.** The owner or operator of each affected source shall comply with the HON wastewater requirements of 40 C.F.R. §§63.132 through 63.147 for each process wastewater stream originating at an affected source, with the HON leak inspection requirements in 40 C.F.R. §63.148, and with the HON requirements in 40 C.F.R. §63.149 for equipment that is subject to 40 C.F.R. §63.149, with the differences noted in 40 C.F.R. §§63.1433(a)(1) through (19). The recordkeeping requirements for a Group 1 process wastewater stream are as follows:
[45CSR34; 40 C.F.R. §63.1433(a)]

5.4.3.1. Records of the reactor temperature, caustic feed flow, and extractor tails water feed flow shall be stored on a computer control system. (*Vessel 40 Tails*)

[45CSR34; 40 C.F.R. §63.147(a)(4); Letter from Judith M. Katz (EPA Region III) to J.L. Blatt (Union Carbide Corporation) dated November 13, 2001; Letter from Jeff L. Blatt (Union Carbide Corporation) to Judith M. Katz (EPA Region III) dated August 16, 2002]

(*Vessel 401 Tails*)

5.4.4. **Group 2 Process Wastewater Streams.** The owner or operator of each affected source shall comply with the HON wastewater requirements of 40 C.F.R. §§63.132 through 63.147 for each process wastewater stream originating at an affected source, with the HON leak inspection requirements in 40 C.F.R. §63.148, and with the HON requirements in 40 C.F.R. §63.149 for equipment that is subject to 40 C.F.R. §63.149, with the differences noted in 40 C.F.R. §§63.1433(a)(1) through (20). The recordkeeping requirements for a Group 2 process wastewater stream are as follows:

[45CSR34; 40 C.F.R. §63.1433(a)]

5.4.4.1. The owner or operator shall keep in a readily accessible location the records specified in 5.4.4.1.a through 5.4.4.1.d.

[45CSR34; 40 C.F.R. §63.147(b)(8)]

a. Process unit identification and description of the process unit.

[45CSR34; 40 C.F.R. §63.147(b)(8)(i)]

b. Stream identification code.

[45CSR34; 40 C.F.R. §63.147(b)(8)(ii)]

c. For existing sources, concentration of table 9 of 40 C.F.R. 63, Subpart G compound(s) in parts per million, by weight. Include documentation of the methodology used to determine the concentration.

[45CSR34; 40 C.F.R. §63.147(b)(8)(iii)]

d. Flow rate in liters per minute.

[45CSR34; 40 C.F.R. §63.147(b)(8)(iv)]

(*Tank 4929 Discharge to Sewer and Scrubber 230 Tails (B230)*)

5.4.5. Reserved.

5.4.6. **Equipment Leaks.** The permittee shall comply with all applicable recordkeeping requirements of 40 C.F.R. 63, Subpart H – “National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks” as specified in 40 C.F.R. §63.181, except as specified in 40 C.F.R. §§63.1434(b) through (h). [45CSR34; 40 C.F.R. §63.1439(c); 40 C.F.R. 63, Subpart H; 40 C.F.R. §63.181]

5.4.7. **Record of Maintenance of Air Pollution Control Equipment E221A, E707, and A221.** For air pollution control equipment E221A, E707, and A221, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures. [45CSR13, R13-0171, 5.4.2; 45CSR§30-5.1.c]

5.4.8. **Record of Malfunctions of Air Pollution Control Equipment E221A, E707, and A221.** For air pollution control E221A, E707, and A221, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:

- a. The equipment involved.
- b. Steps taken to minimize emissions during the event.
- c. The duration of the event.
- d. The estimated increase in emissions during the event.

For each such case associated with an equipment malfunction, the additional information shall also be recorded:

- e. The cause of the malfunction.
- f. Steps taken to correct the malfunction.
- g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.

[45CSR13, R13-0171, 5.4.3; 45CSR§30-5.1.c]

- 5.4.9. **45CSR§21-37 Recordkeeping Requirements for Equipment Leaks.** The permittee shall comply with all applicable recordkeeping requirements of 45CSR§21-37 – “Leaks from Synthetic Organic Chemical, Polymer, and Resin Manufacturing Equipment” as specified in 45CSR§21-37.10, with the exception that all records shall be maintained for a period of five (5) years instead of three (3) years. To the extent that implementation of the requirements of 40 C.F.R. 60, 40 C.F.R. 61, or 40 C.F.R. 63 results in monitoring and repair, consistent with 45CSR§21-37, of all components in VOC service in any synthetic organic chemical, polymer, or resin manufacturing process unit, compliance with these federally enforceable standards will satisfy the requirements of 45CSR§21-37.

[45CSR§§21-37.1.c and 37.10 (State-Enforceable only); 45CSR§30-5.1.c; ~~CO-R21-97-41, III.2 (State-Enforceable only)~~]

- 5.4.10. Reserved.

- 5.4.11. To demonstrate compliance with the 5.1.14 hourly ethylene oxide emission limits for the POLYOX™ Solids Handling Systems (emission points 230K, 230L, 230M, 230R, ~~230H~~, 230J, and 230V), the rotary valve speed on the solids handling system shall be set such that the throughput of the solids does not exceed 6 cubic feet per minute. Each year, the permittee shall check the rotary valve speed and shall adjust the speed, if necessary, in order to maintain the speed such that the throughput of the solids does not exceed 6 cubic feet per minute. A record of the rotary valve speed checks and calculations showing the corresponding solids throughput shall be maintained in accordance with Condition 3.4.2 and shall specify the date and type of corrective action(s) taken, if any. To demonstrate compliance with the 5.1.14 annual ethylene oxide emission limit, the permittee shall, upon the request of the Director, calculate the twelve month rolling total ethylene oxide emissions based on production for the previous twelve month operating period. Emissions are calculated from the production rate and the amount of material vented per amount of product produced. Records of production and the emission factor used to calculate emissions shall be maintained in accordance with Condition 3.4.2.

[45CSR§30-5.1.c]

- 5.4.12. To demonstrate compliance with the 5.1.14 annual ethylene oxide emission limits for emission points 230O, 230Q, and 230T, the permittee shall maintain records for each emission point showing the total number of emitting events occurring during the month. For emission points 230O and 230T, the permittee shall also

maintain records of the duration of each emitting event. Upon the request of the Director, records of the number of emitting events shall be used to calculate a twelve month rolling total annual emission rate for each emission point to demonstrate compliance with the annual ethylene oxide emission limits. Emissions will be calculated from the number of events and the amount of material vented per event. To demonstrate compliance with the hourly emission limits for emission points 230O and 230T, the permittee shall, upon the request of the Director, calculate the hourly emission rate for each emission point based upon the amount of material vented per event and the duration of each event.

[45CSR§30-5.1.c]

- 5.4.13. To demonstrate compliance with the 5.1.14 hourly and annual propylene oxide emission limits for emission point 230B, the permittee shall maintain records of scrubber water flow meter calibrations and records of the functionality checks conducted on the scrubber interlock system. These records shall be maintained in accordance with Condition 3.4.2.

[45CSR§30-5.1.c]

- 5.4.14. To demonstrate compliance with the 5.1.14 annual propylene oxide emission limit for emission point 230S, the permittee shall maintain records of the date and material throughput. Upon the request of the Director, these throughput records shall be used to calculate the twelve month rolling total annual emissions to demonstrate compliance with the annual propylene oxide emission limit.

[45CSR§30-5.1.c]

- 5.4.15. The permittee shall maintain records of all monitoring data required by condition 5.2.5 documenting the date and time of each visible emission check, the emission point or equipment/source identification number, the name or means of identification of the observer, the results of the check(s), whether the visible emissions are normal for the process, and, if applicable, all corrective measures taken or planned. An example form is supplied as Appendix B. Should a visible emission observation be required to be performed per the requirements specified in U.S. EPA Method 9, the data records of each observation shall be maintained per the requirements of U.S. EPA Method 9. For an emission unit out of service during the normal monthly evaluation, the record of observation may note “out of service” (OOS) or equivalent. [45CSR13, R13-0171, 5.4.5]

5.5. Reporting Requirements

- 5.5.1. The permittee shall submit Periodic Reports as specified in 40 C.F.R. §§63.1439(e)(6), except that semi-annual periodic monitoring reports are due within 60 calendar days following June 30 and December 31, for each calendar year. The reports cover the periods January 1 through June 30 and July 1 through December 31.

[45CSR34; C.F.R. §63.1432(l); 40 C.F.R. §63.1439(e)(6)]

- 5.5.2. The permittee shall submit malfunction reports required by 40 C.F.R. §63.1439(b)(1). The malfunction reports may be submitted on the same schedule as the Periodic Reports required under 5.5.1.

[45CSR34; 40 C.F.R. §63.1439(b)(1)]

- 5.5.3. **Group 1 Process Vents.** The permittee shall submit reports of the times and durations of all periods recorded under 5.4.2 in which all pilot flames of a flare were absent. (*V302, V404, V492I, and 4922*)

[45CSR34; 40 C.F.R. §63.1430(h)(5)]

- 5.5.4. **Group 1 Process Wastewater Streams.** The owner or operator of each affected source shall comply with the HON wastewater requirements of 40 C.F.R. §§63.132 through 63.147 for each process wastewater stream originating at an affected source, with the HON leak inspection requirements in 40 C.F.R. §63.148, and with

the HON requirements in 40 C.F.R. §63.149 for equipment that is subject to 40 C.F.R. §63.149, with the differences noted in 40 C.F.R. §§63.1433(a)(1) through (20). The reporting requirements for a Group 1 process wastewater stream are as follows:

[45CSR34; 40 C.F.R. §63.1433(a)]

5.5.4.1. The owner or operator shall submit as part of the next Periodic Report required by 40 C.F.R. §63.1439(e)(6), the monitoring results for each operating day during which the monitored parameters were outside the range established in 5.2.2.

[45CSR34; 40 C.F.R. §§63.146(d)(3) and 63.1433(a)(14)]

(Vessel 401 Tails)

5.5.5. **Equipment Leaks.** The permittee shall comply with all applicable reporting requirements of 40 C.F.R. 63, Subpart H – “National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks” as specified in 40 C.F.R. §63.182, except with the differences noted in 40 C.F.R. §§63.1422(d), 63.1422(h), and 63.1434(b) through (h).

[45CSR34; 40 C.F.R. §63.1439(c); 40 C.F.R. 63, Subpart H; 40 C.F.R. §63.182]

5.5.6. **45CSR§21-37 Reporting Requirements for Equipment Leaks.** The permittee shall comply with all applicable reporting requirements of 45CSR§21-37 – “Leaks from Synthetic Organic Chemical, Polymer, and Resin Manufacturing Equipment” as specified in 45CSR§§21-37.11 and 5.2. To the extent that implementation of the requirements of 40 C.F.R. 60, 40 C.F.R. 61, or 40 C.F.R. 63 results in monitoring and repair, consistent with 45CSR§21-37, of all components in VOC service in any synthetic organic chemical, polymer, or resin manufacturing process unit, compliance with these federally enforceable standards will satisfy the requirements of 45CSR§21-37.

[45CSR§§21-37.1.c, 37.11, and 5.2 (State-Enforceable only); ~~CO-R21-97-41, III.2 (State-Enforceable only)~~]

5.6. Compliance Plan

5.6.1. None.

Appendix A: ~~Consent Order CO-R21-97-41 ATTACHMENTS A AND B~~

**Rule 21 Equipment with Maximum Theoretical VOC Emissions ≥ 6
lbs/hr**

ATTACHMENT A

Process Area Description and Identification Number	Name of Process Equipment Vented to Control Device and Equipment Identification Number	Maximum Theoretical Emissions (MTE) of the Source (lbs/hr)	Emission Point Identification Number	Control Device Identification Number	Control Device Description	Efficiency of Control Device	Maximum Allowable Hours of Operation (hrs/yr)	Maximum Allowable VOC Emissions	
								lbs/hr	tons/yr
POLYOX™ 230	Vessel 302 (V302) ⁺	1,100 ³	230O	None	No Device	0	8760 ⁺	1,100 ³	28.5 ³
POLYOX™ 230	Tank 4928 (T4928)	150 ³	230Q ⁺	None	No Device	0	8760 ⁺	150 ³	0.11 ³
POLYOX™ 230	Vent Header to Flare ⁺ (A221)	300 ³	221A	A221 ⁺	FL	98 ⁺	8760 ⁺	Vents to Flare (R13-0171) ⁺	Vents to Flare (R13-0171) ⁺
POLYOX™ 230	Tank 4906 (T4906) Tank 4907 (T4907) Tank 4905 (T4905)	48 ³	235C	None	No Device	0	8760 ⁺	48 ³	0.6 ³
POLYOX™ 230		48 ³	235D	None	No Device	0	8760 ⁺	48 ³	0.6 ³
POLYOX™ 230		48 ³	235K/ 221A	None/ A221	No Device/ FL	0/ 98	8760 ⁺	48 ³	0.6 ³ 1.8
POLYOX™ 230 ⁺	Scrubber Header ⁺ (B230)	18.7 ³	230B ⁺	B230 ⁺	PBS ⁺	75 ⁺	8760 ⁺	5.00 ⁺	1.25 ³
POLYOX™ 230 ⁺	Tank 4920 (T4920) ⁺	6.1 ³	235J ⁺	None ⁺	No Device ⁺	0 ⁺	8760 ⁺	6.1 ³	1.2 ³
POLYOX™ 230 ⁺	Tank 4994 (T4994) ⁺	12 ³	235F ⁺	None ⁺	No Device ⁺	0 ⁺	8760 ⁺	12 ³	0.04 ³
POLYOX™ 230 ⁺	Tank 4998 (T4998) ⁺	9.16 ⁺	N/A ⁵	N/A ⁵	N/A ⁵	N/A ⁵	N/A ⁵	0 ⁵ See Note 1	0 ⁵ See Note 1
POLYOX™ 230 ⁺	Tank 23009 (T23009) ⁺	13 ³	253A ⁺	None ⁺	No Device ⁺	0 ⁺	8760 ⁺	13 ³	0.04 ³
POLYOX™ 230 ⁶	Tank Truck Loading (TTR-PX1) ⁶	77.4 ⁶	N/A ⁶	N/A ⁶	N/A ⁶	N/A ⁶	N/A ⁶	0 ⁶ See Note 2	0 ⁶ See Note 2

FL – Flare

PBS – Packed Bed Scrubber

VB – Vapor Balancing, vent gas returned to T4998

Note 1: Vent routed to process

Note 2: Vent routed to T4998

¹ Revised based on June 14, 2006 letter from J. L. Blatt.

² Emission Point ID Numbers revised based on Section 1.0 – Emission Units Table.

³ Revised based on November 14, 2011 letter from T.J. London

⁴ Emission limits for Flare are specified by Permit R13-0171

⁵ Tank 4998 vent routed to process

⁶ New tank truck loading operation to be operational 2nd quarter of 2012. Vent gas to be returned to Tank 4998.

ATTACHMENT B

ROUTINE/NORMAL OPERATING & MAINTENANCE SCENARIOS RESULTING IN EXCESS EMISSIONS*

Process Area Description and Identification Number	Emission Point Identification Number	Description of Excess Emission Scenario SU—Start-up SD—Shutdown M—Maintenance (Describe Activity)	Description of Controls and Measures used to Minimize VOC Emissions (During each Scenario)	Duration of Excess Emission Scenario (Hours)	Typical/Maximum Number of Events per Year /	Average/Peak VOC Emissions per Event (Pounds per Hour) /
		<u>Not Applicable</u>				

*Do not include malfunction scenarios

APPENDIX B: R13-0171 Example Recordkeeping Form and Certification of Data Accuracy Form

Appendix B

Example Form

Monthly/Quarterly Opacity Record

~~Union Carbide Corporation~~ Specialty Products US, LLC – Institute
Plant ID No. 039-00005682; Permit No. R13-0171

Date of Observation: _____

Data Entered by: _____

Reviewed by: _____

Date Reviewed: _____

Describe the General Weather Conditions:

Stack ID/Vent ID/ Emission Point ID	Stack/Vent/Emission Point Description	Time of Observation	Visible Emissions? Yes/No	Consecutive Months of Visual Emissions	Comments

CERTIFICATION OF DATA ACCURACY

I, the undersigned, hereby certify that, based on information and belief formed after reasonable inquiry, all information contained in the attached _____, representing the period beginning _____ and ending _____, and any supporting documents appended hereto, is true, accurate, and complete.

Signature¹ _____
(please use blue ink) Responsible Official or Authorized Representative Date

Name and Title _____
(please print or type) Name Title

Telephone No. _____ Fax No. _____

- ¹ This form shall be signed by a "Responsible Official." "Responsible Official" means one of the following:
- a. For a corporation: The president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
 - (i) the facilities employ more than 250 persons or have a gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), or
 - (ii) the delegation of authority to such representative is approved in advance by the Director;
 - b. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
 - c. For a municipality, State, Federal, or other public entity: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of U.S. EPA); or
 - d. The designated representative delegated with such authority and approved in advance by the Director.