



North Carolina Department of Environment and Natural Resources
Division of Air Quality

Beverly Eaves Perdue
Governor

Sheila Holman
Director

Dee Freeman
Secretary

ENTER DATE

Mr. William M. King, Jr.
Site Manager
INVISTA, S.à.r.l.
P.O. Box 327
Wilmington, North Carolina 28402-0327

SUBJECT: Air Quality Permit No. 00164T44
Facility ID: 6500083
INVISTA, S.à.r.l.
Wilmington, New Hanover County
Fee Class: Title V

Dear Mr. King:

In accordance with your completed Air Quality Permit Application for a significant modification of the Title V permit received June 9, 2010), we are forwarding herewith Air Quality Permit No. 00164T44 to INVISTA, S.à.r.l. at 4600 Hwy 421 North in Wilmington, North Carolina authorizing the construction and operation, of the emission source(s) and associated air pollution control device(s) specified herein. Additionally, any emissions activities determined from your Air Quality Permit Application as being insignificant per 15A North Carolina Administrative Code 2Q .0503(8) have been listed for informational purposes as an "ATTACHMENT." Please note the requirements for the annual compliance certification are contained in General Condition P in Section 3. The current owner is responsible for submitting a compliance certification for the entire year regardless of who owned the facility during the year.

As the designated responsible official it is your responsibility to review, understand, and abide by all of the terms and conditions of the attached permit. It is also your responsibility to ensure that any person who operates any emission source and associated air pollution control device subject to any term or condition of the attached permit reviews, understands, and abides by the condition(s) of the attached permit that are applicable to that particular emission source.

If any parts, requirements, or limitations contained in this Air Quality Permit are unacceptable to you, you have the right to request a formal adjudicatory hearing within 30 days following receipt of this permit, identifying the specific issues to be contested. This hearing request must be in the form of a written petition, conforming to NCGS (North Carolina General Statutes) 150B-23, and filed with both the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, North Carolina 27699-6714 and the Division of Air Quality, Permitting Section, 1641 Mail Service Center, Raleigh, North Carolina 27699-1641. The form for requesting a formal adjudicatory hearing may be obtained upon request from the Office of Administrative Hearings. Please note that this permit will be stayed in its entirety upon receipt of the request for a hearing. Unless a request for a hearing is made pursuant to NCGS 150B-23, this Air Quality Permit shall be final and binding 30 days after issuance.

Permitting Section

1641 Mail Service Center, Raleigh, North Carolina 27699-1641
2728 Capital Blvd., Raleigh, North Carolina 27604
Phone: 919-715-6235 / FAX 919-733-5317 / Internet: www.ncair.org

One
North Carolina
Naturally

Mr. William King, Jr.

ENTER DATE

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You may request modification of your Air Quality Permit through informal means pursuant to NCGS 150B-22. This request must be submitted in writing to the Director and must identify the specific provisions or issues for which the modification is sought. Please note that this Air Quality Permit will become final and binding regardless of a request for informal modification unless a request for a hearing is also made under NCGS 150B-23.

The construction of new air pollution emission source(s) and associated air pollution control device(s), or modifications to the emission source(s) and air pollution control device(s) described in this permit must be covered under an Air Quality Permit issued by the Division of Air Quality prior to construction unless the Permittee has fulfilled the requirements of GS 143-215-108A(b) and received written approval from the Director of the Division of Air Quality to commence construction. Failure to receive an Air Quality Permit or written approval prior to commencing construction is a violation of GS 143-215.108A and may subject the Permittee to civil or criminal penalties as described in GS 143-215.114A and 143-215.114B.

This Air Quality Permit shall be effective from **ENTER DATE** until July 31, 2012 is nontransferable to future owners and operators, and shall be subject to the conditions and limitations as specified therein. Should you have any questions concerning this matter, please contact Ms. Fern Paterson, P.E. at (919) 715-6242.

Sincerely yours,

Donald R. van der Vaart, Ph.D., J.D., P.E.
Chief

Enclosure

cc: Gregg Worley, EPA Region 4
Wilmington Regional Office
Central Files

ATTACHMENT I:

Summary of Changes to the Previous Permit (00164T43)

Page(s)	Section	Description of Change(s)
1	Permit Cover Page	Amend permit revision numbers and issuance/effective dates.
23	Section 2.1.E., Table	Revise listed PM standards under 15A NCAC 2D .0503 to include independent emissions limits for the DMT and PTA production areas and the Terate® resins production area.
24	Section 2.1.E.1	Revise listed requirements pursuant to 15A NCAC 2D .0503 to: - List the independent emissions limits for the DMT and PTA production areas and the Terate® resins production area; and, - Include a testing requirement for the No. 6 fuel oil fired boilers and heaters at the DMT and PTA production areas.
74-83	Section 3	Update General Provisions with the most recent revision (v. 3.4)

ATTACHMENT II:**Insignificant Activities Pursuant to 15A NCAC 2Q .0503(8)**

Source ID No.	Source Description	No.
IT6409R	DMT residue burn tank; 30,400 gallon capacity	1.
IA49203	liquid drain line collection; 2,800 gallon with condenser (ID No. E49203)	2.
ICLBU	closed loop barge unloading	3.
ICLRMU	closed loop reclaim methanol unloading	4.
ICTS	four cooling towers	5.
IEG125	125 kW No. 2 fuel oil-fired emergency generator	6.
IG1955	Wastewater treatment plant methane flare	7.
IH210810	PTA rework drum dump station with fabric filter (36 square feet of filter area) (ID No. S-2108-6)	8.
ILABWASTE	laboratory wastes	9.
ILIQADD	liquid additives loading	10.
IMEBZDRLD	Methyl benzoate drum loading	11.
IMEBZTRLD	Methyl benzoate truck loading	12.
IMPTDRLD	Methyl p-toluate drum loading	13.
IMPTTRLD	Methyl p-toluate truck loading	14.
IPARTWASH	Parts washers	15.
IR1972	Wastewater treatment plant anaerobic reactor	16.
IR1982	Wastewater treatment plant anaerobic reactor	17.
IRESTRAN	Terate® resins product transfer	18.
IS19341	Wastewater treatment plant #2 clarifier	19.
IS1959	Wastewater treatment plant #3 clarifier	20.
IS1985	Wastewater treatment plant reactor clarifier	21.
IS1986A	Wastewater treatment plant sand filter	22.
IS1986B	Wastewater treatment plant sand filter	23.
IS1986C	Wastewater treatment plant sand filter	24.
IS40656	PTA clarifier	25.
ISOLIDADD	solid adhesive unloading	26.
IT1035	evaporator distillate receiver; 30 gallons	27.
IT10524	Methyl benzoate still barometric tank; 280 gallon capacity recycled to process	28.
IT1101	sodium hypochlorite tank	29.
IT1106R	sulfuric acid tank	30.
IT114	Catalyst solution tank, Line B; 22,500 gallon capacity	31.
IT120017	brine storage tank; 42,000 gallons	32.
IT1219	Terate® resin fixed roof storage tank; 28,000 gallon capacity	33.
IT1220	Terate® resin fixed roof storage tank; 28,000 gallon capacity	34.
IT13	No. 6 fuel oil tank	35.
IT130026R	DMT residue burn tank; 37,000 gallon capacity	36.
IT1301	No. 6 fuel oil tank	37.

Source ID No.	Source Description	No.
IT13058	Fuel oil rework tank	38.
IT136	Fuel oil additive injection tank	39.
IT139	Fuel oil additive injection tank; 6,000 gallon capacity	40.
IT1500A	Fuel oil tank	41.
IT1500B	Fuel oil tank	42.
IT1500C	Fuel oil tank	43.
IT1500D	Fuel oil tank	44.
IT1500E	Fuel oil tank	45.
IT1500F	Fuel oil tank	46.
IT1500G	Fuel oil tank	47.
IT1500H	Fuel oil tank	48.
IT153	Contaminated methanol catch tank	49.
IT172	Fuel oil catch tank	50.
IT1916	Waste treatment phosphoric acid tank	51.
IT1917	Waste treatment ammonia tank	52.
IT1919	Lime storage silo	53.
IT19351	Wastewater treatment plant clear well	54.
IT1941	Wastewater treatment plant #2 aeration basin	55.
IT1955	Wastewater treatment plant #3 aeration basin	56.
IT1964	Wastewater treatment plant clear well	57.
IT1975	Wastewater treatment plant yeast slurry mix tank	58.
IT1977	Wastewater treatment plant nutrient storage tank	59.
IT1979	Wastewater treatment plant conditioning tank	60.
IT1983	Waste treatment sulfuric acid tank	61.
IT1991	Wastewater treatment plant clear well	62.
IT2305	Terate® resin fixed roof storage tank; 56,000 gallon capacity	63.
IT2411	Barometric tank; 235 gallon capacity recycled to process	64.
IT24113	Barometric tank; 235 gallon capacity recycled to process	65.
IT2502	Cobalt storage tank; 56,000 gallon capacity	66.
IT29003	Therminol receiver	67.
IT30029A	Sulfuric acid tank	68.
IT303	98% methyl benzoate fixed roof storage tank; 65,000 gallon capacity	69.
IT308	98% methyl benzoate fixed roof storage tank; 56,000 gallon capacity	70.
IT31006	Sulfuric acid tank	71.
IT3101	Sodium hypochlorite tank	72.
IT3223	aluminum sulfate tank; 10,000 gallons	73.
IT39003	Therminol receiver	74.
IT402010R	Sulfuric acid tank	75.
IT4021	Sodium hypochlorite tank	76.
IT4062	PTA filtered mother liquor storage tank; 27,000 gallon capacity	77.

Source ID No.	Source Description	No.
IT4063	Recycle "bottoms" water tank	78.
IT4064	Recycle "bottoms" water tank	79.
IT40656	PTA clean purge water surge tank; 960 gallon capacity	80.
IT40702A	Centrifuge wash recycle tank (surge control vessel)	81.
IT40702B	Centrifuge wash recycle tank (surge control vessel)	82.
IT4071	PTA centrifuge mother liquor tank; 11,000 gallon capacity	83.
IT410	methanol injection tank; 294 gallon capacity	84.
IT411	Catechol injection tank; 147 gallon capacity	85.
IT422018	Barometric tank; 280 gallon capacity recycled to process	86.
IT430	Potassium injection tank	87.
IT440626	Barometric tank; 500 gallon capacity recycled to process	88.
IT49003	Therminol receiver	89.
IT4903	No. 6 fuel oil tank	90.
IT501	Methyl benzoate decant tank	91.
IT502	Methyl benzoate neutralization tank for drying operations	92.
IT510	Methyl benzoate fixed roof storage tank; 19,907 gallon capacity	93.
IT51213A	Soda ash tank; 6,000 gallons	94.
IT5400	Terate® resin fixed roof storage tank; 20,200 gallon capacity	95.
IT5420A	Terate® resin fixed roof storage tank; 20,200 gallon capacity	96.
IT5420B	Terate® resin fixed roof storage tank; 20,200 gallon capacity	97.
IT5420C	Terate® resin fixed roof storage tank; 20,200 gallon capacity	98.
IT5700	Terate® resin fixed roof storage tank; 51,658 gallon capacity	99.
IT601213	Contaminated methanol catch tank	100.
IT602010R2	Sulfuric acid tank	101.
IT6021	Sodium hypochlorite tank	102.
IT610514	Pure MPT (p-methyl toluate) fixed roof storage tank, A Line; 17,000 gallon capacity	103.
IT610520	MPT (p-methyl toluate) fixed roof storage tank; 2,538 gallon capacity	104.
IT610614	99% MPT (p-methyl toluate) fixed roof storage tank; 10,000 gallon capacity	105.
IT61128	Acid water storage; 8,400 gallons	106.
IT622018	Barometric tank; 500 gallon capacity recycled to process	107.
IT6311	Methyl benzoate fixed roof storage tank; 42,298 gallon capacity	108.
IT6404	Barometric tank; 500 gallon capacity recycled to process	109.
IT641219	Barometric tank; 570 gallon capacity recycled to process	110.
IT6417	Diethylene glycol fixed roof storage tank; 65,000 gallon capacity	111.
IT64173	Diethylene glycol fixed roof storage tank; 56,000 gallon capacity	112.
IT6419	MPT (p-methyl toluate) fixed roof storage tank; 29,363 gallon capacity	113.
IT6516A	Triethylene glycol fixed roof tank; 20,000 gallon capacity	114.
IT6516B	Terate® storage fixed roof tank; 20,000 gallon capacity	115.
IT6900	Diethylene glycol storage tank	116.
IT69003	Therminol receiver	117.

Source ID No.	Source Description	No.
IT69004	DMT residue burn tank; 29,000 gallon capacity	118.
IT6903	No. 6 fuel oil tank	119.
IT692021	No. 2 fuel oil tank	120.
IT7000	Terate® resin storage fixed roof tank; 32,877 gallon capacity	121.
IT7001	Residue fixed roof storage tank; 30,000 gallon capacity	122.
IT7002A	Residue fixed roof storage tank; 30,292 gallon capacity	123.
IT7002B	Residue fixed roof storage tank; 30,292 gallon capacity	124.
IT7002C	Residue fixed roof storage tank; 30,292 gallon capacity	125.
IT7003	Diethylene glycol fixed roof storage tank; 30,292 gallon capacity	126.
IT7004	Tall oil fatty acid fixed roof storage tank; 30,400 gallon capacity	127.
IT7005	Surfactant fixed roof tank; 9,971 gallon capacity	128.
IT7006	Terate® resin fixed roof storage tank; 49,237 gallon capacity	129.
IT7007	Methyl glucoside storage tank; 3,870 gallon capacity	130.
IT7008	Terate® resin fixed roof storage tank; 101,246 gallon capacity	131.
IT7009	Additive fixed roof storage tank; 25,250 gallon capacity	132.
IT70106	LCT bottoms receiver	133.
IT7011	Terate® resin fixed roof storage tank; 34,000 gallon capacity	134.
IT70012	Additive fixed roof storage tank; 500 gallon capacity	135.
IT70013	Additive fixed roof storage tank; 500 gallon capacity	136.
IT7014	Terate® resin fixed roof storage tank; 54,100 gallon capacity	137.
IT70015	Additive fixed roof storage tank; 30,400 gallon capacity	138.
IT7016	Terate® resin fixed roof storage tank; 100,000 gallon capacity	139.
IT7017	Terate® resin fixed roof storage tank; 100,520 gallon capacity	140.
IT7019	Terate® resin fixed roof storage tank; 52,000 gallon capacity	141.
IT7101	Residue weigh tank; 3,675 gallon capacity	142.
IT71024	Terate® rework tank; 25 gallon capacity	143.
IT710313	Evaporator bottoms tank; 30 gallons	144.
IT71044	Terate® rework tank; 40 gallon capacity	145.
IT7104A	Terate® resin tank; 5,967 gallon capacity	146.
IT7104B	Terate® resin tank; 5,967 gallon capacity	147.
IT76003	Therminol receiver	148.
IT7601	Therminol fixed roof storage tank; 10,486 gallon capacity	149.
IT76017	Therminol receiver	150.
IT76022	Therminol receiver	151.
IT7603	No. 6 fuel oil tank	152.
IT7604	Therminol catch tank; 430 gallons	153.
IT9003	Therminol receiver	154.
IT901	Used Therminol tank	155.
IWCU	Water treatment chemical usage	156.

1. Because an activity is insignificant does not mean that the activity is exempted from an applicable requirement or that the

owner or operator of the source is exempted from demonstrating compliance with any applicable requirement.

2. When applicable, emissions from stationary source activities identified above shall be included in determining compliance with the permit requirements for toxic air pollutants under 15A NCAC 2D .1100, "Control of Toxic Air Pollutants" or 15A NCAC 2Q .0711, "Emission Rates Requiring a Permit".



AIR QUALITY PERMIT

Permit No.	Replaces Permit No.	Effective Date	Expiration Date
00164T44	00164T43	ENTER DATE	July 31, 2012

Until such time as this permit expires or is modified or revoked, the below named Permittee is permitted to construct and operate the emission source(s) and associated air pollution control device(s) specified herein, in accordance with the terms, conditions, and limitations within this permit. This permit is issued under the provisions of Article 21B of Chapter 143, General Statutes of North Carolina as amended, and Title 15A North Carolina Administrative Codes (15A NCAC), Subchapters 2D and 2Q, and other applicable Laws.

Pursuant to Title 15A NCAC, Subchapter 2Q, the Permittee shall not construct, operate, or modify any emission source(s) or air pollution control device(s) without having first submitted a complete Air Quality Permit Application to the permitting authority and received an Air Quality Permit, except as provided in this permit.

Permittee: **INVISTA, S.à.r.l. – Wilmington**

Facility ID: 6500083
Facility Site Location: 4600 Hwy 421 North
City, County, State, Zip: Wilmington, New Hanover County, North Carolina, 28401

Mailing Address: P.O. Box 327
City, State, Zip: Wilmington, North Carolina 284020327

Application Number: 6500083.10B
Complete Application Date: June 9, 2009
Primary SIC Code: 2869

Regional Office Address: 127 Cardinal Drive Extension
Wilmington, North Carolina
284053845

Permit issued this the ENTER DATE, 2011

Donald R. van der Vaart, Ph.D., J.D., P.E., Chief, Air Permits Section
By Authority of the Environmental Management Commission

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SECTION 1 – PERMITTED EMISSION SOURCE(S) AND ASSOCIATED AIR POLLUTION CONTROL DEVICE(S) AND APPURTENANCES

The following table contains a summary of all permitted emission sources and associated air pollution control devices and appurtenances:

Emission Source ID No.	Emission Source Description	Recovery/Control Device ID No.	Recovery/Control Equipment Description
A Line Oxidizer Header (AOXHEAD – MACT F,G,H Process Vent Group 2) TRE Index greater than 1 and less than or equal to 4			
R100A MACT F,Gpv2	air oxidation reactor (oxidizer) via condensers to phase separation tank	A102A A102B	Reactor Xylene Recovery Equipment carbon adsorber in parallel with carbon adsorber for xylene recovery [Emissions from tanks, phase separator, and xylene steam stripper venting through the scrubber may bypass the carbon adsorption system and vent to the process heater or flare via methanol recovery header as a Group 1 process vent. The xylene stripped from the carbon during regeneration is sent through a condenser and the non-condensibles are sent to the methanol recovery header as a Group 1 process vent.]
R100B MACT F,Gpv2	air oxidation reactor (oxidizer) via condensers to phase separation tank		
R100C MACT F,Gpv2	air oxidation reactor (oxidizer) via condensers to phase separation tank		
A101/T101-5R NSPS NNN MACT F,Gpv2/1 T106 T111 T107 T103A T2025 MACT F,Gpv2/1	xylene steam stripper via condenser to overheads catch tank, methyl toluate tank (49,489 gal), acid water phase separator with condenser, residue tank (21,000 gal), and oxidate tank (40,710 gal) all via scrubber (xylene) with condensers		
A Line Methanol Recovery Header (VS520 – MACT F,G,H Process Vent Group 1)			
A110/T110-4 NSPS NNN, MACT F, Gpv1 A102A/A102B MACT F, Gpv1	wastewater still, via still condenser and wastewater vent condenser, and overheads tank A-line oxidizer header carbon adsorbers during stripping cycle via recovered xylene condenser,	E2520-3 A2520 HTR4 G4904R***	Methanol recovery equipment: precondenser venting to packed bed scrubber (methanol recovery column) with water injection venting to Control Equipment: No. 4 process heater and/or Natural gas-fired flare (170 million Btu per hour heat input)
A112/T112-4 NSPS NNN, MACT F, Gpv1 T104 T109 T1016	oxidizer methanol still feed tank (129,000 gallons) and overheads tank oxidizer feed tank (49,493 gallons) water separator tank, and methyl benzoate feed tank (22,843 gal) each via water separator vent condenser all venting through methanol condenser	E2520-3 A2520 HTR4 G4904R***	Methanol recovery equipment: Pre-condenser venting to packed bed scrubber (methanol recovery column) with water injection venting to Control Equipment: No. 4 process heater and/or Natural gas-fired flare (170 million Btu per hour heat input)
T112-7A MACT F,Gsv1	oxidizer acid water still feed tank and overhead condenser		
A201A/T201-3 NSPS NNN, MACT F, Gpv1	glycol stripper and overheads tank		
A206/T206-6 NSPS NNN, MACT F, Gpv1	reclaim methanol still with condensers and reflux tank with vent condenser.		

Emission Source ID No.	Emission Source Description	Recovery/Control Device ID No.	Recovery/Control Equipment Description
T405R T300 A6206-15/T6206-18 NSPS NNN, MACT F, Gpv1 T206-18/T300-4 MACT F,Gpv1	methyl toluate tank (11,000 gal), isomer tank (56,000 gal), and ethylene glycol recovery still/condenser and overheads tank all via glycol extraction tank (413 gal) with scrubber (methanol scrubbant) with condenser		
T1417-A/T1417-C, T1417-B, DMTLOAD, T1417-3	two DMT tanks with scrubber jet, DMT tank, and DMT truck loading with scrubber jet, all via scrubber (methanol scrubbant) with vent condenser.		
T301-B MACT F,Gsv1	methanol test tank (29,000 gal)		
T518-7	xylene separator (2,500 gal)		
T307 MACT F,Gsv1	mother liquor tank (56,000 gal, methanol)		
T309 MACT H	methanol purge tank (56,000 gal)		
T310-A MACT F,Gsv2	methanol tank (12,300 gal)		
T310-B MACT F,Gsv2	reclaim methanol test tank (12,300 gal)		
T415 MACT F,Gsv1	isomer feed (28,764 gal) with condenser		
T422-2 MACT F,Gsv1	purge evaporator feed tank (56,000 gal) via vent condenser on purge scrubber tank T416		
T409 T421 T424 T416	residue tank, isomer tank (27,000 gal), and residue tank via purge scrubber tank with condenser	E2520-3 A2520	Methanol recovery equipment: Pre-condenser venting to packed bed scrubber (methanol recovery column) with water injection venting to
T419 MACT F,Gsv1	purge centrifuge filtrate storage (28,000 gal) with vent condenser.	HTR4	Control Equipment: No. 4 process heater and/or
A420 NSPS NNN, MACT F, Gpv1	methanol stripper with condenser.	G4904R***	Natural gas-fired flare (170 million Btu per hour heat input)
T203-36 R203 MACT F,Gpv1 A203-30 A422/T422-4 NSPS NNN, MACT F, Gpv1	bottoms flash tank and residue methanolysis reactor via residue methanolysis overhead column via purge methanol evaporator/condenser and overheads tank		
T304	residue tank (56,000 gal)		

Emission Source ID No.	Emission Source Description	Recovery/Control Device ID No.	Recovery/Control Equipment Description
T417 T417-3 MACT F, Gpv1	"A" line crystallizer via condensers via isomer slurry feed tank (57, 000 gal) (vacuum jets may be used)		
T503	methanol overhead tank		
T505-3B T507-B	isomer melter via crude DMT scrubber with condensers		
A105R/T105-5R NSPS NNN, MACT F, Gpv1	methyl benzoate still/condenser and overheads tank via vacuum jets		
A406/T406-5 NSPS NNN, MACT F, Gpv1	utility still/condenser and overheads tank venting to		
A406-7	MPT scrubber venting via vacuum jets		
A412/T412-5 NSPS NNN, MACT F, Gpv1	pure DMT still/condenser with overheads tank venting to		
A412-8	MPT scrubber venting via vacuum jets		
B Line Oxidizer Header (BOXHEAD – MACT F,G,H Process Vent Group 2) TRE Index greater than 1 and less than or equal to 4			
R2100A MACT F,Gpv2	air oxidation reactor (oxidizer) via condensers to phase separation tank	A2102A A2102B	Reactor Xylene Recovery Equipment Carbon adsorber in parallel with carbon adsorber for xylene recovery [Emissions from tanks and stripping columns venting through the scrubber may bypass the carbon adsorption system and vent to the process heater/flare via methanol recovery header as a Group 1 process vent. The xylene stripped from the carbon during regeneration is sent through a condenser and the non-condensibles are sent to the methanol recovery header as a Group 1 process vent.]
R2100B MACT F,Gpv2	air oxidation reactor (oxidizer) via condensers to phase separation tank		
R2100C MACT F,Gpv2	air oxidation reactor (oxidizer) via condensers to phase separation tank		
T2202 T2106 T2108 T2107 A2201A NSPS NNN, MACT F,Gpv2/1 A2201B/T2201-3 NSPS NNN, MACT F,Gpv2/1 T2103A T2103B T2202-5 MACT F,Gpv2/1	stripped oxidate tank (38,400 gallons), methyl toluate tank (56,000 gallon), PTA rework tank, residue tank (20,600 gallon), oxidate stripper and condenser, oxidate stripper with condenser and overheads tank, oxidate tank (40,710 gallon), and oxidate tank (40,710 gallon) all via xylene scrubber with condensers.		

Emission Source ID No.	Emission Source Description	Recovery/Control Device ID No.	Recovery/Control Equipment Description
B Line Methanol Recovery Header (VS2520 – MACT F,G,H Process Vent Group 1)			
A2102A, A2102B MACT F, Gpv1	B-line oxidizer header carbon adsorbers during stripping cycle via recovered xylene condenser.	E2520-3 A2520	<p>Methanol recovery equipment: Pre-condenser venting to packed bed scrubber (methanol recovery column) with water injection venting to</p> <p>Control Equipment No. 4 process heater and/or Natural gas-fired flare (170 million Btu per hour heat input)</p>
R2203 NSPS RRR/NNN, MACT F,Gpv1 A2414 MACT F,Gpv1 A2204 MACT F,Gpv1 T220314 A2203-19 MACT F,Gpv1 A2205/T2205-5 NSPS NNN, MACT F, Gpv1	esterification reactor, methanol evaporator, feed prestill, esterifier product tank, product prestill, and methanol still/condenser all via reflux tank/condenser	HTR4 G4904R***	
A2403/A24038 NSPS NNN, MACT F, Gpv1 A413/T413-6 NSPS NNN, MACT F, Gpv1 A413-7	DMT still with MPT scrubber, and pure DMT still/condenser with overheads tank both venting to MPT scrubber venting via vacuum jets		
T4406-24 MACT H S440640	utility still feed tank (23,000 gal) via residue heat treatment tank scrubber	E2520-3 A2520	
T1800 T1800-12	DMT rework tank (2,600 gal) via DMT rework scrubber tank (1,000)		<p>Methanol recovery equipment: pre-condenser venting to packed bed scrubber (methanol recovery column) with water injection venting to</p> <p>Control Equipment No. 4 process heater and/or Natural gas-fired flare (170 million Btu per hour heat input)</p>
T117	xylene scrubber tank (2,500) via condenser	HTR4 G4904R***	
T113 T113-9 T119 T120	residue phase separation tank (4,900 gal), residue mix tank (6,000 gal), and residue dryer tank (6,000); all via catalyst recovery scrubber with condenser.		
T413-2 A413-9	pure molten DMT tank via molten DMT scrubber and condenser		
T2300 T2304 T2303 T2405 T2300-4	ester storage tank (56,000 gal), residue storage tank (56,000gal), DMT storage (53,000 gal) and MPT hold tank (11,000 gal); all via ester tank scrubber with condenser		
T2301A MACT F,Gsv1	methanol test tank (28,764 gal).		
T2301B MACT F,Gsv1	methanol tank (28,765 gal).		
T2306 T2307 MACT F,Gsv1	mother liquor tank (56,000 gal) and mother liquor storage (56,000 gal) via condenser.		

Emission Source ID No.	Emission Source Description	Recovery/Control Device ID No.	Recovery/Control Equipment Description
T2308 T2309 MACT F,Gsv1	mother liquor storage tank (56,000 gal) and mother liquor storage(56,000 gal) via condenser.		
A4406-21/T4406-5 NSPS NNN, MACT F, Gpv1 A4406-7 MACT F,Gpv1	residue stripper with condenser and vacuum receiver and residue stripper scrubber with vacuum jets		
T2104 T2109	oxidizer feed tank (22,000 gal) and water separator tank via condenser.		
A2113-7 T2424 T2117 T2119 T2113-7	karr liquid/liquid extractor, residue tank/condenser, xylene wash tank, and raffinate dryer tank/separator; all via vent collection tank		
C LINE – MACT F,G,H Process Vent Group 2			
R4100 MACT F,Gpv2 R4100B** MACT F,Gpv2 T4100-5 MACT F,Gpv2	Air oxidation reactor (oxidizer) through condenser Air oxidation reactor (oxidizer) through condenser, and Separator tank with condensers	A4102**	Recovery Equipment: Regenerative carbon bed adsorption system with three carbon beds. (System may operate while adsorbing in a single bed, two beds in parallel, or two beds in series.)
C Line Methanol Recovery Header (VS4520 – MACT F,G,H Process Vent Group 1)			
A4102** MACT F,Gpv1 T4102-11 MACT F,Gpv1	Regenerative carbon bed adsorption system (during regeneration cycle), and Catch tank	E4520-5 A4520/E4520-3	Methanol recovery equipment condenser venting to packed bed scrubber (methanol recovery column with water injection) and condenser venting to
A4065-10 A4061/T4061-4 NSPS NNN, MACT F, Gpv1	MeOH/H ₂ O prestill via PTA methanol still with condenser and reflux tank via condenser	HTR4 G4904R***	Control Equipment No. 4 process heater and/or flare (170 million Btu per hour heat input)
R4203 NSPS RRR/NNN, MACT F,Gpv1 A4204A MACT F,Gpv1 A4204B NSPS NNN, MACT F, Gpv1 A4414 MACT F,Gpv1 T4204-4 T4203-14 A4203-19 A4205/T4205-5 NSPS NNN, MACT F, Gpv1	esterification reactor, feed prestill A, feed prestill B, and methanol evaporator separator tank ester bottoms receiver; via ester bottoms flash still; all via methanol still/condenser with reflux tank/condenser		
T4504 MACT F,Gsv1	preheat tank (35,000 gal)		

Emission Source ID No.	Emission Source Description	Recovery/Control Device ID No.	Recovery/Control Equipment Description
T4511 MACT F,Gsv1	pure DMT solution tank (45,000 gal)		
A4220/T4220-6 NSPS NNN, MACT F, Gpv1 T4220-10 NSPS NNN, MACT F, Gpv1	vacuum oxidizer stripper with condenser and overheads catch tank through vent condenser separator via vacuum jets		
A4400/T4400-9 NSPS NNN, MACT F, Gpv1 A4403/T4403-6 NSPS NNN, MACT F, Gpv1 A4403-8 MACT F,Gpv1	ester still through condenser and vacuum receiver with condenser and crude DMT still through condenser and vacuum receiver through crude DMT scrubber via vacuum jets	E4520-5 A4520/E4520-3 HTR4 G4904R***	Methanol recovery equipment condenser venting to packed bed scrubber (methanol recovery column with water injection) and condenser venting to Control Equipment No. 4 process heater and/or flare (170 million Btu per hour heat input)
T4516A T4516B T4513-3A/3B S4516-3 T4515	DMT test tank A (20,000 gal), DMT test tank B (20,000 gal), and two DMT melters all via pure DMT scrubber, pure melter scrubber tank and condenser		
T4106 T4107 T4207 A4201 T4201-3 NSPS NNN, MACT F, Gpv1 T4202 T4300 T4202-5 MACT F, Gpv1	methyl toluate tank (56,000 gal), residue tank (28,000 gal), wastewater vaporizer through oxidate stripper with condenser and stripper receiver, stripped oxidate tank (132,183 gal), and ester tank (56,000 gal); all via xylene scrubber tank with condenser		
T4104 T4109	oxidizer feed tank (56,000 gal) and water separator tank (23,600 gal) via condenser.		
T4305 S4305-3 T4301 MACT F,Gsv1 T4306 MACT F,Gsv1 T4309 MACT F,Gsv1	crude DMT tank (99,500 gal) via crude DMT tank scrubber, methanol test tank (68,000 gal), mother liquor tank (68,000 gal) and mother liquor tank (52,500 gal) all via condenser		
T4501 T4502 MACT F,Gsv1 T4509 T4510 MACT F,Gsv1	crystallizer with condenser via crude slurry tank and crystallizer with condenser via pure DMT slurry tank all via vacuum jet condenser		
T4503	head tank (200 gal)		
T4505	seal flush tank (240 gal)		

Emission Source ID No.	Emission Source Description	Recovery/Control Device ID No.	Recovery/Control Equipment Description
C Line Methanol Recovery Header (VS4520 – MACT F, G, H Process Vent Group 1)			
T4517-2A	crude re-pulp tank A (10,000 gal)	E4520-5 A4520/E4520-3	Methanol recovery equipment condenser venting to packed bed scrubber (methanol recovery column with water injection) and condenser venting to
T4517-2B	crude re-pulp tank B (10,000 gal)		
T4517-2C	crude re-pulp tank C (10,000 gal)		
T4522 S4522-3	pure DMT feed tank (1,000,000 gal) via pure DMT scrubber		
T4060 MACT H	overhead PTA blend tank (54,000 gal) via sparge B/T condenser E40603	HTR4 G4904R***	Control Equipment: No. 4 process heater and/or Natural gas-fired flare (170 million Btu per hour heat input)
Terate Production Collection Header (VS7100 – MACT FFFF Process Vent)			
R7100A A7100-2A T7100-4A R7100B A7100-2B T7100-4B T7105 R7100C A7100-2C T7100-4C R7100D A7100-2D T7100-4D T7102 T7100-12 MACT FFFF, Gpv1	resin reactor via reactor reflux column with vent condenser via reactor cooling vessel, and resin reactor via reactor reflux column with vent condenser via reactor cooling vessel both via cooling tank, resin reactor via reactor reflux column with vent condenser via reactor cooling vessel, and resin reactor via reactor reflux column with vent condenser via reactor cooling vessel, both via resins feed tank all via resins VOC catch tank (may be vented to the atmosphere)	HTR4 G4904R***	Control Equipment: No. 4 process heater and/or Natural gas-fired flare (170 million Btu per hour heat input)
E7103	WFE Evaporator (and steam jets and receivers)	T7010-12 to HTR4 G4904R***	
A7010 T7010-4	LCT Evaporator with overheads receiver via vacuum jets (C701015/15/17/19)		
D LINE Oxidizer Header – MACT F, G, H Process Vent Group 2			
R6100 R6100B** T6100-5 MACT F,Gpv2	Air oxidation reactor (oxidizer) through condensers Air oxidation reactor (oxidizer) through condensers, and Separator tank with condensers	A6102A**	Recovery Equipment: Regenerative carbon bed adsorption system with three carbon beds. (System may operate while adsorbing in a single bed, two beds in parallel, or two beds in series.)

Emission Source ID No.	Emission Source Description	Recovery/Control Device ID No.	Recovery/Control Equipment Description
D Line Methanol Recovery Header (VS6520 – MACT F, G, H Process Vent Group 1)			
A6102** T6102-11 MACT F,Gpv1	Regenerative carbon bed adsorption system (during regeneration cycle), and catch tank	E6520-5 A6520/E6520-3 HTR4 G4904R***	Methanol recovery equipment Pre-condenser venting to packed bed scrubber (methanol recovery column with water injection) and condenser venting to Control Equipment: No. 4 process heater and/or Natural gas-fired flare (170 million Btu per hour heat input)
T6106 T6300 T6207 A6201/T6201-3 NSPS NNN MACT F, Gpv1 T6107 T6202 T6202-5 MACT F,Gpv1	methyl toluate storage, ester tank (66,000 gal), wastewater evaporator through oxidate stripper through condenser and receiver, residue tank, and stripped oxidate tank (132,183 gal) all via xylene scrubber tank with condenser	E6520-5 A6520/E6520-3 HTR4 G4904R***	Methanol recovery equipment pre-condenser venting to packed bed scrubber (methanol recovery column with water injection) and condenser venting to Control Equipment: No. 4 process heater and/or Natural gas-fired flare (170 million Btu per hour heat input)
A6220 T6220-6/T6220-10 NSPS NNN MACT F, Gpv1	vacuum oxidate stripper through condenser and overheads catch tank with condenser through condenser separator via vacuum jets		
T6104 T6109	oxidizer feed tank and water separator tank via condenser		
A6105/T6105-5 NSPS NNN MACT F, Gpv1	multipurpose still through condenser and overheads tank via vacuum jets and condensers		
A6110, S6110-11, T6110-4 NSPS NNN MACT F, Gpv1	wastewater still through condenser, xylene separator, and reflux tank with condenser		
A6112/T6112-4 NSPS NNN MACT F, Gpv1	oxidizer acid water still through condenser and reflux tank		

Emission Source ID No.	Emission Source Description	Recovery/Control Device ID No.	Recovery/Control Equipment Description
R6203 NSPS RRR/NNN MACT F,Gpv1 A6204 NSPS NNN MACT F, Gpv1 A6204A NSPS NNN MACT F, Gpv1 T6204-4 MACT F,Gpv1 T6203-14, A6203-19 MACT F,Gpv1 A6205/T6205-5 NSPS NNN MACT F, Gpv1	esterification reactor, feed prestill, feed prestill, and separator tank, ester bottoms receiver, via ester bottoms flash still, all via methanol still/condenser with reflux tank/condenser	E6520-5 A6520/E6520-3 HTR4 G4904R***	Methanol recovery equipment pre-condenser venting to packed bed scrubber (methanol recovery column with water injection) and condenser venting to Control Equipment: No. 4 process heater and/or Natural gas-fired flare (170 million Btu per hour heat input)
T6305 S6305-3 T6301 MACT F,Gsv1 T6306 MACT F,Gsv1 T6309 MACT F,Gsv1	crude DMT tank (105,000 gal) via crude DMT scrubber tank, methanol test tank (68,000 gal), mother liquor tank (68,000 gal), and mother liquor tank (68,000 gal) all via condenser	E6520-5 A6520/E6520-3 HTR4 G4904R***	Methanol recovery equipment pre-condenser venting to packed bed scrubber (methanol recovery column with water injection) and condenser venting to Control Equipment: No. 4 process heater and/or Natural gas-fired flare (170 million Btu per hour heat input)
A6400/T64009 NSPS NNN MACT F, Gpv1 A6403 T6403-6/A6403-8 NSPS NNN MACT F, Gpv1	ester still through condenser and vacuum receiver with condenser and crude DMT still through condenser and vacuum receiver and crude DMT scrubber all via vacuum jets.	HTR4 G4904R***	Methanol recovery equipment pre-condenser venting to packed bed scrubber (methanol recovery column with water injection) and condenser venting to Control Equipment: No. 4 process heater and/or Natural gas-fired flare (170 million Btu per hour heat input)
A6422/T6422-6 NSPS NNN MACT F, Gpv1	purge methanol still through condenser and reflux tank with condenser		
T6503	methanol head tank		
T6504 MACT F,Gsv1	preheat tank (35,000 gal)		
T6501 T6502 MACT F,Gsv1 T6509 T6510 MACT F,Gsv1	crystallizer with condenser via crude slurry tank (56,000 gal) and crystallizer with condenser via pure DMT slurry tank (56,000 gal) or vacuum jet and condenser		
T6513A, T6513B T6515	two DMT melters through pure DMT scrubber and condenser		
T6511 MACT F,Gsv1	pure DMT slurry tank (45,000 gal)		
T6509-5 T6517-2A	seal flush tank through crude DMT reslurry tank (10,000 gal)		
T6517-2B	crude DMT re-slurry tank (10,000 gal)	E6520-5	Methanol recovery equipment pre-condenser venting to
T6517-2C	crude DMT re-slurry tank (10,000 gal)		

Emission Source ID No.	Emission Source Description	Recovery/Control Device ID No.	Recovery/Control Equipment Description
T6112-7 MACT F,Gsv1	oxidizer methanol still feed tank (127,000 gal)	A6520/E6520-3	packed bed scrubber (methanol recovery column with water injection) and condenser venting to Control Equipment: No. 4 process heater and/or Natural gas-fired flare (170 million Btu per hour heat input)
T6111	D-line water phase separator through condenser	HTR4 G4904R***	
S6522-3***	DMT tank scrubber and condenser associated with two DMT tanks (T6522, T6523)	E6520-5 A6520/E6520-3 E4520-5 A4520/E4520-3 HTR4 G4904R***	Methanol recovery equipment pre-condenser venting to packed bed scrubber (methanol recovery column with water injection) and condenser; or, pre-condenser venting to packed bed scrubber (methanol recovery column with water injection) and condenser; venting to Control Equipment: No. 4 process heater and/or Natural gas-fired flare (170 million Btu per hour heat input)
Material Handling			
G4074	terephthalic acid steam heated dryer; 40 ton per process weight rate	A4074-9R	wet cyclonic scrubber; 10 gallons per minute minimum water injection rate
H4085-3	PTA bin loading station; 11.5 tons per hour process weight rate	S4085-10A S4087	fabric filters; 7.5 square feet of filter area and 80 square feet of filter area, respectively
H4085-4	PTA bin loading station; five tons per hour process weight rate	S4085-10B S4087	fabric filters; 7.5 square feet of filter area and 80 square feet of filter area, respectively
T4051	PTA slurry tank; 32,904 gallons	E4051-3	condenser; 1,890 square feet surface area
L1401A through L1401E	five DMT flake makers; 13 tons per hour process weight rate each	N/A	N/A
H1413-22	DMT re-melt hopper; 11 tons per hour process weight rate	N/A	N/A
T4078	PTA grinder feed bin; 30 tons per hour process weight rate	S4078-2	fabric filter; 7.5 square feet of filter area
L4080	PTA grinder and surge bin; 15 tons per hour process weight rate	S4080-3	fabric filter; 640 square feet of filter area
L4081	PTA grinder and surge bin; 15 tons per hour process weight rate	S4081-3	fabric filter; 640 square feet of filter area
T4082	PTA grinder surge bin; 30 tons per hour process weight rate	S4082-2	fabric filter; 15.1 square feet of filter area
T4083	Unground PTA surge bin; 30 tons per hour process weight rate	S4083-3R	fabric filter; 69 square feet of filter area

Emission Source ID No.	Emission Source Description	Recovery/Control Device ID No.	Recovery/Control Equipment Description
T4084A	PTA bulk loading silo; 40 tons per hour process weight rate	S4084-2A	fabric filter; 117 square feet of filter area
T4084B	PTA bulk loading silo; 40 tons per hour process weight rate	S4084-2B	fabric filter; 117 square feet of filter area
T4084C	PTA bulk loading silo; 40 tons per hour process weight rate	S4084-2C	fabric filter; 117 square feet of filter area
T4084D	PTA bulk loading silo; 40 tons per hour process weight rate	S4084-2D	fabric filter; 117 square feet of filter area
T4084E	PTA bulk loading silo; 40 tons per hour process weight rate	S4084-2E	fabric filter; 117 square feet of filter area
T4084F	PTA bulk loading silo; 40 tons per hour process weight rate	S4084-2F	fabric filter; 117 square feet of filter area
T4085	tote bin and semi-bulk loading silo; 40 tons per hour process weight rate	S4085-2	fabric filter; 117 square feet of filter area
DMTRAIL	DMT rail car loading	T6550 E6550-4	venturi scrubber (20 gallons per minute water injection) and condenser
EGTRANS MACT F, Gto2	ethylene glycol tank truck transfer rack	N/A	N/A
PTARAIL	PTA railcar loading; 100 tons per hour process weight rate	N/A	N/A
TANKS			
T10 MACT F, Gsv2	xylene fixed roof storage tank; two million gallon capacity	N/A	N/A
T6013 MACT F, Gsv2	xylene fixed roof storage tank; two million gallon capacity	N/A	N/A
T11 MACT F,Gsv1	methanol internal floating roof storage tank with secondary seal; one million gallon capacity	N/A	N/A
T1107 MACT H	wastewater still feed tank; 27,350 gallon capacity	N/A	N/A
T12 MACT F,Gsv1	reclaimed methanol internal floating roof storage tank with secondary seal; 500,000 gallon capacity	N/A	N/A
T14 MACT F,Gsv2	xylene fixed roof storage tank; four million gallon capacity	N/A	N/A
T1939AR* MACT G, MACT FFFF, Gww2	enclosed wastewater equalization (still bottoms) fixed roof tank; 120,000 gallon capacity	N/A	N/A
T1922A MACT G, Gww2	wastewater (sumps, spills, maintenance) equalization open top tank; 230,000 gallon capacity	N/A	N/A
T1922B MACT G, Gww2	wastewater (sumps, spills, maintenance) equalization open top tank; 230,000 gallon capacity	N/A	N/A
T1922C	wastewater (sumps, spills, maintenance)	N/A	N/A

Emission Source ID No.	Emission Source Description	Recovery/Control Device ID No.	Recovery/Control Equipment Description
MACT G, MACT FFFF, Gww2	equalization open top tank; two million gallon capacity		
T1922D MACT G, MACT FFFF, Gww2	wastewater (sumps, spills maintenance) equalization open top tank; two million gallon capacity	N/A	N/A
T1922E MACT G, MACT FFFF, Gww2	wastewater equalization fixed roof tank; two million gallon capacity	N/A	N/A
T2068 MACT F,Gsv2	ethylene glycol fixed roof storage tank; 56,000 gallon capacity	N/A	N/A
T301A MACT F,Gsv2	ethylene glycol fixed roof storage tank; 28,500 gallon capacity	N/A	N/A
T306 MACT F,Gsv2	ethylene glycol test fixed roof storage tank; 56,000 gallon capacity	N/A	N/A
T4110-7 MACT H	wastewater still feed tank	N/A	N/A
T509 MACT F,Gsv2	ethylene glycol fixed roof storage tank; 46,000 gallon capacity	N/A	N/A
T6012 MACT F,Gsv1	reclaimed methanol external floating roof tank with secondary seal; 500,000 gallon capacity	N/A	N/A
T6101-6	multipurpose still feed fixed roof tank; 15,230 gallon capacity	N/A	N/A
T6110-7 MACT H	wastewater still feed tank	N/A	N/A
T6421 MACT F,Gsv2	purged isomer fixed roof storage tank; 19,461 gallon capacity	N/A	N/A
T105-13	methyl benzoate overheads fixed roof tank; 18,600 gallon capacity	N/A	N/A
T105-7	off-grade methyl benzoate storage tank; 21,846 gallon capacity	N/A	N/A
T112-7B	A-line acid water fixed roof storage tank; 129,000 gallon capacity	N/A	N/A
T115	catalyst solution tank, Line B; 17,500 gallon capacity	N/A	N/A
T404	barometric tank; 510 gallon capacity recycled to process	N/A	N/A
T406-15	barometric tank; 280 gallon capacity recycled to process	N/A	N/A
T4404	barometric tank; 500 gallon capacity recycled to process	N/A	N/A
T517-2A	methyl benzoate neutralization tank	N/A	N/A
T517-2B	methyl benzoate neutralization tank	N/A	N/A
T7010-21 MACT FFFF	Terate® barometric tank; 175 gallon capacity	N/A	N/A

Emission Source ID No.	Emission Source Description	Recovery/Control Device ID No.	Recovery/Control Equipment Description
T7103-12 MACT FFFF	Terate® resin barometric tank	N/A	N/A
WWTP1940	wastewater treatment plant (includes 1922A,B,C,D, Aeration Basin, Cooling Tower, Clarifier No. 2, Clarifier No. 3, Reactor Clarifier, default trickling filter)	N/A	N/A
Utilities			
B4040 Case-By-Case MACT	pure terephthalic acid (PTA) steam generator; 202 million Btu per hour heat input, No. 2 and No. 6 fuel oil, natural gas, organic byproduct (sulfur free), dimethyl ether, and biogas-fired	N/A	N/A
B7600 Case-By-Case MACT	hot oil medium Terate resin heater; 22 million Btu per hour heat input, No. 2 and No. 6 fuel oil, natural gas, and organic byproduct (sulfur free) fired	N/A	N/A
B7602 Case-By-Case MACT	Terate resin heater; 4 million Btu per hour heat input, natural gas-fired	N/A	N/A
BLR1 Case-By-Case MACT	boiler; 200 million Btu per hour heat input, No. 2 and No. 6 fuel oil, natural gas, and organic byproduct (sulfur free) fired	N/A	N/A
BLR4 Case-By-Case MACT	boiler; 246 million Btu per hour heat input, No. 2 and No. 6 fuel oil, natural gas, and organic byproduct (sulfur free) fired	N/A	N/A
BLR5 Case-By-Case MACT	boiler; 246 million Btu per hour heat input, No. 2 and No. 6 fuel oil, natural gas, and organic byproduct (sulfur free) fired	N/A	N/A
HTR3 Case-By-Case MACT	hot oil medium process heater; 140 million Btu per hour heat input, No. 2 and No. 6 fuel oil, natural gas, and organic byproduct (sulfur free) fired	N/A	N/A
HTR4*** Case-By-Case MACT	hot oil medium process heater; 167 million Btu per hour heat input, No. 2 and No. 6 fuel oil, natural gas, biogas, organic byproduct (sulfur free), and VOC gas-fired	N/A	N/A
HTR5 Case-By-Case MACT	hot oil medium process heater; 213 million Btu per hour heat input, No. 2 and No. 6 fuel oil, natural gas, biogas, and organic byproduct (sulfur free) fired	N/A	N/A
TO	liquid waste incinerator; 140 million Btu per hour heat input, No. 2 and No. 6 fuel oil, natural gas, and organic byproduct (sulfur free) fired, 17.55 tons per hour liquid waste (90% water) input capacity	N/A	N/A

Emission Source ID No.	Emission Source Description	Recovery/Control Device ID No.	Recovery/Control Equipment Description
Miscellaneous			
AEQLK NSPS VV, MACT H	A-line equipment leaks	N/A	N/A
BEQLK NSPS VV, MACT H	B-line equipment leaks	N/A	N/A
CEQLK MACT H	C-line equipment leaks	N/A	N/A
DEQLK MACT H	D-line equipment leaks	N/A	N/A
PTAEQLK MACT H	PTA process area equipment leaks	N/A	N/A
RAWEQLK MACT H	raw material equipment leaks	N/A	N/A
RESEQLK MACT FFFF	resins plant equipment leaks	N/A	N/A

* This emission source (**ID No. T1934AR**) is listed as a 502(b)(10) change per 15A NCAC 2Q .0523. The permit shield described in General Condition R does not apply.

** These emission sources and control devices (**ID Nos. R4100A, A4102, R6100B, and A6102**) are listed as a minor modification per 15A NCAC 2Q .0515. The compliance certification as described in General Condition P is required. Unless otherwise notified by NC DAQ, the affected terms of this permit (excluding the permit shield as described General Condition R) for this source shall become final on May 4, 2009. Until this date, the affected permit terms herein reflect the proposed operating language that the Permittee shall operate this source under pursuant to 15A NCAC 2Q .0515(f).

*** These emission sources and control devices (**ID Nos. G4904R, HTR4, T6522, and T6523**) are listed as a minor modification per 15A NCAC 2Q .0515. The compliance certification as described in General Condition P is required. Unless otherwise notified by NC DAQ, the affected terms of this permit (excluding the permit shield as described General Condition R) for this source shall become final on September 2, 2010. Until this date, the affected permit terms herein reflect the proposed operating language that the Permittee shall operate this source under pursuant to 15A NCAC 2Q .0515(f).

SECTION 2 – SPECIFIC LIMITATIONS AND CONDITIONS

2.1 - Emission Sources and Control Devices Specific Limitations and Conditions

The emission sources and associated air pollution control devices and appurtenances listed below are subject to the following specific terms, conditions, and limitations, including the testing, monitoring, recordkeeping, and reporting requirements as specified herein:

A. Material Handling

Terephthalic acid steam heated dryer (ID No. G4074) with wet cyclonic scrubber (ID No. A4074-9R)

The following table provides a summary of limits and standards for the emission source(s) described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
PM	Particulate emissions shall not exceed the rate prescribed by the process weight equations: For process rates up to 30 tons per hour: $E = 4.10 \times P^{0.67}$ For process rates greater than 30 tons per hour: $E = 55.0 \times P^{0.11} 40$ Where: E = allowable emission rate in pounds per hour, and P = process weight in tons per hour	15A NCAC 2D .0515
Visible emissions	Visible emissions shall not exceed 20 percent opacity	15A NCAC 2D .0521
PM	Compliance assurance monitoring scrubber operating parameters	15A NCAC 2D .0614

1. 15A NCAC 2D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

- a. Emissions of particulate matter from the source listed above shall not exceed an allowable emission rate as calculated by the following equation:

$$\begin{aligned} \text{For process rates up to 30 tons per hour:} & \quad E = 4.10 \times P^{0.67} \\ \text{For process rates greater than 30 tons per hour:} & \quad E = 55.0 \times P^{0.11} 40 \end{aligned}$$

Where: E = allowable emission rate in pounds per hour, and
P = process weight in tons per hour

(Liquid and gaseous fuels and combustion air are not considered as part of the process weight.)

Testing [15A NCAC 2Q .0508(f)]

- b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.A.1.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515.

Monitoring/Recordkeeping [15A NCAC 2Q .0508(f)]

- c. Particulate matter emissions from the listed emission source shall be controlled by wet cyclonic scrubber. To assure compliance, water flow to the wet cyclonic scrubber shall be a minimum of 10 gallons per minute as demonstrated by ensuring the horsepower input to the scrubbing liquid recycle pump is a minimum horsepower of 5.25, based on a six-minute rolling average. Horsepower input to the scrubbing liquid recycle pump shall be continuously monitored. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515 if the horsepower input falls below the minimum allowable value.
- d. The Permittee shall perform inspections and maintenance that include a monthly visual inspection of the system ductwork and the wet cyclonic scrubber for leaks and structural integrity. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515 if the ductwork and scrubber are not inspected and maintained as required.
- e. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) onsite and made available to an authorized representative upon request. The logbook shall record the following for ductwork and the scrubber:
- i. The date and time of each recorded action;
 - ii. The results of each inspection;

- iii. The results of any maintenance performed on the scrubber;
- iv. Any periods when the monitoring system (pump horsepower) was not functional and how the flow to the scrubber was monitored during this period; and
- v. Any periods when the 6-minute rolling average horsepower was below 5.25, including what actions were taken to restore proper flow to the scrubber, and the date and duration of the event.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515 if these records are not maintained.

Reporting [15A NCAC 2Q .0508(f)]

- f. The Permittee shall submit the results of any maintenance performed on each control device within 30 days of a written request by the DAQ.
- g. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

- a. Visible emissions from the emission source listed above shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 2Q .0508(f)]

- b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 A.2.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521.

Monitoring [15A NCAC 2Q .0508(f)]

- c. To assure compliance, each month the Permittee shall observe the emission point of the source above for any visible emissions above normal. The Permittee shall establish normal for the source's emission point. If visible emissions from this source are observed to be above normal, the Permittee shall either:
 - i. Take appropriate action to correct the above normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
 - ii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 2D .2601 (Method 9) for 12 minutes, is below the limit given in Section 2.1 A.2.a. above.

If the above normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .0521.

Recordkeeping [15A NCAC 2Q .0508(f)]

- d. The results of the monitoring shall be maintained in a logbook (written or electronic format) onsite and made available to an authorized representative upon request. The logbook shall record the following:
 - i. the date and time of each recorded action;
 - ii. the results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
 - iii. the results of any corrective actions performed.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521 if these records are not maintained.

Reporting [15A NCAC 2Q .0508(f)]

- e. The Permittee shall submit a summary report of the observations postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

B. Material Handling

- DMT Railcar loading (ID No. DMTRAIL) with venturi scrubber (ID No. T6550) and condenser (ID No. E6550-4).
- PTA bin/bag loading station (ID No. H4085-3) with fabric filters (ID Nos. S4085-10A and S4087).
- PTA bin/bag loading station (ID No. H4085-4) with fabric filters (ID Nos. S4085-10B and S4087).
- PTA grinder feed bin (ID No. T4078) with fabric filter (ID No. S4078-2).
- PTA grinder surge bin (ID No. L4080) with fabric filter (ID No. S4080-3).
- PTA grinder surge bin (ID No. L4081) with fabric filter (ID No. S4081-3).
- PTA grinder surge bin (ID No. T4082) with fabric filter (ID No. S4082-2).
- Unground PTA surge bin (ID No. T4083) with fabric filter (ID No. S4083-3R).
- Six PTA bulk loading silos (ID Nos. T4084A through T4084F) each with a fabric filter (ID Nos. S4084-2A through SC4084-2F).
- Tote bin and semi-bulk loading silo (ID No. T4085) with fabric filter (ID No. S4085-2).

The following table provides a summary of limits and standards for the emission source(s) described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
PM	particulate emissions shall not exceed the rate prescribed by the process weight equations: For process rates up to 30 tons per hour: $E = 4.10 \times P^{0.67}$ For process rates greater than 30 tons per hour: $E = 55.0 \times P^{0.11} 40$ Where: E = allowable emission rate in pounds per hour, and P = process weight in tons per hour	15A NCAC 2D .0515
Visible emissions	visible emissions shall not exceed 20 percent opacity	15A NCAC 2D .0521

1. 15A NCAC 2D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

- a. Emissions of particulate matter from each source listed above shall not exceed an allowable emission rate as calculated by the following equation:

For process rates up to 30 tons per hour: $E = 4.10 \times P^{0.67}$
 For process rates greater than 30 tons per hour: $E = 55.0 \times P^{0.11} 40$

Where: E = allowable emission rate in pounds per hour, and
 P = process weight in tons per hour

(Liquid and gaseous fuels and combustion air are not considered as part of the process weight.)

Testing [15A NCAC 2Q .0508(f)]

- b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 B.1.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515.

Monitoring/Recordkeeping [15A NCAC 2Q .0508(f)]

- c. Particulate matter emissions shall be controlled by a fabric filter (scrubber for DMTRAIL) as delineated above. To assure compliance, the Permittee shall perform inspections and maintenance. Inspection and maintenance shall include:
 - i. A monthly visual inspection of the system ductwork and control device for leaks; and
 - ii. An annual (for each 12 month period following the initial inspection) internal inspection of each control device for structural integrity and filter fabric condition.
 The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515 if the ductwork and control devices are not inspected and maintained.
- d. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) onsite and made available to an authorized representative upon request. The logbook shall record the following for each control device:
 - i. The date and time of each recorded action;
 - ii. The results of each inspection; and
 - iii. The results of any maintenance performed on the control device;
 The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515 if these records are not maintained.

Reporting [15A NCAC 2Q .0508(f)]

- e. The Permittee shall submit the results of any maintenance performed on each control system within 30 days of a written request by the DAQ.
- f. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

- a. Visible emissions from the emission source listed above shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 2Q .0508(f)]

- b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 B.2.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521.

Monitoring [15A NCAC 2Q .0508(f)]

- c. To assure compliance, each month the Permittee shall observe the emission point of the source above for any visible emissions above normal. The Permittee shall establish normal for the source's emission point. If visible emissions from this source are observed to be above normal, the Permittee shall either:
 - i. Take appropriate action to correct the above normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
 - ii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 2D .2601 (Method 9) for 12 minutes, is below the limit given in Section 2.1 B.2.a. above.

If the above normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .0521.

Recordkeeping [15A NCAC 2Q .0508(f)]

- d. The results of the monitoring shall be maintained in a logbook (written or electronic format) onsite and made available to an authorized representative upon request. The logbook shall record the following:
 - i. The date and time of each recorded action;
 - ii. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
 - iii. The results of any corrective actions performed.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521 if these records are not maintained.

Reporting [15A NCAC 2Q .0508(f)]

- e. The Permittee shall submit a summary report of the observations postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

C. Material Handling

Four DMT flake makers (ID Nos. L1401A through L1401D).

DMT re-melt hopper (ID No. H1413-22).

PTA railcar loading (ID No. PTARAIL).

The following table provides a summary of limits and standards for the emission source(s) described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
PM	Particulate emissions shall not exceed the rate prescribed by the process weight equations: For process rates up to 30 tons per hour: $E = 4.10 \times P^{0.67}$ For process rates greater than 30 tons per hour: $E = 55.0 \times P^{0.11} 40$ Where: E = allowable emission rate in pounds per hour, and P = process weight in tons per hour	15A NCAC 2D .0515
Visible Emissions	Visible emissions shall not exceed 20 percent opacity ID No. PTARAIL Visible emissions shall not exceed 40 percent opacity ID Nos. L1401A through L1401D and H1413-22	15A NCAC 2D .0521

1. 15A NCAC 2D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

- a. Emissions of particulate matter from each source listed above shall not exceed an allowable emission rate as calculated by the following equation:

$$\begin{array}{ll} \text{For process rates up to 30 tons per hour:} & E = 4.10 \times P^{0.67} \\ \text{For process rates greater than 30 tons per hour:} & E = 55.0 \times P^{0.11} 40 \end{array}$$

Where: E = allowable emission rate in pounds per hour, and
P = process weight in tons per hour

(Liquid and gaseous fuels and combustion air are not considered as part of the process weight.)

Testing [15A NCAC 2Q .0508(f)]

- b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 C.1.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515.

Monitoring/Recordkeeping/Reporting [15A NCAC 2Q .0508(f)]

- c. The Permittee shall maintain production records that specify the types of materials processed and shall make these records available to a DAQ authorized representative upon request. A canvas chute shall be used at all times during PTA rail car loading and maintained in working condition such that there are not holes or tears. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515 if the production records are not maintained or the types of materials and finishes are not monitored. No reporting is required.

2. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

- a. Visible emissions from the PTA rail car loading facility (**ID No. PTARAIL**) shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24hour period. In no event shall the six-minute average exceed 87 percent opacity.
- b. Visible emissions from the four DMT flake makers (**ID Nos. L1410A through L1401D**) and the DMT re-melt hopper (**ID No. H1413-22**) shall not be more than 40 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 40 percent not more than once in any hour and not more than four times in any 24hour period. In no event shall the six-minute average exceed 90 percent opacity.

Testing [15A NCAC 2Q .0508(f)]

- c. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of

this test are above the respective limit given in Section 2.1 C.2.a. or b. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521.

Monitoring [15A NCAC 2Q .0508(f)]

- d. To assure compliance, each month the Permittee shall observe the emission point of the source above for any visible emissions above normal. The Permittee shall establish normal for the source's emission point. If visible emissions from this source are observed to be above normal, the Permittee shall either:
- i. Take appropriate action to correct the above normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
 - ii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 2D .2601 (Method 9) for 12 minutes, is below the limit given in Section 2.1 C.2.a. or b. above.
- If the above normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .0521.

Recordkeeping [15A NCAC 2Q .0508(f)]

- e. The results of the monitoring shall be maintained in a logbook (written or electronic format) onsite and made available to an authorized representative upon request. The logbook shall record the following:
- i. The date and time of each recorded action;
 - ii. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
 - iii. The results of any corrective actions performed.
- The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521 if these records are not maintained.

Reporting [15A NCAC 2Q .0508(f)]

- f. The Permittee shall submit a summary report of the observations postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

D. TANKS

Methanol internal floating roof storage tank (ID No. T11).

Reclaimed methanol internal floating roof tank (ID No. T12).

Reclaimed methanol external floating roof tank (ID No. T6012).

Tanks venting to A Line Methanol Recovery Header:

Oxidizer Methanol still feed tank (ID No. T112-7A),

Mother liquor storage tank (ID No. T307),

Methanol purge tank (ID No. T309),

Isomer slurry feed tank (ID No. T417-3), and

Purge evaporator feed tank (ID No. T422-2).

Tanks venting to B Line Methanol Recovery Header:

Mother liquor tank (ID No. T2306),

Mother liquor tank (ID No. T2309),

Mother liquor storage (ID No. T2307), and

Mother liquor storage tank (ID No. T2308).

Tanks venting to C Line Methanol Recovery Header:

Crude Slurry Tank (ID No. T4502),

Pure DMT Slurry Tank (ID No. T4510),

Methanol test tank (ID No. T4301),

Mother liquor tank (ID No. T4306),

Mother liquor tank (ID No. T4309), and

Overhead PTA blend tank (ID No. T4060).

Tanks venting to D Line Methanol Recovery Header:

Methanol test tank (ID No. T6301),

Mother liquor tank (ID No. T6306),

Mother liquor tank (ID No. T6309),

Crude slurry tank (ID No. T6502),

Pure DMT slurry tank (ID No. T6510), and

Oxidizer methanol still feed tank (ID No. T6112-7).

The following table provides a summary of limits and standards for the emission source(s) described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
VOC	Floating roof tank or vapor capture and control required	15A NCAC 2D .0949
HAPs	See Section 2.2.B. "Multiple Emission Sources"	15A NCAC 2D .1111 (40 CFR 63, Subpart G)

1. 15A NCAC 2D .0949: STORAGE OF MISCELLANEOUS VOLATILE ORGANIC COMPOUNDS

- a. The Permittee shall not place, store, or hold in any stationary tank, reservoir, or other container with a capacity greater than 50,000 gallons (189.3 m³), any liquid volatile organic compound that has a vapor pressure of 1.5 pounds per square inch absolute (10.34 kPa) or greater under actual storage conditions unless such tank, reservoir, or other container:
- Is a pressure tank capable of maintaining working pressures sufficient at all times to prevent vapor gas loss into the atmosphere; or
 - Is designed and equipped with one of the following vapor loss control devices:
 - a floating pontoon, double deck type floating roof or internal pan type floating roof equipped with closure seals to enclose any space between the cover's edge and compartment wall; this control equipment shall not be permitted for volatile organic compounds with a vapor pressure of 11.0 pounds per square inch absolute (75.8 kPa) or greater under actual storage conditions; all tank gauging or sampling devices shall be gastight except when tank gauging or sampling is taking place;
 - a vapor recovery system or other equipment or means of air pollution control that reduces the emission of organic materials into the atmosphere by at least 90 percent by weight; all tank gauging or sampling devices shall be gas tight except when tank gauging or sampling is taking place.

Monitoring/Recordkeeping/Reporting [15A NCAC 2Q .0508(f)]

- b. Monitoring, recordkeeping, and reporting requirements for the Hazardous Organic NESHAP (40 CFR 63, Subpart G) are provided in Section 2.2.B. of this permit. Group 1 storage vessel requirements for the surge vessels (**ID Nos. T307, T309, T4060, T6502, T6510, T2309, and T4060**) satisfy the requirements of 15A NCAC 2D .0949.

E. UTILITIES

PTA Steam Generator (202 million Btu per hour heat input; **ID No. B4040**).
 Boiler No. 1 (200 million Btu per hour heat input; **ID No. BLR1**).
 Boiler No. 4 (246 million Btu per hour heat input; **ID No. BLR4**).
 Boiler No. 5 (246 million Btu per hour heat input; **ID No. BLR5**).
 Process Heater No. 3 (140 million Btu per hour heat input; **ID No. HTR3**).
 Process Heater No. 4 (167 million Btu per hour heat input; **ID No. HTR4**).
 Process Heater No. 5 (213 million Btu per hour heat input; **ID No. HTR5**).
 Terate Resin Heater (22 million Btu per hour heat input; **ID No. B7600**).
 Terate Resin Heater (4 million Btu per hour heat input; **ID No. B7602**).

The following table provides a summary of limits and standards for the emission source(s) described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
PM	For the DMT and PTA Production Areas: Particulate emission shall not exceed 0.17 pounds per million Btu heat input. ID Nos. B4040, BLR1, BLR4, BLR5, HTR3, HTR4, and HTR5 For the Terate® Resins Production Area: Particulate emission shall not exceed 0.47 pounds per million Btu heat input. ID Nos. B7600 and B7602	15A NCAC 2D .0503
SO ₂	Sulfur dioxide emissions shall not exceed 2.3 pounds per million Btu heat input.	15A NCAC 2D .0516

Regulated Pollutant	Limits/Standards	Applicable Regulation
Visible Emissions	Visible emissions shall not exceed 20 percent opacity ID Nos. B4040, B7600, BLR4, BLR5, HTR3, HTR4, and HTR5. Visible emissions shall not exceed 40 percent opacity ID Nos. B7602 and BLR1.	15A NCAC 2D .0521
SO ₂	No more than two of the three boilers (ID Nos. BLR1, BLR4, and BLR5) shall operate simultaneously on No. 6 fuel oil. Sulfur dioxide emissions from the process heater (ID No. B4040) shall not exceed 1,152 pounds per any consecutive three-hour period.	15A NCAC 2D .0402
Hazardous Air Pollutants	Section 2.1.E.6 provides emissions standards, monitoring, recordkeeping, and reporting requirements.	15A NCAC 2D .1109
Toxic Air Pollutants	Affected Sources: ID Nos. B4040 and HTR4, only State Enforceable only See Sections 2.2 G.4 and .5 "Multiple Emission Sources"	15A NCAC 2Q .0711 15A NCAC 2D .1100
NO _x , SO ₂ , PM and PM-10	PSD Avoidance Limitations for Boiler No. 1 (ID No. BLR1, only)	15A NCAC 2Q .0317

1. 15A NCAC 2D .0503: PARTICULATES FROM FUEL BURNING INDIRECT HEAT EXCHANGERS

- a. Emissions of particulate matter from the combustion of natural gas, No. 2 and No. 6 fuels, sulfur free organic byproducts, dimethyl ether, biogas, and VOC gas that are discharged from these sources into the atmosphere shall not exceed the following emissions limitations:
 - i. 0.17 lbs/MMBtu for heat exchangers in the DMT and PTA production areas (**ID Nos. B4040, BLR1, BLR4, BLR5, HTR3, HTR4, and HTR5**); and,
 - ii. 0.47 lbs/MMBtu for heat exchangers in the Terate® resins production area (**ID Nos. B7600 and B7602**).

Testing [15A NCAC 2Q .0508(f)]

- b. Except as provided in ii. below, the Permittee shall demonstrate compliance with the emissions limitation in Section 2.1.E.1.a.i. above by testing any one boiler and any one process heater listed in Section 2.1.E.6.e.i.(A) and (B) below in accordance with a testing protocol approved by the DAQ. If required, testing shall be completed and the results submitted within five years of issuance of Permit No. 0164T44 (**Enter Date**) unless an alternate date is approved by the DAQ.
 - i. The Permittee shall fire 100% No. 6 fuel oil during the required testing.
 - ii. No testing shall be required if, prior to the required test date, the Permittee accepts enforceable permit conditions that limit the combustion of No. 6 fuel oil in the affected combustion sources to less than 100% of the heat input capacity on a 24-hour basis.

Additional emissions testing and reporting requirements are provided in Section 3 - General Condition JJ. If the results of any performance stack test required in this condition are above the limit given in Section 2.1.E.1.a.i. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0503.
- c. If any further emissions testing is required, the testing shall be performed in accordance General Condition JJ. If the results of this test are above the limit given in Section 2.1.E.1.a.i. or ii. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0503.

Monitoring/Recordkeeping/Reporting [15A NCAC 2Q .0508(f)]

- d. No monitoring/recordkeeping/reporting is required for particulate emissions from the firing of natural gas, No. 2 fuel oil, sulfur free organic byproducts, dimethyl ether, biogas, and VOC gas in the affected sources.

2. 15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

- a. Emissions of sulfur dioxide from these sources shall not exceed 2.3 pounds per million Btu heat input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard.

Testing [15A NCAC 2Q .0508(f)]

- b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 E.2.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0516.

Monitoring/Recordkeeping [15A NCAC 2Q .0508(f)]

- c. No monitoring/recordkeeping is required for sulfur dioxide emissions from natural gas, No. 2 fuel oil, sulfur free organic byproducts, dimethyl ether, biogas, and VOC gas combusted in these sources.
- d. The maximum sulfur content of No. 6 fuel oil received and burned in the boiler shall not exceed 2.1 percent by weight. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0516 if the sulfur content of the fuel oil exceeds this limit. [15A NCAC 2Q .0508(bb)]
- e. To assure compliance, the Permittee shall monitor the sulfur content of the No. 6 fuel oil by using fuel oil supplier certification per shipment received. The results of the fuel oil supplier certifications shall be recorded in a logbook (written or electronic format) on a quarterly basis and include the following information:
 - i. The name of the fuel oil supplier;
 - ii. The maximum sulfur content of the fuel oil received during the quarter;
 - iii. The method used to determine the maximum sulfur content of the fuel oil; and
 - iv. A certified statement signed by the responsible official that the records of fuel oil supplier certification submitted represent all of the No. 6 fuel oil fired during the period.
 The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0516 if the sulfur content of the oil is not monitored and recorded.

Reporting [15A NCAC 2Q .0508(f)]

- f. The Permittee shall submit a summary report of the fuel oil supplier certifications postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

3. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

- a. Visible emissions from five process heaters (**ID Nos. B4040, B7600, HTR3, HTR4 and HTR5**) and two boilers (**ID Nos. BLR4 and BLR5**) shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24hour period. In no event shall the six-minute average exceed 87 percent opacity.
- b. Visible emissions from the process heater (**ID No. B7602**) and the boiler (**ID No. BLR1**) shall not be more than 40 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 40 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 90 percent opacity.

Testing [15A NCAC 2Q .0508(f)]

- c. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the respective limit given in Section 2.1 E.3.a. or b. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521.

Monitoring [15A NCAC 2Q .0508(f)]

- d. To assure compliance, once a day the Permittee shall observe the emission points of each process heater and boiler when combusting No. 6 fuel oil for any visible emissions above normal. The Permittee shall establish normal for the source's emission point. If visible emissions from this source are observed to be above normal, the Permittee shall either:
 - i. Take appropriate action to correct the above normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
 - ii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 2D .2601 (Method 9) for 12 minutes, is below the limit given in Section 2.1 E.3.a. or b. above.
 If the above normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .0521.
- e. No monitoring/recordkeeping/reporting is required for visible emissions from the firing of natural gas, No. 2 fuel oil, sulfur free organic byproducts, dimethyl ether, biogas, or VOC gas in these sources.

Recordkeeping [15A NCAC 2Q .0508(f)]

- f. The results of the monitoring shall be maintained in a logbook (written or electronic format) onsite and made available

to an authorized representative upon request. The logbook shall record the following:

- i. The date and time of each recorded action;
- ii. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
- iii. The results of any corrective actions performed.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521 if these records are not maintained. However, the Permittee shall be allowed three days of absent observations per semiannual period.

Reporting [15A NCAC 2Q .0508(f)]

- g. The Permittee shall submit a summary report of the observations postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

4. 15A NCAC 2D .0402: NATIONAL AMBIENT AIR QUALITY STANDARDS FOR SULFUR DIOXIDE

- a. The Permittee shall not combust No. 6 fuel oil in more than two of the three boilers (**ID Nos. BLR1, BLR4, or BLR5**) simultaneously.
- b. Sulfur dioxide emissions from the PTA steam generator (**ID No. B4040**) shall not exceed 1,152 lbs when totaled over any consecutive three-hour period.

Monitoring and Recordkeeping [15A NCAC 2Q .0508(f)]

- c. The Permittee shall maintain a record of the periods of operation of each boiler (**ID Nos. BLR1, BLR4, and BLR5**) during No. 6 fuel oil combustion. This record must be available for inspection by the Division of Air Quality.
- d. The Permittee shall continuously monitor and record the fuel oil combusted in, or total hourly heat input to (gross Btu value), the PTA steam generator (**ID No. B4040**) and shall maintain records, in numeric or graphical form, which demonstrate continuous compliance with 2.2 E.4.b. based on fuel use and sulfur content. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0402 if these records are not maintained.

5. 15A NCAC 2Q. 0317: Avoidance Condition for

15A NCAC 2D .0530: PREVENTION OF SIGNIFICANT DETERIORATION AVOIDANCE CONDITION

- a. In order to avoid applicability of 15A NCAC 2D .0530(g), the Boiler No. 1 (**ID No. BLR1**) shall discharge into the atmosphere less than 120.6 tons of nitrogen oxides, 445.3 tons of sulfur dioxide, 53.0 tons of particulate matter and 40.7 tons of PM-10 per consecutive 12-month period.

Testing [15A NCAC 2Q .0508(f)]

- b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ found in Section 3.

Monitoring/Recordkeeping [15A NCAC 2Q .0508(f)]

- c. The Permittee shall keep monthly records in a logbook (written or electronic format) of the amount of each fuel fired and its respective sulfur content. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if the amount of fuel used and its sulfur content are not monitored.
- d. The Permittee shall calculate, each month, the amount of sulfur dioxide, particulate matter, and PM-10 based on the amount of No. 6 fuel oil and natural gas fired in the boiler and US EPA AP-42 emission factors. Emission from the combustion of sulfur free byproduct and nitrogen oxides emissions from No. 6 fuel oil shall use the emission factors tabulated below:

Nitrogen oxides:	40 pounds per 1,000 gallons of No. 6 fuel oil
Nitrogen oxides:	22 pounds per 1,000 gallons of sulfur free byproduct
Particulate matter:	3.22 pounds per 1,000 gallons of sulfur free byproduct
PM10:	2.77 pounds per 1,000 gallons of sulfur free byproduct

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if the above records are not kept or the emissions exceed any of the above limits in Section 2.1 E.5.a.

Reporting [15A NCAC 2Q .0508(f)]

- e. The Permittee shall submit a semiannual summary report postmarked within 30 days after each calendar year half. The reports are to be post marked on or before January 30 of each calendar year for the preceding six-month period between

July and December, and July 30 for the calendar year for the preceding six-month period between January and June. The report shall contain the following:

- i. The monthly emissions of nitrogen oxides, sulfur dioxide, particulate matter, and PM-10 for each of the previous 17 months. The rolling total consecutive 12 month period emissions must be calculated for each of the six months of the calendar half; and
- ii. The monthly quantities of each fuel fired in Boiler No. 1 for each of the 17 months.

6. 15A NCAC 2D .1109: Case-by-Case MACT

- a. The initial compliance date for the emission limitations and associated monitoring, recordkeeping, and reporting requirements listed below is **February 4, 2014**. These conditions need not be included on the annual compliance certification until after the initial compliance date. These limits apply except for periods of startup, shutdown, and malfunction. The Permittee shall follow the procedures in 15A NCAC 2D .0535 for any excess emissions that occur during periods of startup, shutdown, or malfunction.
- b. Combined emissions from the affected boilers and process heaters shall not exceed the emissions limitations tabulated below:

Hazardous Air Pollutant	Hourly Emissions Limitation* (lbs/hr)	12-Calendar Month Rolling Emissions Limitations (lbs/12-months)	
		Limit 1**	Limit 2***
Arsenic	-	25.1	381.6
Beryllium	-	5.3e-01	8.0
Cadmium	-	7.6	121.7
Chromium (VI)	-	18.3	398.1
Lead	-	-	438.0
Manganese	-	-	8,353.9
Nickel	-	19,600.0	271,369.1
Mercury	-	-	88.5
Selenium	-	-	436.4
Acetaldehyde	55.9	1,144.5	1,144.2
Acrolein	52.6	-	1,075.8
Benzo(a)anthracene	-	9.6e-01	-
Benzo(b)fluoranthene	-	4.0e-05	-
Benzo(j)fluoranthene	-	4.0e-05	-
Benzo(k)fluoranthene	-	4.0e-05	-
Benzene	26.9	551.4	551.2
Chrysene	-	5.7e-01	-
Dibenz(a,h)anthracene	-	4.0e-01	-
p-Dichlorobenzene	-	70.2	70.2
Ethylbenzene	-	-	19.8
Formaldehyde	576.4	11,796.5	11,792.9
Hexane	5,143.6	-	105,236.7
Indeno(1,2,3-cd)pyrene	-	5.1e-01	-
Naphthalene	-	355.9	355.8
Toluene	95.4	-	1,952.4
1,1,2-Trichloroethane	-	56.4	56.4
Dioxins/Furans	-	-	2.3e-03

* Hourly emissions limitations are based on an acute, non-cancer risk assessment.

** Annual emissions limitations – Limit 1 are based on a cancer risk assessment.

*** Annual emissions limitations – Limit 2 are based on a chronic, non-cancer risk assessment.

Compliance Testing [15A NCAC 2Q .0508(f)]

- c. No compliance testing is required for:
 - i. The natural gas-fired Terate resin heater (**ID No. B7602**);
 - ii. Organic by-product, dimethyl ether, biogas, and VOC gas firing at any boiler or process heater;
 - iii. Metals from natural gas or No. 2 fuel oil firing at any boiler or process heater (i.e., only organic HAP emissions testing is required for these fuels); and,
 - iv. Affected sources that are not in operation on the initial compliance date. For such sources, initial compliance

testing shall be required within 180 days of the first startup following the initial compliance date.

While no testing is required for the fuels listed above, the Permittee may choose to conduct stack tests to establish fuel-specific emissions factors to be used in monthly compliance demonstrations.

- d. **Compliance Testing for Metals.** Except as provided in Section 2.1 E.6.c. above, the Permittee shall conduct compliance tests for each metal listed in Section 2.1 E.6.b. of this permit. The Permittee may choose either of the following methods for the compliance tests:
- i. **Initial & Periodic Stack Testing.** Stack testing shall be performed in accordance with General Condition JJ in Section 3 of this permit for each affected boiler and process heater. Tests shall not be conducted during periods of malfunction (except as allowed by 15A NCAC 2D .2608), startup, or shutdown. Initial and annual testing is required for residual fuel oil firing, except as provided in (A) through (B) below. Each annual stack test shall be conducted between 11 and 13 calendar months after the previous stack test. Each stack test that is required every 5 years shall be conducted between 57 and 63 calendar months after the previous stack test.
 - (A) Annual testing shall not be required for any affected source that fires less than 10% residual fuel oil on a 12-calendar month rolling average heat input basis. The Permittee shall retain records of the fuels fired in the boilers or process heaters in accordance with Section 2.1 E.6.m. of this permit to demonstrate the heat input from residual oil. If a boiler has been exempt from testing pursuant to this subsection, and subsequently residual fuel oil firing exceeds 10% on a 12-calendar month rolling average heat input basis, performance testing shall be conducted within 90 days of the end of the 12-calendar month period.
 - (B) If a stack test shows that the emission rate of any pollutant is less than or equal to 80 percent of the allowable limit, the stack test frequency for that pollutant shall be reduced to once every five years. To determine whether the test frequency can be reduced to once every 5 years, the tested emission rates will be compared to the allowable annual emission rates by assuming 8,760 hours of operation per year, unless the facility accepts federally-enforceable limits on annual operation. If any subsequent stack test shows that the emission rate of the pollutant is greater than 80 percent of the allowable limit, the Permittee shall perform an annual stack test for that pollutant until the emission rate is detected at less than or equal to 80 percent.
 - ii. **Fuel Analysis.** As an alternative to stack testing, the Permittee may use fuel analyses to demonstrate compliance with any metal emission limitation as described in the monitoring provisions in Section 2.1.E.6.h., i., and j. below.

Where required, the initial stack test shall be conducted within 180 days of the initial compliance date. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1109 if the required stack tests are not conducted, or if the results (except as allowed by 15A NCAC 2D .2608) of any stack test exceed a limit in Section 2.1 E.6.b. of this permit.

- e. **Compliance Testing for Organic HAP.** Except as provided in Section 2.1 E.6.c. above, the Permittee shall conduct stack testing for each organic HAP listed in Section 2.1 E.6.b. of this permit. Stack tests shall be performed in accordance with General Condition JJ. Tests shall not be conducted during periods of malfunction (except as allowed by 15A NCAC 2D .2608), startup, or shutdown.
- i. For each round of testing, the Permittee is only required to test one boiler and one process heater in the lists provided in (A) and (B) below. The test results for the chosen combustion source will be representative of the untested combustion sources in the group.
 - (A) **Boilers: ID Nos. B4040, BLR1, BLR4, and BLR5;**
 - (B) **Process Heaters: ID Nos. HTR3, HTR4, and HTR5.**
 - ii. During testing, the Permittee may burn natural gas, No. 2 fuel oil, or No. 6 fuel oil as the primary fuel. If any combustion source in the affected group is in operation (i.e., not decommissioned or in a long-term shutdown) and capable of dual fuel firing, the Permittee must also fire either organic byproduct, dimethyl ether, VOC gas, or biogas to contribute a portion of the heat input capacity during the test.
 - iii. Initial and annual testing is required, except as provided in (iv) below. Each annual stack test shall be conducted between 11 and 13 calendar months after the previous stack test.
 - iv. If a stack test shows that the emission rate of any pollutant is less than or equal to 80 percent of the allowable limit, the stack test frequency for that pollutant shall be reduced to once every five years. To determine whether the test frequency can be reduced to once every 5 years, the tested emission rates will be compared to the allowable annual emission rates by assuming 8,760 hours of operation per year, unless the facility accepts federally-enforceable limits on annual operation. If any subsequent stack test shows that the emission rate of the pollutant is greater than 80 percent of the allowable limit, the Permittee shall perform an annual stack test for that pollutant until the emission rate is detected at less than or equal to 80 percent. Each stack test that is required every 5 years shall be conducted between 57 and 63 calendar months after the previous stack test.
- The initial stack test shall be conducted within 180 days of the initial compliance date. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1109 if the required stack tests are not conducted, or if the results

(except as allowed by 15A NCAC 2D .2608) of any stack test exceed a limit in Section 2.1 E.6.b. of this permit.

Work Practice Standards [15A NCAC 2Q .0508(f)]

- f. The Permittee shall perform inspection and maintenance of all affected sources as recommended by the manufacturer, or as a minimum, the inspection and maintenance requirement shall include the following:
- i. Inspect the burner, and clean or replace any components of the burner as necessary;
 - ii. Inspect the flame pattern and make any adjustments to the burner necessary to optimize the flame pattern; and,
 - iii. Inspect the system controlling the air-to-fuel ratio and ensure that it is correctly calibrated and functioning properly.
- The Permittee shall conduct the required inspection and maintenance during each maintenance turn-around. The period between the inspections shall not exceed 24 calendar months. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1109 if the boilers or process heaters are not inspected and maintained as required above.
- g. The results of the annual burner inspections and any required maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
- i. The date of each recorded action;
 - ii. The results of each inspection; and,
 - iii. The results of any maintenance performed on the boilers.
- The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1109 if these records are not maintained.

Monitoring Requirements – Fuel Analyses [15A NCAC 2Q .0508(f)]

- h. Where the Permittee utilizes fuel analyses to demonstrate compliance, the Permittee shall either:
- i. Obtain a fuel analysis of each fuel tank after any delivery of oil to the tank and before any oil is combusted to determine the concentration of each affected HAP; or,
 - ii. Obtain a fuel analysis of each shipment of fuel oil delivered to the facility and calculate the average concentration of each affected HAP in the tank from the results of the fuel analysis and data about the material already stored in the tank.
- The results of the fuel analyses shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1109 if the fuel analyses are not conducted or if results of the fuel analyses are not retained as required above.
- i. The Permittee shall maintain monthly records of fuel usage at each affected boiler and process heater. Records of fuel usage shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1109 if the fuel usage records are not created and maintained as described above.
- j. Once per calendar month, the Permittee shall calculate the HAP emission rates from the affected boilers and process heaters using the fuel analysis results and stack test results where fuel analyses are not available. For each affected HAP and each affected combustion source, as required, the Permittee shall calculate:
- i. The average hourly emission rates for the previous calendar month for each pollutant with an hourly limit; and,
 - ii. The total emission rates for the previous 12-calendar month period for each pollutant with a 12-calendar month rolling limit.
- Records of emissions calculations shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1109 if the emissions calculations are not performed and recorded, or if any calculated emission rate exceeds an emissions limitation in Section 2.1 E.6.b. of this permit.

Monitoring Requirements – Stack Testing [15A NCAC 2Q .0508(f)]

- k. Where the Permittee utilizes stack tests to demonstrate compliance, the Permittee shall maintain monthly records of fuel usage at each affected boiler and process heater. Records of fuel usage shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1109 if the fuel usage records are not created and maintained as described above.
- l. Once per calendar month, the Permittee shall calculate the HAP emission rates from the affected boilers and process heaters using the stack test results. For each affected HAP and each affected combustion source, as required, the Permittee shall calculate:
- i. The average hourly emission rates for the previous calendar month for each pollutant with an hourly limit; and,
 - ii. The total emission rates for the previous 12-calendar month period for each pollutant with a 12-calendar month

rolling limit.

Records of emissions calculations shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1109 if the emissions calculations are not performed and recorded, or if any calculated emission rate exceeds an emissions limitation in Section 2.1 E.6.b. of this permit.

Recordkeeping [15A NCAC 2Q .0508(f)]

- m. If the Permittee limits residual fuel oil firing to less than 10% on an annual average heat input basis as provided in Section 2.1.E.d.i.(A) above, it shall create and retain the following records once per calendar month:
 - i. Record the fuel use by each affected source, including the type(s) of fuel and amount(s) used, during the previous calendar month; and,
 - ii. Calculate the annual average heat input from residual fuel oil for each affected source during the previous 12-month period.

The Permittee shall be deemed in non-compliance with 15A NCAC 2D .1109 if it fails to comply with the recordkeeping requirements.

Reporting [15A NCAC 2Q .0508(f)]

- n. **Notification of Compliance Status.** The Permittee must submit a Notification of Compliance Status that meets the requirements of 40 CFR 63.9(h)(2)(ii) no later than the 60th day following the completion of the final required performance test and/or other initial compliance demonstration. The Notification of Compliance Status report must contain the following information, as applicable:
 - i. A description of the affected source(s) including identification of which subcategory the source is in, the capacity of the source, a description of the add-on controls used on the source description of the fuel(s) burned, and justification for the fuel(s) burned during the performance test.
 - ii. Summary of the results of all performance tests and calculations conducted to demonstrate initial compliance.
 - iii. A certification signed by the Responsible Official that the facility has met all applicable emission limits and work practice standards.
- o. **Semiannual Summary Report.** The Permittee shall submit a summary report by January 30 of each calendar year for the preceding six-month period between July and December, and July 30 of each calendar year for the preceding six-month period between January and June. The first summary report shall be required on July 30, 2014. The report shall include the following:
 - i. Company name and address;
 - ii. Statement by a responsible official with that official’s name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report;
 - iii. Date of report and beginning and ending dates of the reporting period;
 - iv. A summary of the results of the annual performance tests;
 - v. Signed statement indicating that no new types of fuel were fired in the affected sources.

F. UTILITIES

Liquid Waste Incinerator (ID No. TO)

The following table provides a summary of limits and standards for the emission source(s) described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
SO ₂	Sulfur dioxide emission shall not exceed 2.3 pounds per million Btu heat input.	15A NCAC 2D .0516 15A NCAC 2D .1208(b)(4)
Visible emissions	Visible emissions shall not exceed 20 percent opacity	15A NCAC 2D .0521 15A NCAC 2D .1208(b)(3)
Various as stated under Limits/Standards	Particulate emissions shall not exceed 4.0 pounds per hour. Hydrogen chloride emissions shall not exceed 1.12 pounds per hour. [4.0 pounds per hour limit of 2D .1208(b)(6) is superseded by 2D .1208(b)(8)] [State Enforceable only] Mercury emissions shall not exceed 0.013 pounds per day.	15A NCAC 2D .1208

Regulated Pollutant	Limits/Standards	Applicable Regulation
	[0.032 pounds per hour limit of 2D .1208(b)(7) is superseded by 2D .1208(b)(8)] [State Enforceable only] Combustion chamber temperature shall not be less than 1800 degrees F and gaseous residence time shall not be less than one second. [State Enforceable only] Wastewater shall not be introduced to the incinerator when the combustion chamber temperature is less than 1800 degrees F. [State Enforceable only]	
Toxic Air Pollutants	State Enforceable only See Sections 2.2 G.4 and .5 "Multiple Emission Sources"	15A NCAC 2Q .0711 15A NCAC 2D .1100
Odor	State Enforceable only See Section 2.2 G.3 "Multiple Emission Sources"	15A NCAC 2D .1806

1. 15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

15A NCAC 2D .1208(b)(4): OTHER INCINERATORS

- a. Emissions of sulfur dioxide from this source shall not exceed 2.3 pounds per million Btu heat input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard.

Testing [15A NCAC 2Q .0508(f)]

- b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 F.1.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0516 and 2D .1208.

Monitoring/Recordkeeping [15A NCAC 2Q .0508(f)]

- c. No monitoring/recordkeeping is required for sulfur dioxide emissions from natural gas, No. 2 fuel oil, or sulfur free wastewater combusted in this source.
- d. The maximum sulfur content of No. 6 fuel oil received and burned in the liquid waste incinerator shall not exceed 2.1 percent by weight. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0516 if the sulfur content of the fuel oil exceeds this limit. [15A NCAC 2Q .0508(bb)]
- e. To assure compliance, the Permittee shall monitor the sulfur content of the No. 6 fuel oil by using fuel oil supplier certification per shipment received. The results of the fuel oil supplier certifications shall be recorded in a logbook (written or electronic format) on a quarterly basis and include the following information:
- The name of the fuel oil supplier;
 - The maximum sulfur content of the fuel oil received during the quarter;
 - The method used to determine the maximum sulfur content of the fuel oil; and
 - A certified statement signed by the responsible official that the records of fuel oil supplier certification submitted represent all of the No. 6 fuel oil fired during the period.
- The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0516 and 2D .1208 if the sulfur content of the oil is not monitored and recorded.

Reporting [15A NCAC 2Q .0508(f)]

- f. The Permittee shall submit a summary report of the fuel oil supplier certifications postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. The summary report required in Section 2.1 E.2.f. of this permit will satisfy this requirement, provided it includes fuel oil supplier certifications of all fuel oil fired at the affected liquid waste incinerator. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

15A NCAC 2D .1208(b)(3): OTHER INCINERATORS

- a. Visible emissions from the wastewater incinerator (**ID No. TO**) shall not be more than 20 percent opacity when

averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 2Q .0508(f)]

- b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the respective limit given in Section 2.1 F.2.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521 and 2D .1208.

Monitoring [15A NCAC 2Q .0508(f)]

- c. To assure compliance, once a day the Permittee shall observe the emission points of the wastewater incinerator when combusting No. 6 fuel oil for any visible emissions above normal. The Permittee shall establish normal for the source's emission point. If visible emissions from this source are observed to be above normal, the Permittee shall either:
- i. Take appropriate action to correct the above normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
 - ii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 2D .2601 (Method 9) for 12 minutes is below the limit given in Section 2.1 F.2.a. above.
- If the above normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .0521 and 2D .1208.
- d. No monitoring/recordkeeping/reporting is required for visible emissions from the firing of natural gas, No. 2 fuel oil, or sulfur free wastewater in this source.

Recordkeeping [15A NCAC 2Q .0508(f)]

- e. The results of the monitoring shall be maintained in a logbook (written or electronic format) onsite and made available to an authorized representative upon request. The logbook shall record the following:
- i. The date and time of each recorded action;
 - ii. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
 - iii. The results of any corrective actions performed.
- The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521 if these records are not maintained.

Reporting [15A NCAC 2Q .0508(f)]

- f. The Permittee shall submit a summary report of the observations postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

3. 15A NCAC 2D .1208: OTHER INCINERATORS

- a. The allowable particulate emission rate shall not exceed 4.0 pounds per hour (three-hour block period average).
- b. Combustion gases shall maintain a minimum temperature of 1,800 degrees F for a period of not less than one second. The temperature of 1,800 °F shall be maintained at least 55 minutes out of each 60-minute period but at no time shall the temperature go below 1,600 °F. **State Enforceable only**
- c. Except during startup where the procedure has been approved according to 15A NCAC 2D .0535(g), wastewater shall not be charged to the incinerator when the temperature is below the minimum required temperature. The incinerator shall have automatic auxiliary burners that are capable of maintaining the required minimum temperature in the secondary chamber excluding the heat content of the wastes. **State Enforceable only**

Testing [15A NCAC 2Q .0508(f)]

- d. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .1208(d) and General Condition JJ. If the results of any test are above the respective limit determined in accordance with 15A NCAC 2D .1208, the Permittee shall be deemed in noncompliance with the applicable emission limit.

STATE-ENFORCEABLE ONLY

Monitoring [15A NCAC 2Q .0508(f)]

- e. The Permittee shall maintain and operate a continuous temperature monitoring and recording device for the primary chamber and, where there is a secondary chamber, for the secondary chamber.
- f. The Permittee shall install, operate, and maintain a continuous monitor for oxygen or carbon monoxide or both as necessary to determine proper operation of the incinerator. To assure proper operation, the Permittee shall establish a

range of oxygen and/or carbon monoxide levels in the flue gas during wastewater charging that represent proper incinerator operation. Documentation of these proper operating ranges shall be maintained on site and made available to the DAQ on request. The Permittee shall check these levels for each established feed rate of wastewater introduced to the incinerator. If abnormal levels are observed during incineration, the Permittee shall either alter the combustion parameters to establish the proper operating level of oxygen and or carbon monoxide or discontinue the incineration of the wastewater feed within four hours.

- g. The Permittee shall not be required to monitor during a period of monitoring system malfunction or report emissions during a period of monitoring system malfunction if the Permittee shows to the DAQ that: the malfunction was unavoidable, is being repaired as expeditiously as practicable, and no applicable requirements are violated. The Permittee shall provide the DAQ documentation of continuous monitoring system performance when system repairs or adjustments have been made upon request. Malfunctions of the monitoring system that result from inadequate or poor operation and maintenance practices shall not be exempted.
- h. The Permittee of a source that operates less than 30 days per 12month period shall not be required to monitor emissions from that source. However, the Permittee shall maintain records to document that the source is operated less than 30 days per 12month period.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1208 if the above monitoring requirements are not met.

Recordkeeping [15A NCAC 2Q .0508(f)]

- i. Records of combustion chamber temperature during wastewater charging shall be maintained onsite and made available to the DAQ upon request.
- j. The Permittee shall record all periods of incinerator operation that occurred from more than four hours outside of the established oxygen and/or carbon monoxide established proper operating range(s). These records shall be made available to the DAQ upon request.

Reporting [15A NCAC 2Q .0508(f)]

- k. The Permittee shall submit a summary report of the any periods of malfunction of continuous combustion parameter monitors or the incinerator, periods when the combustion temperature was less than the required temperature when wastewater was being charged, and periods when the proper operating levels of oxygen and/or carbon monoxide were outside of the established operating ranges from more than four hours during wastewater charging. The reports shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2.2 - Multiple Emission Source(s) Specific Limitations and Conditions

A. Group 1 Process Vents

A line Methanol Recovery Header (ID No. VS520) and Denoted Group 1 Process Vent Sources

B line Methanol Recovery Header (ID No. VS2520) and Denoted Group 1 Process Vent Sources

C line Methanol Recovery Header (ID No. VS4520) and Denoted Group 1 Process Vent Sources

D line Methanol Recovery Header (ID No. VS6520) and Denoted Group 1 Process Vent Sources

Group 2 Process Vents: TRE Index Value >1.0 and ≤4.0

A line Oxidizer Header (ID No. AOXHEAD)

B line Oxidizer Header (ID No. BOXHEAD)

Group 2 Process Vents: TRE Index Value > 4.0

C line Air Oxidation Reactors and separator tank (ID No. R4100/R4100B/T4100-5)

D line Air Oxidation Reactors and separator tank (ID No. R6100/R6100B/T6100-5)

The following table provides a summary of limits and standards for the emission source(s) describe above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
HAPs	<u>Group 1 Process Vents</u> HAP emissions will be reduced by 98 percent by weight or to 20 ppmv, whichever is less stringent, by introducing the vent stream to the flame zone of Process Heater No. 4 (ID No. HTR4)	15A NCAC 2D .1111 (40 CFR 63, Subpart G) Group 1 process vents 40 CFR 63.113(a)(2)
HAPs	<u>Group 1 Process Vents</u> HAP emissions shall be reduced by using a flare (ID No. G4904R)	15A NCAC 2D .1111 (40 CFR 63, Subpart G) Group 1 process vents 40 CFR 63.113(a)(1)
HAPs	<u>Group 2 Process Vents [TRE Index Value >1.0 and ≤ 4.0]</u> The total resource effectiveness (TRE) index value of the process vent shall be maintained at a value greater than 1.0.	15A NCAC 2D .1111 (40 CFR 63, Subpart G) Group 2 process vents 40 CFR 63.113(d)
HAPs	<u>Group 2 Process Vents with TRE > 4</u> The total resource effectiveness (TRE) index value of the process vent shall be maintained at a value greater than 4.0.	15A NCAC 2D .1111 (40 CFR 63, Subpart G) Group 2 process vents 40 CFR 63.113(e)
Odor	State Enforceable only See Section 2.2 G.3 "Multiple Emission Sources"	15A NCAC 2D .1806
Toxic Air Pollutants	State Enforceable only See Sections 2.2 G.4 and .5 "Multiple Emission Sources"	15A NCAC 2Q .0711 15A NCAC 2D .1100

1. 15A NCAC 2D .1111: MACT (40 CFR 63, Subpart G, "HON") for Group 1 Process Vents

- a. The Permittee shall control emissions of total organic HAP from the Group 1 process vents (ID Nos. VS520, VS2520, VS4520, and VS6520) to one of the following control standards by introducing the vent streams from the methanol headers into:
 - i. The flame zone of Process Heater No. 4 (ID No. HTR4); and/or,
 - ii. Reduce emissions of organic HAP using a flare (ID No. G4904R) that complies with the requirements of 40 CFR 63.11(b).

The process heater and/or flare shall control emissions from the vent headers at all times except as provided in the start up, shut down and malfunction plan. [40 CFR 63.113(a)(1)-(2), 40 CFR 63.113(b)]

Monitoring/Recordkeeping [15A NCAC 2Q .0508(f)]

- b. No monitoring or recordkeeping is required for Process Heater No. 4 (ID No. HTR4). [40 CFR 63.114(a)(3)]

- c. The flare (**ID No. G4904R**) shall be equipped with a thermocouple to continuously monitor and record the presence of a pilot flame. To demonstrate compliance with this requirement, the Permittee shall maintain the following records:
 - i. Continuous records of thermocouple data to demonstrate operation of the monitoring device. A “continuous record” is documentation (either hard copy or electronic format) of data values measured at least once every 15 minutes and recorded at a frequency specified in 40 CFR 63.152(f) or (g);
 - ii. Hourly records of whether the pilot flame was continuously present during each hour, as demonstrated by thermocouple data; and, [40 CFR 63.118(a)(1)]
 - iii. A record or the times and durations of all periods when all pilot flames at the flare are absent or the monitor is not operating. [40 CFR 63.118(a)(1)-(2)]

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if the flare is not monitored as provided above. [40 CFR 63.114(a)(2)]

- d. The flare shall meet the general requirement provided in 40 CFR 63, Subpart A, [40 CFR 63.11(b)] as follows:
 - i. The flare shall be operated at all times when emissions may be vented to it.
 - ii. Flares shall be designed for and operated with no visible emissions, except for periods not to exceed a total of five minutes during any two consecutive hours. If visible emissions testing is required, Method 22 in Appendix A of 40 CFR 60 shall be used to determine compliance. The observation period is two hours and shall be used according to Method 22.
 - iii. The Permittee shall adhere to either:
 - A. The heat content specifications in 40 CFR 63.11(b)(6)(ii) and the maximum tip velocity specifications in 40 CFR 63.11(b)(7) or (8); or,
 - B. The design and exit velocity requirements in 40 CFR 63.11(b)(6)(i).

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if the flare does not meet the requirements listed above.

Reporting [15A NCAC 2Q .0508(f)]

- e. The Permittee shall submit Periodic Reports postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. For the Group 1 Process Vents, the report shall include the following information:
 - i. For each excursion caused by insufficient monitoring data, as defined below, the duration of periods when monitoring data at the flare is not collected. An excursion is:
 - A. When the period of flare operation is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data for at least 75 percent of the operating hours.
 - B. When the period of flare operation is less than 4 hours in an operating day and more than one of the hours during the period of operation does not constitute a valid hour of data due to insufficient monitoring data.
 - ii. The times and durations of all periods when all pilots flames of the flare are absent. [40 CFR 63.118(f)]

2. 15A NCAC 2D .1111: MACT (40 CFR 63, Subpart G, “HON”) for Group 2 Process Vents with TRE > 4.0

- a. Group 2 Process Vents with a TRE index value greater than 4.0 (**ID Nos. R4100/R4100B/T4100-5 and R6100/R6100B/T6100-5**) shall maintain a TRE index value greater than 4.0. [40 CFR 63.113(e)]

Recordkeeping [15A NCAC 2Q .0508(f)]

- b. The Permittee shall maintain records, measurements, engineering assessments, and calculations performed to determine the TRE index value of the vent stream. Documentation of engineering assessments shall include all data, assumptions, and procedures used for the engineering assessments, as specified in 40 CFR 63.115(d)(1). The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if the required records are not retained. [40 CFR 63.117(b)]
- c. The Permittee shall keep up-to-date, readily accessible records of any process changes as defined in 40 CFR 63.115(e), including changes in production capacity, production rate, feedstock type, or catalyst type, or the replacement, removal, or addition of recovery equipment, and any recalculation of the TRE index value. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if the required records are not retained. [40 CFR 63.118(c)]

Testing [15A NCAC 2Q .0508(f)]

- d. Following installation and startup of the new C line oxidizer (**ID No. R4100B**) and the modified carbon adsorption system (**ID No. R4102**) and following installation and startup of the new D line oxidizer (**ID No. R6100B**) and modified carbon adsorption system (**ID No. R6102**), the Permittee shall measure and calculate the vent stream flow rate, net heating value, TOC emission rate, and total organic HAP emission rate of the C line and D line vent

streams, respectively, in accordance with the procedures provided in 40 CFR 63.115(d)(2) for each of the available operating scenarios at the carbon adsorptions systems, as follows:

- i. Two beds operating in parallel;
- ii. Two beds operating in series; and,
- iii. One bed operating.

The measured results shall be used to recalculate the TRE index value, as required in Section 2.2.A.2.e. below. If the TRE index value is no longer greater than 4.0 in any operating scenario, the Permittee shall submit a report within 180 calendar days after the process change as required in Section 2.2.A.2.e. below. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if the required TRE testing is not conducted in accordance with the requirements provided above.

Process Changes, TRE Determinations, and Reporting Requirements [15A NCAC 2Q .0508(f)]

- e. The Permittee shall recalculate the TRE index value, flow, or organic HAP concentration for each process vent, as necessary, to determine whether the vent is Group 1 or Group 2, whenever process changes are made that could reasonably be expected to change the vent to a Group 1 vent. Examples of process changes include, but are not limited to, changes in production capacity, production rate, feedstock type, or catalyst type, or whenever there is a replacement, removal, or addition of recovery equipment.
 - i. The recalculation shall be based on the procedures provided in 40 CFR 63.115(a), (b), (c), and (d), as applicable, or on best engineering assessments that meet the specifications in 40 CFR 63.115(d)(1).
 - ii. Where the recalculated TRE index value is no longer greater 4.0, the Permittee shall submit a report within 180 calendar days after the process change as specified in 40 CFR 63.118(g) or (h) and shall comply with the appropriate provisions in 40 CFR 63.113 by the dates specified in 40 CFR 63.100.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if the required TRE determinations are not conducted in accordance with the requirements provided above. [40 CFR 63.117(b)]

3. 15A NCAC 2D .1111: MACT (40 CFR 63, Subpart G, “HON”) for Group 2 Process Vents with TRE >1.0 and ≤4.0

- a. Group 2 Process Vents with a TRE index value greater than 1.0 and less or equal to 4.0 (**ID Nos. AOXHEAD and BOXHEAD**) shall maintain a TRE index value greater than 1.0. [40 CFR 63.113(d)]

Operating Standards [15A NCAC 2Q .0508(f)]

- b. To ensure proper operation of the affected carbon adsorption systems (**ID Nos. A102A, A102B, A2102A and A2102B**), the Permittee shall maintain the monitoring parameters within the operating ranges listed below or as specified in the most recent monitoring plan submitted to and approved by DAQ that ensure TRE > 1.0:
 - i. The minimum regeneration stream mass flow is 5,100 pounds per regeneration cycle; and,
 - ii. The maximum carbon bed temperature is less than or equal to 50 °C during each adsorption cycle.

[40 CFR 63.114(e)]

Monitoring [15A NCAC 2Q .0508(f)]

- c. The Permittee shall install, calibrate, and maintain the following monitoring equipment on each affected carbon adsorption system according to the manufacturer’s specifications or other written procedures that provide adequate assurance that the equipment would reasonable be expected to monitor accurately:
 - i. An integrating regeneration stream flow monitoring device having an accuracy of ±10 percent or better, capable of recording the total regeneration stream mass flow for each regeneration cycle.
 - ii. A carbon bed temperature monitoring device that records the carbon bed temperature during each adsorption cycle.

The Permittee shall be deemed in non-compliance with 15A NCAC 2D .1111 if the required monitoring equipment is not installed, calibrated, and maintained as required above. [40 CFR 63.114(b)(3)]

Recordkeeping [15A NCAC 2Q .0508(f)]

- d. The Permittee shall maintain the following records onsite in a logbook (written or electronic format) on-site and made available to an authorized representative upon request:
 - i. The total regeneration stream mass flow for each carbon bed regeneration cycle; and,
 - ii. The temperature of the carbon bed after each regeneration cycle.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if these records are not maintained. [40 CFR 63.117(a)(7)(i), 40 CFR 63.118(b)]
- e. The Permittee shall maintain records, measurements, engineering assessments, and calculations performed to determine the TRE index value of the vent stream. Documentation of engineering assessments shall include all data, assumptions, and procedures used for the engineering assessments, as specified in 40 CFR 63.115(d)(1). The

Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if the required records are not retained. [40 CFR 63.117(a)(7)(ii), 40 CFR 63.118(c)(2)]

- f. The Permittee shall keep up-to-date, readily accessible records of any process changes as defined in 40 CFR 63.115(e), including changes in production capacity, production rate, feedstock type, or catalyst type, or the replacement, removal, or addition of recovery equipment, and any recalculation of the TRE index value. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if the required records are not retained. [40 CFR 63.118(c)(1)]

Reporting [15A NCAC 2Q .0508(f)]

- g. The Permittee shall submit Periodic Reports postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. For Group 2 Process Vents with a TRE index value greater than 1.0 and less or equal to 4.0, the report shall include the following information:
- i. All carbon bed regeneration cycles when the total regeneration stream mass flow is outside the range provided in Section 2.2. A.3.b.i. above.
 - ii. All carbon bed regeneration cycles when the temperature of the carbon bed after regeneration is outside the range provided in Section 2.2. A.3.b.ii. above.
 - iii. All carbon bed absorption cycles when the temperature of the carbon bed is outside the range provided in Section 2.2. A.3.b.iii. above.
 - iv. All instances of deviations from the requirements of this permit must be clearly identified.

Process Changes, TRE Determinations, and Reporting Requirements [15A NCAC 2Q .0508(f)]

- h. The Permittee shall recalculate the TRE index value, flow, or organic HAP concentration for each process vent, as necessary, to determine whether the vent is Group 1 or Group 2, whenever process changes are made that could reasonably be expected to change the vent to a Group 1 vent. Examples of process changes include, but are not limited to, changes in production capacity, production rate, feedstock type, or catalyst type, or whenever there is a replacement, removal, or addition of recovery equipment.
- i. The recalculation shall be based on the procedures provided in 40 CFR 63.115(a), (b), (c), and (d), as applicable, or on best engineering assessments that meet the specifications in 40 CFR 63.115(d)(1).
 - ii. Where the recalculated TRE index value continues to be less than or equal to 4.0 but greater than 1.0, the next Periodic Report shall include:
 - A. The total regeneration stream mass or volumetric flow during each carbon bed regeneration cycle and the temperature of the carbon bed after each regeneration during the period of the TRE determination; and,
 - B. The measurements and calculations performed to determine the TRE index value of the vent stream.
 - iii. Where the recalculated TRE index value is no longer less than or equal to 4.0 but greater than 1.0 the Permittee shall submit a report within 180 calendar days after the process change as specified in 40 CFR 63.118(g) and shall comply with the appropriate provisions in 40 CFR 63.113 by the dates specified in 40 CFR 63.100.
- The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if the required TRE determinations are conducted in accordance with the requirements provided above. [40 CFR 63.117(a)(3)]

B. Group 1 Fixed Roof Storage Vessels with Closed Vent Systems and Control

A Line Methanol Recovery Header Tank ID Nos. T112-7A, T301-B, T307, T415, T422-2, T417-3, and T419.

B Line Methanol Recovery Header Tank ID Nos. T2301A, T2301B, T2306, T2307, T2308, and T2309.

C Line Methanol Recovery Header Tank ID Nos. T4502, T4504, T4510, T4511, T4301, T4306, and T4309.

D Line Methanol Recovery Header Tank ID Nos. T6301, T6306, T6309, T6502, T6504, T6510, T6511, and T6112-7.

Group 1 Storage Vessels with Internal Floating Roofs

Reclaimed methanol tanks (ID Nos. T11 and T12)

Group 1 Storage Vessels with External Floating Roofs

Reclaimed methanol tank (ID No. T6012)

Group 2 Storage Vessels

Methanol storage tank (ID No. T310-A)

Reclaim methanol test tank (ID No. T310-B)

Xylene storage tanks (ID Nos. T10, T6013, and T14)

Glycol storage tanks (ID Nos. T301A, T306, T2068, and T509)

Methyl phthalate ester storage tank (ID No. T6421)

The following table provides a summary of limits and standards for the emission source(s) describe above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
HAPs	<u>Group 1 Fixed Roof Storage Vessels with Closed Vent Systems and Control</u> HAP emissions will be reduced by 95 percent or greater by introducing the vent stream to the flame zone of process heater No. 4 (ID No. HTR4)	15A NCAC 2D .1111 (40 CFR 63, Subpart G) Group 1 storage vessels 40 CFR 63.119(e)
HAPs	<u>Group 1 Fixed Roof Storage Vessels with Closed Vent Systems and Control</u> HAP emissions shall be reduced by using a flare (ID No. G4904R)	15A NCAC 2D .1111 (40 CFR 63, Subpart G) Group 1 storage vessels 40 CFR 63.119(e)(1)
HAPs	<u>Group 1 Storage Vessels</u> Internal Floating Roof	15A NCAC 2D .1111 (40 CFR 63, Subpart G) Group 1 storage vessels 40 CFR 63.119(b)
HAPs	<u>Group 1 Storage Vessels</u> External Floating Roof	15A NCAC 2D .1111 (40 CFR 63, Subpart G) Group 1 storage vessels 40 CFR 63.119(c)
HAPs	<u>Group 2 Storage Vessels</u> Recordkeeping only	15A NCAC 2D .1111 (40 CFR 63, Subpart G) Group 2 storage vessels 40 CFR 63.119(a)(3)
Odor	State Enforceable only See Section 2.2 G.3 "Multiple Emission Sources"	15A NCAC 2D .1806
Toxic Air Pollutants	State Enforceable only See Sections 2.2 G.4 and .5 "Multiple Emission Sources"	15A NCAC 2Q .0711 15A NCAC 2D .1100

1. **15A NCAC 2D .1111 [40 CFR 63.119]: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY**
Group 1 Fixed Roof Storage Vessels with Closed Vent Systems and Control
 - a. **40 CFR 63.119(e)(1):** The Permittee shall reduce emissions of total organic hazardous air pollutants from the Group 1 storage vessels by 95 weight percent or greater through combustion in the No. 4 process heater (167 million Btu per hour heat input; **ID No. HTR4**) in accordance with the more stringent provisions for Group 1 Process Vents of Section 2.2 A.1.
 - b. The flare for Group 1 Process Vents (Section 2.2 A.1) will be employed when emissions are not vented to the No. 4 process heater in lieu of provisions of 40 CFR 63.119(e)(3) and (4) during periods of planned routine maintenance.
 - c. **40 CFR 63.120(d)(7):** Each Group 1 fixed roof storage vessel vented to any methanol recovery header (A line, B line, C line, or D line) shall be maintained under negative pressure and is exempt from the leak inspection detection provisions of 40 CFR 63.148.
 - d. Monitoring provisions of 40 CFR 63.120(d)(2), (3), and (5) and recordkeeping and reporting requirements of 40 CFR 63.122(b), (c), (g), and 40 CFR 63.123(f) are fulfilled through the control, monitoring, recordkeeping, and reporting requirements for Group 1 process vents under Section 2.2 A.1.
 - e. **40 CFR 63.123(a) - Recordkeeping Requirements.** The Permittee shall keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel.

2. **15A NCAC 2D .1111 [40 CFR 63.119]: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY**
Group 1 - Fixed Roof Storage Vessels with Closed Vent Systems and Control Flare Requirements
 - a. **40 CFR 63.119(e)(1):** The Permittee shall reduce emissions of organic HAP using a flare which complies with the requirements of 40 CFR 63.11(b) [See requirements for the flare for Group 1 Process Vents (Section 2.2 A.1.)].
 - b. The process heater No. 4 shall be used to reduce emissions of organic HAP (Section 2.2 A.1) when the flare is not being used in lieu of provisions of 40 CFR 63.119(e)(3) and (4).
 - c. **40 CFR 63.120(e)(6):** Each Group 1 storage vessel vented to any methanol recovery header (A line, B line, C line, D line) shall be maintained under negative pressure and is exempt from the leak inspection provisions of 40 CFR 63.148.
 - d. Monitoring provisions of 40 CFR 63.120(e)(3) and (4) and recordkeeping and reporting requirements of 40 CFR 63.122(b), (c), (g), and 40 CFR 63.123(f) are fulfilled through the control, monitoring, recordkeeping, and reporting requirements for Group 1 process vents under Section 2.2 A.1.
 - e. **40 CFR 63.123(a) Recordkeeping Requirements.** The Permittee shall keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel.

3. **15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY**
Group 1 Storage Vessels with Internal Floating Roofs
40 CFR 63.119(b) Requirements
 - a. The internal floating roof (i.e., a cover that rests or floats on the liquid surface, but not necessarily in complete contact with it, inside a storage vessel that has a permanently affixed roof) shall be floating on the liquid surface at all times except when the floating roof must be supported by the leg supports:
 - i. During the initial fill,
 - ii. After the vessel has been completely emptied and degassed, or
 - iii. When the vessel is completely emptied before being subsequently refilled.
 - b. When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as soon as practical.
 - c. Each internal floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge that shall consist of one of the following devices:
 - i. A liquid-mounted seal (i.e., a foam or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof which is mounted continuously around the circumference of the vessel or unit),
 - ii. A metallic shoe seal (i.e., metal sheets that are held vertically against the wall of the storage vessel by springs, weighted levers, or other mechanisms and connected to the floating roof by braces or other means which has a flexible coated fabric enveloping or spanning the annular space between the metal sheet and the floating roof), or
 - iii. Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. [The lower seal may be vapor mounted, but both must be continuous seals.]

If the internal floating roof is equipped with a vapor-mounted seal as of December 31, 1992, the seal requirements specified above do not apply until the next time the storage vessel is emptied and degassed but not later than 10 years after April 22, 1994.

- d. Automatic bleeder vents are to be closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the roof leg supports.
- e. Each internal floating roof shall meet the following specifications:
 - i. Each opening in a non-contact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and rim space vents is to provide a projection below the liquid surface,
 - ii. Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains shall be equipped with a cover, equipped with a gasket, or lid,
 - iii. Each penetration of the internal floating roof for the purposes of sampling shall be a sample well with a slit fabric cover that covers at least 90 percent of the opening,
 - iv. Each automatic bleeder vent shall be gasketed,
 - v. Each rim space vent shall be gasketed,
 - vi. Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover, and
 - vii. Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

If the internal floating roof does not meet any one of the above specifications as of December 31, 1992, the requirement for meeting these specifications does not apply until the next time the storage vessel is emptied and degassed but not later than 10 years after April 22, 1994.
- f. Each cover or lid on any opening in the internal floating roof shall be closed (i.e., no visible gaps), except when the cover or lid must be open for access.
- g. Covers on each access hatch and each gauge float well shall be bolted or fastened so as to be airtight when they are closed.
- h. Rim space vents are to be set to open only when the internal floating roof is not floating or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

40 CFR 63.120(a) Compliance Provisions

- i. The Permittee shall visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), according to the schedule specified below.
 - i. For vessels equipped with a single seal system, the Permittee shall:
 - (A) Visually inspect the internal floating roof and the seal through manholes and roof hatches on the fixed roof at least once every 12 months, and
 - (B) Visually inspect the internal floating roof, the seal, gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied and degassed, and at least once every 10 years after April 22, 1997.
 - ii. For vessels equipped with a double seal system, the Permittee shall perform either the inspection in (A) below or both the inspections in (B) and (C) below.
 - (A) Visually inspect the internal floating roof, the primary seal, the secondary seal, gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied and degassed and at least once every five years after April 22, 1997; or
 - (B) Visually inspect the internal floating roof and the secondary seal through manholes and roof hatches on the fixed roof at least once every 12 months, and
 - (C) Visually inspect the internal floating roof, the primary seal, the secondary seal, gaskets, slotted membranes, and sleeve seals (if any) each time the vessel is emptied and degassed and at least once every 10 years after April 22, 2007.
- j. If during the inspections required above, the internal floating roof is not resting on the surface of the liquid inside the storage vessel and is not resting on the leg supports; or there is liquid on the floating roof; or the seal is detached; or there are holes or tears in the seal fabric; or there are visible gaps between the seal and the wall of the storage vessel, the Permittee shall repair the items or empty and remove the storage vessel from service within 45 calendar days. If a failure that is detected during inspections cannot be repaired within 45 calendar days and if the vessel cannot be emptied within 45 calendar days, the Permittee may utilize up to two extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include a description of the failure, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical.
- k. The Permittee shall notify the DAQ in writing at least 30 calendar days prior to the refilling of each storage vessel to afford the DAQ the opportunity to have an observer present for all inspections. However, if the inspection is not planned and the Permittee could not have known about the inspection 30 calendar days in advance of refilling the vessel, the Permittee shall notify the DAQ at least seven calendar days prior to the refilling of the storage vessel. Notification may be made by telephone and immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, the notification including the written documentation may be made in writing and sent so that it

is received by the DAQ at least seven calendar days prior to refilling.

- l. If during the inspections, the internal floating roof has defects; or the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area, the Permittee shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with organic HAP.

40 CFR 63.123 Recordkeeping Requirements

- m. The Permittee shall keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel.
- n. The Permittee shall keep a record that each inspection was performed.

40 CFR 63.122 Reporting Requirements

- o. Annual Inspection Reporting Requirements. The Permittee shall submit the results of each annual inspection (as applicable) in which a failure is detected. A failure is defined as any time in which the internal floating roof is not resting on the surface of the liquid inside the storage vessel and is not resting on the leg supports; or there is liquid on the floating roof; or the seal is detached from the internal floating roof; or there are holes, tears, or other openings in the seal or seal fabric; or there are visible gaps between the seal and the wall of the storage vessel. The report shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The report shall also describe the nature of and date the repair was made or the date the storage vessel was emptied. If it was determined that a time extension was necessary for repair, the Permittee shall identify the vessel; document the determination that the time extension was necessary; and describe the date the storage vessel was emptied and the nature of and date the repair was made in the next report.
- p. Five and Ten Year Inspection Reporting Requirements. The Permittee shall submit the results of each five and ten year inspection (as applicable) in which a failure is detected. A failure is defined as any time in which the internal floating roof has defects; or the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal (if one has been installed) has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area. The report shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The report shall also describe the nature of and date the repair was made.
- q. The Permittee shall submit reports as required above postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June.

4. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

Group 1 Storage Vessels with External Floating Roofs

40 CFR 63.119(c) Requirements

- a. Each external floating roof (i.e., a pontoon type or double deck type cover that rests on the liquid surface in a storage vessel with no fixed roof) shall be equipped with a closure device between the wall of the storage vessel and the roof edge, which meets the following requirements:
 - i. The closure device is to consist of two seals, one above the other where the lower seal is referred to as the primary seal and the upper seal is referred to as the secondary seal,
 - ii. The primary seal shall be either a metallic shoe seal or a liquid mounted seal, and
 - iii. Except during the inspections, both the primary seal and the secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion.

However, if the external floating roof is equipped with a liquid mounted or metallic shoe primary seal as of December 31, 1992, the requirement for a secondary seal does not apply until the next time the storage vessel is emptied and degassed but not later than 10 years after April 22, 1994. Also, if the external floating roof is equipped with a vapor mounted primary seal and a secondary seal as of December 31, 1992, the requirement for a liquid mounted or metallic shoe primary seal does not apply until the next time the storage vessel is emptied and degassed but not later than 10 years after April 22, 1994.
- b. Each external floating roof shall meet the specifications listed below:
 - i. Except for automatic bleeder vents (vacuum breaker vents) and rim space vents, each opening in the non-contact external floating roof shall provide a projection below the liquid surface,
 - ii. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal or lid which is to be maintained in a closed position (i.e., no visible gap) at all times except when the cover or lid must be open for access and covers on each access hatch and each gauge float

- well shall be bolted or fastened so as to be airtight when they are closed,
- iii. Automatic bleeder vents are to be closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the roof leg supports,
 - iv. Rim space vents are to be set to open only when the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting,
 - v. Automatic bleeder vents and rim space vents are to be gasketed,
 - vi. Each roof drain that empties into the stored liquid is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening,
 - vii. Each unslotted guide pole well shall have a gasketed sliding cover or a flexible fabric sleeve seal,
 - viii. Each unslotted guide pole shall have on the end of the pole a gasketed cap which is closed at all times except when gauging the liquid level or taking liquid samples,
 - ix. Each slotted guide pole well shall have a gasketed sliding cover or a flexible fabric sleeve seal,
 - x. Each slotted guide pole shall have a gasketed float or other device which closes off the liquid surface from the atmosphere, and
 - xi. Each gauge hatch/sample well shall have a gasketed cover, which is closed at all times except when the hatch or well must be open for access.

However, if each opening in a non-contact external floating roof except for automatic bleeder vents (vacuum breaker vents) and rim space vents does not provide a projection below the liquid surface as of December 31, 1992, the requirement for providing these projections below the liquid surface does not apply until the next time the storage vessel is emptied and degassed but not later than 10 years after April 22, 1994.

- c. The external floating roof shall be floating on the liquid surface at all times except when the floating roof must be supported by the leg supports during the periods specified below:
 - i. During the initial fill,
 - ii. After the vessel has been completely emptied and degassed, or
 - iii. When the vessel is completely emptied before being subsequently refilled.
- d. When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as soon as practical.

40 CFR 63.120(b) Compliance Provisions

- e. The Permittee shall determine the gap areas and maximum gap widths between the primary seal and the wall of the storage vessel, and the secondary seal and the wall of the storage vessel according to the frequency specified below (unless it has been determined to be unsafe to do so).
 - i. For an external floating roof vessel equipped with primary and secondary seals, measurements of gaps between the vessel wall and the primary seal shall be performed at least once every five years after the hydrostatic testing of the vessel or by April 22, 1997 and the secondary seal at least once every year.
 - ii. For an external floating roof vessel equipped with a liquid mounted or metallic shoe primary seal and without a secondary seal, measurements of gaps between the vessel wall and the primary seal shall be performed by at least once per year, until a secondary seal is installed. When a secondary seal is installed above the primary seal, measurements of gaps between the vessel wall and both the primary and secondary seals shall be performed within 90 calendar days of installation of the secondary seal, and every five years thereafter for the primary seal and annually for the secondary seal.
 - iii. If any storage vessel ceases to store organic HAP for a period of one year or more, or if the maximum true vapor pressure of the total organic HAPs in the stored liquid falls below the values defining Group 1 storage vessels specified in Table 5 or Table 6 of 40 CFR 63, Subpart G for a period of one year or more, measurements of gaps between the vessel wall and the primary seal, and gaps between the vessel wall and the secondary seal shall be performed within 90 calendar days of the vessel being refilled with organic HAP.
- f. The Permittee shall determine gap widths and gap areas in the primary and secondary seals (seal gaps) individually by the procedures described below (unless it has been determined to be unsafe to do so).
 - i. Seal gaps, if any, shall be measured at one or more floating roof levels when the roof is not resting on the roof leg supports.
 - ii. Seal gaps, if any, shall be measured around the entire circumference of the vessel in each place where an 0.32 centimeter (1/8 inch) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the storage vessel. The circumferential distance of each such location shall also be measured.
 - iii. The total surface area of each gap (i.e., where an 0.32 centimeter 1/8 inch diameter uniform probe passes freely without forcing or binding against the seal between the seal and the wall of the storage vessel) shall be determined by using probes of various widths to measure accurately the actual distance from the vessel wall to the seal and multiplying each such width by its respective circumferential distance.
- g. The Permittee shall add the gap surface area of each gap location for the primary seal and divide the sum by the nominal

diameter of the vessel. The accumulated area of gaps between the vessel wall and the primary seal shall not exceed 212 square centimeters per meter of vessel diameter and the width of any portion of any gap shall not exceed 3.81 centimeters.

- h. The Permittee shall add the gap surface area of each gap location for the secondary seal and divide the sum by the nominal diameter of the vessel. The accumulated area of gaps between the vessel wall and the secondary seal shall not exceed 21.2 square centimeters per meter of vessel diameter and the width of any portion of any gap shall not exceed 1.27 centimeters. These seal gap requirements may be exceeded during the measurement of primary seal gaps.
- i. The primary seal shall meet the additional requirements specified below.
 - i. Where a metallic shoe seal is in use, one end of the metallic shoe shall extend into the stored liquid and the other end shall extend a minimum vertical distance of 61 centimeters above the stored liquid surface.
 - ii. There shall be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.
- j. The secondary seal shall meet the additional requirements specified below.
 - i. The secondary seal shall be installed above the primary seal so that it completely covers the space between the roof edge and the vessel wall except during gap measurement of the primary seal.
 - ii. There shall be no holes, tears, or other openings in the seal or seal fabric.
- k. If the Permittee determines that it is unsafe to perform the seal gap measurements or to inspect the vessel to determine compliance because the floating roof appears to be structurally unsound and poses an imminent or potential danger to inspecting personnel, the Permittee shall comply with one of the following requirements.
 - i. The Permittee shall measure the seal gaps or inspect the storage vessel no later than 30 calendar days after the determination that the roof is unsafe, or
 - ii. The Permittee shall empty and remove the storage vessel from service no later than 45 calendar days after determining that the roof is unsafe. If the vessel cannot be emptied within 45 calendar days, the Permittee may utilize up to two extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include an explanation of why it was unsafe to perform the inspection or seal gap measurement, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the vessel will be emptied as soon as practical.
- l. The Permittee shall repair conditions that do not meet the seal gap requirements (i.e., failures) or the additional seal requirements no later than 45 calendar days after identification, or shall empty and remove the storage vessel from service no later than 45 calendar days after identification. If during seal gap measurements or during inspections necessary to determine compliance with the additional seal gap requirements, a failure is detected that cannot be repaired within 45 calendar days and if the vessel cannot be emptied within 45 calendar days, the Permittee may utilize up to two extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include a description of the failure, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical.
- m. The Permittee shall notify the DAQ in writing 30 calendar days in advance of any gap measurements to afford the DAQ the opportunity to have an observer present.
- n. The Permittee shall visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.
 - i. If the external floating roof has defects; the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area, the Permittee shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with organic HAP.
 - ii. The Permittee shall notify the DAQ in writing at least 30 calendar days prior to filling or refilling of each storage vessel with organic HAP to afford the DAQ the opportunity to inspect the storage vessel prior to refilling unless the inspection is not planned and the Permittee could not have known about the inspection 30 calendar days in advance of refilling the vessel with organic HAP. In this case the Permittee shall notify the DAQ at least 7 calendar days prior to refilling of the storage vessel. Notification may be made by telephone and immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent so that it is received by the Administrator at least seven calendar days prior to the refilling.

40 CFR 63.123 Recordkeeping Requirements

- o. The Permittee shall keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel.
- p. The Permittee shall keep records describing the results of each seal gap measurement. The records shall include the date of the measurement, the raw data obtained in the measurement, and all calculations used to determine compliance.

40 CFR 63.122 Reporting Requirements

- q. The Permittee shall submit a report documenting the results of each seal gap measurement made in which the required seal gap specifications and/or seal specifications are not met. This documentation shall include:
 - i. The date of the seal gap measurement,
 - ii. The raw data obtained in the seal gap measurement and the calculations made to determine compliance with the seal gap specifications,
 - iii. A description of any condition where a seal does not meet the required specifications, and
 - iv. A description of the nature of and date the repair was made, or the date the storage vessel was emptied.

If it was determined that a time extension was necessary for repair, the Permittee shall identify the vessel; document the determination that the time extension was necessary; and describe the date the storage vessel was emptied and the nature of and date the repair was made in the next report.
- r. The Permittee shall submit a report documenting any failures that are identified during visual inspections. A failure is defined as any time in which the external floating roof has defects; or the primary seal has holes, or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area. The report required shall include the date of the inspection, identification of each storage vessel in which a failure was detected, a description of the failure, and a description of the nature of and date the repair was made.
- s. The Permittee shall submit reports as required above postmarked on or before January 30 of each calendar year for the preceding six month period between July and December and July 30 of each calendar year for the preceding six month period between January and June.

5. 15A NCAC 2D .1111 [40 CFR 63.119(a)(3)]: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

Group 2 Storage Vessels

- a. **40 CFR 63.123(a) Recordkeeping Requirements.** The Permittee shall keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel.

C. Ethylene Glycol Tank Truck Transfer Rack (ID No. EGTRANS)

The following table provides a summary of limits and standards for the emission source(s) describe above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
HAPs	Recordkeeping	15A NCAC 2D .1111 (40 CFR 63, Subpart G) Group 2 transfer rack

1. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.126(c) Transfer Operations

- a. The Permittee shall maintain records as provided below [40 CFR 63.130(f)] for each Group 2 transfer rack. No other provisions of 40 CFR 63, Subpart G for transfer racks apply to the Group 2 transfer rack.

40 CFR 63.130(f) Recordkeeping Requirements

- b. The Permittee shall record, update annually, and maintain the information specified below in a readily accessible location on site and made available to the DAQ on request.
 - i. An analysis demonstrating the design and actual annual throughput of the transfer rack.
 - ii. An analysis documenting the weight percent organic HAPs in the liquid loaded. (Examples of acceptable documentation include but are not limited to analyses of the material and engineering calculations.)
 - iii. Documentation of the organic HAPs (by compound) that are transferred and the vapor pressure of each.

D. Group 2 Wastewater:

- Enclosed wastewater equalization (still bottoms) fixed roof tank (point of origination is A110, A6110, A112, and A6112 still bottoms; ID No. T1939AR).**
- Open top wastewater equalization tank (point of origination is sumps, spills, maintenance; ID No. T1922A).**
- Open top wastewater equalization tank (point of origination is sumps, spills, maintenance; ID No. T1922B).**
- Open top wastewater equalization tank (point of origination is sumps, spills, maintenance; ID No. T1922C) to aerobic digestion.**
- Open top wastewater equalization tank (point of origination is sumps, spills, maintenance; ID No. T1922D) to aerobic digestion.**
- Fixed roof wastewater equalization tank (point of origination T1939AR; ID No. T1922E) to anaerobic digestion.**

The following table provides a summary of limits and standards for the emission source(s) describe above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
HAPs	Recordkeeping	15A NCAC 2D .1111 (40 CFR 63, Subpart G) (40 CFR 63, Subpart FFFF)
Odor	State Enforceable only See Section 2.2 G.3 "Multiple Emission Sources"	15A NCAC 2D .1806
Toxic Air Pollutants	State Enforceable only See Sections 2.2 G.4 and .5 "Multiple Emission Sources"	15A NCAC 2Q .0711 15A NCAC 2D .1100

1. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.132(c), 40 CFR 63.2485: Process Wastewater Group 2 Provisions

- a. To avoid Group 1 wastewater stream requirements, the wastewater characteristics shall not exceed any of the following limitations:
 - i. For 40 CFR 63, Subpart G:
 - A. At any flow rate, the total annual average concentration of compounds listed in Table 9 of this Subpart shall be less than 10,000 ppmw; and,
 - B. If the annual average flow rate is greater than or equal to 10 liters per minute, the total annual average concentration of compounds listed in Table 9 of this Subpart shall be less than 1,000 ppmw.
 - ii. For 40 CFR 63, Subpart FFFF:
 - A. At any flow rate, if the total annual average concentration of compounds in Table 8 of this Subpart is greater than or equal to 10,000 ppmw, the total annual load of compounds in Table 8 shall be limited to less than 200 lb/yr;
 - B. If the annual average flowrate is greater than or equal to 1 liter per minute, the total annual average concentration of compounds in Table 8 of this Subpart shall be limited to less than 1,000 ppmw; and,
 - C. If the combined total annual average concentration of compounds in Tables 8 and 9 of this Subpart is greater than or equal to 30,000 ppmw, the combined total annual load of compounds in Tables 8 and 9 of this Subpart shall be limited to less than 1 tpy.

40 CFR 63.147(b)(8): Recordkeeping

- b. The Permittee shall keep in a readily accessible location and made available to the DAQ on request the records specified below.
 - i. Each process unit identification and description.
 - ii. Each stream identification code.
 - iii. The concentration of any of the following compound(s) in parts per million, by weight and documentation of the methodology used to determine concentration:
 - A. Any compound listed in 40 CFR 63, Subpart G, Table 9;
 - B. Any compound listed in 40 CFR 63, Subpart FFFF, Table 8; and,
 - C. Any compound listed in 40 CFR 63, Subpart FFFF, Table 9.
 - iv. Each flow rate in liter per minute.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if any of the above records are not retained, or if the wastewater concentrations and flowrates exceed the limits in a.i. or a.ii. above.

E. All pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, instrumentation systems, and control devices or closed vent systems in A Line, B Line, C Line, D Line, the PTA process area, and raw material storage and handling (ID Nos. AEQLK, BEQLK, CEQLK, DEQLK, PTAEQLK, and RAWQLK)

The following table provides a summary of limits and standards for the emission source(s) describe above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
HAPs	Equipment Leak Detection and Repair	15A NCAC 2D .1111 (40 CFR 63, Subpart H)
Toxic Air Pollutants	State Enforceable only See Sections 2.2 G.4 and .5 "Multiple Emission Sources"	15A NCAC 2Q .0711 15A NCAC 2D .1100

- a. Per 40 CFR 63.120(e)(6), if a Group 1 storage vessel is maintained under negative pressure it is exempt from the leak inspection provisions of 40 CFR 63.148 of Subpart G.
- b. Per 40 CFR 63.148(k), if a closed vent system is subject to 40 CFR 63, Subpart H, the Permittee shall comply with 40 CFR 63, Subpart H requirements and is exempt from the leak inspection provisions of 40 CFR 63.148 of Subpart G.

1. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.160: Applicability and Designation of Source

- a. 40 CFR 63.160(b): Each process unit which has equipment subject to 40 CFR 60, Subpart VV provisions which is also subject 40 CFR 63, Subpart H shall apply the provisions of 40 CFR 63, Subpart H only.
- b. 40 CFR 63.160(c): Per request of the Permittee, each process unit which has equipment to which the provisions of 40 CFR 63, Subpart H do not apply but which is subject 40 CFR 60, Subpart VV shall apply the provisions of 40 CFR 63, Subpart H to all such equipment in the process unit. All VOC in such equipment shall be considered, for purposes of applicability and compliance, as if it were a HAP.

2. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.162: General Standards

- a. 40 CFR 63.162(c): Each piece of equipment in a process unit to which 40 CFR 63, Subpart H applies shall be identified such that it can be distinguished readily from equipment that is not subject to this subpart. The equipment may be identified on a plant site plan, in log entries, or by designation of process unit boundaries by some form of weatherproof identification.
- b. 40 CFR 63.162(d): Equipment that is in vacuum service is excluded from the requirements of 40 CFR 63, Subpart H.
- c. 40 CFR 63.162(e): Equipment that is in organic HAP service less than 300 hours per calendar year excluded from the requirements 40 CFR 63, Subpart H must be identified either by list, location (area or group) of equipment.
- d. 40 CFR 63.162(f): When each leak is detected for: pumps in light liquid service (40 CFR 63.163), valves in gas/vapor/light liquid service (40 CFR 63.168), pumps/valves/connectors/agitators in heavy liquid service and instrumentation systems/pressure relief devices in liquid service (40 CFR 63.169), closed vent systems and control devices (40 CFR 63.172), agitators in gas/vapor/light liquid service (40 CFR 63.173), and connectors in gas/vapor/light liquid service (40 CFR 63.174), the following requirements apply.
 - i. A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.
 - ii. The identification on a valve may be removed after it has been repaired and monitored in accordance with 40 CFR 63.180(b) within three months of the repair and no leak has been detected during the follow-up monitoring for two successive months.
 - iii. The identification on a connector may be removed after it is monitored after reconnection within the first three months after being returned to service and no leak is detected during that monitoring.
 - iv. The identification that has been placed on equipment determined to have a leak may be removed after it is repaired, except for a valve or connector.
- e. 40 CFR 63.162(h): It is a violation of this subpart to fail to take action to repair the leaks within the specified time. If action is taken to repair the leaks within the specified time, failure of that action to successfully repair the leak is not a violation. However, if the repairs are unsuccessful, a leak is detected and the Permittee shall take further action as

required.

3. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.163: Pumps in Light Liquid Service

[Light liquid means a liquid with a VOC with a vapor pressure greater than 0.3 kPa [0.0435 psi] at 20 °C that is present in the liquid in a concentration greater than 20 percent by weight.]

- a. 40 CFR 63.163(b): The Permittee shall monitor each affected pump monthly to detect leaks by the method specified in 40 CFR 63.180(b) and shall comply as set forth below.
 - i. The instrument reading, as determined by the method as specified in 40 CFR 63.180(b), that defines a leak in each phase of the standard is 1,000 parts per million or greater.
 - ii. Each pump shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. If there are indications of liquids dripping from the pump seal, a leak is detected.
 - iii. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except repair is not required unless an instrument reading of 2,000 parts per million or greater is detected or delay in repair is necessary per 40 CFR 63.171.
 - iv. A first attempt at repair shall be made no later than five calendar days after the leak is detected. First attempts at repair include, but are not limited to: tightening of packing gland nuts, and ensuring that the seal flush is operating at design pressure and temperature.
- b. 40 CFR 63.163(d): The Permittee shall calculate percent leaking pumps on a source wide basis.
 - i. If the greater of either 10 percent of the pumps or three pumps source wide leak (calculated on a 6month rolling average), the Permittee shall implement a quality improvement program for pumps in accordance with 40 CFR 63.176.
 - ii. The number of source-wide pumps shall be the sum of all the pumps in organic HAP service, except that pumps found leaking in a continuous process within one month after startup of the pump shall not count in the percent leaking pumps calculation for that one monitoring period only.
 - iii. Percent leaking pumps shall be determined by the following equation:

$$\%P_L + [(P_L P_S)/(P_T P_S)] \times 100$$

where: %P_L = Percent leaking pumps.
 P_L = Number of pumps found leaking.
 P_T = Total pumps in organic HAP service, including those exempt from monitoring.
 P_S = Number of pumps leaking within 1 month of startup during the current monitoring period.

- c. Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from monitoring requirements provided the following requirements are met.
 - i. Each dual mechanical seal system is:
 - (A) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or
 - (B) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device complying with 40 CFR 63.172; or
 - (C) Equipped with a closed loop system that purges the barrier fluid into a process stream.
 - ii. The barrier fluid is not in light liquid service.
 - iii. Each barrier fluid system is equipped with a sensor that will detect failure of the seal system and /or the barrier fluid system.
 - iv. Each pump is checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.
 - (A) If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the pump shall be monitored to determine if there is a leak of organic HAP in the barrier fluid.
 - (B) If an instrument reading of 1,000 parts per million or greater is measured, a leak is detected.
 - v. Each seal system and /or the barrier fluid system sensor is observed daily or is equipped with an alarm unless the pump is located within the boundary of an unmanned plant site.
 - vi. The Permittee determines, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal and/or barrier system.
 - (A) If indications of liquids dripping from the pump seal or the sensor indicate failure (i.e., criteria exceeded) of the seal system, the barrier fluid system, or both, a leak is detected.
 - (B) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in for in delay of repair pursuant to 40 CFR 63.171.
 - vii. A first attempt at repair shall be made no later than five calendar days after each leak is detected.

- d. Any pump that is designed with no externally actuated shaft penetrating the pump housing is exempt from monitoring requirements.
- e. Any pump equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device is exempt from monitoring requirements and calculations for percent leaking pumps
- f. Any pump that is designated as an unsafe-to-monitor pump is exempt from monitoring and percent leaking pumps calculation if:
 - i. The Permittee determines that the pump is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying these above requirements; and
 - ii. The Permittee has a written plan that requires monitoring of the pump as frequently as practical during safe-to-monitor times.

4. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.165: Pressure Relief Devices in Gas/Vapor Service

- a. Each pressure relief device in gas/vapor service shall be operated with an instrument reading of less than 500 parts per million above background, except during pressure releases, as measured by the method specified in 40 CFR 63.180(c).
- b. After each pressure release, the pressure relief device shall be returned to a condition indicated by an instrument reading of less than 500 parts per million above background, as soon as practicable, but no later than five calendar days after each pressure release, except as provided in delay of repair 40 CFR 63.171.
- c. No later than five calendar days after the pressure release and being returned to organic HAP service, the pressure relief device shall be monitored to confirm the condition indicated by an instrument reading of less than 500 parts per million above background.
- d. Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage from the pressure relief device to a control device is exempt from monitoring.
- e. Any pressure relief device that is equipped with an upstream rupture disk is exempt from monitoring provided the rupture disk is reinstalled as soon as practicable after each pressure release, but no later than five calendar days after each pressure release, except as provided in delay of repair 40 CFR 63.171.

5. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.166: Sampling Connection Systems

- a. Each sampling connection system shall be equipped with a closed purge, closed loop, or closed vent system. Gases displaced during filling of the sample container are not required to be collected or captured.
- b. Each closed purge, closed loop, or closed vent system shall:
 - i. Return the purged process fluid directly to the process line; or
 - ii. Collect and recycle the purged process fluid to a process; or
 - iii. Be designed and operated to capture and transport the purged process fluid to a control device; or
 - iv. Collect, store, and transport the purged process fluid to:
 - (A) A Group 1 wastewater if the purged process fluid contains any organic HAP listed in Table 9 of 40 CFR 63, Subpart G of part 63;
 - (B) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; or
 - (C) A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR Part 261.
- c. In-situ sampling systems and sampling systems without purges are exempt.

6. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.167: Open Ended Valves or Lines

- a. Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided below, which shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line, or during maintenance or repair.
- b. Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.
- c. When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall be closed at all other times.
- d. Open-ended valves or lines in an emergency shutdown system that are designed to open automatically in the event of a process upset are exempt from the above requirements.

- e. Open-ended valves or lines containing materials which would auto catalytically polymerize or, would present an explosion, serious over pressure, or other safety hazard if capped or equipped with a double block and bleed system are exempt from the above requirements.

7. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.168: Valves in Gas/Vapor/Light Liquid Service

[Light liquid means a liquid with a VOC with a vapor pressure greater than 0.3 kPa [0.0435 psi] at 20 degrees C that is present in the liquid in a concentration greater than 20 percent by weight.]

- a. The Permittee of a source subject to this subpart shall monitor using the method specified in 40 CFR 63.180(b) all valves, except as provided below, at the intervals specified as follows.
 - i. At process units with two percent or greater leaking valves, the Permittee shall either:
 - (A) Monitor each valve once per month; or
 - (B) Implement a quality improvement program for valves pursuant to 40 CFR 63.175 (d) or (e) of this subpart and monitor quarterly.
 - ii. At process units with less than two percent leaking valves, the Permittee shall monitor each valve once each quarter
 - iii. At process units with less than one percent leaking valves, the Permittee may monitor each valve once every two quarters.
 - iv. At process units with less than 0.5 percent leaking valves, the Permittee may monitor each valve once every four quarters.
- b. An instrument reading of 500 part per million or greater defines a leak.
- c. Percent leaking valves at a process unit shall be determined by the following equation:

$$\%V_L = [V_L / (V_T + V_C)] \times 100$$

Where:

$\%V_L$ = Percent leaking valves as determined through periodic monitoring

V_L = Number of valves found leaking, excluding non-repairable valves. However, non-repairable valves shall be included in the calculation of percent leaking valves the first time the valve is identified as "leaking and non-repairable". Also, if the number of non-repairable valves exceeds one percent of the total number of valves in organic HAP service at a process unit, then the number of non-repairable valves exceeding one percent of the total number of valves in organic HAP service shall be included in the calculation of percent leaking valves. Otherwise, a number of non-repairable valves (identified and included in the percent leaking calculation in a previous period) up to a maximum of one percent of the total number of valves in organic HAP service at a process unit may be excluded from calculation of percent leaking valves for subsequent monitoring periods.

V_T = Total valves monitored, in a monitoring period excluding valve monitoring as required within three months after a repair.

V_C = Optional credit for removed valves = 0.67 x net number (i.e., total removed minus total added) of valves in organic HAP service removed from process unit. If credits are not taken, then $V_C = 0$.

- d. The percent leaking valves shall be calculated as a rolling average of two consecutive monitoring periods for monthly, quarterly, or semiannual monitoring programs; and as an average of any three out of four consecutive monitoring periods for annual monitoring programs.
- e. When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in delay of repair 40 CFR 63.171. A first attempt at repair shall be made no later than five calendar days after each leak is detected.
- f. When a leak has been repaired, the valve shall be monitored (as specified in 40 CFR 63.180(b) and (c), as appropriate) at least once within the first three months after its repair to determine whether the valve has resumed leaking. If a leak is detected, the Permittee shall count the valve as a leaking valve unless it is repaired and shown by periodic monitoring not to be leaking.
- g. First attempts at repair include, but are not limited to, the following practices where practicable:
 - i. Tightening of bonnet bolts,
 - ii. Replacement of bonnet bolts,
 - iii. Tightening of packing gland nuts, and
 - iv. Injection of lubricant into lubricated packing.
- h. Any valve that is unsafe-to-monitor is exempt from the monitoring, percent leaking valves calculation, and repair requirements if:
 - i. The Permittee determines that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with requirements; and
 - ii. The Permittee has a written plan that requires monitoring of the valve as frequently as practicable during safe-to-

monitor times.

- i. Any valve that is determined as difficult to monitor is exempt from the monitoring and percent leaking valves calculation requirements if:
 - i. The Permittee determines that the valve cannot be monitored without elevating the monitoring personnel more than two meters above a support surface or it is not accessible at anytime in a safe manner;
 - ii. The process unit within which the valve is located is an existing source or the Permittee designates less than three percent of the total number of valves in a new source as difficult to monitor; and
 - iii. The Permittee follows a written plan that requires monitoring of the valve at least once per calendar year.

8. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.169: Pumps, Valves, Connectors, and Agitators in Heavy Liquid Service, Pressure Relief Devices in Light and Heavy Liquid Service, and Instrumentation Systems

- a. Pumps, valves, connectors, and agitators in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and instrumentation systems shall be monitored by the method specified in 40 CFR 63.180(b) within five calendar days if evidence of a potential leak to the atmosphere is found by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired as set forth below, it is not necessary to monitor the system for leaks.
- b. If an instrument reading of 10,000 parts per million or greater for agitators, 2,000 parts per million or greater for pumps, or 500 parts per million or greater for valves, connectors, instrumentation systems, and pressure relief devices is measured, a leak is detected.
- c. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in delay of repair 40 CFR 63.171. The first attempt at repair shall be made no later than five calendar days after each leak is detected.
- d. For a potential leak to the atmosphere found by visual, audible, olfactory, or any detection method other than that prescribed in accordance with 40 CFR 63.180(b), repaired shall mean that the visual, audible, olfactory, or other indications of a leak to the atmosphere have been eliminated; that no bubbles are observed at potential leak sites during a leak check using soap solution; or that the system will hold a test pressure.
- e. First attempts at repair include, but are not limited to:
 - i. Tightening of packing gland nuts, and ensuring that the seal flush is operating at design pressure and temperature for pumps; and
 - ii. Tightening of bonnet bolts, replacement of bonnet bolts, tightening of packing gland nuts, and injection of lubricant into lubricated packing for valves.

9. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.170: Surge Control Vessels and Bottoms Receivers

- a. Each surge control vessel or bottoms receiver subject to these requirements is denoted in the equipment list as "MACT H" having a capacity between 19,810 gallons and less than 39,885 gallons with a HAP vapor pressure greater than or equal to 1.9 psi, or has a capacity greater than or equal to 39,885 gallons with a HAP vapor pressure greater than or equal to 0.75 psi. This equipment shall be equipped with a closed vent system that routes the organic vapors vented from the surge control vessel or bottoms receiver back to the process, to the process heater No. 4 (**ID No. HTR4**), or the flare (**ID No. G4904R**).

40 CFR 63.172: Closed Vent Systems and Control Devices

- b. The control devices (**ID Nos. HTR4 and G4904R**) for the closed vent systems (**ID Nos. VS520, VS2520, VS4529 and VS6520**) shall meet the requirements for Group 1 process vents set forth in this permit and 40 CFR 63, Subpart G in lieu of 40 CFR 63.172(c), (d), and (e).
- c. The Permittee shall conduct annual visual inspections for visible, audible, or olfactory indications of leaks for each closed vent system (**ID Nos. VS520, VS2520, VS4529 and VS6520**) unless it has been determined to be unsafe or difficult to inspect.
- d. Leaks, as indicated by visual inspections, shall be repaired as soon as practicable unless a delay of repair is necessary. The repair shall be completed no later than 15 calendar days after the leak is detected and a first attempt at repair shall be made no later than five calendar days after the leak is detected.
- e. Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the Permittee determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.

- f. For each closed vent system that contains bypass lines that could divert a vent stream away from the control device and to the atmosphere, the Permittee shall comply with the following provisions.
 - i. Install, set or adjust, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. Records shall be generated as specified Section 2.2 G.2. The flow indicator shall be installed at the entrance to any bypass line; or
 - ii. Secure the bypass line valve in the non-diverting position with a car seal or a lock and key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure the valve is maintained in the non-diverting position and the vent stream is not diverted through the bypass line.
 - iii. Equipment such as low leg drains, high point bleeds, analyzer vents, open ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.
- g. Any parts of the closed vent system that are designated as unsafe to inspect are exempt from conducting annual visual inspections for visible, audible, or olfactory indications of leaks if:
 - i. The Permittee determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger; and
 - ii. The Permittee has a written plan that requires inspection of the equipment as frequently as practicable during safe to inspect times, but not more frequently than annually.
- h. Any parts of the closed vent system that are designated as difficult to inspect are exempt from conducting annual visual inspections for visible, audible, or olfactory indications of leaks if:
 - i. The Permittee determines that the equipment cannot be inspected without elevating the inspecting personnel more than two meters above a support surface; and
 - ii. The Permittee has a written plan that requires inspection of the equipment at least once every five years.
- i. Whenever organic HAP emissions are vented to a closed vent system or control device used to comply with the provisions of this subpart, such system or control device shall be operating.

40 CFR 63.179: Alternate Means of Emission limitation: Enclosed Vented Process Units

- j. Process units, including surge vessels and the closed vent system piping, that are maintained under a negative pressure during unit operation to ensure all emissions are routed to the control device are exempt from monitoring requirements.

10. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.173: Agitators in Gas/Vapor/Light Liquid Service

[Light liquid means a liquid with a VOC with a vapor pressure greater than 0.3 kPa [0.0435 psi] at 20 °C that is present in the liquid in a concentration greater than 20 percent by weight.]

- a. Each agitator shall be monitored monthly to detect leaks by the methods specified in 40 CFR 63.180(b). If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.
- b. Each agitator shall be checked by visual inspection each calendar week for indications of liquids dripping from the agitator. If there are indications of liquids dripping from the agitator, a leak is detected.
- c. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in delay of repair 40 CFR 63.171. A first attempt at repair shall be made no later than five calendar days after each leak is detected.
- d. Each agitator equipped with a dual mechanical seal system that includes a barrier fluid system is exempt monthly monitoring by the methods specified in 40 CFR 63.180(b) provided the following requirements are met.
 - i. Each dual mechanical seal system shall be:
 - (A) Operated with the barrier fluid at a pressure that is at all times greater than the agitator stuffing box pressure; or
 - (B) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device; or
 - (C) Equipped with a closed loop system that purges the barrier fluid into a process stream.
 - ii. The barrier fluid shall not be in light liquid organic HAP service.
 - iii. Each barrier fluid system shall be equipped with a sensor that will detect failure of the seal and/or barrier fluid system.
 - iv. Each agitator shall be checked by visual inspection each calendar week for indications of liquids dripping from the agitator seal.
 - (A) If there are indications of liquids dripping from the agitator seal at the time of the weekly inspection, the agitator shall be monitored as specified in 40 CFR 63.180(b) to determine the presence of organic HAP in the barrier fluid.
 - (B) If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.
 - v. Each barrier fluid/seal system equipped with a sensor shall be observed daily or equipped with an alarm, unless the agitator is located within the boundary of an unmanned plant site.

- vi. The Permittee shall determine, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal and/or barrier system.
 - (A) If indications of liquids dripping from the agitator seal exceed these criteria, or if, based on the criteria, the sensor indicates failure of the seal and/or barrier fluid system, a leak is detected.
 - (B) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in delay of repair 40 CFR 63.171, and a first attempt at repair shall be made no later than five calendar days after each leak is detected.
- e. Any agitator that is designed with no externally actuated shaft penetrating the agitator housing is exempt from monitoring requirements.
- f. Any agitator equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or fuel gas system or to a control device is exempt from monitoring requirements.
- g. Any agitator that is difficult to monitor is exempt from monitoring requirements if:
 - i. The Permittee determines that the agitator cannot be monitored without elevating the monitoring personnel more than two meters above a support surface or it is not accessible at anytime in a safe manner;
 - ii. The process unit within which the agitator is located is an existing source or the Permittee designates less than three percent of the total number of agitators in a new source as difficult to monitor; and
 - iii. The Permittee follows a written plan that requires monitoring of the agitator at least once per calendar year.
- h. Any agitator that is obstructed by equipment or piping that prevents access to the agitator by a monitor probe is exempt from monitoring requirements.
- i. Any agitator that is designated as an unsafe to monitor agitator is exempt from the monitoring requirements if:
 - i. The Permittee determines that the agitator is unsafe to monitor because monitoring personnel would be exposed to an immediate danger; and
 - ii. The Permittee has a written plan that requires monitoring of the agitator as frequently as practical during safe to monitor times.

11. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.174: Connectors in Gas/Vapor/Light Liquid Service

[Light liquid means a liquid with a VOC with a vapor pressure greater than 0.3 kPa [0.0435 psi] at 20°C, which is present in the liquid in a concentration greater than 20 percent by weight.]

- a. The Permittee shall monitor connectors to detect leaks by the method specified in 40 CFR 63.180(b). If an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected.
- b. The Permittee shall monitor for leaks according to the schedule established as follows.
 - i. Once per year (i.e., 12month period), if the percent leaking connectors in the process unit was 0.5 percent or greater during the last required annual or biennial monitoring period,
 - ii. Once every two years, if the percent leaking connectors was less than 0.5 percent during the last required monitoring period. The Permittee may comply with this paragraph by monitoring at least 40 percent of the connectors in the first year and the remainder of the connectors in the second year. The percent leaking connectors will be calculated for the total of all monitoring performed during the two-year period.
 - iii. If the Permittee of a process unit in a biennial leak detection and repair program calculates less than 0.5 percent leaking connectors from the two-year monitoring period, the Permittee may monitor the connectors once every 4 years. A Permittee may comply with these requirements by monitoring at least 20 percent of the connectors each year until all connectors have been monitored within four years.
 - iv. If a process unit complying with the monitoring requirements using a four year monitoring interval program has greater than or equal to 0.5 percent but less than one percent leaking connectors, the Permittee shall increase the monitoring frequency to one time every two years. A Permittee may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors in the first year and the remainder of the connectors in the second year. The Permittee may again elect to monitor on the four-year schedule when the percent leaking connectors decreases to less than 0.5 percent.
 - v. If a process unit complying with on the four year monitoring schedule has one percent or greater leaking connectors, the Permittee shall increase the monitoring frequency to one time per year. The Permittee may again elect to monitor on the four-year schedule when the percent leaking connectors decreases to less than 0.5 percent.
- c. Each connector that has been opened or has otherwise had the seal broken shall be monitored for leaks when it is reconnected or within the first three months after being returned to organic hazardous air pollutants service. If the Permittee chooses not to monitor these connectors, the Permittee shall not count non-repairable connectors in determining the monitoring frequency and calculate the percent leaking connectors by setting the non-repairable component C_{AN} of the equation to zero for all monitoring periods. The Permittee may switch alternatives for the accounting of non-repairable valves at the end of a monitoring period provided that it is documented in the periodic

report. The Permittee may begin the new alternative in annual monitoring. The initial monitoring in the new alternative shall be completed no later than 12 months after reporting the switch.

- d. If the monitoring detects a leak, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided for unsafe or inaccessible connectors, or if a delay of repair is required pursuant to 40 CFR 63.171, or if it is non-repairable. A first attempt at repair shall be made no later than five calendar days after the leak is detected.
- e. As an alternative to the monitoring schedule established above, each screwed connector two inches or less in nominal inside diameter installed in a process unit before December 31, 1992 may comply with leak detection by visual, audible, olfactory, or any detection method other than that prescribed in accordance with 40 CFR 63.180(b).
 - i. The repair of connectors detected by visual audible, olfactory, or other than 40 CFR 63.180(b) method shall mean that the visual, audible, olfactory, or other indications of a leak to the atmosphere have been eliminated; that no bubbles are observed at potential leak sites during a leak check using soap solution; or that the system will hold a test pressure.
 - ii. The connectors shall be monitored for leaks within the first three months after being returned to organic hazardous air pollutants service after having been opened or otherwise had the seal broken. If that monitoring detects a leak, it shall be repaired it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided for unsafe or inaccessible connectors, or if a delay of repair is required pursuant to 40 CFR 63.171, or if it is non-repairable. A first attempt at repair shall be made no later than five calendar days after the leak is detected.
- f. Any connector that is designated unsafe to monitor is exempt from monitoring of connectors that have not been opened requirements if:
 - i. The Permittee determines that the connector is unsafe to monitor because personnel would be exposed to an immediate danger; and
 - ii. The Permittee has a written plan that requires monitoring of the connector as frequently as practicable during safe to monitor periods.
- g. Any connector that is designated unsafe to repair is exempt from monitoring of connectors that have not been disconnected and the 5/15 day repair schedule requirements if:
 - i. The Permittee determines that the connector is unsafe to repair because personnel would be exposed to an immediate danger; and
 - ii. The connector will be repaired before the end of the next scheduled process unit shutdown.
- h. Any connector that is inaccessible or is ceramic or ceramic lined (e.g., porcelain, glass, or glass lined), is exempt from the monitoring requirements from recordkeeping and reporting requirements. An inaccessible connector is one that is:
 - i. Buried,
 - ii. Insulated in a manner that prevents access to the connector by a monitor probe,
 - iii. Obstructed by equipment or piping that prevents access to the connector by a monitor probe,
 - iv. Unable to be reached from a wheeled scissor lift or hydraulic type scaffold which would allow access to connectors up to 7.6 meters (25 feet) above the ground,
 - v. Inaccessible because it would require elevating the monitoring personnel more than two meters above a permanent support surface or would require the erection of scaffold, or not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but is not limited to, the use of a wheeled scissor lift on unstable or uneven terrain, the use of a motorized man-lift basket in areas where an ignition potential exists, or access would require near proximity to hazards such as electrical lines, or would risk damage to equipment.

If any inaccessible or ceramic or ceramic lined connector is observed by visual, audible, olfactory, or other means to be leaking, the leak shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in delay of repair pursuant to 40 CFR 63.171, or has been determined to be unsafe to repair. A first attempt at repair shall be made no later than five calendar days after the leak is detected.

- i. The percent leaking connectors shall be calculated with the following equation:

$$\% C_L = [(C_L C_{AN}) / (C_t + C_C)] 100$$

where:

$\% C_L$ = Percent leaking connectors as determined through periodic monitoring.

C_L = Number of connectors, including non-repairables, measured at 500 parts per million or greater.

C_{AN} = Number of allowable non-repairable connectors, as determined by monitoring, not to exceed two percent of the total connector population, C_t .

C_t = Total number of monitored connectors, including non-repairables, in the process unit.

C_C = Optional credit for removed connectors = 0.67 x net number (i.e., total removed total added) of connectors in organic hazardous air pollutants service removed from the process unit. If credits are not taken, then $C_C = 0$.

- j. If the Permittee eliminates a connector subject to monitoring, the Permittee may receive credit for elimination of the connector in the calculation of percent leaking connectors provided the following requirements are met.

- i. The connector was welded after December 31, 1992.
- ii. The integrity of the weld is demonstrated by monitoring it according to the procedures in 40 CFR 63.180(b) or by testing using X-ray, acoustic monitoring, hydro-testing, or other applicable method.
- iii. Welds created after December 31, 1992 but before April 22, 1994 are monitored or tested within three months after the applicable compliance date [see 40 CFR 63.100(k)(3)].
- iv. Welds created after April 22, 1994 are monitored or tested within three months after being welded.
- v. If an inadequate weld is found or the connector is not welded completely around the circumference, the connector is not considered a welded connector.

12. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.181: Recordkeeping Requirements

- a. The Permittee may comply with the recordkeeping requirements for multiple process units in one recordkeeping system if the system identifies each record by process unit and the program being implemented (e.g., quarterly monitoring, quality improvement) for each type of equipment. All records and information shall be maintained in a manner that can be readily accessed at the plant site.
- b. The following information pertaining to all equipment in each affected process unit shall be recorded.
 - i. A list of identification numbers for all affected equipment (except connectors exempt from monitoring and recordkeeping and instrumentation systems). Connectors need not be individually identified if all connectors in a designated area or length of pipe subject to the provisions of this subpart are identified as a group, and the number of affected connectors is indicated.
 - ii. A schedule, by process unit, for monitoring affected connectors and valves.
 - iii. Physical tagging of the equipment to indicate that it is in organic HAP service is not required. Affected equipment may be identified on a plant site plan, in log entries, or by other appropriate methods.
 - iv. A list of identification numbers for affected pumps in light liquid service, compressors, pressure relief devices in gas/vapor service, or agitators in gas/vapor/light liquid service that the Permittee elects to equip with a closed-vent system and control device.
 - v. Identification of affected surge control vessels or bottoms receivers that the Permittee elects to equip with a closed-vent system and control device (See Section 2.2 E.8.).
 - vi. A list of identification numbers for affected pressure relief devices.
 - vii. A list of identification numbers for affected pressure relief devices equipped with rupture disks.
 - viii. Identification of affected instrumentation systems. Individual components in an instrumentation system need not be identified.
 - ix. Identification of screwed connectors two inches in diameter or less and installed before December 31, 1992 that will be electively monitored in accordance with Section 2.2 E.11.e. Identification can be by area or grouping as long as the total number within each group or area is recorded.
 - x. The following information shall be recorded for each dual mechanical seal system:
 - (A) Design criteria required in Section 2.2 E.3.c.vi. for pumps in light liquid service and Section 2.2 E.10.d.vi. for agitators in gas/vapor/light liquid service and an explanation of the design criteria pertaining to the presence and frequency of drips and to the sensor that indicates a failure of the seal and/or barrier system; and
 - (B) Any changes to these criteria and the reasons for the changes.
 - xi. The following information pertaining to all unsafe to monitor pumps (Section 2.2 E.3.f.), unsafe or difficult to monitor valves (Section 2.2 E.7.h. and Section 2.2 E.7.i., respectively), difficult to monitor or unsafe to monitor agitators (Section 2.2 E.10.g. and Section 2.2 E.10.i., respectively), and unsafe to monitor or unsafe to repair connectors (Section 2.2 E.11.f. and 2.2 E.11.g., respectively) shall be recorded:
 - (A) Identification of equipment designated as unsafe to monitor, difficult to monitor, or unsafe to inspect and the plan for monitoring or inspecting this equipment.
 - (B) A list of identification numbers for the equipment that is designated as difficult to monitor, an explanation of why the equipment is difficult to monitor, and the planned schedule for monitoring this equipment.
 - (C) A list of identification numbers for connectors that are designated as unsafe to repair and an explanation why the connector is unsafe to repair.
 - (D) A list of valves removed from and added to the process unit for calculation of percent leaking valves (Section 2.2 E.7.c.) if the net credits for removed valves (V_C) are expected to be used.
 - (E) A list of connectors removed from and added to the process unit during the first monitoring period as determined pursuant to 40 CFR 63.174(i)(1), and documentation of the integrity of the weld for any removed connectors in the calculation of percent leaking connectors (Section 2.2 E.11.i.). This is not required unless the net credits for removed connectors (C_C) are expected to be used.
- c. For visual inspections of pumps in light liquid service [Section 2.2 E.3.a.ii. and Section 2.2 E.3.c.iv.(A)], the Permittee

shall document that the inspection was conducted and the date of the inspection. The Permittee shall maintain records as specified below in 2.2 E.12.d. for leaking equipment identified in this inspection.

- d. When each leak is detected as specified for affected equipment including: pumps in light liquid service (Section 2.2 E.3.), valves in gas/vapor/light liquid service (Section 2.2 E.7.), pumps/valves/connectors/agitators in heavy liquid service/pressure relief devices in liquid service/instrumentation systems (Section 2.2 E.8.), closed vent systems (Section 2.2 E.9.b through i.; **ID Nos. VS520, VS2520, VS4529 and VS6520**), agitators in gas/vapor/light liquid service (Section 2.2 E.10.), and connectors in gas/vapor/light liquid service (Section 2.2 E.11.), the following information shall be recorded and retained in accordance with the general provisions of this permit:
 - i. The instrument and the equipment identification number and the operator name, initials, or identification number.
 - ii. The date the leak was detected and the date of first attempt to repair the leak.
 - iii. The date of successful repair of the leak.
 - iv. Maximum instrument reading measured by Method 21 of 40 CFR 60, Appendix A after it is successfully repaired or determined to be non-repairable.
 - v. "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
 - (A) The Permittee may develop a written procedure that identifies the conditions that justify a delay of repair. The written procedures may be included as part of the startup/shutdown/ malfunction plan for the source or may be part of a separate document that is maintained at the plant site. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.
 - (B) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked onsite before depletion and the reason for depletion.
 - vi. Dates of process unit shutdowns that occur while the equipment is unrepaired.
 - vii. Identification, either by list, location (area or grouping), or tagging of connectors that have been opened or otherwise had the seal broken since the last monitoring period established pursuant to Section 2.2 E.11.b., as described in Section 2.2 E.11.c., unless the Permittee chooses not to monitor these valves and sets the variable C_{AN} equal to zero in the calculation of percent leaking valves pursuant to Section 2.2 E.11.c.
 - viii. The date and results of monitoring connectors that have been opened pursuant Section 2.2 E.11.c. If identification of connectors that have been opened or otherwise had the seal broken is made by location above in Section 2.2 E.12.d.vii., then all connectors within the designated location shall be monitored.
 - ix. Copies of the periodic reports, if records are not maintained on a computerized database capable of generating summary reports from the records.
- e. The Permittee shall maintain records of the following information for closed vent systems (**ID Nos. VS520, VS2520, VS4529 and VS6520**) and control devices (**ID Nos. HTR4 and G4904R**).
 - i. The design specifications and performance demonstrations specified below shall be maintained for the life of the equipment.
 - (A) Detailed schematics, design specifications of the control device, and piping and instrumentation diagrams.
 - (B) The dates and descriptions of any changes in the design specifications.
 - (C) The flare (**ID No. G4904R**) design (i.e., steam-assisted, air-assisted, or non-assisted) and the results of the compliance demonstration required by 40 CFR 63.11(b).
 - (D) A description of the parameter or parameters monitored, as required in Section 2.2 E.9.b., to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.
 - ii. Records of operation of closed vent systems and control devices, as specified below shall be retained in accordance with the general provisions of this permit.
 - (A) Dates and durations when the closed vent systems and control devices are not operated as designed as indicated by the monitored parameters, including periods when a flare pilot light system does not have a flame.
 - (B) Dates and durations during which the monitoring system or monitoring device is inoperative.
 - (C) Dates and durations of startups and shutdowns of control devices.
 - iii. Records of inspections of closed vent systems (**ID Nos. VS520, VS2520, VS4529 and VS6520**) as specified below shall be retained in accordance with the general provisions of this permit.
 - (A) For each inspection annual inspection conducted of the hard piping for visible, audible, or olfactory indications of leaks during which no leaks were detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.
 - (B) For each annual inspection conducted of the hard piping for visible, audible, or olfactory indications of leaks during which leaks were detected, the information specified in Section 2.2 E.12.d. shall be recorded.
- f. The Permittee shall maintain the records for quality improvement programs for valve and pumps developed pursuant to 40 CFR 63.175 and 40 CFR 63.176 as specified below for the period of the quality improvement program for the process unit.

- i. If the Permittee elects to use a reasonable further progress quality improvement program, as specified in 40 CFR 63.175(d) for valves, the following records must be maintained:
 - (A) All data required in 40 CFR 63.175(d)(2).
 - (B) The percent leaking valves observed each quarter and the rolling average percent reduction observed in each quarter.
 - (C) The beginning and ending dates while meeting the requirements of 40 CFR 63.175(d) of this subpart.
- ii. If the Permittee elects to use a quality improvement program of technology review and improvement, as specified in 40 CFR 63.175(e) for valves, the following record must be maintained:
 - (A) All data required in 40 CFR 63.175(e)(2).
 - (B) The percent leaking valves observed each quarter.
 - (C) Documentation of all inspections conducted pursuant to 40 CFR 63.175(e)(4) and any recommendations for design or specification changes to reduce leak frequency.
 - (D) The beginning and ending dates while meeting the requirements of 40 CFR 63.175(e).
- iii. If the Permittee is subject to the requirements of the pump quality improvement program as specified in 40 CFR 63.176, the following records must be maintained:
 - (A) All data required in 40 CFR 63.176(d)(2).
 - (B) The rolling average percent leaking pumps.
 - (C) Documentation of all inspections conducted pursuant to 40 CFR 63.176(d)(4) and any recommendations for design or specification changes to reduce leak frequency.
 - (D) The beginning and ending dates while meeting the requirements of 40 CFR 63.176(d).
- iv. If a leak is not repaired within 15 calendar days after discovery of the leak, the reason for the delay and the expected date of successful repair.
- v. Records of all analyses required in 40 CFR 63.175(e) for valves and 40 CFR 63.176(d) for pumps. The records will include the following:
 - (A) A list identifying areas associated with poorer than average performance and the associated service characteristics of the stream, the operating conditions and maintenance practices.
 - (B) The reasons for rejecting specific candidate superior emission performing valve or pump technology from performance trials.
 - (C) The list of candidate superior emission performing valve or pump technologies, and documentation of the performance trial program items required pursuant to 40 CFR 63.175(e)(6)(iii) and 40 CFR 63.176(d)(6)(iii).
 - (D) The beginning date and duration of performance trials of each candidate superior emission performing technology.
- vi. All records documenting the quality assurance program for valves or pumps as specified in 40 CFR 63.175(e)(7) and 40 CFR 63.176(d)(7).
- vii. Records indicating that all valves or pumps replaced or modified during the period of the quality improvement program are in compliance with the quality assurance requirements in 40 CFR 63.175(e)(7) and 40 CFR 63.176(d)(7).
- viii. Records documenting compliance with the 20 percent or greater annual replacement rate for pumps as specified in 40 CFR 63.176(d)(8).
- g. The Permittee shall retain information, data, and analyses used to determine that a piece of equipment is in heavy liquid service, or demonstrate that the piece of equipment or process is in heavy liquid service when requested by the DAQ. A determination or demonstration that a piece of equipment or process is in heavy liquid service shall include an analysis or demonstration that the process fluids do not meet the definition of "in light liquid service." Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge.
- h. Identification, either by list, location (area or group) of equipment in organic HAP service less than 300 hours per year within a process unit subject to the provisions of 40 CFR 63, Subpart H.
- i. If the Permittee shall maintain the following records for all equipment in organic hazardous air pollutant service that are ducted to the closed vent systems (**ID Nos. VS520, VS2520, VS4529 and VS6520**) and control devices (**ID Nos. HTR4 and G4904R**), which are maintained under negative pressure:
 - i. Identification of the process units (e.g., surge control vessels, methanol header hard piping components, etc.) and the organic HAP's they handle,
 - ii. A schematic of the process unit, enclosure, and closed vent system, and
 - iii. A description of the system used to create a negative pressure in the enclosure to ensure that all emissions are routed to the control device.

13. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.182: Reporting Requirements

The Permittee shall submit periodic reports postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June.

- a. For each affected process unit, the report shall contain a summary of information for each monitoring period during the 6-month period regarding the following items.
 - i. The number of valves for which leaks were detected as described in Section 2.2 E.7.a., the percent leakers, and the total number of valves monitored.
 - ii. The number of valves for which leaks were not repaired as required in Sections 2.2 E.7.e. and g., identifying the number of those that are determined non-repairable.
 - iii. The number of pumps for which leaks were detected as described in Sections 2.2 E.3.a., a.i., and a.ii., the percent leakers, and the total number of pumps monitored.
 - iv. The number of pumps for which leaks were not repaired as required in Sections 2.2 E.3.a.iii, and a.iv.
 - v. The number of agitators for which leaks were detected as described in Sections 2.2 E.10.a. and b.
 - vi. The number of agitators for which leaks were not repaired as required in Section 2.2E.10.c.
 - vii. The number of connectors for which leaks were detected as described in Section 2.2 E.11.a., the percent of connectors leaking, and the total number of connectors monitored.
 - viii. The number of connectors for which leaks were not repaired as required in Section 2.2 E.11.d., identifying the number of those that are determined non-repairable;
 - ix. The facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible.
 - x. The results of all monitoring to show compliance with Section, 2.2 E.4.a. (pressure relief devices), and Section 2.2 E.9.c. (surge control vessels and bottoms receivers) conducted within the semiannual reporting period.
 - xi. The initiation of a monthly monitoring program under Section 2.2 E.7.a.i.(A) for process units with two percent or greater leaking valves, or a quality improvement program under either 40 CFR 63.175 or 40 CFR 63.176.
 - xii. If applicable, notification of a change in connector monitoring alternatives as described in Section 2.2 E.11.c.
- b. If the Permittee chooses to pressure test batch process units pursuant to Section 2.2 E.13., the report shall include the following information for each affected process unit.
 - i. The batch product process equipment train identification.
 - ii. The number of pressure tests conducted.
 - iii. The number of pressure tests where the equipment train failed the pressure test.
 - iv. The facts that explain any delay of repairs.
 - v. The results of all monitoring to determine compliance with Section 2.2 E.9.c.
- c. Any revisions to items reported in earlier Notification of Compliance Status, if the method of compliance has changed since the last report.

F. Facility-Wide

The following table provides a summary of limits and standards for the emission source(s) describe above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
HAPs	General Applicability, Standards, Recordkeeping and Reporting Provisions Heat exchange system monitoring Maintenance wastewater management procedures	15A NCAC 2D .1111 (40 CFR 63, Subpart F)

1. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.102: General Standards

- a. The provisions of 40 CFR 63 Subparts F and G as set forth in Sections 2.2 A. B., C., D., F., and G. of this permit apply at all times except during periods of startup or shutdown, malfunction, or non-operation of the chemical manufacturing process unit (or specific portion thereof) resulting in cessation of affected HAP emissions. However, if a startup, shutdown, malfunction or period of non-operation of one portion of a chemical manufacturing process unit does not affect the ability of a particular emission point to comply with the specific provisions to which it is subject, then that emission point shall still be required to comply with the applicable provisions of Sections 2.2 F. (40 CFR Subpart F),

and 2.2 A., 2.2 B., 2.2 C., and 2.2 D. (40 CFR 63, Subpart G) of this permit during the startup, shutdown, malfunction or period of non-operation.

- b. The provisions of Section 2.2. E. of this permit (40 CFR 63, Subpart H) apply at all times except during periods of startup or shutdown, malfunction, process unit shutdown, or non-operation of the chemical manufacturing process unit (or specific portion thereof) in which the lines are drained and depressurized resulting in cessation of the emissions to which Section 2.2 F. of this permit applies.
- c. The Permittee shall not shut down items of equipment that are required or utilized for compliance with the provisions of this permit during times when emissions (or, where applicable, wastewater streams or residuals) are being routed to such items of equipment, if the shutdown would contravene permit requirements applicable to such items of equipment. This paragraph does not apply if the item of equipment is malfunctioning, or if the Permittee must shut down the equipment to avoid damage due to a contemporaneous startup, shutdown, or malfunction of the chemical manufacturing process unit or portion thereof.
- d. During startups, shutdowns, and malfunctions, the Permittee shall implement, to the extent reasonably available, measures to prevent or minimize "excess emissions" to the extent practical. "Excess emissions" means emissions in excess of those that would have occurred if there were no startup, shutdown, or malfunction and the Permittee complied with the relevant permit requirements. The measures to be taken shall be identified in the applicable startup, shutdown, and malfunction plan, and may include, but are not limited to, air pollution control technologies, recovery technologies, work practices, pollution prevention, monitoring, and/or changes in the manner of operation of the source. Backup control devices are not required, but may be used if available.

2. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.103: General Compliance, Reporting, and Recordkeeping Provisions.

- a. Table 3 of 40 CFR 63, Subpart F specifies the provisions of 40 CFR 63, Subpart A that apply and those that do not apply.
- b. The Permittee shall conduct all required compliance demonstrations during production of the primary product for a flexible operation unit. The Permittee is not required to conduct compliance demonstrations for operating conditions during production of a product other than the primary product. The Permittee shall operate each control device, recovery device, and/or recapture device that is required or used for compliance, and associated monitoring systems, without regard for whether the product that is being produced is the primary product or a different product. Operation of a control device, recapture device and/or recovery device required or used for compliance such that the daily average of monitored parameter values is outside the parameter range established pursuant to Section 2.2 A.1. shall constitute a violation of the required operating conditions.
- c. All applicable records shall be maintained in such a manner that they can be readily accessed. The most recent six months of records shall be retained on site or shall be accessible from a central location by computer or other means that provides access within two hours after a request. The remaining four and one-half years of records may be retained offsite. Records may be maintained in hard copy or computer readable form including, but not limited to, on paper, microfilm, computer, floppy disk, magnetic tape, or microfiche.
- d. The Permittee shall keep the following records in addition to the other records required by this permit.
 - i. The occurrence and duration of each startup, shutdown, and malfunction of operation of process equipment or of air pollution control equipment or continuous monitoring systems used to comply with the provisions of this permit during which excess emissions occur.
 - ii. For each startup, shutdown, and malfunction during which excess emissions occur, records that the procedures specified in the source's startup, shutdown, and malfunction plan were followed, and documentation of actions taken that are not consistent with the plan. These records may take the form of a "checklist," or other form of recordkeeping that confirms conformance with the startup, shutdown, and malfunction plan for the event.
 - iii. For continuous monitoring systems used to comply with Sections 2.2 A., B., C., and D. of this permit, records documenting the completion of calibration checks and maintenance of continuous monitoring systems that are specified in the manufacturer's instructions or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.
 - iv. Records of startup, shutdown and malfunction and continuous monitoring system calibration and maintenance are not required if they pertain solely to Group 2 emission points.
- e. All reports shall be sent to the DAQ Regional Office.
- f. When requested by the DAQ, the Permittee shall demonstrate that the chemical manufacturing process unit does not use as a reactant or manufacture as a product or co-product any organic hazardous air pollutant.

3. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.104: Heat Exchange System Requirements

- a. Unless one or more of the conditions specified below are met, the Permittee shall monitor each heat exchange system used to cool process equipment in a chemical manufacturing process unit.
- i. The heat exchange system is operated with the minimum pressure on the cooling water side at least 35 kilopascals (5.1 psi) greater than the maximum pressure on the process side.
 - ii. There is an intervening cooling fluid, containing less than five percent by weight of total hazardous air pollutants listed in Table 4 of 40 CFR 63, Subpart F between the process and the cooling water. This intervening fluid serves to isolate the cooling water from the process fluid and the intervening fluid is not sent through a cooling tower or discharged (excluding emptying for maintenance purposes).
 - iii. The once through heat exchange system is subject to a National Pollution Discharge Elimination System (NPDES) permit with an allowable discharge limit of one part per million or less above influent concentration or ten percent or less above influent concentration, whichever is greater.
 - iv. The once through heat exchange system is subject to an NPDES permit that:
 - (A) Requires monitoring of a parameter(s) or condition(s) to detect a leak of process fluids into cooling water;
 - (B) Specifies or includes the normal range of the parameter or condition;
 - (C) Requires monitoring for the parameters selected as leak indicators no less frequently than monthly for the first six months and quarterly thereafter; and
 - (D) Requires the Permittee to report and correct leaks to the cooling water when the parameter or condition exceeds the normal range.
 - v. The recirculating heat exchange system is used to cool process fluids that contain less than five percent by weight of total hazardous air pollutants listed in Table 4 of 40 CFR 63, Subpart F.
 - vi. The once through heat exchange system is used to cool process fluids that contain less than five percent by weight of total hazardous air pollutants listed in Table 9 of 40 CFR 63, Subpart G.
- b. The Permittee who chooses to monitor the cooling water for the presence of one or more organic hazardous air pollutants or other representative substances whose presence in cooling water indicates a leak shall comply with the following requirements.
- i. The cooling water shall be monitored for total hazardous air pollutants, total volatile organic compounds, total organic carbon, one or more specific HAP compounds, or other representative substances that would indicate the presence of a leak in the heat exchange system.
 - ii. The cooling water shall be monitored quarterly to detect leaks.
 - iii. For recirculating heat exchange systems (cooling tower systems), the monitoring of specific hazardous air pollutants or total hazardous air pollutants refers to the hazardous air pollutants listed in Table 4 of 40 CFR 63, Subpart F.
 - iv. For once through heat exchange systems, the monitoring of specific hazardous air pollutants or total hazardous air pollutants refers to the hazardous air pollutants listed in Table 9 of 40 CFR 63, Subpart G.
 - v. The concentration of the monitored substance(s) in the cooling water shall be determined using any EPA approved method listed in 40 CFR 136 as long as the method is sensitive to concentrations as low as ten parts per million and the same method is used for both entrance and exit samples.
 - vi. The samples shall be collected either at the entrance and exit of each heat exchange system or at locations where the cooling water enters and exits each heat exchanger or any combination of heat exchangers.
 - (A) For samples taken at the entrance and exit of recirculating heat exchange systems, the entrance is the point at which the cooling water leaves the cooling tower prior to being returned to the process equipment and the exit is the point at which the cooling water is introduced to the cooling tower after being used to cool the process fluid.
 - (B) For samples taken at the entrance and exit of once through heat exchange systems, the entrance is the point at which the cooling water enters and the exit is the point at which the cooling water exits the plant site or chemical manufacturing process units.
 - (C) For samples taken at the entrance and exit of each heat exchanger or any combination of heat exchangers in chemical manufacturing process units, the entrance is the point at which the cooling water enters the individual heat exchanger or group of heat exchangers and the exit is the point at which the cooling water exits the heat exchanger or group of heat exchangers.
 - vii. A minimum of three sets of samples shall be taken at each entrance and exit. The average entrance and exit concentrations shall then be calculated. The concentration shall be corrected for the addition of any makeup water or for any evaporative losses, as applicable.
 - viii. A leak is detected if the exit mean concentration is found to be greater than the entrance mean using a one sided statistical procedure at the 0.05 level of significance and the amount by which it is greater is at least one part per million or ten percent of the entrance mean, whichever is greater.

- c. The Permittee who chooses to monitor using a surrogate indicator of heat exchange system leaks shall comply with the following.
 - i. The Permittee shall prepare and implement a monitoring plan that documents the procedures that will be used to detect leaks of process fluids into cooling water. The plan shall require monitoring of one or more surrogate indicators for monitoring of one or more process parameters or other conditions that indicate a leak. Monitoring that is already being conducted for other purposes may be used. The plan shall include the following.
 - (A) A description of the parameter or condition to be monitored and an explanation of how the selected parameter or condition will reliably indicate the presence of a leak.
 - (B) The parameter level(s) or conditions(s) that shall constitute a leak. This shall be documented by data or calculations showing that the selected levels or conditions will reliably identify leaks. The monitoring must be sufficiently sensitive to determine the range of parameter levels or conditions when the system is not leaking. When the selected parameter level or condition is outside that range, a leak is indicated.
 - (C) Quarterly monitoring to detect leaks.
 - (D) The records that will be maintained to document compliance.
 - ii. If a substantial leak is identified by methods other than those described in the monitoring plan and the method(s) specified in the plan could not detect the leak, the Permittee shall revise the plan and document the basis for the changes. The revisions to the plan shall be made no later than 180 days after discovery of the leak.
 - iii. The Permittee shall maintain, at all times, the monitoring plan that is currently in use. The current plan shall be maintained onsite, or shall be accessible from a central location by computer or other means that provides access within two hours after a request. If the monitoring plan is superseded, the Permittee shall retain the most recent superseded plan for five years from the date of it was superseded. The superseded plan shall be retained onsite (or accessible from a central location by computer or other means that provides access within two hours after a request) for at least six months.
- d. If a leak is detected, it shall be repaired as soon as practical but not later than 45 calendar days after the Permittee receives results of monitoring tests indicating a leak. The leak shall be repaired unless the Permittee demonstrates that the results are due to a condition other than a leak. Once the leak has been repaired, the Permittee shall confirm that the heat exchange system has been repaired within seven calendar days of the repair or startup, whichever is later.
- e. Delay of repair of heat exchange systems for which leaks have been detected is allowed if the equipment is isolated from the process. Delay of repair is also allowed if repair is technically infeasible without a shutdown and any one of the following conditions is met. (All time periods shall be determined from the date when the Permittee determines that delay of repair is necessary.)
 - i. If a shutdown is expected within the next two months, a special shutdown before that planned shutdown is not required.
 - ii. If a shutdown is not expected within the next two months, the Permittee may delay repair as follows.
 - (A) The decision to delay repair shall document the reasons repair was delayed and shall specify a schedule for completing the repair as soon as practical.
 - (B) The Permittee may delay repair until the next shutdown of the process equipment associated with the leaking heat exchanger if a shutdown for repair would cause greater emissions than the potential emissions from delaying repair. The Permittee shall document the basis for the determination that a shutdown for repair would cause greater emissions than the emissions likely to result from delaying repair as follows.
 - (1) The Permittee shall calculate the potential emissions from the leaking heat exchanger by multiplying the concentration of total hazardous air pollutants listed in Table 4 of 40 CFR 63, Subpart F in the cooling water from the leaking heat exchanger by the flow rate of the cooling water from the leaking heat exchanger by the expected duration of the delay. The Permittee may calculate potential emissions using total organic carbon concentration.
 - (2) The Permittee shall determine emissions from purging and depressurizing the equipment that will result from the unscheduled shutdown for the repair.
 - (C) The Permittee may delay repair up to a maximum of 120 calendar days if the basis for the delay is other than the fact that repair would cause greater emissions. However, the Permittee must demonstrate that the necessary parts or personnel were not available.
- f. The Permittee shall retain the following records.
 - i. Monitoring data indicating a leak and the date when the leak was detected, and if demonstrated not to be a leak, the basis for that determination.
 - ii. Records of any leaks detected by procedures or methods other than those contained in the monitoring plan and the date the leak was discovered.
 - iii. The dates of efforts to repair leaks.
 - iv. The method or procedure used to confirm repair of a leak and the date repair was confirmed.
- g. The Permittee shall submit the following in the periodic report if a delay of repair occurs for a heat exchange system. If

the leak remains unrepaired, the information shall also be submitted in each subsequent periodic report, until repair of the leak is reported.

- i. The presence of the leak and the date that the leak was detected.
- ii. Whether or not the leak has been repaired.
- iii. The reason(s) for delay of repair and documentation of emissions estimates when a delay is due to an estimate of emissions that would be less than those caused by repair.
- iv. If the leak remains unrepaired, the expected date of repair.
- v. If the leak is repaired, the date the leak was successfully repaired.

4. 15A NCAC 2D .1111: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY

40 CFR 63.105: Maintenance Wastewater Requirements

- a. The Permittee shall prepare a description of maintenance procedures for management of wastewater containing those organic HAP's listed in Table 9 of 40 CFR 63, Subpart G generated from the emptying and purging of equipment in the process during temporary shutdowns for inspections, maintenance, and repair (i.e., a maintenance turnaround) and during periods which are not shutdowns (i.e., routine maintenance). The descriptions shall include the following information.
 - i. The process equipment or maintenance tasks that are anticipated to create wastewater during maintenance activities.
 - ii. The procedures that will be followed to properly manage the wastewater and control organic HAP emissions to the atmosphere.
 - iii. The procedures to be followed when clearing materials from process equipment.
- b. The Permittee shall modify and update the wastewater management procedures as needed following each maintenance procedure based on the actions taken and the wastewater generated in the preceding maintenance procedure.
- c. The Permittee shall implement the maintenance wastewater procedures as part of the startup, shutdown, and malfunction plan.
- d. The Permittee shall maintain a record of the maintenance wastewater procedures as part of the startup, shutdown, and malfunction plan.

G. Facility-Wide

The following table provides a summary of limits and standards for the emission source(s) describe above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
HAPs	Startup, Shutdown, Malfunction	15A NCAC 2D .1111 (40 CFR 63, Subpart A)
HAPs	Control Device Bypasses	15A NCAC 2D .1111 (40 CFR 63, Subparts F, G, H)
Odor	State Enforceable only See Section 2.2 G.3 "Multiple Emission Sources"	15A NCAC 2D .1806
Toxic Air Pollutants	State Enforceable only See Sections 2.2 G.4 and .5 "Multiple Emission Sources"	15A NCAC 2Q .0711 15A NCAC 2D .1100

1. 15A NCAC 2D .1111 [40 CFR 63, Subparts F, G, and H]: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY – Start up, Shut Down Malfunction

- a. **40 CFR 63.6(e)(3): Start up, Shut Down and Malfunction Plan**
 - i. The Permittee shall develop a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with the relevant standard. The startup, shutdown, and malfunction plan does not need to address any scenario that would not cause the source to exceed an applicable emission limitation in the relevant standard. The purpose of the startup, shutdown, and malfunction plan is to:
 - (A) Ensure that Permittee is prepared to correct malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of hazardous air pollutants; and
 - (B) Reduce the reporting burden associated with periods of startup, shutdown, and malfunction (including

- corrective action taken to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation).
- ii. When actions taken by the Permittee during a startup or shutdown (and the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards), or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, the Permittee must keep records for that event which demonstrate that the procedures specified in the plan were followed. In addition, The Permittee must keep records of these events as specified below in Section 2.1 G.1.a.ii.(A) through (E) [40 CFR 63.10(b)], including records of the occurrence and duration of each startup or shutdown (if the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards), or malfunction of operation and each malfunction of the air pollution control and monitoring equipment. Furthermore, the Permittee shall confirm that actions taken during the relevant reporting period during periods of startup, shutdown, and malfunction were consistent with the affected source's startup, shutdown and malfunction plan in the semiannual (or more frequent) startup, shutdown, and malfunction report required in Section 2.1 G.1.b.i. [40 CFR 63.10(d)(5)].
 - (A) The occurrence and duration of each startup or shutdown when the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards;
 - (B) The occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the required air pollution control and monitoring equipment;
 - (C) All required maintenance performed on the air pollution control and monitoring equipment;
 - (D) Actions taken during periods of startup or shutdown when the source exceeded applicable emission limitations in a relevant standard and when the actions taken are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan; or Actions taken during periods of malfunction (including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation) when the actions taken are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan;
 - (E) All information necessary, including actions taken, to demonstrate conformance with the affected source's startup, shutdown, and malfunction plan when all actions taken during periods of startup or shutdown (and the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards), and malfunction (including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation) are consistent with the procedures specified in such plan. (The information needed to demonstrate conformance with the startup, shutdown, and malfunction plan may be recorded using a "checklist," or some other effective form of recordkeeping, in order to minimize the recordkeeping burden for conforming events);
 - iii. If an action taken by the Permittee during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) is not consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, and the source exceeds any applicable emission limitation in the relevant emission standard, then the Permittee must record the actions taken for that event and must report such actions within 2 working days after commencing actions inconsistent with the plan, followed by a letter within 7 working days after the end of the event, in accordance with Section 2.1 G.1.b.i. [40 CFR 63.10(d)(5)] (unless the owner or operator makes alternative reporting arrangements, in advance, with the DAQ).
 - iv. The Permittee must maintain at the affected source a current startup, shutdown, and malfunction plan and must make the plan available upon request for inspection and copying by the DAQ. In addition, if the startup, shutdown, and malfunction plan is subsequently revised as provided in Section 2.1 G.1.a.iii., the Permittee must maintain at the affected source each previous (*i.e.*, superseded) version of the startup, shutdown, and malfunction plan, and must make each such previous version available for inspection and copying by the DAQ for a period of 5 years after revision of the plan. If at any time after adoption of a startup, shutdown, and malfunction plan the affected source ceases operation or is otherwise no longer subject to the provisions of this part, the Permittee must retain a copy of the most recent plan for 5 years from the date the source ceases operation or is no longer subject to this part and must make the plan available upon request for inspection and copying by the DAQ. The DAQ may at any time request in writing that the Permittee submit a copy of any startup, shutdown, and malfunction plan (or a portion thereof) which is maintained at the affected source or in the possession of the Permittee. Upon receipt of such a request, the Permittee must promptly submit a copy of the requested plan (or a portion thereof) to the DAQ. The Permittee may elect to submit the required copy of any startup, shutdown, and malfunction plan to the DAQ in an electronic format. If the owner or operator claims that any portion of such a startup, shutdown, and malfunction plan is confidential business information entitled to protection from disclosure under section 114(c) of the Act or 40 CFR 2.301, the material which is claimed as confidential must be clearly designated in the submission.
 - v. The Permittee may use the affected source's standard operating procedures (SOP) manual, an Occupational Safety and Health Administration (OSHA) plan, or other plan, provided the alternative plans meet all the requirements of

this section and are made available for inspection when requested by the DAQ.

- vi. The DAQ may require that the Permittee of an affected source make changes to the startup, shutdown, and malfunction plan for an affected source based on the review of monitoring data and/or the plan. The DAQ may require reasonable revisions to a startup, shutdown, and malfunction plan, if the DAQ finds that the plan:
 - (A) Does not address a startup, shutdown, or malfunction event that has occurred;
 - (B) Fails to provide for the operation of the source (including associated air pollution control equipment) during a startup, shutdown, or malfunction event in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by all relevant standards; or
 - (C) Does not provide adequate procedures for correcting malfunctioning process and/or air pollution control equipment as quickly as practicable.
- vii. If the startup, shutdown, and malfunction plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction but was not included in the startup, shutdown, and malfunction plan at the time the Permittee developed the plan, the Permittee shall revise the startup, shutdown, and malfunction plan within 45 days after the event to include detailed procedures for operating and maintaining the source during similar malfunction events and a program of corrective action for similar malfunctions of process or air pollution control equipment.

b. **40 CFR 63.10(d)(5): Startup, Shutdown, and Malfunction Reports**

- i. *Periodic startup, shutdown, and malfunction reports.* If actions taken by the Permittee during a startup, shutdown, or malfunction of an affected source (including actions taken to correct a malfunction) are consistent with the procedures specified in the source's startup, shutdown, and malfunction plan, the Permittee shall state such information in a startup, shutdown, and malfunction report. Reports shall only be required if a startup, shutdown, or malfunction occurred during the reporting period. The startup, shutdown, and malfunction report shall consist of a letter, containing the name, title, and signature of the Permittee or other responsible official who is certifying its accuracy, which shall be submitted to the DAQ semiannually. If the Permittee is required to submit excess emissions and continuous monitoring system performance (or other periodic) reports under this part, the startup, shutdown, and malfunction reports may be submitted simultaneously with the excess emissions and continuous monitoring system performance (or other) reports.
- ii. *Immediate startup, shutdown, and malfunction reports.* Any time an action taken by the Permittee during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) is not consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, the Permittee shall report the actions taken for that event within two working days after commencing actions inconsistent with the plan followed by a letter within seven working days after the end of the event. The immediate report shall consist of a telephone call (or facsimile (FAX) transmission) to the DAQ within two working days after commencing actions inconsistent with the plan, and it shall be followed by a letter, delivered or postmarked within seven working days after the end of the event, that contains the name, title, and signature of the responsible official who is certifying its accuracy, explaining the circumstances of the event, the reasons for not following the startup, shutdown, and malfunction plan, and whether any excess emissions and/or parameter monitoring exceedances are believed to have occurred.

2. **15A NCAC 2D .1111 [40 CFR 63, Subparts F, G, and H]: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY - Control Device Bypass**

a. **40 CFR 63.114(d): Control Device Bypass Monitoring Requirements**

- i. The Permittee shall maintain and operate a flow indicator installed at the entrance to any bypass line, between the origin of the gas stream (e.g., at an air oxidation reactor, distillation unit, or reactor) and the point where the gas stream reaches the process vent that could divert the gas stream to the atmosphere. The indicator shall take a reading at least once every 15 minutes and records shall be generated as specified in 40 CFR 63.118(a)(3); or
- ii. The Permittee shall secure the bypass line valve in the non-diverting position with a car seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the non-diverting position and the gas stream is not diverted through the bypass line.

b. **40 CFR 63.118(a): Control Device Bypass Recordkeeping Requirements**

- i. The Permittee shall maintain hourly records of whether the flow indicator specified in 2.2 G.2.a.i. was operating and whether a diversion was detected at any time during the hour, as well as records of the times and durations of all periods when the gas stream is diverted to the atmosphere or the monitor is not operating; or
- ii. The Permittee shall record that the monthly visual inspection of the seals or closure mechanism for a seal used to comply with 2.2 G.2.a.ii. has been done, and shall record the duration of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock has been checked out,

and records of any car seal that has broken.

c. **40 CFR 63.118(f): Control Device Bypass Reporting Requirements**

- i. The Permittee shall submit periodic reports of the duration of periods when monitoring data is not collected for each excursion caused by insufficient monitoring data as defined below:
 - (A) when the period of control device or recovery device operation is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data for at least 75 percent of the operating hours;
 - (B) when the period of control device or recovery device operation is less than 4 hours in an operating day and more than one of the hours during the period of operation does not constitute a valid hour of data due to insufficient monitoring data;
 - (C) monitoring data are insufficient to constitute a valid hour of data if measured values are unavailable for any of the 15minute periods within the hour. [For data compression systems approved under 40 CFR 63.151(g)(4), monitoring data are insufficient to calculate a valid hour of data if there are less than 4 data values recorded during the hour.]
- ii. The Permittee shall submit periodic reports of the times and durations of all periods recorded under 2.2 G.2.b.i. when the gas stream is diverted to the atmosphere through a bypass line.
- iii. The Permittee shall submit periodic reports of all periods recorded under 2.2 G.2.b.ii. in which the seal mechanism is broken, the bypass line valve position has changed, or the key to unlock the bypass line valve was checked out.

State Enforceable Only

3. **15A NCAC 2D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS**

- a. The Permittee shall not operate the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary.
- b. The DAQ may require the Permittee to implement maximum feasible controls per 15A NCAC 2D .1806(g) if:
 - i. A member of the DAQ staff determines by field investigation that an objectionable odor is present by taking into account nature, intensity, pervasiveness, duration, and source of the odor and other pertinent factors;
 - ii. The source or facility emits known odor causing compounds such as ammonia, total volatile organics, hydrogen sulfide, or other sulfur compounds at levels that cause objectionable odors beyond the property line of that source or facility; or
 - iii. The DAQ receives epidemiological studies associating health problems with odors from the source or facility or evidence of documented health problems associated with odors from the source or facility provided by the State Health Director.
- c. If the DAQ determines that a source or facility is emitting an objectionable odor, the Permittee shall:
 - i. Complete the determination process outlined in 15A NCAC 2D .1807 and submit to the DAQ a completed maximum feasible control determination process, a permit application for maximum feasible controls and a compliance schedule within 180 days of receipt of written notification from the Director of the requirement to implement maximum feasible controls; and
 - ii. Have installed and begun operating the maximum feasible controls within 18 months of receipt of written notification from the DAQ of the requirement to implement maximum feasible controls.

State Enforceable Only

4. **15A NCAC 2Q .0711: TOXIC AIR POLLUTANT EMISSIONS LIMITATION REQUIREMENT**

The Permittee has made a demonstration that facility-wide actual emissions for each of the toxic air pollutants (TAPs) listed below do not exceed the Toxic Permit Emission Rates (TPERs) listed in 15A NCAC 2Q .0711. The facility shall be operated and maintained in such a manner that emissions of any listed TAPs from the facility, including fugitive emissions, will not exceed TPERs listed in 15A NCAC 2Q .0711.

- a. A permit to emit any of the below listed TAPs shall be required for this facility if actual emissions from all sources will become greater than the corresponding TPERs.
- b. **PRIOR** to exceeding any of these listed TPERs, the Permittee shall be responsible for obtaining a permit to emit TAPs and for demonstrating compliance with the requirements of 15A NCAC 2D .1100 "Control of Toxic Air Pollutants". In accordance with the approved application, the Permittee shall maintain records of operational information demonstrating that the TAP emissions do not exceed the TPERs as listed below:

TPERs Limitations				
Pollutant (CAS Number)	Carcinogens (lb/yr)	Chronic Toxicants (lb/day)	Acute Systemic Toxicants (lb/hr)	Acute Irritants (lb/hr)
acrolein (107028)				0.02
p-dichlorobenzene (106467)				16.8
chlorine (7782505)		0.79		0.23
n-hexane (110543)		23		
hexane isomers except n-hexane				92
hydrogen chloride (7647016)				0.18
sulfuric acid mist (7663939)		0.25	0.025	

STATE-ENFORCEABLE ONLY

5. **15A NCAC 2D .1100: CONTROL OF TOXIC AIR POLLUTANTS:** Pursuant to 15A NCAC 2Q .0701, as of January 8, 2009, emissions of toxic air pollutants have been demonstrated on a facility-wide basis (excluding those sources exempt under 15A NCAC 2Q .0702 "Exemptions") that each of the toxic air pollutants (TAPs) emitted from all sources at the facility are either below its respective toxic permit emission rates (TPER) listed in 15A NCAC 2Q .0711, "Emission Rates Requiring a Permit", or the TAPs are in compliance with 15A NCAC 2D .1100, "Control of Toxic Air Pollutants", as described above in this permit. Testing, monitoring, recordkeeping and reporting shall be conducted in accordance with the provisions of applicable regulations pursuant to 40 CFR 63; Subparts F, G, H, and FFFF. The Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .1100 if these tasks as stated herein are not performed.

EMISSION SOURCE(S)	TOXIC AIR POLLUTANT(S)	EMISSION LIMIT(S)
UTILITIES		
Heater #4 (ID No. HTR4) and PTA steam generator (ID No. B4040)	acetaldehyde	0.479 lb/hour
	ammonia	2.11 lb/hour
	arsenic and inorganic arsenic compounds	28.5 lb/12-month
	benzene	647 lb/12-month
	beryllium	9.73 lb/12-month
	cadmium	9.73 lb/12-month
	chromium VI	20.0 lb/12-month
	1,4-dioxane	0.293 lb/24-hour
	formaldehyde	0.127 lb/hour
	manganese	6.20 lb/24-hour
	mercury	0.0267 lbs/24-hour

EMISSION SOURCE(S)	TOXIC AIR POLLUTANT(S)	EMISSION LIMIT(S)
	nickel toluene xylene	74.7 lb/24-hour 0.48 lbs/hour 1.95 lb/hour
VOC flare (ID No. G4904R)	acetaldehyde ammonia arsenic and inorganic arsenic compounds benzene cadmium 1,4-dioxane formaldehyde manganese mercury nickel toluene xylene	0.474 lb/hour 0.533 lb/hour 0.292 lb/12-month 586 lb/12-month 1.60 lb/12-month 0.293 lb/24-hour 0.0125 lb/hour 0.00152 lb/24-hour 0.00103 lbs/24-hour 0.0084 lb/24-hour 0.466 lbs/hour 1.95 lb/hour
Wastewater Incinerator (ID No. TO)	acetaldehyde acetic acid ammonia arsenic and inorganic arsenic compounds benzene beryllium cadmium 1,4-dioxane formaldehyde manganese mercury nickel toluene	0.048 lb/hour 3.17 lb/hour 0.794 lb/hour 4.91 lb/12-month 23.9 lb/12-month 3.68 lb/12-month 3.68 lb/12-month 0.021 lb/24-hour 2.10 lb/hour 0.0202 lb/24-hour 0.0101 lb/24-hour 0.610 lb/24-hour 0.00087 lb/hour

EMISSION SOURCE(S)	TOXIC AIR POLLUTANT(S)	EMISSION LIMIT(S)
	xylene	0.000025 lb/hour
PROCESS VENTS		
A-line Carbon Adsorbers (ID No. A102A/B) <i>Released from A-line oxidizer header (ID No. AOXHEAD)</i>	benzene	4,470 lb/12-month
	toluene	1.5 lb/hour
	xylene	11.0 lb/hour
B-line Carbon Adsorbers (ID No. A2102A/B) <i>Released from B-line oxidizer header (ID No. BOXHEAD)</i>	benzene	4,470 lb/12-month
	toluene	1.5 lb/hour
	xylene	11.0 lb/hour
C-line Carbon Adsorbers (ID No. A4102A/B/C) <i>Released from C-line oxidizer reactors and separator tank (ID No. R4100/T41005)</i>	benzene	4,470 lb/12-month
	toluene	3.0 lb/hour
	xylene	16.0 lb/hour
D-line Carbon Adsorbers (ID No. A6102A/B/C) <i>Released from D-line oxidizer reactors and separator tank (ID No. R6100/T61005)</i>	benzene	4,470 lb/12-month
	toluene	3.0 lb/hour
	xylene	16.0 lb/hour
STORAGE VESSELS		
Xylene storage tank (ID No. T10)	benzene	2.77 lb/12-month
	xylene	31.6 lb/hour
Xylene storage tank (ID No. T14)	benzene	2.77 lb/12-month
	xylene	31.6 lb/hour
Catalyst solution tank (ID No. T114)	acetic acid	0.000164 lb/hour
	benzene	0.091 lb/12-month
	formaldehyde	0.00000133 lb/hour
	toluene	0.0000104 lb/hour
	xylene	0.0000019 lb/hour
Methyl benzoate tank (ID No. T105-13)	acetaldehyde	2.22 lb/hour
	benzene	25.4 lb/12-month
	1,4-dioxane	5.61 lb/24-hour
	toluene	0.0262 lb/hour
	xylene	0.827 lb/hour
Methyl benzoate tank	acetaldehyde	4.53 lb/hour

EMISSION SOURCE(S)	TOXIC AIR POLLUTANT(S)	EMISSION LIMIT(S)
(ID No. T105-7)	benzene 1,4-dioxane toluene xylene	46.1 lb/12-month 8.70 lb/24-hour 0.0417 lb/hour 1.15 lb/hour
A-line acid water storage tank (ID No. T112-7B)	acetic acid acetaldehyde benzene 1,4-dioxane formaldehyde toluene xylene	0.496 lb/hour 0.381 lb/hour 3.87 lb/12-month 0.73 lb/24-hour 0.000441 lb/hour 0.0035 lb/hour 0.00967 lb/hour
B-line catalyst solution tank (ID No. T115)	acetic acid benzene formaldehyde toluene xylene	0.0025 lb/hour 0.791 lb/12-month 0.0000029 lb/hour 0.0000903 lb/hour 0.0000284 lb/hour
Barometric tank (ID No. T404)	acetaldehyde benzene 1,4-dioxane toluene xylene	0.0244 lb/hour 7.96 lb/12-month 0.047 lb/24-hour 0.0359 lb/hour 0.279 lb/hour
Barometric tank (ID No. T4404)	acetaldehyde benzene 1,4-dioxane toluene xylene	0.0235 lb/hour 7.66 lb/12-month 0.045 lb/24-hour 0.0345 lb/hour 0.269 lb/hour
Barometric tank (ID No. T406-15)	acetaldehyde benzene 1,4-dioxane toluene	0.0244 lb/hour 7.97 lb/12-month 0.0469 lb/24-hour 0.0359 lb/hour

EMISSION SOURCE(S)	TOXIC AIR POLLUTANT(S)	EMISSION LIMIT(S)
	xylene	0.279 lb/hour
Barometric tank (ID No. T6412-19)	acetaldehyde	0.055 lb/hour
	benzene	17.9 lb/12-month
	1,4-dioxane	0.106 lb/24-hour
	toluene	0.081 lb/hour
	xylene	0.629 lb/hour
Methyl benzoate neutralization tank (ID No. T517-2A)	acetaldehyde	0.502 lb/hour
	benzene	5.11 lb/12-month
	1,4-dioxane	0.963 lb/24-hour
	toluene	0.0046 lb/hour
	xylene	0.128 lb/hour
Methyl benzoate neutralization tank (ID No. T517-2B)	acetaldehyde	0.502 lb/hour
	benzene	5.11 lb/12-month
	1,4-dioxane	0.963 lb/24-hour
	toluene	0.0046 lb/hour
	xylene	0.128 lb/hour
Glycol storage tank (ID No. T301A)	xylene	0.0000135 lb/hour
Methyl toluate storage tank (ID No. T6105-14)	xylene	0.000834 lb/hour
Methyl toluate storage tank (ID No. T6419)	xylene	0.0033 lb/hour
Terate® barometric tank (ID No. T7010-21)	acetaldehyde	0.055 lb/hour
	benzene	17.9 lb/12-month
	1,4-dioxane	0.106 lb/24-hour
	toluene	0.081 lb/hour
	xylene	0.629 lb/hour
Terate® barometric tank (ID No. T7103-12)	acetaldehyde	0.00013 lb/hour
	1,4-dioxane	0.024 lb/24-hour

EMISSION SOURCE(S)	TOXIC AIR POLLUTANT(S)	EMISSION LIMIT(S)
WASTEWATER OPERATIONS		
Wastewater still feed tank (ID No. T110-7)	acetic acid benzene formaldehyde toluene xylene	0.0025 lb/hour 0.791 lb/12-month 0.0000029 lb/hour 0.0000903 lb/hour 0.000097 lb/hour
Wastewater still feed tank (ID No. T4110-7)	acetaldehyde benzene 1,4-dioxane toluene xylene	0.25 lb/hour 5.71 lb/12-month 0.353 lb/hour 0.27 lb/hour 1.84 lb/hour
Wastewater still feed tank (ID No. T6110-7)	acetaldehyde benzene 1,4-dioxane toluene xylene	0.25 lb/hour 5.71 lb/12-month 0.353 lb/hour 0.27 lb/hour 1.84 lb/hour
Wastewater tank (ID No. T1922E)	acetaldehyde acetic acid benzene 1,4-dioxane formaldehyde toluene xylene	0.65 lb/hour 1.83 lb/hour 13.9 lb/12-month 0.0951 lb/24-hour 0.0935 lb/hour 0.00079 lb/hour 0.0349 lb/hour
Wastewater equalization tank (ID No. T1939AR)	acetaldehyde acetic acid benzene 1,4-dioxane formaldehyde xylene	0.401 lb/hour 1.25 lb/hour 6.94 lb/12-month 0.038 lb/24-hour 0.0523 lb/hour 0.0269 lb/hour

EMISSION SOURCE(S)	TOXIC AIR POLLUTANT(S)	EMISSION LIMIT(S)
Wastewater treatment plant (includes 1922A,B,C,D, Aeration Basin, Cooling Tower, Clarifier No. 2, Clarifier No. 3, Reactor Clarifier, default trickling filter) (ID No. WWTP1940)	acetaldehyde	0.0285 lb/hour
	ammonia	29.1 lb/hour
	benzene	13.9 lb/12-month
	1,4-dioxane	0.1141lb/24-hour
	formaldehyde	0.00079 lb/hour
	toluene	0.0578 lb/hour
	xylene	0.0563 lb/hour
FUGITIVE EMISSIONS		
A-line equipment leaks (ID No. AEQLK)	acetaldehyde	0.00516 lb/hour
	benzene	0.263 lb/12-month
	xylene	3.00 lb/hour
B-line equipment leaks (ID No. BEQLK)	acetaldehyde	0.00516 lb/hour
	benzene	0.263 lb/12-month
	xylene	3.00 lb/hour
C-line equipment leaks (ID No. CEQLK)	acetaldehyde	0.00516 lb/hour
	benzene	0.263 lb/12-month
	xylene	3.00 lb/hour
D-line equipment leaks (ID No. DEQLK)	acetaldehyde	0.00516 lb/hour
	benzene	0.263 lb/12-month
	xylene	3.00 lb/hour
Fugitive emissions (ID No. RAWQLK)	acetaldehyde	0.00516 lb/hour
	benzene	0.263 lb/12-month
	xylene	3.00 lb/hour

- a. To ensure compliance with the above limits, the following restrictions apply:
- i. Testing, monitoring, recordkeeping and reporting for all MACT-affected sources listed above shall be conducted in accordance with the provisions of applicable regulations pursuant to 40 CFR 63; Subparts F, G, H, and FFFF.
 - ii. Fuel oil combusted in the heater #4 and PTA steam generator (ID Nos. HTR-4 and B-4040) shall not exceed the 12-month, daily, and hourly consumption rates included in the permit application dated May 9, 2008 as to exceed the limits above when combusted. TAP emission limits are based on emission factors for residual oil fired boilers, Source Classification Codes (SCCs) 1-01-004-01/04, published in AP-42, fifth Edition, Volume I Chapter 1, including its Supplement E dated September 1998.
- b. To ensure compliance with the limits for the wastewater incinerator (ID No. TO), the following restrictions shall apply:
- i. Wastewater shall contain no metals (as delineated above) or chlorine derived from chemical compounds in the synthesis or separations processes (does not include impurities or contaminants); and,
 - ii. Fuel oil combusted in the incinerator shall not exceed 8.67 million gallons over any 12-month rolling period,

- 23,830 gallons over any calendar day, or 993 gallons over any hour to not exceed the limits above when combusted.
- c. The air toxic model submitted as part of the May 9, 2008 application, including supplemental air toxics modeling submitted after the May 9, 2008 application dated October 17, 2008, is considered part of the binding limits and conditions of this permit. The application specified certain parameters for modeling compliance with 15A NCAC 2D .1100 "Control of Toxic Air Pollutants." A new permit is required prior to changing any of these parameters in such a way that toxic emissions increase. Changes in equipment or operations that affect stack exhaust temperature or the stack gas exit velocity, or changes in facilities such as location of new buildings or structures in close proximity to the modeled stack, that could significantly increase the modeled emissions, require an amended permit application.

H. Terates® Production Equipment

The following table provides a summary of limits and standards for the emission source(s) describe above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
HAPs	MACT compliance	15A NCAC 2D .1111 (40 CFR 63, Subpart FFFF)

1. 15A NCAC 2D .1111 [40 CFR 63, Subpart FFFF]: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM THE MISCELLANEOUS ORGANIC CHEMICAL MANUFACTURING

The Permittee shall comply with all applicable provisions contained in Environmental Management Commission Standard 15A NCAC 2D .1111, "Maximum Achievable Control Technology" (MACT) as promulgated in 40 CFR Part 63, Subpart FFFF by **May 10, 2008** [40 CFR 63.2445(b)]. Notification of compliance status is due by **October 7, 2008** [40 CFR 63.2450(d)] and shall consist of both a **test report and a permit application** to amend the Title V operating permit to incorporate all applicable standards, monitoring, recordkeeping and reporting requirements. The notification of compliance status report must include the following information.

- The results of any applicability determinations, emission calculations, or analyses used to identify and quantify HAP emissions from the affected source.
- The results of emissions profiles, performance tests, engineering analyses, design evaluations, flare compliance assessments, inspections and repairs, and calculations used to demonstrate initial compliance according to 40 CFR 63 Sections 63.2455 through 63.2485. For performance tests, results must include descriptions of sampling and analysis procedures and quality assurance procedures.
- Descriptions of monitoring devices, monitoring frequencies, and the operating limits established during the initial compliance demonstrations, including data and calculations to support the levels you establish.
- All operating scenarios.
- Descriptions of worst-case operating and/or testing conditions for control devices.
- Identification of parts of the affected source subject to overlapping requirements described in 40 CFR 63.2535 and the authority under which you will comply.
- The information specified in 40 CFR 63.1039(a)(1) through (3) for each process subject to the work practice standards for equipment leaks in Table 6 of 40 CFR 63, Subpart FFFF.
- Identify storage tanks for which you are complying with the vapor balancing alternative in 40 CFR 63.2470(g).
- Records as specified in 40 CFR 63.2535(i)(1) through (3) of process units used to create a process unit group (PUG) and calculations of the initial primary product of the PUG; and,
- Compliance test results or other initial compliance demonstration, as appropriate, submitted to the DAQ regional office.

2.3 - OTHER APPLICABLE REQUIREMENTS

15A NCAC 2D .0524 (40 CFR 60, Subpart NNN) requirements for distillation operations

- A. Distillation operations (ID Nos. A101/T101-5R, A110, A112, A206/T206-6, A6206-15, A420, A203-30, A422, A105R, A406, A412, A2201A, A2201B/T2201-3, A2205/T2205-5, A413, A4406-21/T4406-5, A4065-10, A406/T4061-4, A4202B, A4205/T4205-5, A4220/T4220-6/T4220-10, A4400/T4400-9, A4403/T4403-6, T4207/A4201/T4201-3, T6207/A6201/T62013, A6220/T62206/T622010, A6105/T61055, A6110/S61011/T61104, A6112/T61124, A6204, A6204A, A6205/T62055, A6400/T64009, A6403/T6403-6/A6403-8, A6422/T6422-6) and esterification reactors (ID Nos. R2203, R4203 and R6203) will be fulfilled under MACT 40 CFR 63, Subpart G Group 1 process vent requirements and are required to comply with MACT provisions only [40 CFR 63.110(d)(4)].

15A NCAC 2D .0524 (40 CFR 60, Subpart VV) LEAK Detection and Repair

- B. Requirements for all the affected equipment grouped under (ID Nos. AEQLK and BEQLK) for TOC will be fulfilled by the LDAR requirements under MACT 40 CFR 63, Subpart H and are required to comply with MACT provisions only [40 CFR 63.160(c)].

SECTION 3 – GENERAL CONDITIONS (version 3.4)

This section describes terms and conditions applicable to this Title V facility.

A. **General Provisions** [NCGS 143-215 and 15A NCAC 2Q .0508(i)(16)]

1. Terms not otherwise defined in this permit shall have the meaning assigned to such terms as defined in 15A NCAC 2D and 2Q.
2. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are binding and enforceable pursuant to NCGS 143-215.114A and 143-215.114B, including assessment of civil and/or criminal penalties. Any unauthorized deviation from the conditions of this permit may constitute grounds for revocation and/or enforcement action by the DAQ.
3. This permit is not a waiver of or approval of any other Department permits that may be required for other aspects of the facility which are not addressed in this permit.
4. This permit does not relieve the Permittee from liability for harm or injury to human health or welfare, animal or plant life, or property caused by the construction or operation of this permitted facility, or from penalties therefore, nor does it allow the Permittee to cause pollution in contravention of state laws or rules, unless specifically authorized by an order from the North Carolina Environmental Management Commission.
5. Except as identified as state-only requirements in this permit, all terms and conditions contained herein shall be enforceable by the DAQ, the EPA, and citizens of the United States as defined in the Federal Clean Air Act.
6. Any stationary source of air pollution shall not be operated, maintained, or modified without the appropriate and valid permits issued by the DAQ, unless the source is exempted by rule. The DAQ may issue a permit only after it receives reasonable assurance that the installation will not cause air pollution in violation of any of the applicable requirements. A permitted installation may only be operated, maintained, constructed, expanded, or modified in a manner that is consistent with the terms of this permit.

B. **Permit Availability** [15A NCAC 2Q .0507(k) and .0508(i)(9)(B)]

The Permittee shall have available at the facility a copy of this permit and shall retain for the duration of the permit term one complete copy of the application and any information submitted in support of the application package. The permit and application shall be made available to an authorized representative of Department of Environment and Natural Resources upon request.

C. **Severability Clause** [15A NCAC 2Q .0508(i)(2)]

In the event of an administrative challenge to a final and binding permit in which a condition is held to be invalid, the provisions in this permit are severable so that all requirements contained in the permit, except those held to be invalid, shall remain valid and must be complied with.

D. **Submissions** [15A NCAC 2Q .0507(e) and 2Q .0508(i)(16)]

Except as otherwise specified herein, two copies of all documents, reports, test data, monitoring data, notifications, request for renewal, and any other information required by this permit shall be submitted to the appropriate Regional Office. Refer to the Regional Office address on the cover page of this permit. For continuous emissions monitoring systems (CEMS) reports, continuous opacity monitoring systems (COMS) reports, quality assurance (QA)/quality control (QC) reports, acid rain CEM certification reports, and NOx budget CEM certification reports, one copy shall be sent to the appropriate Regional Office and one copy shall be sent to:

Supervisor, Stationary Source Compliance
North Carolina Division of Air Quality
1641 Mail Service Center
Raleigh, NC 27699-1641

All submittals shall include the facility name and Facility ID number (refer to the cover page of this permit).

E. **Duty to Comply** [15A NCAC 2Q .0508(i)(2)]

The Permittee shall comply with all terms, conditions, requirements, limitations and restrictions set forth in this permit. Noncompliance with any permit condition except conditions identified as state-only requirements constitutes a violation of the Federal Clean Air Act. Noncompliance with any permit condition is grounds for enforcement action, for permit termination, revocation and reissuance, or modification, or for denial of a permit renewal application.

F. **Circumvention** - STATE ENFORCEABLE ONLY

The facility shall be properly operated and maintained at all times in a manner that will effect an overall reduction in air pollution. Unless otherwise specified by this permit, no emission source may be operated without the concurrent operation of its associated air pollution control device(s) and appurtenances.

G. **Permit Modifications**

1. **Administrative Permit Amendments** [15A NCAC 2Q .0514]
The Permittee shall submit an application for an administrative permit amendment in accordance with 15A NCAC 2Q .0514.
2. **Transfer in Ownership or Operation and Application Submittal Content** [15A NCAC 2Q .0524 and 2Q .0505]
The Permittee shall submit an application for an ownership change in accordance with 15A NCAC 2Q.0524 and 2Q .0505.
3. **Minor Permit Modifications** [15A NCAC 2Q .0515]
The Permittee shall submit an application for a minor permit modification in accordance with 15A NCAC 2Q .0515.
4. **Significant Permit Modifications** [15A NCAC 2Q .0516]
The Permittee shall submit an application for a significant permit modification in accordance with 15A NCAC 2Q .0516.
5. **Reopening for Cause** [15A NCAC 2Q .0517]
The Permittee shall submit an application for reopening for cause in accordance with 15A NCAC 2Q .0517.

H. **Changes Not Requiring Permit Modifications**

1. **Reporting Requirements**. Any of the following that would result in new or increased emissions from the emission source(s) listed in Section 1 must be reported to the Regional Supervisor, DAQ:
 - a. Changes in the information submitted in the application;
 - b. Changes that modify equipment or processes; or
 - c. Changes in the quantity or quality of materials processed.

If appropriate, modifications to the permit may then be made by the DAQ to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause a violation of the emission limitations specified herein.
2. **Section 502(b)(10) Changes** [15A NCAC 2Q .0523(a)]
 - a. "Section 502(b)(10) changes" means changes that contravene an express permit term or condition. Such changes do not include changes that would violate applicable requirements or contravene federally enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements.
 - b. The Permittee may make Section 502(b)(10) changes without having the permit revised if:
 - i. The changes are not a modification under Title I of the Federal Clean Air Act;
 - ii. The changes do not cause the allowable emissions under the permit to be exceeded;
 - iii. The Permittee notifies the Director and EPA with written notification at least seven days before the change is made; and
 - iv. The Permittee shall attach the notice to the relevant permit.
 - c. The written notification shall include:
 - i. A description of the change;
 - ii. The date on which the change will occur;
 - iii. Any change in emissions; and
 - iv. Any permit term or condition that is no longer applicable as a result of the change.
 - d. Section 502(b)(10) changes shall be made in the permit the next time that the permit is revised or renewed, whichever comes first.
3. **Off Permit Changes** [15A NCAC 2Q .0523(b)]
The Permittee may make changes in the operation or emissions without revising the permit if:
 - a. The change affects only insignificant activities and the activities remain insignificant after the change; or
 - b. The change is not covered under any applicable requirement.
4. **Emissions Trading** [15A NCAC 2Q .0523(c)]
To the extent that emissions trading is allowed under 15A NCAC 2D, including subsequently adopted maximum achievable control technology standards, emissions trading shall be allowed without permit revision pursuant to 15A NCAC 2Q .0523(c).

I.A. Reporting Requirements for Excess Emissions and Permit Deviations

[15A NCAC 2D .0535(f) and 2Q .0508(f)(2)]

“Excess Emissions” - means an emission rate that exceeds any applicable emission limitation or standard allowed by any rule in Sections .0500, .0900, .1200, or .1400 of Subchapter 2D; or by a permit condition; or that exceeds an emission limit established in a permit issued under 15A NCAC 2Q .0700. (*Note: Definitions of excess emissions under 2D .1110 and 2D .1111 shall apply where defined by rule.*)

“Deviations” - for the purposes of this condition, any action or condition not in accordance with the terms and conditions of this permit including those attributable to upset conditions as well as excess emissions as defined above lasting less than four hours.

Excess Emissions

1. If a source is required to report excess emissions under NSPS (15A NCAC 2D .0524), NESHAPS (15A NCAC 2D .1110 or .1111), or the operating permit provides for periodic (e.g., quarterly) reporting of excess emissions, reporting shall be performed as prescribed therein.
2. If the source is not subject to NSPS (15A NCAC 2D .0524), NESHAPS (15A NCAC 2D .1110 or .1111), or these rules do NOT define "excess emissions," the Permittee shall report excess emissions in accordance with 15A NCAC 2D .0535 as follows:
 - a. Pursuant to 15A NCAC 2D .0535, if excess emissions last for more than four hours resulting from a malfunction, a breakdown of process or control equipment, or any other abnormal condition, the owner or operator shall:
 - i. Notify the Regional Supervisor or Director of any such occurrence by 9:00 a.m. Eastern Time of the Division's next business day of becoming aware of the occurrence and provide:
 - Name and location of the facility;
 - Nature and cause of the malfunction or breakdown;
 - Time when the malfunction or breakdown is first observed;
 - Expected duration; and
 - Estimated rate of emissions;
 - ii. Notify the Regional Supervisor or Director immediately when corrective measures have been accomplished; and
 - iii. Submit to the Regional Supervisor or Director within 15 days a written report as described in 15A NCAC 2D .0535(f)(3).

Permit Deviations

3. Pursuant to 15A NCAC 2Q .0508(f)(2), the Permittee shall report deviations from permit requirements (terms and conditions) as follows:
 - a. Notify the Regional Supervisor or Director of all other deviations from permit requirements not covered under 15A NCAC 2D .0535 quarterly. A written report to the Regional Supervisor shall include the probable cause of such deviation and any corrective actions or preventative actions taken. The responsible official shall certify all deviations from permit requirements.

I.B. Other Requirements under 15A NCAC 2D .0535

The Permittee shall comply with all other applicable requirements contained in 15A NCAC 2D .0535, including 15A NCAC 2D .0535(c) as follows:

1. Any excess emissions that do not occur during start-up and shut-down shall be considered a violation of the appropriate rule unless the owner or operator of the sources demonstrates to the Director, that the excess emissions are a result of a malfunction. The Director shall consider, along with any other pertinent information, the criteria contained in 15A NCAC 2D .0535(c)(1) through (7).
2. 15A NCAC 2D .0535(g). Excess emissions during start-up and shut-down shall be considered a violation of the appropriate rule if the owner or operator cannot demonstrate that excess emissions are unavoidable.

J. Emergency Provisions [40 CFR 70.6(g)]

The Permittee shall be subject to the following provisions with respect to emergencies:

1. An emergency means any situation arising from sudden and reasonably unforeseeable events beyond the control of the facility, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the facility 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 preventive maintenance, careless or improper

operation, or operator error.

2. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions specified in 3. below are met.
3. The affirmative defense of emergency shall be demonstrated through properly signed contemporaneous operating logs or other relevant evidence that include information as follows:
 - a. An emergency occurred and 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 standards or other requirements in the permit; and
 - d. The Permittee submitted notice of the emergency to the DAQ within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, steps taken to mitigate emissions, and corrective actions taken.
4. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
5. This provision is in addition to any emergency or upset provision contained in any applicable requirement specified elsewhere herein.

K. **Permit Renewal** [15A NCAC 2Q .0508(e) and 2Q .0513(b)]

This permit is issued for a fixed term of five years for facilities subject to Title IV requirements and for a term not to exceed five years in the case of all other facilities. This permit shall expire at the end of its term. Permit expiration terminates the facility's right to operate unless a complete renewal application is submitted at least nine months before the date of permit expiration. If the Permittee or applicant has complied with 15A NCAC 2Q .0512(b)(1), this permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of this permit shall remain in effect until the renewal permit has been issued or denied.

L. **Need to Halt or Reduce Activity Not a Defense** [15A NCAC 2Q .0508(i)(4)]

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.

M. **Duty to Provide Information (submittal of information)** [15A NCAC 2Q .0508(i)(9)]

1. The Permittee shall furnish to the DAQ, in a timely manner, any reasonable information that the Director 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.
2. The Permittee shall furnish the DAQ copies of records required to be kept by the permit when such copies are requested by the Director. For information claimed to be confidential, the Permittee may furnish such records directly to the EPA upon request along with a claim of confidentiality.

N. **Duty to Supplement** [15A NCAC 2Q .0507(f)]

The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information to the DAQ. The Permittee shall also provide additional information as necessary to address any requirement that becomes applicable to the facility after the date a complete permit application was submitted but prior to the release of the draft permit.

O. **Retention of Records** [15A NCAC 2Q .0508(f) and 2Q .0508 (l)]

The Permittee shall retain records of all required monitoring data and supporting information for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Supporting information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring information, and copies of all reports required by the permit. These records shall be maintained in a form suitable and readily available for expeditious inspection and review. Any records required by the conditions of this permit shall be kept on site and made available to DAQ personnel for inspection upon request.

P. **Compliance Certification** [15A NCAC 2Q .0508(n)]

The Permittee shall submit to the DAQ and the EPA (Air and EPCRA Enforcement Branch, EPA, Region 4, 61 Forsyth Street, Atlanta, GA 30303) postmarked on or before March 1 a compliance certification (for the preceding calendar year) by a responsible official with all federally-enforceable terms and conditions in the permit, including emissions limitations, standards, or work practices. It shall be the responsibility of the current owner to submit a compliance certification for the entire year regardless of who owned the facility during the year. The compliance certification shall

comply with additional requirements as may be specified under Sections 114(a)(3) or 504(b) of the Federal Clean Air Act. The compliance certification shall specify:

1. The identification of each term or condition of the permit that is the basis of the certification;
2. The compliance status (with the terms and conditions of the permit for the period covered by the certification);
3. Whether compliance was continuous or intermittent; and
4. The method(s) used for determining the compliance status of the source during the certification period.

Q. Certification by Responsible Official [15A NCAC 2Q .0520]

A responsible official shall certify the truth, accuracy, and completeness of any application form, report, or compliance certification required by this permit. All certifications shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

R. Permit Shield for Applicable Requirements [15A NCAC 2Q .0512]

1. Compliance with the terms and conditions of this permit shall be deemed compliance with applicable requirements, where such applicable requirements are included and specifically identified in the permit as of the date of permit issuance.
2. A permit shield shall not alter or affect:
 - a. The power of the Commission, Secretary of the Department, or Governor under NCGS 143-215.3(a)(12), or EPA under Section 303 of the Federal Clean Air Act;
 - b. The liability of an owner or operator of a facility for any violation of applicable requirements prior to the effective date of the permit or at the time of permit issuance;
 - c. The applicable requirements under Title IV; or
 - d. The ability of the Director or the EPA under Section 114 of the Federal Clean Air Act to obtain information to determine compliance of the facility with its permit.
3. A permit shield does not apply to any change made at a facility that does not require a permit or permit revision made under 15A NCAC 2Q .0523.
4. A permit shield does not extend to minor permit modifications made under 15A NCAC 2Q .0515.

S. Termination, Modification, and Revocation of the Permit [15A NCAC 2Q .0519]

The Director may terminate, modify, or revoke and reissue this permit if:

1. The information contained in the application or presented in support thereof is determined to be incorrect;
2. The conditions under which the permit or permit renewal was granted have changed;
3. Violations of conditions contained in the permit have occurred;
4. The EPA requests that the permit be revoked under 40 CFR 70.7(g) or 70.8(d); or
5. The Director finds that termination, modification, or revocation and reissuance of the permit is necessary to carry out the purpose of NCGS Chapter 143, Article 21B.

T. Insignificant Activities [15A NCAC 2Q .0503]

Because an emission source or activity is insignificant does not mean that the emission source or activity is exempted from any applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement. The Permittee shall have available at the facility at all times and made available to an authorized representative upon request, documentation, including calculations, if necessary, to demonstrate that an emission source or activity is insignificant.

U. Property Rights [15A NCAC 2Q .0508(i)(8)]

This permit does not convey any property rights in either real or personal property or any exclusive privileges.

V. Inspection and Entry [15A NCAC 2Q .0508(l) and NCGS 143-215.3(a)(2)]

1. Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow the DAQ, or an authorized representative, to perform the following:
 - a. Enter the Permittee's premises where the permitted facility is located or emissions-related activity is conducted, or where records are kept under the conditions of the permit;
 - b. Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;
 - c. Inspect at reasonable times and using reasonable safety practices any source, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
 - d. Sample or monitor substances or parameters, using reasonable safety practices, for the purpose of assuring

compliance with the permit or applicable requirements at reasonable times.

Nothing in this condition shall limit the ability of the EPA to inspect or enter the premises of the Permittee under Section 114 or other provisions of the Federal Clean Air Act.

2. No person shall refuse entry or access to any authorized representative of the DAQ who requests entry for purposes of inspection, and who presents appropriate credentials, nor shall any person obstruct, hamper, or interfere with any such authorized representative while in the process of carrying out his official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.

W. **Annual Fee Payment** [15A NCAC 2Q .0508(i)(10)]

1. The Permittee shall pay all fees in accordance with 15A NCAC 2Q .0200.
2. Payment of fees may be by check or money order made payable to the N.C. Department of Environment and Natural Resources. Annual permit fee payments shall refer to the permit number.
3. If, within 30 days after being billed, the Permittee fails to pay an annual fee, the Director may initiate action to terminate the permit under 15A NCAC 2Q .0519.

X. **Annual Emission Inventory Requirements** [15A NCAC 2Q .0207]

The Permittee shall report by **June 30 of each year** the actual emissions of each air pollutant listed in 15A NCAC 2Q .0207(a) from each emission source within the facility during the previous calendar year. The report shall be in or on such form as may be established by the Director. The accuracy of the report shall be certified by a responsible official of the facility.

Y. **Confidential Information** [15A NCAC 2Q .0107 and 2Q .0508(i)(9)]

Whenever the Permittee submits information under a claim of confidentiality pursuant to 15A NCAC 2Q .0107, the Permittee may also submit a copy of all such information and claim directly to the EPA upon request. All requests for confidentiality must be in accordance with 15A NCAC 2Q .0107.

Z. **Construction and Operation Permits** [15A NCAC 2Q .0100 and .0300]

A construction and operating permit shall be obtained by the Permittee for any proposed new or modified facility or emission source which is not exempted from having a permit prior to the beginning of construction or modification, in accordance with all applicable provisions of 15A NCAC 2Q .0100 and .0300.

AA. **Standard Application Form and Required Information** [15A NCAC 2Q .0505 and .0507]

The Permittee shall submit applications and required information in accordance with the provisions of 15A NCAC 2Q .0505 and .0507.

BB. **Financial Responsibility and Compliance History** [15A NCAC 2Q .0507(d)(4)]

The DAQ may require an applicant to submit a statement of financial qualifications and/or a statement of substantial compliance history.

CC. **Refrigerant Requirements (Stratospheric Ozone and Climate Protection)** [15A NCAC 2Q .0501(e)]

1. If the Permittee has appliances or refrigeration equipment, including air conditioning equipment, which use Class I or II ozone-depleting substances such as chlorofluorocarbons and hydrochlorofluorocarbons listed as refrigerants in 40 CFR Part 82 Subpart A Appendices A and B, the Permittee shall service, repair, and maintain such equipment according to the work practices, personnel certification requirements, and certified recycling and recovery equipment specified in 40 CFR Part 82 Subpart F.
2. The Permittee shall not knowingly vent or otherwise release any Class I or II substance into the environment during the repair, servicing, maintenance, or disposal of any such device except as provided in 40 CFR Part 82 Subpart F.
3. The Permittee shall comply with all reporting and recordkeeping requirements of 40 CFR, 82.166. Reports shall be submitted to the EPA or its designee as required.

DD. **Prevention of Accidental Releases - Section 112(r)** [15A NCAC 2Q .0508(h)]

If the Permittee is required to develop and register a Risk Management Plan with EPA pursuant to Section 112(r) of the Clean Air Act, then the Permittee is required to register this plan in accordance with 40 CFR Part 68.

EE. **Prevention of Accidental Releases General Duty Clause - Section 112(r)(1) - FEDERALLY-ENFORCEABLE**

ONLY. Although a risk management plan may not be required, if the Permittee produces, processes, handles, or stores

any amount of a listed hazardous substance, the Permittee has a general duty to take such steps as are necessary to prevent the accidental release of such substance and to minimize the consequences of any release.

FF. **Title IV Allowances** [15A NCAC 2Q .0508(i)(1)]

This permit does not limit the number of Title IV allowances held by the Permittee, but the Permittee may not use allowances as a defense to noncompliance with any other applicable requirement. The Permittee's emissions may not exceed any allowances that the facility lawfully holds under Title IV of the Federal Clean Air Act.

GG. **Air Pollution Emergency Episode** [15A NCAC 2D .0300]

Should the Director of the DAQ declare an Air Pollution Emergency Episode, the Permittee will be required to operate in accordance with the Permittee's previously approved Emission Reduction Plan or, in the absence of an approved plan, with the appropriate requirements specified in 15A NCAC 2D .0300.

HH. **Registration of Air Pollution Sources** [15A NCAC 2D .0200]

The Director of the DAQ may require the Permittee to register a source of air pollution. If the Permittee is required to register a source of air pollution, this registration and required information will be in accordance with 15A NCAC 2D .0202(b).

II. **Ambient Air Quality Standards** [15A NCAC 2D .0501(c)]

In addition to any control or manner of operation necessary to meet emission standards specified in this permit, any source of air pollution shall be operated with such control or in such manner that the source shall not cause the ambient air quality standards in 15A NCAC 2D .0400 to be exceeded at any point beyond the premises on which the source is located. When controls more stringent than named in the applicable emission standards in this permit are required to prevent violation of the ambient air quality standards or are required to create an offset, the permit shall contain a condition requiring these controls.

JJ. **General Emissions Testing and Reporting Requirements** [15A NCAC 2Q .0508(i)(16)]

Emission compliance testing shall be by the procedures of Section .2600, except as may be otherwise required in Rules .0524, .0912, .1110, .1111, or .1415 of Subchapter 2D. If emissions testing is required by this permit or the DAQ or if the Permittee submits emissions testing to the DAQ to demonstrate compliance, the Permittee shall perform such testing in accordance with 15A NCAC 2D .2600 and follow the procedures outlined below:

1. The owner or operator of the source shall arrange for air emission testing protocols to be provided to the Director prior to air pollution testing. Testing protocols are not required to be pre-approved by the Director prior to air pollution testing. The Director shall review air emission testing protocols for pre-approval prior to testing if requested by the owner or operator at least **45 days** before conducting the test.
2. Any person proposing to conduct an emissions test to demonstrate compliance with an applicable standard shall notify the Director at least **15 days** before beginning the test so that the Director may at his option observe the test.
3. The owner or operator of the source shall arrange for controlling and measuring the production rates during the period of air testing. The owner or operator of the source shall ensure that the equipment or process being tested is operated at the production rate that best fulfills the purpose of the test. The individual conducting the emission test shall describe the procedures used to obtain accurate process data and include in the test report the average production rates determined during each testing period.
4. Two copies of the final air emission test report shall be submitted to the Director not later than **30 days** after sample collection. The owner or operator may request an extension to submit the final test report. The Director shall approve an extension request if he finds that the extension request is a result of actions beyond the control of the owner or operator.
 - a. The Director shall make the final determination regarding any testing procedure deviation and the validity of the compliance test. The Director may:
 - (1) Allow deviations from a method specified under a rule in this Section if the owner or operator of the source being tested demonstrates to the satisfaction of the Director that the specified method is inappropriate for the source being tested.
 - (2) Prescribe alternate test procedures on an individual basis when he finds that the alternative method is necessary to secure more reliable test data.
 - (3) Prescribe or approve methods on an individual basis for sources or pollutants for which no test method is specified in this Section if the methods can be demonstrated to determine compliance of permitted emission sources or pollutants.
 - b. The Director may authorize the Division of Air Quality to conduct independent tests of any source subject

to a rule in this Subchapter to determine the compliance status of that source or to verify any test data submitted relating to that source. Any test conducted by the Division of Air Quality using the appropriate testing procedures described in Section 2D .2600 has precedence over all other tests.

KK. Reopening for Cause [15A NCAC 2Q .0517]

1. A permit shall be reopened and revised under the following circumstances:
 - a. Additional applicable requirements become applicable to a facility with remaining permit term of three or more years;
 - b. Additional requirements (including excess emission requirements) become applicable to a source covered by Title IV;
 - c. The Director or EPA finds 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; or
 - d. The Director or EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.
2. Any permit reopening shall be completed or a revised permit issued within 18 months after the applicable requirement is promulgated. No reopening is required if the effective date of the requirement is after the expiration of the permit term unless the term of the permit was extended pursuant to 15A NCAC 2Q .0513(c).
3. Except for the state-enforceable only portion of the permit, the procedures set out in 15A NCAC 2Q .0507, .0521, or .0522 shall be followed to reissue the permit. If the State-enforceable only portion of the permit is reopened, the procedures in 15A NCAC 2Q .0300 shall be followed. The proceedings shall affect only those parts of the permit for which cause to reopen exists.
4. The Director shall notify the Permittee at least 60 days in advance of the date that the permit is to be reopened, except in cases of imminent threat to public health or safety the notification period may be less than 60 days.
5. Within 90 days, or 180 days if the EPA extends the response period, after receiving notification from the EPA that a permit needs to be terminated, modified, or revoked and reissued, the Director shall send to the EPA a proposed determination of termination, modification, or revocation and reissuance, as appropriate.

LL. Reporting Requirements for Non-Operating Equipment [15A NCAC 2Q .0508(i)(16)]

The Permittee shall maintain a record of operation for permitted equipment noting whenever the equipment is taken from and placed into operation. During operation the monitoring, recordkeeping, and reporting requirements as prescribed by the permit shall be implemented within the monitoring period.

MM. Fugitive Dust Control Requirement [15A NCAC 2D .0540] - STATE ENFORCEABLE ONLY

As required by 15A NCAC 2D .0540 "Particulates from Fugitive Dust Emission Sources," the Permittee shall not cause or allow fugitive dust emissions to cause or contribute to substantive complaints or excess visible emissions beyond the property boundary. If substantive complaints or excessive fugitive dust emissions from the facility are observed beyond the property boundaries for six minutes in any one hour (using Reference Method 22 in 40 CFR, Appendix A), the owner or operator may be required to submit a fugitive dust plan as described in 2D .0540(f).

"Fugitive dust emissions" means particulate matter from process operations that does not pass through a process stack or vent and that is generated within plant property boundaries from activities such as: unloading and loading areas, process areas stockpiles, stock pile working, plant parking lots, and plant roads (including access roads and haul roads).

NN. Specific Permit Modifications [15A NCAC 2Q.0501 and .0523]

1. For modifications made pursuant to 15A NCAC 2Q .0501(c)(2), the Permittee shall file a Title V Air Quality Permit Application for the air emission source(s) and associated air pollution control device(s) on or before 12 months after commencing operation.
2. For modifications made pursuant to 15A NCAC 2Q .0501(d)(2), the Permittee shall not begin operation of the air emission source(s) and associated air pollution control device(s) until a Title V Air Quality Permit Application is filed and a construction and operation permit following the procedures of Section .0500 (except for Rule .0504 of this Section) is obtained.
3. For modifications made pursuant to 502(b)(10), in accordance with 15A NCAC 2Q .0523(a)(1)(C), the Permittee shall notify the Director and EPA (EPA - Air Planning Branch, 61 Forsyth St., Atlanta, GA 30303) in writing at least seven days before the change is made. The written notification shall include:
 - a. A description of the change at the facility;
 - b. The date on which the change will occur;
 - c. Any change in emissions; and
 - d. Any permit term or condition that is no longer applicable as a result of the change.

In addition to this notification requirement, with the next significant modification or Air Quality Permit renewal, the Permittee shall submit a page "E5" of the application forms signed by the responsible official verifying that the application for the 502(b)(10) change/modification, is true, accurate, and complete. Further note that modifications made pursuant to 502(b)(10) do not relieve the Permittee from satisfying preconstruction requirements.

ATTACHMENT I
List of Acronyms

AOS	Alternate Operating Scenario
BACT	Best Available Control Technology
Btu	British thermal unit
CEM	Continuous Emission Monitor
CFR	Code of Federal Regulations
CAA	Clean Air Act
DAQ	Division of Air Quality
DENR	Department of Environment and Natural Resources
EMC	Environmental Management Commission
EPA	Environmental Protection Agency
FR	Federal Register
GACT	Generally Available Control Technology
HAP	Hazardous Air Pollutant
MACT	Maximum Achievable Control Technology
NCAC	North Carolina Administrative Code
NCGS	North Carolina General Statutes
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standard
OAH	Office of Administrative Hearings
PM	Particulate Matter
PM₁₀	Particulate Matter with Nominal Aerodynamic Diameter of 10 Micrometers or Less
POS	Primary Operating Scenario
PSD	Prevention of Significant Deterioration
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO₂	Sulfur Dioxide
tpy	Tons Per Year
VOC	Volatile Organic Compound