



North Carolina Department of Environment and Natural Resources

Division of Air Quality

Beverly Eaves Perdue  
Governor

B. Keith Overcash, P.E.  
Director

Dee Freeman  
Secretary

August 17, 2010

Dr. David M. Peele, PhD  
President  
Avoca Incorporated  
P.O. Box 129  
Merry Hill, North Carolina 27957

**SUBJECT: Air Quality Permit No. 01819T37**  
**Facility ID: 0800044**  
**Avoca Incorporated**  
**Merry Hill, Bertie County, North Carolina**  
**Fee Class: Title V**

Dear Dr. Peele:

In accordance with your completed Air Quality Permit Applications for the renewal of a Title V permit received January 25, 2008 and the modification of a Title V permit received September 11, 2009, we are forwarding herewith Air Quality Permit No. 01819T37 to Avoca Incorporated, 841 Avoca Farm Road, Merry Hill, 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, NC 27604  
Phone: 919-715-6237 \ FAX: 919-733-5317 \ Internet: [www.daq.state.nc.us](http://www.daq.state.nc.us)

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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 August 17, 2010 until July 31, 2015, is nontransferable to future owners and operators, and shall be subject to the conditions and limitations as specified therein.

**Please note the attached summary table, which outlines the changes made to this permit.** Should you have any questions concerning this matter, please contact Mr. David F. Putney, PE at (919) 733-2051.

Sincerely yours,

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

Enclosure

c: Gregg Worley, EPA Region 4  
Washington Regional Office  
Central Files

**Insignificant Activities under 15A NCAC 2Q .0503(8)**

<b>Emission Source ID No.</b>	<b>Emission Source Description</b>	<b>Control Device ID No.</b>	<b>Control Device Description</b>
IWWTP-ET1	Wastewater treatment plant equalization tank No. 1 (65,500 gallon capacity)	N/A	N/A
IWWTP-ET2	Wastewater treatment plant equalization tank No. 2 (65,500 gallon capacity)	N/A	N/A
IWWTP-AT2	Wastewater treatment plant aeration tank No. 2 (63,500 gallon capacity)	N/A	N/A
IWWTP-AT3	Wastewater treatment plant aeration tank No. 3 (63,500 gallon capacity)	N/A	N/A
IWWTP-CLR	Wastewater treatment plant clarifier (1,310 gallon capacity)	N/A	N/A
ITK9238	No. 2 fuel oil storage tank (50,000 gallon capacity)	N/A	N/A
ITK9239	No. 2 fuel oil storage tank (50,000 gallon capacity)	N/A	N/A
ITK102	No. 2 fuel oil storage tank (495 gallon capacity)	N/A	N/A
ITK103	No. 2 fuel oil storage tank (495 gallon capacity)	N/A	N/A
ITKFP	No. 2 fuel oil storage tank (270 gallon capacity)	N/A	N/A
IE101 <b>MACT ZZZZ</b>	One No. 2 fuel oil-fired emergency generator (587 horsepower maximum rated power output)	N/A	N/A
IE102 <b>MACT ZZZZ</b>	One No. 2 fuel oil-fired emergency generator (760 horsepower maximum rated power output)	N/A	N/A
IE103 <b>MACT ZZZZ</b>	One No. 2 fuel oil-fired emergency generator (603 horsepower maximum rated power output)	N/A	N/A
IFP <b>MACT ZZZZ</b>	One No. 2 fuel oil-fired emergency fire water pump (285 horsepower maximum rated power output)	N/A	N/A
IECS	ECS process: batch preparation of ethylenediamine/copper sulfate solution	CD-Z-9215  CD-Z-9216	One water spray fume scrubber (0.5 gallons per minute minimum water injection rate) venting to  One water spray fume scrubber (0.5 gallons per minute minimum water injection rate)

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 2Q .0711 "Emission Rates Requiring a Permit".

The following table describes the changes in Permit No. 01819T37 as part of this renewal process.

Old Page(s)	New Page(s)	Condition/Item	Description of Change(s)
Global	Global	N/A	<ul style="list-style-type: none"> <li>Update format to current shell version (e.g. remove Part I and II references and change testing basis to 2D .2601);</li> <li>Change the issuance/effective dates of the permit;</li> <li>Change the application number and complete date;</li> <li>Change permit revision number to T37;</li> <li>Specify that the required semiannual summary reports may be mailed or delivered by hand; and</li> <li>Modify source and control device descriptions to include, when appropriate, limits/capacities, filter areas and etc.</li> </ul>
3 - 6	3 - 7	Equipment List	<ul style="list-style-type: none"> <li>Add the wastewater streams and equipment leaks for sources subject to MACT FFFF;</li> <li>Remove E101, E102, and E103 (these are added to the list of insignificant activities);</li> <li>Add CAM, 2D .1109, and MACT designations in the emission source ID No. column, where applicable;</li> <li>Consolidate the hot boxes in with the concrete operations;</li> <li>Correct several control scenarios; and</li> <li>Modify the asterisk language addressing control scenarios</li> </ul>
7	8	2.1 A	Modify limits/standards summary table to reflect the applicability of 2D .1109, 2Q .0705, and 2Q .0711 and remove 2D .1100
7	8	2.1 A.3.a	Correct the 2D .0521 limits (i.e. change to 40% opacity) for boilers H-101 and H-102
N/A	9	2.1 A.4	Add subsection to include requirements associated with 112(j) case-by-case MACT [i.e. 2D .1109]
8	10 - 11	2.1 B	Modify subsection to remove E101, E102, and E103 (these are on the list of insignificant activities attached to Permit No. 01819T37) and include ES-PkGen1 (2.1 L of Permit No. 01819T36)
8	10	2.1 B	Modify limits/standards summary table to reflect the applicability of 2D .1111 and 2Q .0317 (to avoid PSD)
N/A	10 - 11	2.1 B.3	Add subsection to include the requirements of MACT ZZZZ
24	10	2.1 B.3.b	Correct ES-PkGen1 operational hours limit to less than (instead of less than or equal to) 100 per consecutive 12-month period
N/A	11	2.1 B.3.c	Specify the requirement that ES-PkGen1 be equipped with a non-resettable hour meter
8 - 10	12 - 13	2.1 C	Modify subsection to remove SDE operations, concrete operations, and biological conversion equipment for purification of sclareolide (these are addressed only in 2.2 A and C of Permit No. 01819T37) and include the rotocel operations and recovery operations
8	12	2.1 C	Modify limits/standards summary table to reflect the applicability of 2D .0530 and 2D .0614
N/A	12 - 13	2.1 C.1	Add subsection to include requirements of 2D .0614
9 - 14; & 19 - 23	14 - 17	2.1 D	Modify subsection to replace the rotocel operations and recovery operations (these are addressed in 2.1 C of Permit No. 01819T37) with the botanical extraction operations (including the plant material grinder) and the biomass extraction operations (2.1 E, F, and K of Permit No. 01819T36, respectively)

Old Page(s)	New Page(s)	Condition/Item	Description of Change(s)
9 - 10	14	2.1 D	Modify limits/standards summary table to reflect the applicability of 2D .0515 and 2D .0614
10	15	2.1 D.1	Modify subsection to include requirements of 2D .0515
N/A	15 – 16	2.1 D.2	Add subsection to include requirements of 2D .0521
N/A	16 – 17	2.1 D.3	Add subsection to include requirements of 2D .0614
11 - 25	N/A	2.1 E - L (01819T36)	Delete these subsections (the associated sources are addressed in 2.1 C and D, and 2.2 A, B, and C of Permit No. 01819T37)
25	18	2.2 A	Modify list of sources addressed in subsection to exclude the RICE and the boilers
26 - 27	19 - 20	2.2 A.2	Reword condition for clarity and modify condition to: <ul style="list-style-type: none"> <li>• Address 2D .1100 (as opposed to 2Q .0711 – which is now found in 2.2 A.4 of Permit No. 01819T37);</li> <li>• Combine sage jar with Rotocel Operations;</li> <li>• Add I&amp;M requirements for PNE/SDE scrubbers; and</li> <li>• Remove requirements associated with the boilers</li> </ul>
27 - 28	20 – 21	2.2 A.4	Modify subsection to address 2Q .0705/.0711, with new shell language, instead of 2D .1111 (i.e. MACT FFFF - which is addressed in 2.2 C.1 of Permit No. 01819T37)
28 - 29	N/A	2.2 A.5 (01819T36)	Delete subsection since the 2Q .0705 requirements have been consolidated into 2.2 A.4 of Permit No. 01819T37
21 – 22 & 29 - 42	22 - 36	2.2 B	Modify subsection to include 2D .0530 emission limits and BACT requirements for the biomass extraction operations (found in 2.1 K.3 of Permit No. 01819T36) after removing the requirement for an engineering evaluation found in 2.1 K.3.h of Permit No. 01819T36 (this evaluation was received by DAQ on 07/24/06)
30 - 33	22 – 26	2.2 B.1	Modify subsection to include emission source and control device ID Nos. for clarity
32	25	2.2 B.1.j + k	Reword these conditions to allow for the limited non-operation of scrubber CD-1001-2-S-1 in accordance with permit conditions 2.2 B.1.d and e
32 - 33	25 – 26	2.2 B.1.l	Reword, reformat, and modify the 2D .0530 recordkeeping requirements for clarity and correctness (this includes adding the requirement to keep records of VOC emissions)
33	26	2.2 B.1.n	Reword and reformat the 2D .0530 reporting requirements for correctness and clarity
41	36	2.2 B.2	Fix typographical errors by changing headings of the subsections between 2.2 B.2.mm and 2.2 B.2.qq
42 - 45	37 - 43	2.2 C.1	Modify subsection to include specific language for MACT FFFF (i.e. 40 CFR Part 63, Subpart FFFF) as opposed to 2D .1100 (now found in 2.2 A.2 of Permit No. 01819T37)
46 - 53	44 - 52	Section 3	Update general conditions to version 3.1

Note: Condition/Item numbers are as they appear in Permit No. 01819T37, unless otherwise noted.

State of North Carolina,  
Department of Environment,  
and Natural Resources

Division of Air Quality



## AIR QUALITY PERMIT

Permit No.	Replaces Permit No.(s)	Effective Date	Expiration Date
01819T37	01819T36	August 17, 2010	July 31, 2015

Until such time as this permit expires or is modified or revoked, the below named Permittee is authorized 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:**

**Avoca, Inc.**

**Facility ID:**

**0800044**

**Facility Site Location:**

**841 Avoca Farm Road**

**City, County, State, Zip:**

**Merry Hill, Bertie County, NC 27957**

**Mailing Address:**

**P.O. Box 129**

**City, State, Zip:**

**Merry Hill, NC 27957**

**Application Number:**

**0800044.08A**

**0800044.09A**

**Complete Application Date:**

**January 25, 2008**

**September 11, 2009**

**Primary SIC Code:**

**2087**

**Division of Air Quality,**

**Washington Regional Office**

**Regional Office Address:**

**943 Washington Square Mall**

**Washington, NC 27889**

Permit issued this the 17<sup>th</sup> day of August, 2010.

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

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ATTACHMENT 1 .....List of Acronyms

## 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	Control Device ID No.	Control Device Description
<b>Rotocel Operations</b>			
ES-1001-2-1-P1 <b>PSD</b> <b>CAM</b> <b>MACT FFFF</b>	Rotocel extractor, desolventizer, and solvent separation/recovery	CD-31209  CD-1001-2-S-1	One chilled water condenser venting to  One packed tower scrubber (8 gallons per minute minimum mineral oil injection rate)
ES-1001-2-1-P2 <b>PSD</b> <b>CAM</b> <b>MACT FFFF</b>	Two solvent recycle process tanks	CD-1001-2-C-1  CD-1001-2-S-1 <sup>1</sup>	One chilled water condenser venting to  One packed tower scrubber (8 gallons per minute minimum mineral oil injection rate)
ES-1001-2-1-F <b>PSD</b> <b>MACT FFFF</b>	Process equipment leaks	NA	NA
ES-1001-2-1-WW <b>PSD</b> <b>MACT FFFF</b>	Rotocel Operations wastewater stream	NA	NA
<b>Recovery Operations</b>			
ES-1001-1-1-P1 <b>PSD</b> <b>CAM</b> <b>MACT FFFF</b>	Arcon process tank M-1	CD-1001-1-3  CD-1001-2-S-1 <sup>1</sup>	One chilled water condenser venting to  One packed tower scrubber (8 gallons per minute minimum mineral oil injection rate)
ES-1001-1-1-P2 <b>PSD</b> <b>CAM</b> <b>MACT FFFF</b>	Stripper T-5 and receiver M-21	CD-1001-1-T5B  CD-1001-2-S-1 <sup>1</sup>	One chilled water condenser venting to  One packed tower scrubber (8 gallons per minute minimum mineral oil injection rate)
ES-1001-1-1-P3 <b>PSD</b> <b>MACT FFFF</b>	Seven process tanks of various capacities and one fixed roof methanol storage tank (7,050 gallon capacity)		
ES-1001-1-1-F <b>PSD</b> <b>MACT FFFF</b>	Process equipment leaks	NA	NA
ES-1001-1-1-WW <b>PSD</b> <b>MACT FFFF</b>	Recovery Operations wastewater stream	NA	NA

<b>Emission Source ID No.</b>	<b>Emission Source Description</b>	<b>Control Device ID No.</b>	<b>Control Device Description</b>
<b>Concrete Operations</b>			
ES-1001-1-2-P <b>PSD</b> <b>MACT FFFF</b>	Six process tanks of various capacities	CD-1001-1-2	One chilled water condenser
HB-1 <b>MACT FFFF</b>	One steam-heated hot box	NA	NA
HB-2 <b>MACT FFFF</b>	One steam-heated hot box	NA	NA
HB-3 <b>MACT FFFF</b>	One steam-heated hot box	NA	NA
HB-4 <b>MACT FFFF</b>	One steam-heated hot box	NA	NA
ES-1001-1-2-F <b>MACT FFFF</b>	Process equipment leaks	NA	NA
ES-1001-1-2-WW <b>MACT FFFF</b>	Concrete Operations wastewater stream	NA	NA
<b>Sclareol Recrystallization (SFG) Operations</b>			
T-3001 <b>MACT FFFF</b>	One hexane storage tank (6,700 gallon capacity)	NA	NA
ES-1003-10-P <b>MACT FFFF</b>	Four process tanks of various capacities	NA	NA
ES-1003-10-F <b>MACT FFFF</b>	Process equipment leaks	NA	NA
C-3001 <b>MACT FFFF</b>	One centrifuge	CD-3001	One chilled water condenser
D-3001 <b>MACT FFFF</b>	One reactor		
D-3001d <b>MACT FFFF</b>	One steam-heated dryer		
ES-1003-10-WW <b>MACT FFFF</b>	SFG Process wastewater stream	NA	NA
<b>Biological Conversion Equipment for Purification of Sclareolide</b>			
ES-1001-1-3-P <b>MACT FFFF</b>	Twelve process tanks of various capacities	NA	NA
G-17 <b>MACT FFFF</b>	One centrifuge	NA	NA
ES-1001-1-3-F <b>MACT FFFF</b>	Process equipment leaks	NA	NA
D-1202 <b>MACT FFFF</b>	One steam-heated dryer	NA	NA
A-2 <b>MACT FFFF</b>	One distillation column (6 gallons per minute nominal process rate)	NA	NA
ES-1001-1-3-WW <b>MACT FFFF</b>	Biological conversion equipment for purification of sclareolide wastewater stream	NA	NA
<b>Sclareolide (SDE) Operations</b>			
ES-1001-1-4-P <b>MACT FFFF</b>	Four process tanks of various capacities	NA	NA

<b>Emission Source ID No.</b>	<b>Emission Source Description</b>	<b>Control Device ID No.</b>	<b>Control Device Description</b>
M-20 <b>MACT FFFF</b>	One acetic acid storage tank (10,135 gallon capacity)	NA	NA
ES-1001-1-4-F <b>MACT FFFF</b>	Process equipment leaks	NA	NA
M-10 <b>MACT FFFF</b>	One batch reactor	CD-M-34	One venturi-type wet scrubber (10 gallons per minute minimum liquid injection rate)
M-10A <b>MACT FFFF</b>	One batch reactor		
D-1231A <b>MACT FFFF</b>	One batch reactor		
D-1231B <b>MACT FFFF</b>	One batch reactor		
ES-1001-1-4-WW <b>MACT FFFF</b>	SDE Operations wastewater stream	NA	NA
<b>Plant Nutrient Extraction (PNE) Operations</b>			
D31214 <b>MACT FFFF</b>	One product extract reactor	EX2203 CD-Z-9215 <sup>2</sup> CD-Z-9216 <sup>2</sup>	One chilled water condenser venting to  One water spray fume scrubber (0.5 gallons per minute minimum water injection rate) venting to  One water spray fume scrubber (0.5 gallons per minute minimum water injection rate)
D31211 <b>MACT FFFF</b>	One waste solids separator vessel (1,333 gallon capacity)	EX2205 CD-Z-9215 <sup>2</sup> CD-Z-9216 <sup>2</sup>	One chilled water condenser venting to  One water spray fume scrubber (0.5 gallons per minute minimum water injection rate) venting to  One water spray fume scrubber (0.5 gallons per minute minimum water injection rate)
ES-1003-2-1-F <b>MACT FFFF</b>	Process equipment leaks	NA	NA
ES-1003-2-1-WW <b>MACT FFFF</b>	PNE process wastewater stream	NA	NA
ES-1003-2-1-P <b>MACT FFFF</b>	Seven process tanks of various capacities	CD-Z-9215 <sup>2</sup>	One water spray fume scrubber (0.5 gallons per minute minimum water injection rate) venting to
C-31203 <b>MACT FFFF</b>	One centrifuge	CD-Z-9216 <sup>2</sup>	One water spray fume scrubber (0.5 gallons per minute minimum water injection rate)

<b>Emission Source ID No.</b>	<b>Emission Source Description</b>	<b>Control Device ID No.</b>	<b>Control Device Description</b>
<b>Ethyl Vanillin Glucoside (EVG) Operations</b>			
D-2202 <b>MACT FFFF</b>	One reactor	CD-Z-9215	One water spray fume scrubber (0.5 gallons per minute minimum water injection rate) venting to
D-1215 <b>MACT FFFF</b>	One reactor	CD-Z-9216	
D-1218 <b>MACT FFFF</b>	One reactor		
D-1201 <b>MACT FFFF</b>	One steam-heated dryer		One water spray fume scrubber (0.5 gallons per minute minimum water injection rate)
ES-1003-2-2-F <b>MACT FFFF</b>	Process equipment leaks	NA	NA
ES-1003-2-2-WW <b>MACT FFFF</b>	EVG Operation wastewater stream	NA	NA
<b>Botanical Extraction Operations</b>			
ES-1001-11-P <b>PSD</b> <b>CAM</b> <b>MACT FFFF</b>	Immersion extractor Z-1001, desolventizer Z-1002, day tank 90024 (6,000 gallon capacity), first-stage evaporator EX-1012, second-stage evaporator EX-1013, distillation column EX-90008, and nine process tanks of various capacities	CD-1001-11-EX1002 CD-1001-11-EX1003	One chilled water condenser venting to  One cryogenic (nitrogen) condenser system (-40 °F maximum 24-hour average outlet temperature)
ES-1001-11-F <b>PSD</b> <b>MACT FFFF</b>	Process equipment leaks	NA	NA
MHZ-1002	One plant material grinder (1,011 pounds per hour nominal feed rate)	CD-1003-4-1	One bagfilter (244 square feet of filter area)
ES-1001-11-WW <b>PSD</b> <b>MACT FFFF</b>	Botanical extraction operation wastewater stream	NA	NA
<b>Biomass Extraction Operations</b>			
ES-1004-1 <b>PSD</b>	Biomass extraction debagging	CD-1004-1-FF1	One cartridge filter (6.7:1 maximum air-to-cloth ratio)
ES-1004-2-F <b>PSD</b>	Process equipment leaks	NA	NA
ES-1004-2-WW <b>PSD</b>	Biomass extraction operation wastewater stream	NA	NA
ES-1004-2-P <b>PSD</b> <b>CAM</b>	Immersion extractor Z-41001, desolventizer Z-41002, day tank 490025 (9,953 gallon capacity), isohexane storage tank 490024 (13,536 gallon capacity), first stage evaporator EX-41012, second stage evaporator EX-41013, distillation column EX-490008, and nine process tanks of various capacities	CD-1004-2EX1002 CD-1004-2EX1003	One chilled water condenser venting to  One cryogenic (nitrogen) condenser system (-40 °F maximum 24-hour average outlet temperature)
ES-1004-2Silo	Biomass silo loadout	CD-1004-2-FF2	One bagfilter (254 square feet of filter area)

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
<b>Miscellaneous Operations</b>			
H-101 <b>2D .1109 case-by-case MACT</b>	One No. 2 fuel oil-fired boiler (20.3 million Btu per hour maximum heat input rate)	NA	NA
H-102 <b>2D .1109 case-by-case MACT</b>	One No. 2 fuel oil-fired boiler (20.3 million Btu per hour maximum heat input rate)	NA	NA
H-103 <b>2D .1109 case-by-case MACT</b>	One No. 2 fuel oil-fired boiler (25.2 million Btu per hour maximum heat input rate)	NA	NA
ES-PkGen1 <b>MACT ZZZZ</b>	One No. 2 fuel oil-fired limited use emergency generator (2,935 kilowatt maximum rated power output)	CD-CatOx1	One catalytic oxidizer (695 °F minimum inlet temperature)
WWTP-AT1 <b>PSD MACT FFFF</b>	Wastewater treatment plant aeration tank No. 1	NA	NA

- <sup>1</sup> The Permittee is permitted to operate sources ES-1001-2-1-P2, ES-1001-1-1-P1, ES-1001-1-1-P2, and ES-1001-1-1-P3 without the simultaneous operation of scrubber CD-1001-2-S-1 under the conditions cited in Sections 2.2 B.1.d and e, below.
- <sup>2</sup> Operation of water spray fume scrubber CD-Z-9215 and water spray fume scrubber CD-Z-9216 shall only be required for control of emissions from the PNE Operations if that source is utilizing ethyl acetate as a solvent.

## SECTION 2 – SPECIFIC LIMITATIONS AND CONDITIONS

### 2.1 - Emission Source(s) and Control Device(s) Specific Limitations and Conditions

The emission source(s) and associated air pollution control device(s) 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. Three No. 2 fuel oil-fired boilers (20.3, 20.3, and 25.2 million Btu per hour maximum heat input rates; ID Nos. H-101, H-102, and H-103, respectively)

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

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	0.37 pounds per million Btu heat input	15A NCAC 2D .0503
Sulfur dioxide	2.3 pounds per million Btu heat input	15A NCAC 2D .0516
Visible emissions	20 percent opacity: <b>H-103 only</b>	15A NCAC 2D .0521(d)
	40 percent opacity: <b>H-101 and H-102</b>	15A NCAC 2D .0521(c)
Hazardous Air Pollutants	Case-By-Case Maximum Achievable Control Technology	15A NCAC 2D .1109 [112(j) Case-by-Case MACT]

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

- a. Emissions of particulate matter from the combustion of No. 2 fuel oil that are discharged from these sources into the atmosphere shall not exceed 0.37 pounds per million Btu heat input. [15A NCAC 2D .0503(a)]

**Testing** [15A NCAC 2D .2601]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .2601 and General Condition JJ found in Section 3 of this permit. 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 .0503.

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

- c. No monitoring, recordkeeping, or reporting is required for particulate emissions from the firing of No. 2 fuel oil in boilers H-101, H-102, or H-103.

#### 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. [15A NCAC 2D .0516]

**Testing** [15A NCAC 2D .2601]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .2601 and General Condition JJ found in Section 3 of this permit. 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 .0516.

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

- c. No monitoring, recordkeeping, or reporting is required for sulfur dioxide emissions from the firing of No. 2 fuel oil in boilers H-101, H-102, or H-103.

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

- a. Visible emissions from **boilers H-101 and H-102** 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. [15A NCAC 2D .0521(c)]

- b. Visible emissions from **boiler H-103** 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. [15A NCAC 2D .0521(d)]

**Testing** [15A NCAC 2D .2601]

- c. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .2601 and General Condition JJ found in Section 3 of this permit. If the results of this test are above the limit given in Section 2.1 A.3.a or b, above, as applicable, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521.

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

- d. No monitoring, recordkeeping, or reporting is required for visible emissions from the firing of No. 2 fuel oil in boilers H-101, H-102, or H-103.

**4. 15A NCAC 2D .1109: 112(J) CASE-BY-CASE MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY Clean Air Act Section 112(j) - Case-by-Case MACT for Boilers & Process Heaters**

- a. The Permittee shall use best combustion practices when operating affected boilers **H-101, H-102, and H-103**. The initial compliance date for this work practice standard and the associated monitoring, recordkeeping, and reporting requirements is **August 17, 2013**. These conditions need not be included on the annual compliance certification until after the initial compliance date.

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

- b. To assure compliance, the Permittee shall perform an annual boiler inspection and maintenance on boilers **H-101, H-102, and H-103** 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 at least one tune-up per calendar year for each boiler to demonstrate compliance with this requirement. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1109 if the affected boilers **H-101, H-102, and H-103** are not inspected and maintained as required above.

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

- c. The results of inspection and maintenance performed on affected boilers **H-101, H-102, and H-103** 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 and time 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.

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

- d. No reporting is required for the best combustion practices requirements for boilers **H-101, H-102, and H-103**.

**B. One diesel-fired limited use generator (2,935 horsepower maximum rated power output; ID No. ES-PkGen1) and one associated catalytic oxidizer (695 °F minimum inlet temperature, 835 °F maximum inlet temperature; ID No. CD-CatOx1)**

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

Regulated Pollutant	Limits/Standards	Applicable Regulation
Sulfur dioxide	2.3 pounds per million Btu heat input	15A NCAC 2D .0516
Visible emissions	20 percent opacity	15A NCAC 2D .0521(d)
Hazardous Air Pollutants	Maximum Achievable Control Technology	15A NCAC 2D .1111 [40 CFR Part 63, Subpart ZZZZ]
Nitrogen Oxides (NO <sub>x</sub> )	Emit less than 40 tons of NO <sub>x</sub> per consecutive 12-month period	15A NCAC 2Q .0317 to avoid 15A NCAC 2D .0530

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

- a. Emissions of sulfur dioxide from **limited use generator ES-PkGen1** 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. [15A NCAC 2D .0516]

**Testing** [15A NCAC 2D .2601]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .2601 and General Condition JJ found in Section 3 of this permit. 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 .0516.

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

- c. No monitoring, recordkeeping, or reporting is required for sulfur dioxide emissions from the firing of No. 2 fuel oil in limited use generator ES-PkGen1.

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

- a. Visible emissions from **limited use generator ES-PkGen1** 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. [15A NCAC 2D .0521(d)]

**Testing** [15A NCAC 2D .2601]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .2601 and General Condition JJ found in Section 3 of this permit. 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/Recordkeeping/Reporting** [15A NCAC 2Q .0508(f)]

- c. No monitoring, recordkeeping, or reporting is required for visible emissions from the firing of No. 2 fuel oil in limited use generator ES-PkGen1.

**3. 15A NCAC 2D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY  
[40 CFR Part 63, Subpart ZZZZ]**

**Applicability** [40 CFR §63.6580 and §63.6585]

- a. **Limited use generator ES-PkGen1** shall comply with all applicable requirements of 15A NCAC 2D .1111 “Maximum Achievable Control Technology” pursuant to 40 CFR Part 63, Subpart ZZZZ “National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)” including Subpart A “General Provisions.”

**Emission Limits and Operational Requirements** [40 CFR §63.6590(b)(1)(ii) and §63.6675]

- b. In accordance with 40 CFR §63.6590(a)(2)(i) this source is considered an existing Limited Use source for purposes of Subpart ZZZZ. To qualify as such, the Permittee must limit the operational hours of this source to less

than 100 hours per consecutive 12-month period in accordance with 40 CFR §63.6590(b)(1)(ii). The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if this source operates for 100 hours or more per consecutive 12-month period.

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

- c. The Permittee shall install and maintain a non-resettable hour meter, in accordance with manufacturer's recommendations, on limited use generator ES-PkGen1. The Permittee shall conduct monthly monitoring of hours of operation for this source as measured by the non-resettable hour meter. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if this monitoring is not performed.

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

- d. The Permittee shall maintain monthly records of the hours of operation of limited use generator ES-PkGen1, as measured by the non-resettable hour meter, in a logbook (written or electronic format) on-site and made available to an authorized representative upon request.

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

- e. No monitoring, recordkeeping, or reporting is required for hazardous air pollutant emissions from limited use generator ES-PkGen1.

**4. 15A NCAC 2Q .0317: AVOIDANCE CONDITIONS to avoid  
15A NCAC 2D .0530: PREVENTION OF SIGNIFICANT DETERIORATION**

- a. In order to avoid applicability of 15A NCAC 2D .0530(g) for major sources and major modifications, **limited use generator ES-PkGen1** shall discharge into the atmosphere less than 40 tons of nitrogen oxides per consecutive 12-month period [15A NCAC 2D .0530].

**Testing** [15A NCAC 2D .2601]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .2601 and General Condition JJ found in Section 3 of this permit. If the results of this test are above the limit given in Section 2.1 B.4.a, above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530.

**Operational Limitation** [15A NCAC 2Q .0508(f)]

- c. In order to ensure compliance with the limit given in Section 2.1 B.4.a, above, the operation of limited use generator **ES-PkGen1** shall not exceed 1,500 hours in a consecutive 12-month period. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if the rolling total hours of operation of the limited use generator exceed 1,500 hours per consecutive 12-month period.

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

- d. The Permittee shall conduct monthly monitoring of hours of operation of this source as measured by the non-resettable hour meter and maintain monthly records of that monitoring 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 .0530 if this monitoring is not conducted, these records are not maintained, or if the rolling total hours of operation for the limited use generator exceed 1,500 hours per consecutive 12-month period.

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

- e. The Permittee shall submit a semiannual summary report of monitoring and recordkeeping activities postmarked or delivered 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 report must clearly identify all instances of deviations from the requirements of this permit and include:
  - i. The monthly hours of operation for the limited use generator for each of the previous 17 months; and
  - ii. The total hours of operation for the limited use generator for each consecutive 12-month period ending during the reporting period.

**C. Rotocel Operations, including:**

- Rotocel extractor, desolventizer, and solvent separation/recovery (ID No. ES-1001-2-1-P) and one associated chilled water condenser (ID No. CD-31209) venting to one packed tower scrubber (8 gallon per minute minimum mineral oil injection rate; ID No. CD-1001-2-S-1);
- Two solvent recycle process tanks (ID No. ES-1001-2-1-T) and one associated chilled water condenser (ID No. CD-1001-2-C-1) venting to one packed tower scrubber (8 gallon per minute minimum mineral oil injection rate; ID No. CD-1001-2-S-1); \*\*
- Process equipment leaks (ID No. ES-1001-2-1-F); and
- Rotocel Operations wastewater stream (ID No. ES-1001-2-1-WW)

**Recovery Operations, including:**

- Arcon process tank M-1 (ID No. ES-1001-1-1-P1) and one associated chilled water condenser (ID No. CD-1001-1-3) venting to one packed tower scrubber (8 gallon per minute minimum mineral oil injection rate; ID No. CD-1001-2-S-1); \*\*
- One chilled water condenser (ID No. CD-1001-1-T5B) venting to packed tower scrubber (8 gallon per minute minimum mineral oil injection rate; ID No. CD-1001-2-S-1) controlling emissions from: \*\*
  - Stripper T-5 and receiver M-21 (ID No. ES-1001-1-1-P2); and
  - Seven fixed roof process tanks of various capacities and one fixed roof methanol storage tank (7,050 gallon capacity) (ID No. ES-1001-1-1-P3);
- Process equipment leaks (ID No. ES-1001-1-1-F); and
- Recovery Operations wastewater stream (ID No. ES-1001-1-1-WW)

\*\* The Permittee may operate sources ES-1001-2-1-P1 and ES-1001-1-1-P1, -P2, and -P3 without the simultaneous operation of scrubber CD-1001-2-S-1 under the conditions cited in Sections 2.2 B.1.d and e, below.

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

Regulated Pollutant	Limits/Standards	Applicable Regulation
Volatile organic compounds	Best Available Control Technology See Sections 2.2 B.1 and 2.2 B.2	15A NCAC 2D .0530
	Compliance Assurance Monitoring Rotocel and Recovery Operations only	15A NCAC 2D .0614
	Work practice standards See Section 2.2 A.1	15A NCAC 2D .0958
Hazardous Air Pollutants	Maximum Achievable Control Technology See Section 2.2 C.1	15A NCAC 2D .1111 [40 CFR Part 63, Subpart FFFF]
Odororous emissions	<b>State-Enforceable Only</b> See section 2.2 A.3	15A NCAC 2D .1806
Toxic Air Pollutants	<b>State-Enforceable Only</b> See Sections 2.2 A.2 and 2.2 A.4	15A NCAC 2Q .0705/.0711 15A NCAC 2D .1100

**1. 15A NCAC 2D .0614: COMPLIANCE ASSURANCE MONITORING**

**Applicability** [15A NCAC 2D .0614 and 40 CFR §64.2]

- For the Rotocel Operations and the Recovery Operations the Permittee shall comply with 40 CFR Part 64 and 15A NCAC 2D .0614 and shall ensure that this source complies with the volatile organic compound (VOC) emission limits of 15A NCAC 2D .0530 by complying with Section 2.1 C.1 of this permit.

**Control Requirements/Parameter ranges** [15A NCAC 2Q .0508(f)]

- VOC emissions from the rotocel extractor, desolventizer, and solvent separation/recovery (ID No. ES-1001-2-1-P), two solvent recycle process tanks (ID No. ES-1001-2-1-T), arcon process tank M-1 (ID No. ES-1001-1-1-P1), stripper T-5 and receiver M-21 (ID No. ES-1001-1-1-P2), and eight process and storage tanks (ID No. ES-1001-1-1-P3) shall be controlled by the associated packed tower scrubber (ID No. CD-1001-2-S-1), except as allowed

pursuant to Sections 2.2 B.1.d and e, below. In addition, the Permittee shall maintain a daily average mineral oil temperature at the inlet of scrubber CD-1001-2-S-1 of less than or equal to 100 degrees Fahrenheit (100 °F) whenever the associated sources are operational.

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

- c. **For VOC emissions:** The Permittee shall perform the monitoring requirements of Sections 2.1 C.1.c.i through iii, below. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0614 if the monitoring and recordkeeping requirements of Sections 2.1 C.1.c.i through iii, below, are not performed.
- i. The Permittee shall monitor the inlet mineral oil temperature of mineral oil packed tower scrubber CD-1001-2-S-1 at least once each day that the sources listed in Section 2.1 C.1.b, above, operate;
  - ii. The Permittee shall inspect, maintain, and operate mineral oil packed tower scrubber CD-1001-2-S-1 in accordance with Section 2.2 B.1.j, below; and
  - iii. The Permittee shall install, maintain, operate, and calibrate the temperature gauge associated with mineral oil packed tower scrubber CD-1001-2-S-1 in accordance with Section 2.2 B.1.k, below.
- d. **For excursions:** In the event of an excursion the Permittee shall take appropriate action to correct the excursion as soon as practicable. Further, if mineral oil packed tower scrubber CD-1001-2-S-1 operates under conditions qualifying as an excursion for more than 5 percent of the operational time of the sources listed in Section 2.1 C.1.b, above, during a consecutive 6-month period, then the Permittee shall develop a Quality Improvement Plan (QIP) in accordance with 40 CFR §64.8.

For the purposes of this permit condition excursions are defined as operation of mineral oil packed tower scrubber CD-1001-2-S-1 with an inlet mineral oil temperature that exceeds the limit cited in Section 2.1 C.1.b, above, while the associated emission sources are operating, except as allowed pursuant to Sections 2.2 B.1.d and e, below.

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

- e. The results of monitoring, inspections, maintenance and calibrations conducted pursuant to Sections 2.1 C.1.c and d, above, 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 and time of each recorded action;
  - ii. The results of the monitoring, noting any excursions along with any actions taken to correct the inlet mineral oil temperature of packed tower scrubber CD-1001-2-S-1;
  - iii. The results of any inspections or maintenance performed on mineral oil packed tower scrubber CD-1001-2-S-1 or the associated temperature and flow rate gauges; and
  - iv. Any variance from manufacturer's recommendations, if any, and corrections made.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0614 if these records are not maintained.

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

- f. The Permittee shall submit a summary report of the monitoring and recordkeeping activities postmarked or delivered 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. Botanical Extraction Operations, including:**

- Immersion extractor Z-1001, desolventizer Z-1002, day tank 90024 (6,000 gallon capacity), first-stage evaporator EX-1012, second stage evaporator EX-1013, distillation column EX-90008 and nine process tanks of various capacities (ID No. ES-1001-11-1-P) and one associated chilled water condenser (ID No. CD-1001-11-EX1002) venting to one cryogenic (nitrogen) condenser system (-40 °F maximum 24-hour average outlet temperature; ID No. CD-1001-11-EX1003);
- Plant Material Grinder (1,011 pounds per hour nominal feed rate; ID No. MHZ-1002) and one associated bagfilter (244 square feet of filter area; ID No. CD-1003-4-1);
- Process equipment leaks (ID No. ES-1001-11-1-F); and
- Botanical extraction operations wastewater stream (ID No. ES-1001-11-WW)

**Biomass Extraction Operations, including:**

- Biomass extraction debagging (ID No. ES-1004-1) and one associated cartridge filter (6.7:1 maximum air-to-cloth ratio; ID No. CD-1004-1-FF1);
- Immersion extractor Z-41001, desolventizer Z-41002, day tank 490025 (9,953 gallon capacity), isohehexane storage tank 490024 (13,536 gallon capacity), first-stage evaporator EX-41012, second stage evaporator EX-41013, distillation column EX-490008 and nine process tanks of various capacities (ID No. ES-1004-2-P) and one associated chilled water condenser (ID No. CD-1004-2EX1002) venting to one cryogenic (nitrogen) condenser system (-40 °F maximum 24-hour average outlet temperature; ID No. CD-1004-2EX1003);
- Process equipment leaks (ID No. ES-1004-2-F);
- Wastewater tanks and other similar vessels (ID No. ES-1004-2-WW);
- Biomass extraction operations wastewater stream (ID No. ES-1003-10-WW); and
- Biomass silo loadout (ID No. ES-1004-2Silo) and one associated bagfilter (254 square feet of filter area; ID No. CD-1004-2-FF2)

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

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	Plant material grinder, biomass extraction debagging, and biomass silo loadout: $E=4.10P^{0.67}$ Where: E = allowable emission rate in pounds per hour P = process weight in tons per hour	15A NCAC 2D .0515
Visible emissions	20 percent opacity	15A NCAC 2D .0521(d)
Volatile organic compounds	Best Available Control Technology See Sections 2.2 B.1 and 2.2 B.2	15A NCAC 2D .0530
	Compliance Assurance Monitoring	15A NCAC 2D .0614
	Work practice standards See Section 2.2 A.1	15A NCAC 2D .0958
Odorous emissions	<b>State-Enforceable Only</b> See Section 2.2 A.3	15A NCAC 2D .1806
Hazardous Air Pollutants	Maximum Achievable Control Technology See Section 2.2 C.1 ( <b>Botanical extraction only</b> )	15A NCAC 2D .1111 40 CFR Part 63, Subpart FFFF
Toxic Air Pollutants	<b>State-Enforceable Only</b> See Sections 2.2 A.2 and 2.2 A.4	15A NCAC 2Q .0705/.0711 15A NCAC 2D .1100

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

- a. Emissions of particulate matter from the plant material grinder (ID No. MHZ-1002), the biomass extraction debagging operation (ID No. ES-1004-1), and the biomass silo loadout (ID No. ES-1004-2-Silo) shall not exceed an allowable emission rate as calculated by the following equation: [15A NCAC 2D .0515(a)]

$$E = 4.10 \times P^{0.67}$$

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 2D .2601]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .2601 and General Condition JJ found in Section 3 of this permit. If the results of this test are above the limit given in Section 2.1 D.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 plant material grinder, the biomass extraction debagging operation, and the biomass storage silo shall be controlled by a bagfilter (ID No. CD-1003-4-1), a cartridge filter (ID No. CD-1004-1-FF1), and a bagfilter (ID No. CD-1004-2-FF2), respectively. To assure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there is no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
- i. A monthly visual inspection of the system ductwork and material collection unit for leaks; and
  - ii An annual (for each 12-month period following the initial inspection) internal inspection of the cartridge filter and bagfilters for structural integrity.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515 if the ductwork, cartridge filter, and bagfilters are not inspected and maintained.

- d. The results of inspections and maintenance shall be maintained in a log (written or electronic format) on-site and made available to an authorized representative upon request. The log shall record the following:
- i. The date and time of each recorded action;
  - ii. The results of each inspection;
  - iii. The results of any maintenance performed on the cartridge filter and bagfilters; and
  - iv. Variance from manufacturer's recommendations, if any, and corrections made.

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 the cartridge filter or bagfilters within 30 days of a written request by the DAQ.
- f. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked or delivered 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 botanical extraction operations and the biomass extraction operations 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. [15A NCAC 2D .0521(d)]

**Testing** [15A NCAC 2D .2601]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .2601 and General Condition JJ found in Section 3 of this permit. If the results of this test are above the limit given in

Section 2.1 D.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, once a month the Permittee shall observe the emission points of these sources for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. If practicable, the monthly observation must be made while the associated source is operating. If a source does not operate during a monthly period, then a record documenting such non-operational status will satisfy this monitoring requirement for that source. If visible emissions from a 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 D.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 log (written or electronic format) on-site and made available to an authorized representative upon request. The log 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 or delivered 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 .0614: COMPLIANCE ASSURANCE MONITORING**

**Applicability** [15A NCAC 2D .0614 and 40 CFR §64.2]

- a. For the immersion extractor Z-1001, desolventizer Z-1002, day tank 90024, first-stage evaporator EX-1012, second stage evaporator EX-1013, distillation column EX-90008 and nine process tanks (**ID No. ES-1001-11-1-P**) and the immersion extractor Z-41001, desolventizer Z-41002, day tank 490025, isohexane storage tank 490024, first-stage evaporator EX-41012, second stage evaporator EX-41013, distillation column EX-490008 and nine process tanks of various capacities (**ID No. ES-1004-2-P**), the Permittee shall comply with 40 CFR Part 64 and 15A NCAC 2D .0614 and shall ensure that this source complies with the volatile organic compound (VOC) emission limits of 15A NCAC 2D .0530 by complying with Section 2.1 D.3 of this permit.

**Control Requirements/Parameter ranges** [15A NCAC 2Q .0508(f)]

- b. VOC emissions from the subject botanical extraction operations sources (**ID No. ES-1001-11-1-P**) shall be controlled by the associated cryogenic condenser system (**ID No. CD-1001-11-EX1003**). VOC emissions from the subject biomass extraction operations sources (**ID No. ES-1004-2-P**) shall be controlled by the associated cryogenic condenser system (**ID No. CD-1004-2EX1003**). In addition:
  - i. The Permittee shall maintain a 12-hour average outlet temperature of less than or equal to 40 degrees Fahrenheit below zero (-40 °F) for cryogenic condenser system CD-1001-11-EX1003 whenever the associated sources are operational; and
  - ii. The Permittee shall maintain a 12-hour average outlet temperature of less than or equal to -40 °F for cryogenic condenser system CD-1004-2EX1003 whenever the associated sources are operational.

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

- c. **For VOC emissions:** The Permittee shall perform the monitoring requirements of Sections 2.1 D.3.c.i through iv,

below. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0614 if the monitoring and recordkeeping requirements of Sections 2.1 D.3.c.i through iv, below, are not performed.

- i. The Permittee shall monitor the outlet temperature of cryogenic condenser system CD-1001-11-EX1003 at least once each hour, and calculate the average outlet temperature for the consecutive 12-hour period ending with that hour, when the associated sources listed in Section 2.1 D.3.b, above, operate;
  - ii. The Permittee shall monitor the outlet temperature of cryogenic condenser system CD-1004-2EX1003 at least once each hour, and calculate the average outlet temperature for the consecutive 12-hour period ending with that hour, when the associated sources listed in Section 2.1 D.3.b, above, operate; and
  - iii. The Permittee shall inspect, maintain, and operate cryogenic condenser systems CD-1001-11-EX1003 and CD-1004-2EX1003 in accordance with Section 2.2 B.1.h, below; and
  - iv. The Permittee shall install, maintain, operate, and calibrate the temperature sensors associated with cryogenic condenser systems CD-1001-11-EX1003 and CD-1004-2EX1003 in accordance with Section 2.2 B.1.i, below.
- d. **For excursions:** In the event of an excursion the Permittee shall take appropriate action to correct the excursion as soon as practicable. Further, if cryogenic condenser system CD-1001-11-EX1003 or CD-1004-2EX1003 operate under conditions qualifying as an excursion for more than 5 percent of the operational time of their associated sources listed in Section 2.1 D.3.b, above, during a consecutive 6-month period, then the Permittee shall develop a Quality Improvement Plan (QIP) for that cryogenic condenser system in accordance with 40 CFR §64.8.

For the purposes of this permit condition excursions are defined as operation of cryogenic condenser system CD-1001-11-EX1003 or CD-1004-2EX1003 with a 12-hour average outlet temperature that exceeds the associated limit cited in Sections 2.1 D.3.b.i and ii, above, while the associated emission sources are operating.

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

- e. The results of monitoring, inspections, maintenance and calibrations conducted pursuant to Sections 2.1 D.3.c and d, above, 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 and time of each recorded action;
  - ii. The results of the monitoring, noting any excursions along with any actions taken to correct the outlet temperature of cryogenic condenser system CD-1001-11-EX1003 or CD-1004-2EX1003;
  - iii. The results of any inspections or maintenance performed on cryogenic condenser system CD-1001-11-EX1003, cryogenic condenser system CD-1004-2EX1003, or the associated temperature gauges; and
  - iv. Any variance from manufacturer's recommendations, if any, and corrections made.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0614 if these records are not maintained.

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

- f. The Permittee shall submit a summary report of the monitoring and recordkeeping activities postmarked or delivered 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. Facility-Wide Affected Sources [all permitted sources except for generators E101, E102, E103, and ES-PkGen1 and boilers H-101, H-102, and H-103]

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

Regulated Pollutant	Limits/Standards	Applicable Regulation
Volatile organic compounds	Work practice standards	15A NCAC 2D .0958
Toxic Air Pollutants (TAP)	<b>State-Enforceable Only</b> Limits on emissions of TAP	15A NCAC 2D .1100
Odorous emissions	<b>State-Enforceable Only</b> Odorous emissions must be controlled	15A NCAC 2D .1806
Toxic Air Pollutants	<b>State-Enforceable Only</b> Toxic Permit Emission Rates	15A NCAC 2Q .0705 and 15A NCAC 2Q .0711

#### 1. 15A NCAC 2D .0958: WORK PRACTICES FOR SOURCES OF VOLATILE ORGANIC COMPOUNDS

- a. Pursuant to 15A NCAC 2D .0958, for all sources that use volatile organic compounds (VOC) as solvents, carriers, material processing media, or industrial chemical reactants, or in similar uses that mix, blend, or manufacture volatile organic compounds, or emit volatile organic compounds as a product of chemical reactions, and whose emissions of VOC are greater than 15 pounds per day; the Permittee shall:
  - i. Store all material, including waste material, containing volatile organic compounds in tanks or in containers covered with a tightly fitting lid that is free of cracks, holes, or other defects, when not in use,
  - ii. Clean up spills of volatile organic compounds as soon as possible following proper safety procedures,
  - iii. Store wipe rags containing volatile organic compounds in closed containers,
  - iv. Not clean sponges, fabric, wood, paper products, and other absorbent materials with volatile organic compounds,
  - v. Transfer solvents containing volatile organic compounds used to clean supply lines and other coating equipment into closable containers and close such containers immediately after each use, or transfer such solvents to closed tanks, or to a treatment facility regulated under section 402 of the Clean Water Act,
  - vi. Clean mixing, blending, and manufacturing vats and containers containing volatile organic compounds by adding cleaning solvent and close the vat or container before agitating the cleaning solvent. The spent cleaning solvent shall then be transferred into a closed container, a closed tank or a treatment facility regulated under section 402 of the Clean Water Act. [15A NCAC 2D .0958(c)]
- b. When cleaning parts with a solvent containing a volatile organic compound, the Permittee shall:
  - i. Flush parts in the freeboard area,
  - ii. Take precautions to reduce the pooling of solvent on and in the parts,
  - iii. Tilt or rotate parts to drain solvent and allow a minimum of 15 seconds for drying or until all dripping has stopped, whichever is longer,
  - iv. Not fill cleaning machines above the fill line,
  - v. Not agitate solvent to the point of causing splashing. [15A NCAC 2D .0958(d)]

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

- c. To assure compliance with paragraphs (a) and (b) above, the Permittee shall, at a minimum, perform a visual inspection once per month of all operations and processes utilizing volatile organic compounds. The inspections shall be conducted during normal operations. If the required inspections are not conducted the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .0958.

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

- d. The results of the inspections 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:
- The date and time of each inspection; and
  - The results of each inspection noting whether or not noncompliant conditions were observed.

If the required records are not maintained the Permittee shall be deemed to be in noncompliance with rule 15A NCAC 2D .0958.

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

- e. The Permittee shall submit a summary report of the observations postmarked or delivered 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.

**STATE-ENFORCEABLE ONLY****2. 15A NCAC 2D .1100 CONTROL OF TOXIC AIR POLLUTANTS**

- a. Pursuant to 15A NCAC 2D .1100 and in accordance with the approved application for an air toxic compliance demonstration, received February 21, 2007, the following permit limits shall not be exceeded:

<b>Emission Sources</b>	<b>Pollutants</b>	<b>Emission Limits</b>	
Sclareolide Operations (Building No. 1001-1)	n-hexane hexane isomers except n-hexane Acetic acid	241 100.4 8	pounds per day pounds per hour pounds per hour
Distillation column A-2 (Building No. 1001-1)	n-hexane hexane isomers except n-hexane	31.8 13.3	pounds per day pounds per hour
Recovery and Concrete Operations (Building No. 1001-1)	n-hexane hexane isomers except n-hexane	132.1 55	pounds per day pounds per hour
Rotocel Operations (Building No. 1001-2)	n-hexane hexane isomers except n-hexane	1,185.44 573.27	pounds per day pounds per hour
Botanical Extraction Operations (Building No. 1001-11)	n-hexane hexane isomers except n-hexane	108.2 180.3	pounds per day pounds per hour
Biomass Extraction Operations (Building No. ES-1004-2)	n-hexane hexane isomers except n-hexane	108.2 180.3	pounds per day pounds per hour
Recrystallization Operations (Building No. 1003-10)	n-hexane hexane isomers except n-hexane	360.7 150.3	pounds per day pounds per hour
Plant Nutrient Extraction Operations (Building No. 1003-2)	n-hexane hexane isomers except n-hexane	9 68.2	pounds per day pounds per hour
Ethyl Vanillin Glucoside Operations (Building No. 1003-2)	Chloroform	19,195	pounds per day

**Operational Restrictions**

- b. To ensure compliance with the above limits, the following restrictions shall apply:
- The solvent used in the Sclareolide Operations, Distillation column A-2, Recovery Operations, Concrete Operations, and Rotocel Operations shall each contain no more than 40 percent n-hexane by weight.
  - The solvents used in the Botanical Extraction Operation and Biomass Extraction Operation shall contain no more than 5 percent n-hexane by weight.
  - No more than two batches per day shall be run in the Recrystallization Operations, unless the Permittee demonstrates that n-hexane emissions are less than 360.7 pounds per day by using hexane solvent that contains less than or equal to 95 percent by weight n-hexane. A record of this determination shall be maintained for each occasion when more than two batches per day are processed.

- iv. The solvent used in the Plant Nutrient Extraction Operations shall contain no more than 5 percent n-hexane by weight and shall not process more than two batches per day when using isohexane solvent.
- v. The Botanical Extraction Operation shall not use n-hexane solvent unless the associated cryogenic condenser system (ID No. CD-1001-11-EX1003) is properly operating.
- vi. The Biomass Operation shall not use n-hexane solvent unless the associated cryogenic condenser system (ID No. CD-1004-2EX1003) is properly operating.

**Monitoring**

- c. The Permittee shall conduct monthly monitoring of the n-hexane emissions from those operations listed in Section 2.2 A.2.a, above, that have n-hexane emission limits. The Permittee shall use production throughputs and emissions factors to ensure that each such operation stays within the appropriate n-hexane limit. For example, if a hypothetical operation has an emission limit of 7 pounds of n-hexane per day and emits 10 pounds of n-hexane for each 100 pounds of production, then this operation may only process up to 70 pounds per day.
- d. The Permittee shall perform inspections and perform maintenance as recommended by the manufacturer of the scrubbers (ID Nos. CD-Z-9215, CD-Z-9216, and CD-M-34). In addition to the manufacturer's inspection and maintenance recommendations, or if there are no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include:
  - i. Monthly inspections (for each calendar month during which the associated sources operated) of spray nozzles to detect clogging or corrosion damage of nozzles and perform maintenance and repair when necessary to assure proper operation of the scrubber;
  - ii. Monthly inspections (for each calendar month during which the associated sources operated) of packing material, if applicable, to assure proper packing depth and to check for clogging; and
  - iii. Annual (for each calendar year during which the associated sources operated) inspection, cleaning, and calibration of all associated instrumentation.
- e. The Permittee shall install, operate, and maintain a liquid flow rate meters on the scrubbers. The Permittee shall monitor the liquid flow rate into the scrubbers once each day that the associated sources are operational.

**Recordkeeping**

- f. The Permittee shall maintain records of production, emission factors, and the production limits based on the emissions factors for the operations listed in Section 2.2 A.2.a, above, that have n-hexane limits. These records shall be maintained on site (written or electronic format) and made available to authorized personnel upon request.
- g. The results of scrubber inspection and 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 and time of each recorded action;
  - ii. The liquid flow rate of each scrubber for each day that the associated sources are operational;
  - iii. The results of each inspection;
  - iv. The results of any maintenance performed on a scrubber; and
  - v. Any variance from manufacturer's recommendations, if any, and corrections made.

**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.

**STATE-ENFORCEABLE ONLY**

**4. 15A NCAC 2Q .0705: EXISTING FACILITIES and SIC CALLS; and  
15A NCAC 2Q .0711: EMISSION RATES REQUIRING A PERMIT**

- a. As of February 21, 2007 the Permittee has demonstrated on a facility-wide basis that emissions of toxic air pollutants (TAPs) emitted from all sources at the facility (excluding those sources exempt pursuant to 15A NCAC

2Q .0702 "Exemptions") are either below the associated TAP permitting emission rates (TPER) listed in 15A NCAC 2Q .0711 "Emission Rates Requiring a Permit" or are in compliance with 15A NCAC 2D .1100 "Control of Toxic Air Pollutants" as described in Section 2.2 A.2 of this permit, above.

- b. The facility shall be operated and maintained in such a manner that any new, existing or increased actual emissions of any TAP listed in 15A NCAC 2Q .0711 or in this permit from all sources at the facility (excluding those sources exempt under 15A NCAC 2Q .0702 "Exemptions"), including fugitive emissions and emission sources not otherwise required to have a permit, will not exceed its respective TPER listed in 15A NCAC 2Q .0711 without first obtaining an air permit to construct or operate.
- c. PRIOR to exceeding any of the TPERs listed in 15A NCAC 2Q .0711, the Permittee shall be responsible for obtaining an air quality permit to emit TAPs and for demonstrating compliance with the requirements of 15A NCAC 2D .1100 "Control of Toxic Air Pollutants".
- d. The Permittee shall maintain at the facility records of operational information sufficient for demonstrating to the Division of Air Quality staff that actual TAPs are less than the rate listed in 15A NCAC 2Q .0711. In addition, the following operational requirements apply to the Plant Nutrient Extraction process:
  - i. The source may be operated for the production of concentrated plant extracts without controlling the associated emissions via water spray scrubber CD-Z-9215 and water spray scrubber CD-Z-9216; however, during such production, solvents will be limited to water or volatile organic compound (VOC) solvents that:
    - (A) Contain no hazardous air pollutants as defined at 40 CFR §63.2;
    - (B) Contain no toxic air pollutants as defined at 15A NCAC 2Q .0703(22) unless the emission rate(s) is/are less than that/those allowed pursuant to 15A NCAC 2Q .0711 (except that ethanol denatured with ethyl acetate may be used); and
    - (C) Have a vapor pressure less than or equal to methanol.
  - ii. The source shall operate the water spray fume scrubbers (ID Nos. CD-Z-9215 and CD-Z-9216) whenever ethyl acetate is utilized as a solvent.
  - iii. The Permittee shall maintain daily records specifying the particular product produced (e.g., EVG flavorants, Kava Kava, Saint Johnswort etc.) and the quantity and type of solvent used.
  - iv. The Permittee shall certify compliance with the criteria for solvents (Section 2.2 A.2.d.i.) that may be used when scrubbers are not operated.
- e. The TPER table listed below is provided to assist the Permittee in determining when an air permit is required pursuant to 15A NCAC 2Q .0711 and may not represent all TAPs being emitted from the facility. This table will be updated at such time as the permit is either modified or renewed.

Toxic Air Pollutant	CAS Number	Toxic Permit Emission Rate (TPER)		
		Pounds per hour	Pounds per day	Pounds per year
Ethyl acetate	141-78-6	36		
Toluene	108-88-3	14.4	98	

- B. Three No. 2 fuel oil-fired boilers, as described in Section 2.1 A, above;**  
**Rotocel Operations, as described in Section 2.1 C, above;**  
**Recovery Operations, as described in Section 2.1 C, above;**  
**Biomass Extraction Operations, as described in Section 2.1 D, above;**  
**Botanical Extraction Operations, as described in Section 2.1 D, above; and**  
**Wastewater Treatment Plant Aeration Tank No. 1 (63,500 gallon capacity; ID No. WWTP-AT1)**

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

Regulated Pollutant	Limits/Standards	Applicable Regulation
Volatile organic compounds (VOC)	Best Available Control Technology	15A NCAC 2D .0530

**1. 15A NCAC 2D .0530: PREVENTION OF SIGNIFICANT DETERIORATION**

- a. The following Best Available Control Technology (BACT) limits shall not be exceeded:

Emission Source	Pollutant	BACT Emission Limits		Control Technology
Rotocel extractor, desolventizer, and solvent separation/recovery (ID No. ES-1001-2-1-P1)	VOC	10.8 pounds per hour	47.31 tons per consecutive 12-month period	Condenser CD-31209 and packed tower scrubber CD-1001-2-S-1
Rotocel solvent recycle tanks (ID No. ES-1001-2-1-P2)	VOC	<i>When Rotocel Operating:</i> 0.94 pounds per hour and 4.11 tons per consecutive 12-month period, combined total  <i>When Rotocel is NOT Operating and Recovery Process is processing Concrete:</i> 0.47 pounds per hour and 0.19 tons per consecutive 12-month period, combined total		Condenser CD-1001-2-C-1 and packed tower scrubber CD-1001-2-S-1  Condenser CD-1001-2-C-1
Rotocel equipment leaks (ID No. ES-1001-2-1-F)	VOC (Fugitive)			Leak detection and repair (LDAR)
Rotocel wastewater stream (ID No. ES-1001-2-1-WW)	VOC			Fixed roofs on wastewater treatment tanks
Recovery arcon tank M-1 (ID No. ES-1001-1-1-P1)	VOC	<i>When Rotocel is Operating:</i> 0.80 pounds per hour and 3.50 tons per consecutive 12-month period  <i>When Rotocel is NOT Operating and Recovery Process is processing Concrete:</i> 8.76 pounds per hour and 0.63 tons per consecutive 12-month period		Condenser CD-1001-1-3 and packed tower scrubber CD-1001-2-S-1  Condenser CD-1001-1-3

Emission Source	Pollutant	BACT Emission Limits		Control Technology
Recovery stripper T-5 and receiver M-21 (ID No. ES-1001-1-1-P2)	VOC	<p><i>When Rotocel is Operating:</i> 0.85 pounds per hour and 3.72 tons per consecutive 12-month period</p> <p><i>When Rotocel is NOT Operating and Recovery Process is processing Concrete:</i> 4.89 pounds per hour and 1.99 tons per consecutive 12-month period</p>		<p>Condenser CD-1001-1-T5B and packed tower scrubber CD-1001-2-S-1</p> <p>Condenser CD-1001-1-T5B</p>
Recovery process/storage tanks (ID No. ES-1001-1-1-P3)	VOC			Fixed roofs
Recovery equipment leaks (ID No. ES-1001-1-1-F)	VOC (Fugitive)			LDAR
Recovery wastewater stream (ID No. ES-1001-1-1-WW)	VOC	95% mass removal from wastewater stream consisting of methanol-wash		Fixed roofs on wastewater treatment tanks and biological treatment
Botanical extraction immersion extractor, desolventizer, first and second stage evaporators, distillation column, day tank, and multiple process tanks (ID No. ES-1001-11-P)	VOC	14.1 pounds per hour	61.76 tons per consecutive 12-month period	Condenser CD-1001-11-EX1002 and condenser CD-1001-11-EX1003
Botanical extraction equipment leaks (ID No. ES-1001-11-F)	VOC (Fugitive)			LDAR
Botanical extraction wastewater stream (ID No. ES-1001-11-WW)	VOC			Fixed roofs on wastewater treatment tanks
Biomass extraction immersion extractor, desolventizer, day tank, isohexane storage tank, first and second stage evaporators, distillation column, and multiple process tanks (ID No. ES-1004-2-P)	VOCs	14.1 pounds per hour	61.8 tons per consecutive 12-month period	Condenser CD-1004-2EX1002 and condenser CD-1004-2EX1003
Biomass extraction equipment leaks (ID No. ES-1004-2-F)	VOCs			LDAR
Biomass extraction wastewater stream (ID No. ES-1004-2-WW)	VOCs			Fixed roofs on wastewater treatment tanks
No. 2 fuel-oil fired boilers (ID Nos. H-101, H-102, H-103)	VOC	0.2 pounds per 1,000 gallons		Combustion control

**Testing** [15A NCAC 2D .2601]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .2601 and General Condition JJ found in Section 3 of this permit. If the results of this test are above the limit given in Section 2.2 B.1.a, above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530.

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

- c. The Permittee shall only fill the Rotocel solvent recycle tanks (ID No. ES-1001-2-1-P2) from tanker trucks when source ES-1001-2-1-P1 is operating.

- d. The Permittee shall limit the operation of the rotocel solvent recycle tanks (ID No. ES-1001-2-1-P2), recovery arcon tank M-1 (ID No. ES-1001-1-1-P1), and recovery stripper T-5 and receiver M-21 (ID No. ES-1001-1-1-P2) while source ES-1001-2-1-P1 is not operating to no greater than 34 days in any consecutive 12-month period.
- e. The Permittee shall limit the total number of days during which the liquid flow into the recovery arcon tank M-1 (ID No. ES-1001-1-1-P1) exceeds the liquid flow out of the arcon tank (i.e., days when the liquid level in the tank rises) while source ES-1001-2-1-P1 is not operating to no greater than 6 days in any consecutive 12-month period.
- f. The Permittee shall implement the leak detection and repair (LDAR) program of 40 CFR Part 63, Subpart UU, as per the requirements Section 2.2 B.2, below. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530, if the LDAR program requirements are not implemented.
- g. The Permittee shall determine once a week, the mass removal efficiency of the on-site biological wastewater treatment plant (i.e. Wastewater Treatment Plant Aeration Tank No. 1; ID No. WWTP-AT1) for volatile organic compounds (VOC), when the wastewater stream consisting of methanol-wash from the recovery operations (ID No. ES-1001-1-1-WW) is discharged to it.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if the mass removal efficiency of the on-site biological wastewater treatment plant (ID No. WWTP-AT1) for VOC is not determined every week or if the mass removal efficiency is less than 95%.

- h. Volatile organic compound (VOC) emissions from the emission sources listed in Section 2.2 B.1.a, above, shall be controlled by the associated condensers. To assure compliance, the Permittee shall perform periodic inspections and maintenance as recommended by the equipment manufacturer. In addition, the Permittee shall perform an annual inspection of each condenser system, including the following:
  - i. The Permittee shall inspect and maintain the structural integrity of each condenser, including inspection for leakage of coolant and, if the system is under positive gauge pressure, leakage of the contaminated gas stream. In order to monitor leakage of the coolant, the condensate shall be inspected for the presence of coolant; and
  - ii. The Permittee shall inspect and maintain the structural integrity of ductwork and piping leading to and coming from each condenser.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if the condensers are not inspected and maintained.

- i. To assure compliance, the Permittee shall install, maintain, operate, and calibrate, in accordance with manufacturer's recommendations, a sensor to continuously measure the outlet temperature of each condenser listed in Section 2.2 B.1.a, above. Each sensor shall be installed in an accessible location and shall be maintained by the Permittee such that it is in proper working order at all times. The temperatures output from the sensors shall be continuously monitored and hourly values used to determine the 24-hour average temperature at the condenser outlets. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if the outlet temperatures of the condensers are not maintained below the limits in the table below; or the condensers are not equipped with sensors to continuously measure the outlet temperatures; or if those sensors are not inspected and maintained.

Emission Source	Condenser ID No.	Required Outlet Temperature
Rotocel solvent recycle tanks (ID No. ES-1001-2-1-P2)	CD-1001-2-C-1	45 °F, 24-hour average, when source ES-1001-2-1-P1 is not operating and the tanks are used for concrete processing in the recovery operation
Recovery arcon tank M-1 (ID No. ES-1001-1-1-P1)	CD-1001-1-3	
Recovery stripper T-5 and receiver M-21 (ID No. ES-1001-1-1-P2)	CD-1001-1-T5B	
Botanical extraction operations (ID No. ES-1001-11-P)	CD-1001-11-EX1003	-40 °F, 24-hour average

Emission Source	Condenser ID No.	Required Outlet Temperature
Biomass extraction operations (ID No. ES-1004-2-P)	CD-1004-2EX1003	-40 °F, 24-hour average

- j. Volatile organic compound (VOC) emissions from the emission sources listed in Section 2.2 B.1.a, above, shall also be controlled by the associated packed tower scrubber (ID No. CD-1001-2-S-1), except as allowed pursuant to Sections 2.2 B.1.d and e, above. To assure compliance, the Permittee shall perform periodic inspections and maintenance as recommended by the equipment manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there is no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
- i. An annual inspection of spray nozzles and packing materials, chemical feed system (if so equipped), and perform maintenance and repair when necessary to assure proper operation of the packed tower scrubber; and
  - ii. An annual inspection, cleaning, and calibration of all associated instrumentation.
  - iii. Additionally, whenever the packing is replaced, the Permittee shall inspect for nozzle plugging and settling of the packing.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if the packed tower scrubber is not inspected and maintained.

- k. The Permittee shall install, maintain, operate, and calibrate a scrubbing liquid flow meter, a scrubbing liquid inlet temperature sensor, and an emission stream inlet temperature sensor for packed tower scrubber CD-1001-2-S-1 in accordance with manufacturer's recommendations. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if the flow meter and temperature sensors are not installed, maintained, and calibrated, or if, except as allowed pursuant to Sections 2.2 B.1.d and e, above:
- i. The scrubbing liquid injection rate is not maintained at or above eight gallons per minute;
  - ii. The scrubbing liquid inlet temperature exceeds 105 °F;
  - iii. The emission stream inlet temperature exceeds 90 °F; or
  - iv. The flow meter and temperature sensors are not operated.

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

- l. The Permittee shall maintain the following records:
- i. VOC emissions for each calendar month, and for the consecutive 12-month period ending with each calendar month, from the following sources:
    - (A) Rotocel and recovery operations (ID Nos. ES-1001-2-1-P1, ES-1001-2-1-P2, ES-1001-1-1-P1, ES-1001-1-1-P2, and ES-1001-1-1-P3) when source ES-1001-2-1-P1 is operating;
    - (B) Rotocel and recovery operations (ID Nos. ES-1001-2-1-P1, ES-1001-2-1-P2, ES-1001-1-1-P1, ES-1001-1-1-P2, and ES-1001-1-1-P3) when source ES-1001-2-1-P1 is not operating and the recovery process is processing concrete;
    - (C) Botanical extraction operations (ID No. ES-1001-11-P); and
    - (D) Biomass extraction operations (ID No. ES-1004-2-P).
  - ii. Results of any inspections, maintenance, and monitoring conducted pursuant to Sections 2.2 B.1.c through k, above, shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall be updated at least monthly and record the following:
    - (A) The date and time of each recorded action;
    - (B) The operational status of source ES-1001-2-1-P1 during the filling of the rotocel solvent recycle tanks (ID No. ES-1001-2-1-P2) from tanker trucks;
    - (C) The actual hours of operation of the rotocel solvent recycle tanks (ID No. ES-1001-2-1-P2), recovery

arcon tank M-1 (ID No. ES-1001-1-1-P1), and recovery stripper T-5 and receiver M-21 (ID No. ES-1001-1-1-P2), when source ES-1001-2-1-P1 is not operating;

- (D) The actual hours of operation of recovery arcon tank M-1 (ID No. ES-1001-1-1-P1), when the liquid flow into the arcon tank exceeds the liquid flow out of recovery arcon tank M-1 and source ES-1001-2-1-P1 is not operating;
- (E) The mass removal efficiency of the on-site biological wastewater treatment plant (ID No. WWTP-AT1) for VOC calculated once a week at a minimum when the wastewater stream consisting of methanol-wash from the recovery operation (ID No. ES-1001-1-1-WW) is discharged to it;
- (F) The 24-hour average outlet temperature of the associated condenser(s) listed in Section 2.2 B.1.i, above:
  - (1) When source ES-1001-2-1-P1 is not operating and the Concrete Operations tanks (ID No. ES-1001-1-2-P) are used for concrete processing in the recovery operation;
  - (2) When the biomass extraction operations (ID No. ES-1004-2-P) is operating; and/or
  - (3) When the botanical extraction operations (ID No. ES-1001-2-1-P2) is operating.
- (G) The scrubbing liquid injection rate, scrubbing liquid inlet temperature, and emission stream inlet temperature of scrubber CD-1001-2-S-1 at least once each day that source ES-1001-2-1-P1 operates;
- (H) The results of maintenance performed on the condensers and scrubber listed in Section 2.2 B.1.a, above, and the associated temperature sensors and flow rate gauges; and
- (I) Any variance from manufacturer's recommendations, if any, and corrections made.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if these records are not maintained.

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

- m. Within 30 days of a request from the DAQ, the Permittee shall submit a report of any maintenance performed on the condensers and scrubber listed in Section 2.2 B.1.a, above.
- n. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked or received 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. In addition, the semiannual reports shall also contain the following:
  - i. The monthly VOC emissions from each of the following sources for each of the previous 17 months; and
    - (A) Rotocel and recovery operations (ID Nos. ES-1001-2-1-P1, ES-1001-2-1-P2, ES-1001-1-1-P1, ES-1001-1-1-P2, and ES-1001-1-1-P3) when source ES-1001-2-1-P1 is operating;
    - (B) Rotocel and recovery operations (ID Nos. ES-1001-2-1-P1, ES-1001-2-1-P2, ES-1001-1-1-P1, ES-1001-1-1-P2, and ES-1001-1-1-P3) when source ES-1001-2-1-P1 is not operating and the recovery process is processing concrete;
    - (C) Botanical extraction operations (ID No. ES-1001-11-P); and
    - (D) Biomass extraction operations (ID No. ES-1004-2-P).
  - ii. The cumulative total VOC emissions from each of the sources listed in Section 2.2 B.1.n.i, above, for each of the consecutive 12-month periods ending during the reporting period.

**2. Leak Detection and Repair**

**[15A NCAC 2D .0530: Prevention of Significant Deterioration]**

**Equipment identification** [15A NCAC 2Q .0508(f)]

- a. Affected process equipment shall be identified. Identification of the equipment does not require physical tagging of the equipment. For example, the equipment may be identified on a plant site plan, in log entries, by designation of process unit or affected facility boundaries by some form of weatherproof identification, or by other appropriate methods. In addition to the above, the following equipment shall be specifically identified:
  - i. Connectors that are:

- (A) Buried, insulated in a manner that prevents access by a monitor probe,
- (B) Obstructed by equipment or piping that prevents access by a monitoring probe,
- (C) Unable to be reached by a lift up to 25 feet above ground level,
- (D) Inaccessible because it would require elevating the monitoring personnel more than seven feet above a permanent support surface or would require the erection of scaffolding, or
- (E) Not able to be accessed in a safe manner to perform monitoring;

(Connectors need not be individually identified if all connectors in a designated area or length of pipe are identified as a group, and the number of connectors subject is indicated.)

- ii. Pressure relief devices that are equipped with rupture disk upstream of the pressure device;
  - iii. Valves, pumps, and connectors that are designated unsafe-to-monitor (i.e., Permittee has determined that monitoring personnel would be exposed to an immediate danger as a consequence of complying with the monitoring requirements); and
  - iv. Valves that are difficult-to-monitor (i.e., Permittee has determined that the valve cannot be monitored without elevating the monitoring personnel more than seven feet above a support surface or it is not accessible in a safe manner when it is in regulated material service.
- b. The Permittee shall record the identity of equipment designated as unsafe-to-monitor and/or difficult-to-monitor and the planned schedule for monitoring this equipment. The Permittee shall include an explanation why the equipment is unsafe or difficult-to-monitor. These records must be kept at the plant and be available for review by an inspector.
- i. The Permittee shall have a written plan that requires monitoring of the equipment as frequently as practical during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment if a leak is detected.
  - ii. The Permittee shall have a written plan that requires monitoring of difficult to monitor equipment at least once per calendar year and repair of the equipment if a leak is detected.
- c. Connectors that are designated as unsafe-to-repair will be repaired before the end of the next process unit shutdown. The identity of connectors designated as unsafe-to-repair and an explanation why the connector is unsafe-to-repair shall be recorded.

**Instrument and sensory monitoring for leaks** [15A NCAC 2Q .0508(f)]

- d. Instrument monitoring shall be conducted for
- i. Valves in gas/vapor or light liquid service;
  - ii. Pumps in light liquid service;
  - iii. Connectors in gas/vapor or light liquid service; and
  - iv. Pressure relief devices in gas/vapor service.
- e. Sensory monitoring for leaks shall be conducted for pumps in light liquid service. Sensory monitoring consists of visual, audible, olfactory, or any other detection method used to determine a potential leak to the atmosphere.
- f. Instrument monitoring shall comply with the following requirements,
- i. Monitoring shall comply with Method 21 of 40 CFR part 60, appendix A.
  - ii. The detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2, paragraph (a) of Method 21 shall be for the representative composition of the process fluid not each individual VOC in the stream. For process streams that contain nitrogen, air, water or other inerts that are not VOC, the representative stream response factor shall be determined on an inert-free basis. The response factor may be determined at any concentration for which monitoring for leaks will be conducted. If there is no instrument commercially available that will meet the performance criteria specified above, the instrument readings may be adjusted by multiplying by the representative response factor of the process fluid, calculated on an inert-free basis.

- iii. The detection instrument shall be calibrated annually by the manufacturer by the procedures specified in Method 21 of 40 CFR part 60, appendix A.
  - iv. Calibration gases shall be zero air (less than 10 parts per million of hydrocarbon in air); and the gases shall be mixtures of methane in air at a concentration no more than 2,000 parts per million greater than the leak definition concentration of the equipment monitored. If the monitoring instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 parts per million above the concentration specified as a leak, and the highest scale shall be calibrated with a calibration gas that is approximately equal to 10,000 parts per million. A calibration gas other than methane in air may be used if the instrument does not respond to methane or if the instrument does not meet the performance criteria specified Method 21 of 40 CFR part 60, appendix A. In such cases, the calibration gas may be a mixture of one or more of the compounds to be measured in air.
  - v. Monitoring shall be performed when the equipment is in VOC service.
- g. The Permittee may elect to adjust or not to adjust the instrument readings for background.
- i. If the Permittee elects not to adjust instrument readings for background, the Permittee shall monitor the equipment according to the procedures specified above in Section 2.2 B.2.f of this permit, above. In such cases, all instrument readings shall be compared directly to the applicable leak definition for the monitored equipment to determine whether there is a leak or to determine compliance with operational standards for pressure relief devices.
  - ii. If the Permittee elects to adjust instrument readings for background, the Permittee shall
    - (A) Monitor the equipment according to the procedures specified above in Section 2.2 B.2.f, above;
    - (B) Determine the background level using the procedures in Method 21 of 40 CFR part 60, appendix A;
    - (C) Traverse the potential leak interfaces with the instrument probe as close to the interface as possible as described in Method 21 of 40 CFR part 60, appendix A; and
    - (D) Compare the arithmetic difference between the maximum concentration indicated by the instrument and the background level to the applicable leak definition for the monitored equipment to determine whether there is a leak or to determine compliance operational standards for pressure relief devices.
- h. When a leak is detected:
- i. A weatherproof and readily visible identification, shall be attached to the leaking equipment, and
  - ii. Leak repair records shall be made that include the following:
    - (A) The date of first attempt to repair the leak;
    - (B) The date of successful repair of the leak;
    - (C) The maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A at the time the leak is successfully repaired or determined to be non-repairable;
    - (D) Dates of process unit shutdowns that occur while the equipment is unrepaired; and
    - (E) Any delay of repair and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
      - (1) 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, and malfunction plan, 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 (i.e. season operation).
      - (2) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.

**Leak Repair** [15A NCAC 2Q .0508(f)]

- i. The Permittee shall repair each leak detected as soon as practical, but not later than 15 calendar days after it is detected, except as provided for in delay of repair and/or unsafe to repair connectors. A first attempt at repair shall

be made no later than 5 calendar days after the leak is detected. First attempt at repair for pumps includes, but is not limited to, tightening the packing gland nuts and/or ensuring that the seal flush is operating at design pressure and temperature. First attempt at repair for valves includes, but is not limited to, tightening the bonnet bolts, and/or replacing the bonnet bolts, and/or tightening the packing gland nuts, and/or injecting lubricant into the lubricated packing.

- j. The leak identification on a valve in gas/vapor or light liquid service may be removed after it has been monitored as specified in this permit and no leak has been detected during that monitoring. The leak identification on a connector in gas/vapor or light liquid service may be removed after it has been monitored as specified in this permit and no leak has been detected during that monitoring. Identification that has been placed on equipment determined to have a leak, except for a valve or for a connector in gas/vapor or light liquid service, may be removed after it is repaired.
- k. Delay of repair is allowed for any of the conditions specified below. The Permittee shall maintain a record of the facts that explain any delay of repairs and, where appropriate, why the repair was technically infeasible without a process unit shutdown.
  - i. Delay of repair of equipment for which leaks have been detected is allowed if repair within 15 days after a leak is detected is technically infeasible without a process unit or affected facility shutdown. Repair of this equipment shall occur as soon as practical, but no later than the end of the next process unit shutdown. However, delay of repair beyond a process unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the process unit shutdown, and valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the second process unit shutdown will not be allowed unless the third process unit shutdown occurs sooner than six months after the first process unit shutdown.
  - ii. Delay of repair of equipment for which leaks have been detected is allowed for equipment that is isolated from the process and that does not remain in VOC service.
  - iii. Delay of repair for valves and connectors is also allowed if:
    - (A) The Permittee determines that emissions of purged material resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair, and
    - (B) When repair procedures are effected, the purged material can not be collected and destroyed or reused in the process.
  - iv. Delay of repair for pumps is also allowed if repair requires replacing the existing seal design with a new system that the Permittee has determined under a quality improvement program (Sections 2.2 B.2.bb through 2.2 B.2.gg, below) will provide better performance, or the repair is completed as soon as practical, but not later than 6 months after the leak was detected and one of the following is used;
    - (A) A dual mechanical seal system;
    - (B) A pump that meets has no external shaft penetrating the pump housing; or
    - (C) A system that routes emissions to a process or a fuel gas system or a closed vent system and control device;

**Valves in Gas/Vapor/Light Liquid Service** [15A NCAC 2Q .0508(f)]

- 1. The Permittee shall monitor all valves using the method specified in this permit at the intervals, except unsafe to monitor valves and maintain records as specified below. The instrument reading that defines a leak is 500 parts per million or greater.
  - i. If at least the greater of two valves or two percent of the valves in a process unit leak, the Permittee shall monitor each valve once per month.
  - ii. At process units with less than the greater of two leaking valves or two percent leaking valves, the Permittee shall monitor each valve once each quarter, except as provided below.
    - (A) The Permittee may elect to monitor each valve once every two quarters for process units with less than one percent leaking valves.

- (B) The Permittee may elect to monitor each valve once every four quarters for process units with less than 0.5 percent leaking valves.
- (C) The Permittee may elect to monitor each valve once every two years for process units with less than 0.25 percent leaking valves.
- iii. The Permittee shall keep a record of the monitoring schedule for each process unit.
- m. The Permittee may choose to subdivide the valves in the group of process units and apply the monitoring frequency provisions to each subgroup. If the Permittee subdivides the valves in the group of process units, then the following provisions apply.
- i. The overall performance of total valves in the group of process units to be subdivided shall be less than two percent leaking valves.
- ii. The initial assignment or subsequent reassignment of valves to subgroups shall be governed as follows.
- (A) The Permittee shall determine which valves are assigned to each subgroup. Valves with less than one year of monitoring data or valves not monitored within the last twelve months must be placed initially into the most frequently monitored subgroup until at least one year of monitoring data have been obtained.
- (B) Any valve or group of valves can be reassigned from a less frequently monitored subgroup to a more frequently monitored subgroup provided that the valves to be reassigned were monitored during the most recent monitoring period for the less frequently monitored subgroup. The monitoring results must be included with that less frequently monitored subgroup's associated percent leaking valves calculation for that monitoring event.
- (C) Any valve or group of valves can be reassigned from a more frequently monitored subgroup to a less frequently monitored subgroup provided that the valves to be reassigned have not leaked for the period of the less frequently monitored subgroup (e.g., for the last 12 months, if the valve or group of valves is to be reassigned to a subgroup being monitored annually). Non-repairable valves may not be reassigned to a less frequently monitored subgroup.
- iii. The Permittee shall determine every six months if the overall performance of total valves in the applicable process unit or group of process units is less than two percent leaking valves and so indicate the performance in the next periodic report. If the overall performance of total valves in the applicable process unit or group of process units is two percent leaking valves or greater, the Permittee shall no longer subgroup and shall revert to the program required in Section 2.2 B.2.p. for that group of process units. The Permittee can again elect to comply with the valve subgrouping procedures if future overall performance of total valves in the process unit or group of process units is again less than two percent. The overall performance of total valves in the applicable process unit or group of process units shall be calculated as a weighted average of the percent leaking valves of each subgroup according to following equation:

$$\%V_{LO} = \left[ \frac{\sum_{i=1}^n (\%V_{Li} \times V_i)}{\sum_{i=1}^n V_i} \right]$$

Where:  $\%V_{LO}$  = Overall performance of total valves in the applicable process unit or group of process units

$\%V_{Li}$  = Percent leaking valves in subgroup i, most recent value

$V_i$  = Number of valves in subgroup i

n = Number of subgroups.

- iv. The Permittee shall maintain the following records:
- (A) Which valves are assigned to each subgroup;
- (B) Monitoring results and calculations made for each subgroup for each monitoring period;

- (C) Which valves are reassigned, the last monitoring result prior to reassignment, and when they were reassigned; and
- (D) The results of the semiannual overall performance calculation.
- v. The Permittee shall notify the DAQ no later than 30 days prior to the beginning of the next monitoring period of the decision to subgroup valves. The notification shall identify the participating process units and the number of valves assigned to each subgroup, if applicable, and may be included in the next semi-annual periodic report.
- vi. The Permittee shall submit in the semi-annual periodic reports the following information:
  - (A) Total number of valves in each subgroup, and
  - (B) The results of the semiannual overall performance calculation.
- n. The Permittee perform percentage calculations for each process group (i.e., botanical extraction, biomass extraction, and Rotocel/recovery) for comparison with the sub grouping criteria specified in Section 2.2 B.2.m, above, and the percent leaking valves for each monitoring period for each process unit or valve subgroup shall be calculated using the following equation:

$$\%V_L = \left( \frac{V_L}{V_T} \right) \times 100$$

Where: %V<sub>L</sub> = Percent leaking valves.

V<sub>L</sub> = Number of valves found leaking, excluding non-repairable valves and including those valves found whose repair was not confirmed with both post leak repair monitoring and periodic monitoring.

V<sub>T</sub> = The sum of the total number of valves monitored.

- o. When determining monitoring frequency for each process unit or valve subgroup subject to monthly, quarterly, or semiannual monitoring frequencies, the percent leaking valves shall be the arithmetic average of the percent leaking valves from the last two monitoring periods. When determining monitoring frequency for each process unit or valve subgroup subject to annual or biennial (once every 2 years) monitoring frequencies, the percent leaking valves shall be the arithmetic average of the percent leaking valves from the last three monitoring periods.
  - i. 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. Otherwise, a number of non-repairable valves (identified and included in the percent leaking valves calculation in a previous period) up to a maximum of one percent of the total number of valves in VOC service at a process unit may be excluded from calculation of percent leaking valves for subsequent monitoring periods.
  - ii. If the number of non-repairable valves exceeds one percent of the total number of valves in regulated material service at a process unit or affected facility, the number of non-repairable valves exceeding one percent of the total number of valves in regulated material service shall be included in the calculation of percent leaking valves.
- p. If a leak is determined, then the leak shall be repaired. After a leak has been repaired, the valve shall be monitored at least once within the first three months after its repair.
  - i. This monitoring is in addition to the monitoring required to satisfy the definition of repaired and first attempt at repair. The monitoring shall be conducted to determine whether the valve has resumed leaking.
  - ii. Periodic monitoring may be used to satisfy this if the timing of the monitoring period coincides with the time specified. Alternatively, other monitoring may be performed to satisfy the requirement regardless of whether the timing of the monitoring period for periodic monitoring coincides with the time above.
  - iii. If a leak is detected by monitoring that is conducted after leak repair, the Permittee shall:
    - (A) Use periodic monitoring to satisfy the requirement above, then the valve shall be counted as a leaking valve, or

- (B) If the Permittee elected to use other monitoring, prior to the periodic monitoring, to satisfy the above requirement, then the valve shall be counted as a leaking valve unless it is repaired and shown by periodic monitoring not to be leaking.
- q. Any valve that is designated as an unsafe-to-monitor or difficult to monitor valve is exempt from the requirements of Section 2.2 B.2.1, above, and the Permittee shall monitor the valve according to the written plan specified in Section 2.2 B.2.b, above.

**Pumps in light liquid service standards** [15A NCAC 2Q .0508(f)]

- r. The pumps shall be instrumentally monitored monthly to detect leaks by the method specified in this permit. The instrument reading that defines a leak is 1,000 parts per million or greater. Repair is not required unless an instrument reading of 2,000 parts per million or greater is detected. Any pump that is designated as an unsafe-to-monitor pump is exempt from this requirement and shall be monitored and inspected according to the written plan specified in Section 2.2 B.2.b, above.
- s. Each pump shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. The Permittee shall document that the inspection was conducted and the date of the inspection. If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the Permittee shall:
- Monitor the pump as specified in this permit and if the instrument reading indicates a reading of 2,000 parts per million (ppm) or greater it shall be repaired using the procedures in Sections 2.2 B.2.i through 2.2 B.2.k, above; or
  - Eliminate the visual indications of liquids dripping.

Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection provided that each pump is visually inspected as often as practical and at least monthly.

- t. If, when calculated on a 6-month rolling average for the percent leaking pumps, at least the greater of either 10 percent of the pumps in a process unit or three pumps in a process unit leak, the Permittee shall implement a quality improvement program for pumps Sections 2.2.B.2.bb through 2.2 B.2.gg, below. The Permittee shall not alter the process grouping used in calculating this percentage.
- The number of pumps at a process unit shall be the sum of all the pumps in VOC service, except that pumps found leaking in a continuous process unit within one month after start-up of the pump shall not count in the percent leaking pumps calculation for that one monitoring period only.
  - Percent leaking pumps shall be determined by the following equation:

$$\%P_L = \left[ \frac{P_L - P_S}{P_T - P_S} \right] \times 100$$

Where: %P<sub>L</sub> = Percent leaking pumps

P<sub>L</sub> = Number of pumps found leaking as determined through monthly monitoring. Do not include results from inspection of unsafe-to-monitor pumps.

P<sub>S</sub> = Number of pumps leaking within one month of start-up during the current monitoring period.

P<sub>T</sub> = Total pumps in VOC, including pumps with dual mechanical seals, pumps with no external shaft penetrating the pump housing, and unsafe to monitor pumps.

**Connectors in gas and vapor service and in light liquid service standards** [15A NCAC 2Q .0508(f)]

- u. The Permittee shall monitor all connectors in gas and vapor and light liquid using instrumentation as specified in this permit. If an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected. Any connector that is designated as unsafe-to-monitor is exempt from this requirement and shall be monitored and inspected according to the written plan specified in Section 2.2 B.2.b, above.
- v. The Permittee shall perform monitoring as specified below.

- i. If the percent leaking connectors in the process unit was greater than or equal to 0.5 percent, then monitor within 12 months (one year).
  - ii. If the percent leaking connectors in the process unit was greater than or equal to 0.25 percent but less than 0.5 percent, then monitor within four years. The Permittee may comply with this requirement by monitoring at least 40 percent of the connectors within two years of the start of the monitoring period, provided all connectors have been monitored by the end of the four year monitoring period.
  - iii. If the percent leaking connectors in the process unit was less than 0.25 percent the Permittee shall monitor at least 50 percent of the connectors within four years of the start of the monitoring period and
    - (A) Monitor as soon as practical, but within the next six months, all connectors that have not yet been monitored during the monitoring period if the percent leaking connectors is greater than or equal to 0.35 percent of the monitored connectors [At the conclusion of monitoring, a new monitoring period shall be started based on the percent leaking connectors of the total monitored connectors.], or
    - (B) Monitor all connectors that have not yet been monitored within eight years of the start of the monitoring period if the percent leaking connectors is less than 0.35 percent of the monitored connectors.
  - iv. If, during the monitoring, a connector is found to be leaking, it shall be re-monitored once within 90 days after repair to confirm that it is not leaking.
  - v. The Permittee shall keep a record of the start date and end date of each monitoring period under this section for each process unit.
- w. Monitoring frequency shall be determined based on the percent leaking connectors and calculated as follows:

$$\% C_L = \frac{C_L}{C_T} \times 100$$

Where: %C<sub>L</sub> = Percent leaking connectors as determined through periodic monitoring.

C<sub>L</sub> = Number of connectors measured at 500 parts per million or greater.

C<sub>T</sub> = Total number of monitored connectors in the process unit.

- x. Connectors that are:
  - i. Buried, insulated in a manner that prevents access by a monitor probe,
  - ii. Obstructed by equipment or piping that prevents access by a monitoring probe,
  - iii. Unable to be reached by a lift up to 25 feet above ground level,
  - iv. Inaccessible because it would require elevating the monitoring personnel more than seven feet above a permanent support surface or would require the erection of scaffolding, or
  - v. Not able to be accessed in a safe manner to perform monitoring

are exempt from monitoring requirements. However if any inaccessible, ceramic or ceramic-lined connector is observed by visual, audible, olfactory, or other means to be leaking, the visual, audible, olfactory, or other indications of a leak to the atmosphere shall be eliminated as soon as practical.

**Pressure relief devices in gas and vapor service standards** [15A NCAC 2Q .0508(f)]

- y. Except during pressure releases as specified below, each pressure relief device in gas and vapor service shall be operated with an instrument reading of less than 500 parts per million.
- z. After each pressure release:
  - i. The pressure relief device shall be returned to a condition indicated by an instrument reading of less than 500 parts per million, as soon as practical, but no later than five calendar days after each pressure release, except as provided for in delay of repair provisions of this permit;
  - ii. The pressure relief device shall be monitored no later than five calendar days after the restoration to confirm the condition indicated by an instrument reading of less than 500 parts per million above background, and

- iii. The Permittee shall record the dates and results of the monitoring following a pressure release including the background level measured and the maximum instrument reading measured during the monitoring.
- aa. Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from monitoring provided the Permittee installs a replacement rupture disk upstream of the pressure relief device as soon as practical after each pressure release but no later than five calendar days after each pressure release, except as provided for in delay of repair.

**Quality improvement program for pumps** [15A NCAC 2Q .0508(f)]

- bb. If, on a 6-month rolling average, at least the greater of either 10 percent of the pumps in a process unit or three pumps in a process unit leak, the Permittee shall implement a quality improvement plan until the number of leaking pumps is less than the greater of either 10 percent of the pumps or three pumps in the process unit, calculated as a 6-month rolling average. Once the performance level is achieved, the Permittee shall comply with the requirements in Sections 2.2 B.2.r through 2.2 B.2.t, above.
- cc. The Permittee shall collect the following data and maintain records for each pump in each process unit subject to the quality improvement program. The data may be collected and the records may be maintained on a process unit, affected facility, or plant site basis.
  - i. Pump type (e.g., piston, horizontal or vertical centrifugal, gear, bellows); pump manufacturer; seal type and manufacturer; pump design (e.g., external shaft, flanged body); materials of construction; if applicable, barrier fluid or packing material; and year installed.
  - ii. Service characteristics of the stream such as discharge pressure, temperature, flow rate, and annual operating hours.
  - iii. The maximum instrument readings observed in each monitoring observation before repair, response factor for the stream if appropriate, instrument model number, and date of the observation.
  - iv. If a leak is detected, the repair methods used and the instrument readings after repair.

The Permittee shall continue to collect data on the pumps as long as the process unit or affected facility (or plant site) remains in the quality improvement program.

- dd. The Permittee shall inspect all pumps or pump seals that exhibited frequent seal failures and were removed from the process unit due to leaks. The inspection shall determine the probable cause of the pump seal failure or of the pump leak and shall include recommendations, as appropriate, for design changes or changes in specifications to reduce leak potential.
- ee. The Permittee shall analyze the data collected to comply with the requirements of Section 2.2 B.2.cc, above, to determine the services, operating or maintenance practices, and pump or pump seal designs or technologies that have poorer than average emission performance and those that have better than average emission performance. The analysis shall determine if specific trouble areas can be identified on the basis of service, operating conditions or maintenance practices, equipment design, or other process-specific factors.
  - i. The analysis shall also be used to determine if there are superior performing pump or pump seal technologies that are applicable to the service(s), operating conditions, or pump or pump seal designs associated with poorer than average emission performance. A superior performing pump or pump seal technology is one with a leak frequency of less than 10 percent for specific applications in the process unit. A candidate superior performing pump or pump seal technology is one demonstrated or reported in the available literature or through a group study as having low emission performance and as being capable of achieving less than 10 percent leaking pumps in the process unit.
  - ii. The analysis shall include consideration of the following information:
    - (A) The data obtained from the inspections of pumps and pump seals removed from the process unit due to leaks;
    - (B) Information from the available literature and from the experience of other plant sites that will identify pump designs or technologies and operating conditions associated with low emission performance for specific services; and
    - (C) Information on limitations on the service conditions for the pump seal technology operating conditions as well as information on maintenance procedures to ensure continued low emission performance.

- iii. The data analysis may be conducted through an inter- or intra-company program (or through some combination of the two approaches) and may be for a single process unit, a plant site, a company, or a group of process units.
- iv. The first analysis of the data shall be completed no later than 18 months after the start of the quality improvement program. The first analysis shall be performed using data collected for a minimum of six months. An analysis of the data shall be done each year the process unit or affected facility is in the quality improvement program.
- ff. The Permittee shall prepare and implement a pump quality assurance program that details purchasing specifications and maintenance procedures for all pumps and pump seals in the process unit. The quality assurance program may establish any number of categories, or classes, of pumps as needed to distinguish among operating conditions and services associated with poorer than average emission performance as well as those associated with better than average emission performance. The quality assurance program shall be developed considering the findings of the data analysis required under paragraph Section 2.2B.2.ee, above, and the operating conditions in the process unit. The quality assurance program shall be updated each year as long as the process unit has the greater of either 10 percent or more leaking pumps or has three leaking pumps.
  - i. The quality assurance program shall implement the following procedures.
    - (A) Establish minimum design standards for each category of pumps or pump seal technology. The design standards shall specify known critical parameters such as tolerance, manufacturer, materials of construction, previous usage, or other applicable identified critical parameters.
    - (B) Require that all equipment orders specify the design standard (or minimum tolerances) for the pump or the pump seal.
    - (C) Provide for an audit procedure for quality control of purchased equipment to ensure conformance with purchase specifications.
    - (D) Detail off-line pump maintenance and repair procedures. These procedures shall include provisions to ensure that rebuilt or refurbished pumps and pump seals will meet the design specifications for the pump category and will operate so that emissions are minimized.
  - ii. The quality assurance program shall be established no later than the start of the third year of the quality improvement program.
- gg. Three years after the start of the quality improvement program, the Permittee shall replace the pumps or pump seals that are not superior emission performance technology with pumps or pump seals that have been identified as superior emission performance technology and that comply with the quality assurance standards for the pump category. Superior emission performance technology is that category or design of pumps or pump seals with emission performance that when combined with appropriate process, operating, and maintenance practices, will result in less than 10 percent leaking pumps for specific applications in the process unit. Superior emission performance technology includes material or design changes to the existing pump, pump seal, seal support system, installation of multiple mechanical seals or equivalent, or pump replacement.
  - i. Pumps or pump seals shall be replaced at the rate of 20 percent per year based on the total number of pumps in light liquid service. The calculated value shall be rounded to the nearest nonzero integer value. The minimum number of pumps or pump seals shall be one. Pump replacement shall continue until all pumps subject to the requirements of Sections 2.2 B.2.r through 2.2 B.2.t, above, are pumps determined to be superior performance technology.
  - ii. The Permittee may delay replacement of pump seals or pumps with superior technology until the next planned process unit shutdown, provided the number of pump seals and pumps replaced is equivalent to the 20 percent or greater annual replacement rate.
  - iii. The pumps shall be maintained as specified in the quality assurance program.
- hh. The Permittee shall maintain records for the period of the quality improvement program for the process unit prescribed below.
  - i. When using a pump quality improvement program, the Permittee shall record:

- (A) The rolling average percent leaking pumps;
  - (B) Documentation of all inspections conducted under the requirements of Section 2.2 B.2.dd, above, and any recommendations for design or specification changes to reduce leak frequency; and
  - (C) The beginning and ending dates while meeting the quality improvement plan requirements.
- ii. 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.
  - iii. Records of all analyses required in the quality improvement plan including a list identifying areas associated with poorer than average performance and the associated service characteristics of the stream, the operating conditions and maintenance practices.
  - iv. All records documenting the quality assurance program for pumps as specified in the quality assurance program, including records indicating that all pumps replaced or modified during the period of the quality improvement program are in compliance with the quality assurance.
  - v. Records documenting compliance with the 20 percent or greater annual replacement rate for pumps as specified in Section 2.2 B.2.gg, above.

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

- ii. The Permittee shall keep general and specific equipment identification if the equipment is not physically tagged and the Permittee is electing to identify the equipment through written documentation such as a log or other designation.
- jj. The Permittee shall keep a written plan for any equipment that is designated as unsafe- or difficult-to-monitor.
- kk. The Permittee shall maintain a record of the identity and an explanation for any equipment that is designated as unsafe-to-repair.
- ll. The Permittee shall keep records for leak repair and records for delay of repair.
- mm. For valves, the Permittee shall maintain the monitoring schedule for each process unit and the valve subgrouping records.
- nn. For pumps, the Permittee shall maintain documentation of pump visual inspections.
- oo. For connectors, the Permittee shall maintain the monitoring schedule for each process.
- pp. For pressure relief devices in gas and vapor or light liquid service, the Permittee shall keep records of the dates and results of monitoring following a pressure release.
- qq. For a pump QIP program, the Permittee shall maintain the following records:
  - i. Individual pump records as specified in Section 2.2 B.2.cc, above;
  - ii. Quality assurance program documentation as specified in Section 2.2 B.2.ff, above; and
  - iii. Quality improvement program records as specified in Section 2.2 B.2.hh, above.

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

- rr. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked or received 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 report shall contain in summary format by equipment type (i.e., valves in gas/vapor/light liquid service, Pumps in light liquid service, and connectors in gas/ vapor/light liquid):
  - i. The number of components for which leaks were detected
  - ii. The percent leakers for valves, pumps and connectors, and
  - iii. The total number of components monitored

The report shall also include the number of leaking components that were not repaired, and for valves and connectors, identify the number of components that are determined to be non-repairable.

- ss. Where any delay of repair is utilized, report that delay of repair has occurred and report the number of instances of delay of repair.
- tt. Report the valve subgrouping information.
- uu. For pressure relief devices in gas and vapor service that are to be operated at a leak detection instrument reading of less than 500 parts per million, report the results of all monitoring to show compliance conducted within the semiannual reporting period.
- vv. Report, if applicable, the initiation of a monthly monitoring program for valves.
- ww. Report, if applicable, the initiation of a quality improvement program for pumps.

Proposed

**C. Sclareolide (SDE) Operations, including:**

- Four process tanks of various capacities (ID No. ES-1001-1-4-P);
- One acetic acid storage tank (10,135 gallon capacity; ID No. M-20);
- Process equipment leaks (ID No. ES-1001-1-4-F);
- Four batch reactors (ID Nos. M-10, M-10A, D-1231A, and D-1231B) and associated venturi-type wet scrubber (10 gallons per minute minimum liquid injection rate; ID No. CD-M-34); and
- SDE Operations wastewater stream (ID No. ES-1001-1-4-WW)

**Biological Conversion Equipment for Purification of Sclareolide, including:**

- Twelve process tanks of various capacities (ID No. ES-1001-1-3-P);
- One centrifuge (ID No. G-17);
- One steam-heated dryer (ID No. D-1202);
- Process equipment leaks (ID No. ES-1001-1-3-F);
- One distillation column (6 gallon per minute nominal process rate; ID No. A-2); and
- Biological conversion equipment for sclareolide purification wastewater stream (ID No. ES-1001-1-3-WW)

**Ethyl Vanillin Glucoside (EVG) Operations, including:**

- One water spray fume scrubber (0.5 gallon per minute minimum water injection rate; ID No. CD-Z-9215) venting to one water spray fume scrubber (0.5 gallon per minute minimum water injection rate; ID No. CD-Z-9216) controlling emissions from:
  - Three reactors (ID Nos. D-2202, D-1215, and D-1218); and
  - One steam-heated dryer (ID No. D-1201);
- Process equipment leaks (ID No. ES-1003-2-2-F); and
- EVG Operations wastewater stream (ID No. ES-1003-2-2-WW)

**Sclareol Recrystallization (SFG) Operations, including:**

- Four process tanks of various capacities (ID No. ES-1003-10-P);
- One hexane storage tank (6,700 gallon capacity; ID No. T-3001);
- Process equipment leaks (ID No. ES-1003-10-F); and
- One chilled water condenser (ID No. CD-3001) controlling emissions from:
  - One centrifuge (ID No. C-3001);
  - One reactor (ID No. D-3001); and
  - One steam-heated dryer (ID No. D-3001d)
- SFG Operations wastewater stream (ID No. ES-1003-10-WW)

**Plant Nutrient Extraction (PNE) Operations, including one water spray fume scrubber (0.5 gallon per minute minimum water injection rate; ID No. CD-Z-9215) venting to one water spray fume scrubber (0.5 gallon per minute minimum water solution injection rate; ID No. CD-Z-9216) controlling emissions from:**

- One product extract reactor (ID No. D31214) and one associated chilled water condenser (ID No. EX2203);
- Seven processing tanks of various capacities (ID No. ES-1003-2-1-P);
- One centrifuge (ID No. C-31203);
- Process equipment leaks (ID No. ES-1003-2-1-F);
- One waste solids separator vessel (1,333 gallon capacity; ID No. D31211) and one associated chilled water condenser (ID No. EX2205); and
- PNE Process wastewater stream (ID No. ES-1003-2-1-WW)

**Concrete Operations, including:**

- Four steam-heated hot boxes (ID Nos. HB-1, HB-2, HB-3, and HB-4);
- Process equipment leaks (ID No. ES-1001-1-2-F);
- Six process tanks of various capacities (ID No. ES-1001-1-2-P) and one associated chilled water condenser (ID No. CD-1001-1-2); and
- Concrete Operations wastewater stream (ID No. ES-1001-1-2-WW)

**Rotocel Operations, as described in Section 2.1 C, above;****Recovery Operations, as described in Section 2.1 C, above;****Botanical Extraction Operations, as described in Section 2.1 D, above; and****Wastewater Treatment Plant Aeration Tank No. 1 (63,500 gallon capacity; ID No. WWTP-AT1)**

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

Regulated Pollutant	Limits/Standards	Applicable Regulation
Hazardous Air Pollutants (HAP)	Maximum Achievable Control Technology	15A NCAC 2D .1111 [40 CFR Part 63, Subpart FFFF]

**1. 2D .1111 "MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY"  
[40 CFR Part 63, Subpart FFFF]**

- a. The Permittee shall comply with all applicable provisions, including the notification, testing, recordkeeping, and monitoring requirements contained in Environmental Management Commission Standard 15A NCAC 2D .1111 "Maximum Achievable Control Technology" as promulgated in 40 CFR Part 63, Subpart FFFF, including Subpart A "General Provisions". For convenience, some of the relevant definitions from 40 CFR Part 63, Subpart FFFF are included below: [40 CFR §§63.2435, 63.2440, 63.2445(b), and 63.2550]

**Group 1 batch process vent** means each of the batch process vents in a process for which the collective uncontrolled organic HAP emissions from all of the batch process vents are greater than or equal to 10,000 lb/yr at an existing source or greater than or equal to 3,000 lb/yr at a new source.

**Group 2 batch process vent** means each batch process vent that does not meet the definition of Group 1 batch process vent.

**Group 1 continuous process vent** means a continuous process vent for which the flow rate is greater than or equal to 0.005 standard cubic meter per minute, and the total resource effectiveness index value, calculated according to §63.2455(b), is less than or equal to 1.9 at an existing source and less than or equal to 5.0 at a new source.

**Group 2 continuous process vent** means a continuous process vent that does not meet the definition of a Group 1 continuous process vent.

**Group 1 storage tank** means a storage tank with a capacity greater than or equal to 10,000 gal storing material that has a maximum true vapor pressure of total HAP greater than or equal to 6.9 kilopascals at an existing source or greater than or equal to 0.69 kilopascals at a new source.

**Group 2 storage tank** means a storage tank that does not meet the definition of a Group 1 storage tank.

**Group 1 wastewater stream** means a wastewater stream consisting of process wastewater at an existing or new source that meets the criteria for Group 1 status in §63.2485(c) for compounds in Tables 8 and 9 to this subpart and/or a wastewater stream consisting of process wastewater at a new source that meets the criteria for Group 1 status in §63.132(d) for compounds in Table 8 to subpart G of this part 63.

**Group 2 wastewater stream** means any process wastewater stream that does not meet the definition of a Group 1 wastewater stream.

**In organic HAP service** means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of total organic HAP as determined according to the provisions of §63.180(d). The provisions of §63.180(d) also specify how to determine that a piece of equipment is not in organic HAP service.

**Miscellaneous organic chemical manufacturing process** means all equipment which collectively function to produce a product or isolated intermediate that are materials described in §63.2435(b). For the purposes of this subpart, process includes any, all or a combination of reaction, recovery, separation, purification, or other activity, operation, manufacture, or treatment which are used to produce a product or isolated intermediate.

**Nonstandard batch** means a batch process that is operated outside of the range of operating conditions that are documented in an existing operating scenario but is still a reasonably anticipated event. For example, a nonstandard batch occurs when additional processing or processing at different operating conditions must be conducted to produce a product that is normally produced under the conditions described by the standard batch. A nonstandard batch may be necessary as a result of a malfunction, but it is not itself a malfunction.

**Operating scenario** means, for the purposes of reporting and recordkeeping, any specific operation of an MCPU as described by records specified in §63.2525(b).

**Point of determination** means each point where process wastewater exits the MCPU or control device.

**Standard batch** means a batch process operated within a range of operating conditions that are documented in an operating scenario. Emissions from a standard batch are based on the operating conditions that result in highest emissions. The standard batch defines the uncontrolled and controlled emissions for each emission episode defined under the operating scenario.

**General Requirements/Limitations** [15A NCAC 2Q .0508(f)]

- b. The Permittee shall comply with the general requirements of Sections 2.2 C.1.b.i through v, below:
- i. The Permittee must submit a Notice of Compliance Status Report for the SDE Operations, the Concrete Operations, and/or the PNE Operations prior to the operation of those operations in organic HAP service (as defined at 40 CFR §63.2250) and such that provisions of 40 CFR Part 63, Subpart FFFF apply to those operations, pursuant to 40 CFR §63.2520(d).
  - ii. Opening a safety device, as defined in §63.2550, is allowed at any time conditions require it to avoid unsafe conditions. [40 CFR 63.2450(p)]
  - iii. The Permittee must comply with the applicable control requirements found in 40 CFR §§63.2455 through 63.2490 for the affected sources.
  - iv. If a Group 2 emission point becomes a Group 1 emission point, the Permittee must be in compliance with the Group 1 requirements beginning on the date the switch occurs. An initial compliance demonstration as specified in 40 CFR Part 63, Subpart FFFF must be conducted within 150 days after the switch in group status occurs. The Permittee shall be deemed in non-compliance with 15A NCAC 2D .1111 if the Permittee does not meet these requirements. [40 CFR §63.2445(d)]
  - v. The Permittee must develop a written startup, shutdown, and malfunction plan (SSM Plan) that complies with 40 CFR §63.6(e) for the affected sources. The Permittee is not, however, required to address equipment leaks (except for control devices) or Group 2 emission points in the SSM Plan. The SSM Plan must describe, in detail, procedures for operating and maintaining the affected sources during periods of startup, shutdown, and malfunction; and corrective actions for malfunctioning process, control, and monitoring equipment used to comply with Subpart FFFF. The SSM Plan does not need to address any scenario that would not cause an affected source to exceed an applicable emission limit in Subpart FFFF. The SSM Plan must be maintained on site and made available for inspection by authorized personnel. [40 CFR §§63.6(e)(3) and 63.2525(j)]

The Permittee shall be deemed in non-compliance with 15A NCAC 2D .1111 if it does not meet the requirements of Sections 2.2 C.1.b.i through v, above.

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

- c. The Permittee shall comply with the specific requirements of Sections 2.2 C.1.c.i through vii, below:
- i. **Continuous process vents:** To ensure compliance, the Permittee shall perform the monitoring of Sections 2.2 C.1.c.i(A) and (B), below, for the affected continuous process vents:
    - (A) For the continuous process vents associated with the Rotocel Operations and the Recovery Operations, the Permittee shall perform the monitoring found in Sections 2.2 B.1.h through k, above.

- (B) For continuous process vent associated with the Botanical Extraction Operations, the Permittee shall perform the monitoring found in Sections 2.2 B.1.h and i, above.
- ii. **Batch process vents:** To ensure compliance, the Permittee shall perform the monitoring of Sections 2.2 C.1.c.ii(A) through (C), below, for the affected batch process vents:

- (A) For the batch process vents associated with the SFG Operations, the EVG Operations, and the Biological conversion equipment for purification of sclareolide, the Permittee shall comply with the requirements of 40 CFR §63.2460 and Table 2 of 40 CFR Part 63, Subpart FFFF. To maintain Group 2 classification for these emission sources the organic HAP emissions must be less than 10,000 pounds per consecutive 365-day period, each source. The Permittee shall monitor the organic HAP emissions from each of these emission sources, monthly, as follows:

- (1) Organic HAP emissions from the SFG Operations shall calculated using the following equation:

$$\text{OrganicHAP} = \left[ 3.1 \left( \frac{\text{pounds}}{\text{batch}} \right) \times B_{\text{reg}} \right] + \left[ 4.3 \left( \frac{\text{pounds}}{\text{batch}} \right) \times B_{\text{rec}} \right]$$

Where:  $B_{\text{reg}}$  = The number of regular batches processed in the SFG Operations; and

$B_{\text{rec}}$  = The number of recrop batches processed in the SFG Operations

- (2) Organic HAP emissions from the EVG Operations shall calculated using the following equation:

$$\text{OrganicHAP} = \left[ 1.0 \left( \frac{\text{pounds}}{\text{batch}} \right) \times B \right]$$

Where:  $B$  = The number of batches processed in the EVG Operations

- (3) Organic HAP emissions from the Biological conversion equipment for purification of sclareolide shall calculated using the following equation:

$$\text{OrganicHAP} = \left[ 11.62 \left( \frac{\text{pounds}}{\text{batch}} \right) \times B \right]$$

Where:  $B$  = The number of regular batches processed in the Biological conversion equipment for purification of sclareolide

- (B) The Permittee may administratively amend this permit to modify the organic HAP emission factors cited in the equations of Sections 2.2 C.1.c.ii(A)(1) through (3), above.
- (C) The Permittee must notify DAQ at least 60 days before operating these batch process vents as Group 1 batch process vents in accordance with 40 CFR §63.2460(b)(6)(ii) and 40 CFR §63.2520(e)(10)(ii).

- iii. **Process vents that emit hydrogen halide:** For the batch process vents associated with the EVG Operations, the Permittee shall comply with the requirements of 40 CFR §63.2465 and Table 3 of 40 CFR Part 63, Subpart FFFF. To maintain Group 2 classification for these batch process vents the hydrogen halide emissions must be less than 1,000 pounds per consecutive 365-day period, combined. The Permittee shall monitor the organic HAP emissions from these batch process vents, monthly, as follows:

- (A) Hydrogen halide emissions from the EVG Operations shall calculated using the following equation:

$$\text{OrganicHAP} = \left[ 11.3 \left( \frac{\text{pounds}}{\text{batch}} \right) \times B_{\text{reg}} \right] + \left[ 31.8 \left( \frac{\text{pounds}}{\text{batch}} \right) \times B_{\text{rec}} \right]$$

Where:  $B_{\text{reg}}$  = The number of regular batches processed in the EVG Operations; and

$B_{\text{rec}}$  = The number of recovery batches processed in the EVG Operations

- (B) The Permittee may administratively amend this permit to modify the hydrogen halide emission factors cited in the equations of Sections 2.2 C.1.c.iii(A), above.
- (C) The Permittee must notify DAQ at least 60 days before operating these batch process vents as Group 1 batch process vents in accordance with 40 CFR §63.2460(b)(6)(ii) and 40 CFR §63.2520(e)(10)(ii).

- iv. **Storage tanks:** For the storage tanks that are part of the affected source, the Permittee shall comply with the requirements of 40 CFR §63.2470 and Table 4 of 40 CFR Part 63, Subpart FFFF.
- v. **Equipment leaks:** For the process equipment leaks from the affected sources, the Permittee shall comply with the requirements of 40 CFR §63.2480 and Table 6 of 40 CFR Part 63, Subpart FFFF. The Permittee shall comply with the monitoring requirements of the leak detection and repair (LDAR) program found in Section 2.2 B.2, above, for the equipment associated with the affected sources.
- vi. **Wastewater streams:** For the wastewater streams associated with the affected miscellaneous organic chemical manufacturing processes (MCPU), the Permittee shall comply with the requirements of 40 CFR §63.2485 and Table 7 of 40 CFR Part 63, Subpart FFFF, including:
  - (A) Identifying any operations that may generate maintenance wastewater and the procedures for properly managing that maintenance wastewater in the SSM Plan developed for this Avoca, Inc. facility; and
  - (B) Maintaining the conditions necessary for classification of the process wastewater from the affected sources as Group 2, unless the conditions of Section 2.2 C.1.b.iv, above, have been met.
- vii. **Heat exchangers:** For the heat exchangers associated with the affected sources, the Permittee shall comply with the requirements of 40 CFR §63.2490 and Table 10 of Subpart FFFF, including:
  - (A) Preparation and implementation of a monitoring plan that documents the procedures that will be used to detect leaks of process fluids into cooling water. This plan shall require monitoring of one or more surrogate indicators (e.g., pH, conductivity, etc.) or monitoring of one or more process parameters or other conditions that indicate a leak. The plan shall include the following:
    - (1) 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;
    - (2) 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;
    - (3) The monitoring frequency which shall be no less frequent than monthly for the first 6 months and quarterly thereafter to detect leaks;
    - (4) The records that will be maintained to document compliance with the requirements of this section.
  - (B) If a substantial leak is identified by methods other than those described in the heat exchanger 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 no later than 180 days after discovery of the leak.
  - (C) The Permittee shall maintain a copy of the heat exchanger monitoring plan on-site. If the monitoring plan is superseded, retain the most recent superseded plan at least until 5 years from the date of its creation.
  - (D) If a leak is detected in any heat exchanger system, 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, unless the Permittee demonstrates that the results are due to a condition other than a leak. Once the leak has been repaired, the owner or operator shall confirm that the heat exchange system has been repaired within 7 calendar days of the repair or startup, whichever is later, except where the Permittee appropriately applies the delay of repair provisions found in Section 2.2 C.1.c.vii(E), below.
  - (E) Delay of repair of heat exchange systems 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 conditions listed in 40 CFR §63.104(e)(1) through (2) is met.

The Permittee shall be deemed in non-compliance with 15A NCAC 2D .1111 if the Permittee does not meet the requirements of Sections 2.2 C.1.c.i through vii, above.

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

- d. The Permittee shall comply with the requirements of Sections 2.2 C.1.d.i through v, below:

- i. Create and retain a record of each time a safety device is opened to avoid unsafe conditions.
- ii. Create and retain the following records on each affected MCPU:
  - (A) A description of the process and the type of process equipment used;
  - (B) An identification of related process vents (including associated emissions episodes), wastewater points of determination (PODs), and storage tanks;
  - (C) The applicable control requirements pursuant to 40 CFR Part 63, Subpart FFFF, including the level of required control, and for vents, the level of control for each vent;
  - (D) The control device or treatment process used, as applicable, including a description of operating and/or testing conditions for any associated control device;
  - (E) The process vents, wastewater POD, transfer racks, and storage tanks (including those from other processes) that are simultaneously routed to the control device or treatment process;
  - (F) The applicable monitoring requirements of this subpart and any parametric level that assures compliance for all emissions routed to the control device or treatment process; and,
  - (G) Calculations and engineering analyses required to demonstrate compliance.
- iii. For each affected MPCU with a Group 2 process vent, the Permittee shall retain the following records:
  - (A) A record of the day each batch was completed;
  - (B) A record of whether each batch operated was considered a standard batch;
  - (C) The estimated uncontrolled and controlled emissions for each batch that is considered to be a non-standard batch; and
  - (D) Records of the daily 365-day rolling summations of emissions, or alternative records that correlate to the emissions (e.g., number of batches), calculated no less frequently than monthly.
- iv. For each affected Group 2 wastewater stream, the Permittee shall retain the following records:
  - (A) MPCU identification and description;
  - (B) Stream identification code;
  - (C) Concentration of compounds listed in Table 8 and Table 9 of 40 CFR Part 63, Subpart FFFF (in ppmw), including documentation of the methodology used to determine concentration; and,
  - (D) Stream flow rate (in liters/min).
- v. For each affected heat exchanger system, the Permittee shall retain the following records:
  - (A) Monitoring data indicating a leak, the date when the leak was detected, and if demonstrated not to be a leak, the basis for that determination;
  - (B) Records of any leaks detected by procedures other than those provided in the written heat exchanger monitoring plan, including the date the leak was discovered;
  - (C) The dates of efforts to repair leaks; and,
  - (D) The method or procedure used to confirm repair of a leak and the date repair was confirmed.

The Permittee shall be deemed in non-compliance with 15A NCAC 2D .1111 if the Permittee does not meet the requirements of Sections 2.2 C.1.d.i through v, above.

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

- e. For any process vents that change from Group 2 to Group 1, the Permittee shall comply with the notification requirements of 40 CFR §63.2460(b)(6) and 40 CFR §63.2520(e)(10).
- f. The Permittee shall submit a semiannual compliance report, acceptable to the Regional Air Quality Supervisor, of monitoring and recordkeeping activities postmarked or delivered 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 report shall contain the following:

- i. Company name and address;
- ii. Statement by a responsible official with that official's name, title, and signature, certifying the accuracy of the content of the report;
- iii. Date of report and beginning and ending dates of the reporting period;
- iv. If there are no deviations from any emission limit, operating limit or work practice standard specified in this subpart, include a statement that there were no deviations from the emission limits, operating limits, or work practice standards during the reporting period;
- v. For each deviation from an emission limit, operating limit, and work practice standard, include the following information:
  - (A) The total operating time of the affected source during the reporting period; and,
  - (B) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.
- vi. Identification each new operating scenario which has been operated since the time period covered by the last compliance report and has not been submitted in the previous compliance report. For the purposes of this paragraph, a revised operating scenario for an existing process is considered to be a new operating scenario;
- vii. For the equipment listed below, report in a summary format by equipment type, the number of components for which leaks were detected and for valves, pumps and connectors show the percent leakers, and the total number of components monitored. Also include the number of leaking components that were not repaired as required, and for valves and connectors, identify the number of components that are determined to be non-repairable as described in 40 CFR §63.1025(c)(3).
  - (A) Valves in gas and vapor service and in light liquid service;
  - (B) Pumps in light liquid service;
  - (C) Connectors in gas and vapor service and in light liquid service; and,
  - (D) Agitators in gas and vapor service and in light liquid service.
- viii. Where any delay of repair for leaks is utilized, report that delay of repair has occurred and report the number of instances of delay of repair.
- ix. For pressure relief devices, report the results of all leak monitoring to show compliance conducted within the semiannual reporting period.
- x. Report, if applicable, the initiation of a monthly leak monitoring program for valves.
- xi. For each affected heat exchanger system for which the Permittee invokes the delay of repair, include the following information:
  - (A) The presence of the leak and the date that the leak was detected.
  - (B) Whether or not the leak has been repaired.
  - (C) The reason(s) for delay of repair.
  - (D) If the leak is repaired, the owner or operator shall report the date the leak was successfully repaired.
  - (E) If the leak remains unrepaired, the expected date of repair.

### **SECTION 3 - GENERAL CONDITIONS (version 3.1)**

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(e)]

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)]

If emissions testing is required by this permit or the DAQ or if the Permittee submits emissions testing to the DAQ in support of a permit application or to demonstrate compliance, the Permittee shall perform such testing in accordance with 15A NCAC 2D .2600 and follow the procedures outlined below:

1. The Permittee shall submit a completed Protocol Submittal Form to the DAQ Regional Supervisor at least 45 days prior to the scheduled test date. A copy of the Protocol Submittal Form may be obtained from the Regional Supervisor.
2. The Permittee shall notify the Regional Supervisor of the specific test dates at least 15 days prior to testing in order to

afford the DAQ the opportunity to have an observer on-site during the sampling program.

3. During all sampling periods, the Permittee shall operate the emission source(s) under maximum normal operating conditions or alternative operating conditions as deemed appropriate by the Regional Supervisor or his delegate.
4. The Permittee shall submit **two** copies of the test report to the DAQ. The test report shall contain at a minimum the following information:
  - a. a description of the training and air testing experience of the person directing the test;
  - b. a certification of the test results by sampling team leader and facility representative;
  - c. a summary of emissions results and text detailing the objectives of the testing program, the applicable state and federal regulations, and conclusions about the testing and compliance status of the emission source(s);
  - d. a detailed description of the tested emission source(s) and sampling location(s) process flow diagrams, engineering drawings, and sampling location schematics should be included as necessary;
  - e. all field, analytical, and calibration data necessary to verify that the testing was performed as specified in the applicable test methods;
  - f. example calculations for at least one test run using equations in the applicable test methods and all test results including intermediate parameter calculations; and
  - g. documentation of facility operating conditions during all testing periods and an explanation relating these operating conditions to maximum normal operation. If necessary, provide historical process data to verify maximum normal operation.
5. The testing requirement(s) shall be considered satisfied only upon written approval of the test results by the DAQ.
6. The DAQ will review emission test results with respect exclusively to the specified testing objectives as proposed by the Permittee and approved by the DAQ.

**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.

**OO. Mandatory Greenhouse Gas Reporting Requirements [15A NCAC 2Q .0508]  
FEDERALLY-ENFORCEABLE ONLY**

If the Permittee is subject to requirements of 40 CFR 98.2(a), the Permittee shall submit all required reports to the EPA Administrator in accordance with 40 CFR 98.

**ATTACHMENT 1 to Permit No. 01819T37**  
**Avoca Incorporated**

**List of Acronyms**

<b>AOS</b>	Alternate Operating Scenario
<b>BACT</b>	Best Available Control Technology
<b>Btu</b>	British thermal unit
<b>CEM</b>	Continuous Emission Monitor
<b>CFR</b>	Code of Federal Regulations
<b>CAA</b>	Clean Air Act
<b>CAIR</b>	Clean Air Interstate Rule
<b>DAQ</b>	Division of Air Quality
<b>DENR</b>	Department of Environment and Natural Resources
<b>EMC</b>	Environmental Management Commission
<b>EPA</b>	Environmental Protection Agency
<b>FR</b>	Federal Register
<b>GACT</b>	Generally Available Control Technology
<b>HAP</b>	Hazardous Air Pollutant
<b>MACT</b>	Maximum Achievable Control Technology
<b>MCPU</b>	Miscellaneous Organic Chemical Manufacturing Process Units
<b>NAA</b>	Non-Attainment Area
<b>NCAC</b>	North Carolina Administrative Code
<b>NCGS</b>	North Carolina General Statutes
<b>NESHAPS</b>	National Emission Standards for Hazardous Air Pollutants
<b>NO<sub>x</sub></b>	Nitrogen Oxides
<b>NSPS</b>	New Source Performance Standard
<b>OAH</b>	Office of Administrative Hearings
<b>PM</b>	Particulate Matter
<b>PM<sub>10</sub></b>	Particulate Matter with Nominal Aerodynamic Diameter of 10 Micrometers or Less
<b>POS</b>	Primary Operating Scenario
<b>PSD</b>	Prevention of Significant Deterioration
<b>SIC</b>	Standard Industrial Classification
<b>SIP</b>	State Implementation Plan
<b>SO<sub>2</sub></b>	Sulfur Dioxide
<b>tpy</b>	Tons Per Year
<b>VOC</b>	Volatile Organic Compound