

PUBLIC NOTICE

The Chemours Company FC, LLC has applied to the Tennessee Department of Environment and Conservation, Division of Air Pollution Control for a significant modification to an existing major source (Title V) operating permit subject to the provisions of Tennessee Air Pollution Control Regulations 1200-03-09-.02(11). A major source operating permit is required by both the Federal Clean Air Act and the Tennessee Air Pollution Control Regulations.

Chemours has applied for a significant modification to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject (federally enforceable emissions cap assumed to avoid classification as a Title I modification). Specifically, Chemours requests to add emission source 43-0007-90 (Coke and Ore Operations), with associated annual emission limits for particulate matter (PM) and PM₁₀.

The Title V operating permit subject to the modification is identified as follows: Division identification number 43-0007/569782. The specific permit conditions affected by this modification are identified as follows: Condition A11 (permit shield); Condition A20 (112(r)); Condition B6 (Submission of compliance certification); Condition B11 (report required upon the issuance of a Notice of Violation); Condition E2 (Reporting Requirements); Condition E3-9 (Identification of Responsible Official, Technical Contact, and Billing Contact); Conditions E5-2 and E5-8 (PM limit and monitoring for Ore Roasters); Conditions E8-1 and E8-2 (PM and SO₂ limits and monitoring for #1 and #2 Chlorinators); Conditions E11-1 and E11-2 (PM and SO₂ limits and monitoring for Titanium Tetrachloride Purification); Condition E53-1 (PM limit and monitoring for #1 Finishing Operation); Condition E55-1 (PM limit and monitoring for #2 Finishing Operation); Condition E56-1 (PM limit and monitoring for Slurry Pneumatic Conveying Operations); Condition E61-2 (PM limit for Coke Unloading and Storage); Condition E67-1 (PM limit and monitoring for Iron Co-product Production Facility); Condition E67-12 (H₂S limit and monitoring for Iron Co-product Production Facility); Condition E75-1 (PM limit and monitoring for Fugitive Dust Scrubbers); Conditions E90-1 through E90-8 (emission limits and monitoring requirements for Coke and Ore Handling); Attachment 1 (Opacity Matrix Decision Trees); Attachment 4 (CAM Plans); Attachment 6 (Compliance Schedule for Ore Roasters); and Attachment 7 (Mutual Agreement Letter: 43-0007-90). Only the portions of the Title V permit affected by the significant modifications are open to comment during the notice period.

EPA has agreed to treat this draft Part 70 permit as a proposed Part 70 permit and to perform its 45-day review provided by the law concurrently with the public notice period. If any substantive comments are received, EPA's 45-day review period will cease to be performed concurrently with the public notice period. EPA's 45-day review period will start once the public notice period has been completed and EPA receives notification from the Tennessee Air Pollution Control Division that comments have been received and resolved. Whether EPA's 45-day review period is performed concurrently with the public comment period or after the public comment period has ended, the deadline for citizen's petitions to the EPA Administrator will be determined as if EPA's 45-day review period is performed after the public comment period has ended (*i.e.*, sequentially). The status regarding EPA's 45-day review of these permits and the deadline for submitting a citizen's petition can be found at the following website address:

<http://www2.epa.gov/caa-permitting/caa-permitting-epas-southeastern-region>

Copies of the application materials and draft permits are available for public inspection during normal business hours at the following locations:

Tennessee Department of Environment and Conservation
Division of Air Pollution Control
Nashville Environmental Field Office
711 R.S. Gass Blvd.
Nashville, TN 37216

and

Tennessee Department of Environment and Conservation
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243

An electronic copy of the draft permit is available by accessing the TDEC internet site located at:

<http://www.tn.gov/environment/topic/ppo-air>

Questions concerning the source(s) may be addressed to Mr. Travis Blake at (615) 532-0617 or by e-mail at travis.blake@tn.gov.

Interested parties are invited to review these materials and comment. In addition, a public hearing may be requested at which written or oral presentations may be made. To be considered, written comments or requests for a public hearing must be received no later than 4:30 PM on **October 19, 2020**. To assure that written comments are received and addressed in a timely manner, written comments must be submitted using one of the following methods:

1. **Mail, private carrier, or hand delivery:** Address written comments to Travis Blake, Division of Air Pollution Control, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue 15th Floor, Nashville, Tennessee 37243.
2. **E-mail:** Submit electronic comments to air.pollution.control@tn.gov.

A final determination will be made after weighing all relevant comments.

Individuals with disabilities who wish to review information maintained at the above-mentioned depositories should contact the Tennessee Department of Environment and Conservation to discuss any auxiliary aids or services needed to facilitate such review. Such contact may be in person, by writing, telephone, or other means, and should be made no less than ten days prior to the end of the public comment period to allow time to provide such aid or services. Contact the Tennessee Department of Environment and Conservation ADA Coordinator, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue 2nd Floor, Nashville, TN 37243, 1-(866)-253-5827. Hearing impaired callers may use the Tennessee Relay Service, 1-(800)-848-0298.

For the *News-Democrat* – publish once during the time period of September 14, 2020 through September 18, 2020.

Air Pollution Control DATE: JULY 14, 2020
Assigned to –Travis Blake

No alterations to the above are allowed:

Chemours must pay to place this advertisement in the newspaper

Air Pollution Control must be furnished with an affidavit from the newspaper stating that the ad was run and the date of the ad or one complete sheet from the newspaper showing this advertisement, the name of the newspaper and the date of publication. Mail to Travis Blake, Division of Air Pollution Control, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue 15th Floor, Nashville, Tennessee 37243.

STATE OF TENNESSEE
AIR POLLUTION CONTROL BOARD
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243



**SIGNIFICANT MODIFICATION #1 TO:
OPERATING PERMIT (TITLE V) Issued Pursuant to Tennessee Air Quality Act**

This permit fulfills the requirements of Title V of the Federal Clean Air Act (42 U.S.C. 7661a-7661e) and the federal regulations promulgated thereunder at 40 CFR Part 70. (FR Vol. 57, No. 140, Tuesday, July 21, 1992 p.32295-32312). This permit is issued in accordance with the provisions of paragraph 1200-03-09-.02(11) of the Tennessee Air Pollution Control Regulations. The permittee has been granted permission to operate an air contaminant source in accordance with emissions limitations and monitoring requirements set forth herein.

Issue Date: **January 30, 2018**

Permit Number: **569782**

Modification Date: *******DRAFT*******

Expiration Date: **January 29, 2023**

Issued To:
The Chemours Company FC, LLC

Installation Address:
**One DuPont Road
New Johnsonville**

Installation Description:

**Titanium Dioxide Pigment Production
Listing of Sources on Page iii of Table of Contents**

Emission Source Reference No.: **43-0007**

Renewal Application Due Date: **Between May 4, 2022 and August 2, 2022**

Primary SIC: **28**

Information Relied Upon: **Minor Modification 1 Application dated Sep. 27, 2006; Minor Modification 2 application dated Dec 17, 2012; Renewal application dated June 5, 2014; Significant Modification 1 application dated Dec 5, 2002; Significant Modification 2 applications dated April 18, 2006 (with November 7, 2006 revision), June 7, 2006, and August 24, 2006; Renewal application dated June 5, 2014; Minor Modification Application dated June 5, 2014; Minor Modification application dated January 31, 2017, Minor Modification Application dated April 2, 2018. Significant Modification #1 application dated April 8, 2019 and revision dated November 19, 2019.**

TECHNICAL SECRETARY

No Authority is Granted by this Permit to Operate, Construct, or Maintain any Installation in Violation of any Law, Statute, Code, Ordinance, Rule, or Regulation of the State of Tennessee or any of its Political Subdivisions.

POST AT INSTALLATION ADDRESS

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END OF SIGNIFICANT MODIFICATION #1 TO PERMIT NUMBER 569782

ATTACHMENT 1	Opacity Matrix Decision Tree for Visible Emission Evaluation by Methods 2 and 9	
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ATTACHMENT 3	40 CFR 60 Subpart UUU—Standards of Performance for Calciners and Dryers in Mineral Industries	
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SECTION A

GENERAL PERMIT CONDITIONS

A permit issued under the provisions of paragraph 1200-03-09-.02(11) is a permit issued pursuant to the requirements of Title V of the Federal Act and its implementing Federal regulations promulgated at 40 CFR, Part 70.

- A1. Definitions.** Terms not otherwise defined in the permit shall have the meaning assigned to such terms in the referenced regulation.

TAPCR 1200-03

- A2. Compliance requirement.** All terms and conditions in a permit issued pursuant to paragraph 1200-03-09-.02(11) including any provisions designed to limit a source's potential to emit, are enforceable by the Administrator and citizens under the Federal Act.

The permittee shall comply with all conditions of its permit. Except for requirements specifically designated herein as not being federally enforceable (State Only), non-compliance with the permit requirements is a violation of the Federal Act and the Tennessee Air Quality Act and is grounds for enforcement action; for a permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. Non-compliance with permit conditions specifically designated herein as not being federally enforceable (State Only) is a violation of the Tennessee Air Quality Act and may be grounds for these actions.

TAPCR 1200-03-09-.02(11)(e)2(i) and 1200-03-09-.02(11)(e)1(vi)(I)

- A3. Need to halt or reduce activity.** The need to halt or reduce activity is not a defense for noncompliance. 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 the permit. However, nothing in this item shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in assessing penalties for noncompliance if the health, safety or environmental impacts of halting or reducing operations would be more serious than the impacts of continuing operations.

TAPCR 1200-03-09-.02(11)(e)1(vi)(II)

- A4. The permit.** The permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

TAPCR 1200-03-09-.02(11)(e)1(vi)(III)

- A5. Property rights.** The permit does not convey any property rights of any sort, or any exclusive privilege.

TAPCR 1200-03-09-.02(11)(e)1(vi)(IV)

- A6. Submittal of requested information.** The permittee shall furnish to the Technical Secretary, within a reasonable time, any information that the Technical Secretary may request in writing to determine whether cause exists for modifying, revoking and reissuing, or termination of the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Technical Secretary copies of records required to be kept by the permit. If the permittee claims that such information is confidential, the Technical Secretary may review that claim and hold the information in protected status until such time that the Board can hear any contested proceedings regarding confidentiality disputes. If the information is desired by EPA, the permittee may mail the information directly to EPA. Any claims of confidentiality for federal purposes will be determined by EPA.

TAPCR 1200-03-09-.02(11)(e)1(vi)(V)

- A7. Severability clause.** The requirements of this permit are severable. A dispute regarding one or more requirements of this permit does not invalidate or otherwise excuse the permittee from their duty to comply with the remaining portion of the permit.

TAPCR 1200-03-09.02(11)(e)1(v)

A8. Fee payment.

- (a) The permittee shall pay an annual Title V emission fee based upon the responsible official's choice of actual emissions, allowable emissions, or a combination of actual and allowable emissions; and on the responsible official's choice of annual accounting period. An emission cap of 4,000 tons per year per regulated pollutant per major source SIC Code shall apply to actual or allowable based emission fees. A Title V annual emission fee will not be charged for emissions in excess of the cap. Title V annual emission fees will not be charged for carbon monoxide or for greenhouse gas pollutants solely because they are greenhouse gases.
- (b) Title V sources shall pay allowable based emission fees until the beginning of the next annual accounting period following receipt of their initial Title V operating permit. At that time, the permittee shall begin paying their Title V fee based upon their choice of actual or allowable based fees, or mixed actual and allowable based fees. Once permitted, the Responsible Official may revise their existing fee choice by submitting a written request to the Division no later than December 31 of the annual accounting period for which the fee is due.
- (c) When paying annual Title V emission fees, the permittee shall comply with all provisions of 1200-03-26-.02 and 1200-03-09-.02(11) applicable to such fees.
- (d) Where more than one (1) allowable emission limit is applicable to a regulated pollutant, the allowable emissions for the regulated pollutants shall not be double counted. Major sources subject to the provisions of paragraph 1200-03-26-.02(9) shall apportion their emissions as follows to ensure that their fees are not double counted.
1. Sources that are subject to federally promulgated hazardous air pollutant under 40 CFR 60, 61, or 63 will place such regulated emissions in the regulated hazardous air pollutant (HAP) category.
 2. A category of miscellaneous HAPs shall be used for hazardous air pollutants listed at part 1200-03-26-.02(2)(i)12 that are not subject to federally promulgated hazardous air pollutant standards under 40 CFR 60, 61, or 63.
 3. HAPs that are also in the family of volatile organic compounds, particulate matter, or PM₁₀ shall not be placed in either the regulated HAP category or miscellaneous HAP category.
 4. Sources that are subject to a provision of chapter 1200-03-16 New Source Performance Standards (NSPS) or chapter 0400-30-39 Standards of Performance for New Stationary Sources for pollutants that are neither particulate matter, PM₁₀, sulfur dioxide (SO₂), volatile organic compounds (VOC), nitrogen oxides (NO_x), or hazardous air pollutants (HAPs) will place such regulated emissions in an NSPS pollutant category.
 5. The regulated HAP category, the miscellaneous HAP category, and the NSPS pollutant category are each subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i).
 6. Major sources that wish to pay annual emission fees for PM₁₀ on an allowable emission basis may do so if they have a specific PM₁₀ allowable emission standard. If a major source has a total particulate emission standard but wishes to pay annual emission fees on an actual PM₁₀ emission basis, it may do so if the PM₁₀ actual emission levels are proven to the satisfaction of the Technical Secretary. The method to demonstrate the actual PM₁₀ emission levels must be made as part of the source's major source operating permit in advance in order to exercise this option. The PM₁₀ emissions reported under these options shall not be subject to fees under the family of particulate emissions. The 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i) shall also apply to PM₁₀ emissions.

TAPCR 1200-03-26-.02 and 1200-03-09-.02(11)(e)1(vii)

- A9. Permit revision not required.** A permit revision will not be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or process for changes that are provided for in the permit.

TAPCR 1200-03-09-.02(11)(e)1(viii)

A10. Inspection and entry. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Technical Secretary or his authorized representative to perform the following for the purposes of determining compliance with the permit applicable requirements:

- (a) Enter upon, at reasonable times, the permittee's premises where a source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
- (c) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
- (d) As authorized by the Clean Air Act and Chapter 1200-03-10 of TAPCR, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.
- (e) "Reasonable times" shall be considered to be customary business hours unless reasonable cause exists to suspect noncompliance with the Act, Division 1200-03 or any permit issued pursuant thereto and the Technical Secretary specifically authorizes an inspector to inspect a facility at any other time.

TAPCR 1200-03-09-.02(11)(e)3.(ii)

A11 (SM1). Permit shield.

- (a) Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements as of the date of permit issuance, provided that:
 1. Such applicable requirements are included and are specifically identified in the permit; or
 2. The Technical Secretary, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the permit includes the determination or a concise summary thereof.
- (b) Nothing in this permit shall alter or affect the following:
 1. The provisions of section 303 of the Federal Act (emergency orders), including the authority of the Administrator under that section. Similarly, the provisions of T.C.A. §68-201-109 (emergency orders) including the authority of the Governor under the section;
 2. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
 3. The applicable requirements of the acid rain program, consistent with section 408(a) of the Federal Act; or
 4. The ability of EPA to obtain information from a source pursuant to section 114 of the Federal Act.
- (c) Permit shield is granted to the permittee.

TAPCR 1200-03-09-.02(11)(e)6

A12. Permit renewal and expiration.

- (a) An application for permit renewal must be submitted at least 180 days, but no more than 270 days prior to the expiration of this permit. Permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted.
- (b) Provided that the permittee submits a timely and complete application for permit renewal the source will not be considered to be operating without a permit until the Technical Secretary takes final action on the permit application, except as otherwise noted in paragraph 1200-03-09-.02(11).
- (c) This permit, its shield provided in Condition A11, and its conditions will be extended and effective after its expiration date provided that the source has submitted a timely, complete renewal application to the Technical Secretary.

TAPCR 1200-03-09-.02(11)(f)2 and 3, 1200-03-09-.02(11)(d)1(i)(III), and 1200-03-09-.02(11)(a)2

A13. Reopening for cause.

- (a) A permit shall be reopened and revised prior to the expiration of the permit under any of the circumstances listed below:
 - 1. Additional applicable requirements under the Federal Act become applicable to the sources contained in this permit provided the permit has a remaining term of 3 or more years. Such a reopening shall be completed not later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the permit expiration date of this permit, unless the original has been extended pursuant to 1200-03-09-.02(11)(a)2.
 - 2. Additional requirements become applicable to an affected source under the acid rain program.
 - 3. The Technical Secretary or EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
 - 4. The Technical Secretary or EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.
- (b) Proceedings to reopen and issue a permit shall follow the same proceedings as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists, and not the entire permit. Such reopening shall be made as expeditiously as practicable.
- (c) Reopenings for cause shall not be initiated before a notice of such intent is provided to the permittee by the Technical Secretary at least 30 days in advance of the date that the permit is to be reopened except that the Technical Secretary may provide a shorter time period in the case of an emergency. An emergency shall be established by the criteria of T.C.A. 68-201-109 or other compelling reasons that public welfare is being adversely affected by the operation of a source that is in compliance with its permit requirements.
- (d) If the Administrator finds that cause exists to terminate, modify, or revoke and reissue a permit as identified in A13, he is required under federal rules to notify the Technical Secretary and the permittee of such findings in writing. Upon receipt of such notification, the Technical Secretary shall investigate the matter in order to determine if he agrees or disagrees with the Administrator's findings. If he agrees with the Administrator's findings, the Technical Secretary shall conduct the reopening in the following manner:
 - 1. The Technical Secretary shall, within 90 days after receipt of such notification, forward to EPA a proposed determination of termination, modification, or revocation and reissuance, as appropriate. If the Administrator grants additional time to secure permit applications or additional information from the permittee, the Technical Secretary shall have the additional time period added to the standard 90 day time period.
 - 2. EPA will evaluate the Technical Secretary's proposed revisions and respond as to their evaluation.
 - 3. If EPA agrees with the proposed revisions, the Technical Secretary shall proceed with the reopening in the same manner prescribed under Condition A13 (b) and Condition A13 (c).

4. If the Technical Secretary disagrees with either the findings or the Administrator that a permit should be reopened or an objection of the Administrator to a proposed revision to a permit submitted pursuant to Condition A13(d), he shall bring the matter to the Board at its next regularly scheduled meeting for instructions as to how he should proceed. The permittee shall be required to file a written brief expressing their position relative to the Administrator's objection and have a responsible official present at the meeting to answer questions for the Board. If the Board agrees that EPA is wrong in their demand for a permit revision, they shall instruct the Technical Secretary to conform to EPA's demand, but to issue the permit under protest preserving all rights available for litigation against EPA.

TAPCR 1200-03-09-.02(11)(f)6 and 7.

- A14. Permit transference.** An administrative permit amendment allows for a change of ownership or operational control of a source where the Technical Secretary determines that no other change in the permit is necessary, provided that the following requirements are met:

- (a) Transfer of ownership permit application is filed consistent with the provisions of 1200-03-09-.03(6), and
- (b) written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the Technical Secretary.

TAPCR 1200-03-09-.02(11)(f)4(i)(IV) and 1200-03-09-.03(6)

- A15. Air pollution alert.** When the Technical Secretary has declared that an air pollution alert, an air pollution warning, or an air pollution emergency exists, the permittee must follow the requirements for that episode level as outlined in TAPCR 1200-03-09-.03(1) and TAPCR 1200-03-15-.03.

- A16. Construction permit required.** Except as exempted in TAPCR 1200-03-09-.04, or excluded in subparagraph TAPCR 1200-03-02-.01(1)(aa) or subparagraph TAPCR 1200-03-02-.01(1)(cc), this facility shall not begin the construction of a new air contaminant source or the modification of an air contaminant source which may result in the discharge of air contaminants without first having applied for and received from the Technical Secretary a construction permit for the construction or modification of such air contaminant source.

TAPCR 1200-03-09-.01(1)(a)

- A17. Notification of changes.** The permittee shall notify the Technical Secretary 30 days prior to commencement of any of the following changes to an air contaminant source which would not be a modification requiring a construction permit.

- (a) change in air pollution control equipment
- (b) change in stack height or diameter
- (c) change in exit velocity of more than 25 percent or exit temperature of more than 15 percent based on absolute temperature.

TAPCR 1200-03-09-.02(7)

- A18. Schedule of compliance.** The permittee will comply with any applicable requirement that becomes effective during the permit term on a timely basis. If the permittee is not in compliance the permittee must submit a schedule for coming into compliance which must include a schedule of remedial measure(s), including an enforceable set of deadlines for specific actions.

TAPCR 1200-03-09-.02(11)(d)3 and 40 CFR Part 70.5(c)

A19. Title VI.

- (a) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR, Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:
 - 1. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to Section 82.156.
 - 2. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to Section 82.158.
 - 3. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to Section 82.161.
- (b) If the permittee performs a service on motor (fleet) vehicles when this service involves ozone depleting substance refrigerant in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR, Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners.
- (c) The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program(SNAP) promulgated pursuant to 40 CFR, Part 82, Subpart G, Significant New Alternatives Policy Program.

A20 (SM1). 112 (r). Sources which are subject to the provisions of Section 112(r) of the federal Clean Air Act or any federal regulations promulgated thereunder, shall annually certify in writing to the Technical Secretary that they are properly following their accidental release plan. The annual certification is due in the office of the Technical Secretary no later than January 31 of each year. Said certification will be for the preceding calendar year. TAPCR 1200-03-32-.03(3)

SECTION B

GENERAL CONDITIONS for MONITORING, REPORTING, and ENFORCEMENT

B1. Recordkeeping. Monitoring and related record keeping shall be performed in accordance with the requirements specified in the permit conditions for each individual permit unit. In no case shall reports of any required monitoring and record keeping be submitted less frequently than every six months.

(a) Where applicable, records of required monitoring information include the following:

1. The date, place as defined in the permit, and time of sampling or measurements;
2. The date(s) analyses were performed;
3. The company or entity that performed the analysis;
4. The analytical techniques or methods used;
5. The results of such analyses; and
6. The operating conditions as existing at the time of sampling or measurement.

(b) Digital data accumulation which utilizes valid data compression techniques shall be acceptable for compliance determination as long as such compression does not violate an applicable requirement and its use has been approved in advance by the Technical Secretary.

TAPCR 1200-03-09-.02(11)(e)1(iii)

B2. Retention of monitoring data. The permittee shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

TAPCR 1200-03-09-.02(11)(e)1(iii)(II)II

B3. Reporting. Reports of any required monitoring and record keeping shall be submitted to the Technical Secretary in accordance with the frequencies specified in the permit conditions for each individual permit unit. Reports shall be submitted within 60 days of the close of the reporting period unless otherwise noted. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official. Reports required under "State only requirements" are not required to be certified by a responsible official.

TAPCR 1200-03-09-.02(11)(e)1(iii)

B4. Certification. Except for reports required under "State Only" requirements, any application form, report or compliance certification submitted pursuant to the requirements of this permit shall contain certification by a responsible official of truth, accuracy and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

TAPCR 1200-03-09-.02(11)(d)4

B5. Annual compliance certification. The permittee shall submit annually compliance certifications with terms and conditions contained in Sections A, B, D and E of this permit, including emission limitations, standards, or work practices. This compliance certification shall include all of the following (provided that the identification of applicable information may cross-reference the permit or previous reports, as applicable):

(a) The identification of each term or condition of the permit that is the basis of the certification;

(b) The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period; such methods and other means shall include, at a minimum, the methods and means required by this permit. If necessary, the owner or operator also shall identify any

other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Act, which prohibits knowingly making a false certification or omitting material information;

(c) The status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the method or means designated in B5(b) above. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion* or exceedance** as defined below occurred; and

(d) Such other facts as the Technical Secretary may require to determine the compliance status of the source.

* "Excursion" shall mean a departure from an indicator range established for monitoring under this paragraph, consistent with any averaging period specified for averaging the results of the monitoring.

** "Exceedance" shall mean a condition that is detected by monitoring that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) are greater than the applicable emission limitation or standard (or less than the applicable standard in the case of a percent reduction requirement) consistent with any averaging period specified for averaging the results of the monitoring.

40 CFR Part 70.6(c)(5)(iii) as amended in the Federal Register Vol. 79, No.144, July 28, 2014, pages 43661 through 43667

B6 (SM1). **Submission of compliance certification.** The compliance certification shall be submitted to:

The Tennessee Department of Environment and Conservation Environmental Field Office specified in Section E of this permit	and	Air Enforcement Branch U. S. EPA Region IV 61 Forsyth Street, SW Atlanta, Georgia 30303
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TAPCR 1200-03-09-.02(11)(e)3(v)(IV)

B7. **Emergency provisions.** An emergency constitutes an affirmative defense to an enforcement action brought against this source for noncompliance with a technology based emission limitation due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

(a) The affirmative defense of the emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An emergency occurred and that the permittee can identify the probable cause(s) of the emergency. "Probable" must be supported by a credible investigation into the incident that seeks to identify the causes and results in an explanation supported by generally accepted engineering or scientific principles.
2. The permitted source was at the time being properly operated. In determining whether or not a source was being properly operated, the Technical Secretary shall examine the source's written standard operating procedures which were in effect at the time of the noncompliance and any other code as detailed below that would be relevant to preventing the noncompliance. Adherence to the source's standard operating procedures will be the test of adequate preventative maintenance, careless operation, improper operation or operator error to the extent that such adherence would prevent noncompliance. The source's failure to follow recognized standards of practice to the extent that adherence to such a standard would have prevented noncompliance will disqualify the source from any claim of an emergency and an affirmative defense.
3. During the period of the emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit.
4. The permittee submitted notice of the emergency to the Technical Secretary according to the notification criteria for malfunctions in rule 1200-03-20-.03. For the purposes of this condition, "emergency" shall be substituted for "malfunction(s)" in rule 1200-03-20-.03 to determine the relevant notification threshold. The

notice shall include a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

- (b) In any enforcement proceeding the permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (c) The provisions of this condition are in addition to any emergency, malfunction or upset requirement contained in Division 1200-03 or other applicable requirement.

TAPCR 1200-03-09-.02(11)(e)7

B8. Excess emissions reporting.

- (a) The permittee shall promptly notify the Technical Secretary when any emission source, air pollution control equipment, or related facility breaks down in such a manner to cause the emission of air contaminants in excess of the applicable emission standards contained in Division 1200-03 or any permit issued thereto, or of sufficient duration to cause damage to property or public health. The permittee must provide the Technical Secretary with a statement giving all pertinent facts, including the estimated duration of the breakdown. Violations of the visible emission standard which occur for less than 20 minutes in one day (midnight to midnight) need not be reported. Prompt notification will be within 24 hours of the malfunction and shall be provided by telephone to the Division's Nashville office. The Technical Secretary shall be notified when the condition causing the failure or breakdown has been corrected. In attainment and unclassified areas if emissions other than from sources designated as significantly impacting on a nonattainment area in excess of the standards will not and do not occur over more than a 24-hour period (or will not recur over more than a 24-hour period) and no damage to property and or public health is anticipated, notification is not required.
- (b) Any malfunction that creates an imminent hazard to health must be reported by telephone immediately to the Division's Nashville office at (615) 532-0554 and to the State Civil Defense.
- (c) A log of all malfunctions, startups, and shutdowns resulting in emissions in excess of the standards in Division 1200-03 or any permit issued thereto must be kept at the plant. All information shall be entered in the log no later than 24 hours after the startup or shutdown is complete, or the malfunction has ceased or has been corrected. Any later discovered corrections can be added in the log as footnotes with the reason given for the change. This log must record at least the following:
 1. Stack or emission point involved
 2. Time malfunction, startup, or shutdown began and/or when first noticed
 3. Type of malfunction and/or reason for shutdown
 4. Time startup or shutdown was complete or time the air contaminant source returned to normal operation
 5. The company employee making entry on the log must sign, date, and indicate the time of each log entry

The information under items 1. and 2. must be entered into the log by the end of the shift during which the malfunction or startup began. For any source utilizing continuous emission(s) monitoring, continuous emission(s) monitoring collection satisfies the above log keeping requirement.

TAPCR 1200-03-20-.03 and .04

- B9. Malfunctions, startups and shutdowns - reasonable measures required.** The permittee must take all reasonable measures to keep emissions to a minimum during startups, shutdowns, and malfunctions. These measures may include installation and use of alternate control systems, changes in operating methods or procedures, cessation of operation until the process equipment and/or air pollution control equipment is repaired, maintaining sufficient spare parts, use of overtime labor, use of outside consultants and contractors, and other appropriate means. Failures that are caused by poor maintenance, careless operation or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions. This provision does not apply to standards found in 40 CFR, Parts 60 (Standards of performance for new stationary sources), 61 (National emission standards for hazardous air pollutants) and 63 (National emission standards for hazardous air pollutants for source categories).

TAPCR 1200-03-20-.02

B10. [Reserved]

B11 (SM1). Report required upon the issuance of a notice of violation for excess emissions. The permittee must submit within 20 days after receipt of the notice of violation, the data required below. If this data has previously been available to the Technical Secretary prior to the issuance of the notice of violation no further action is required of the violating source. However, if the source desires to submit additional information, then this must be submitted within the same 20 day time period. The minimum data requirements are:

- (a) The identity of the stack and/or other emission point where the excess emission(s) occurred;
- (b) The magnitude of the excess emissions expressed in pounds per hour and the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;
- (c) The time and duration of the emissions;
- (d) The nature and cause of such emissions;
- (e) For malfunctions, the steps taken to correct the situation and the action taken or planned to prevent the recurrence of such malfunctions;
- (f) The steps taken to limit the excess emissions during the occurrence reported, and
- (g) If applicable, documentation that the air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good operating practices for minimizing emissions.

Failure to submit the required report within the 20 day period specified shall preclude the admissibility of the data for determination of potential enforcement action.

TAPCR 1200-03-20-.06(2), (3) and (4)

SECTION C

PERMIT CHANGES

C1. Operational flexibility changes. The source may make operational flexibility changes that are not addressed or prohibited by the permit without a permit revision subject to the following requirements:

- (a) The change cannot be subject to a requirement of Title IV of the Federal Act or Chapter 1200-03-30.
- (b) The change cannot be a modification under any provision of Title I of the federal Act or Division 1200-03.
- (c) Each change shall meet all applicable requirements and shall not violate any existing permit term or condition.
- (d) The source must provide contemporaneous written notice to the Technical Secretary and EPA of each such change, except for changes that are below the threshold of levels that are specified in Rule 1200-03-09-.04.
- (e) Each change shall be described in the notice including the date, any change in emissions, pollutants emitted, and any applicable requirements that would apply as a result of the change.
- (f) The change shall not qualify for a permit shield under the provisions of part 1200-03-09-.02(11)(e)6.
- (g) The permittee shall keep a record describing the changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes. The records shall be retained until the changes are incorporated into subsequently issued permits.

TAPCR 1200-03-09-.02(11)(a)4 (ii)

C2. Section 502(b)(10) changes.

- (a) The permittee can make certain changes without requiring a permit revision, if the changes are not modifications under Title I of the Federal Act or Division 1200-03 and the changes do not exceed the emissions allowable under the permit. The permittee must, however, provide the Administrator and Technical Secretary with written notification within a minimum of 7 days in advance of the proposed changes. The Technical Secretary may waive the 7 day advance notice in instances where the source demonstrates in writing that an emergency necessitates the change. Emergency shall be demonstrated by the criteria of TAPCR 1200-03-09-.02(11)(e)7 and in no way shall it include changes solely to take advantages of an unforeseen business opportunity. The Technical Secretary and EPA shall attach each such notice to their copy of the relevant permit.
- (b) The written notification must be signed by a facility Title V responsible official and include the following:
 - 1. a brief description of the change within the permitted facility;
 - 2. the date on which the change will occur;
 - 3. a declaration and quantification of any change in emissions;
 - 4. a declaration of any permit term or condition that is no longer applicable as a result of the change; and
 - 5. a declaration that the requested change is not a Title I modification and will not exceed allowable emissions under the permit.

(c) The permit shield provisions of TAPCR 1200-03-09-.02(11)(e)6 shall not apply to Section 502(b)(10) changes.

TAPCR 1200-03-09-.02(11)(a)4 (i)

C3. Administrative amendment.

- (a) Administrative permit amendments to this permit shall be in accordance with 1200-03-09-.02(11)(f)4. The source may implement the changes addressed in the request for an administrative amendment immediately upon submittal of the request.

- (b) The permit shield shall be extended as part of an administrative permit amendment revision consistent with the provisions of TAPCR 1200-03-09-.02(11)(e)6 for such revisions made pursuant to item (c) of this condition which meet the relevant requirements of TAPCR 1200-03-09-.02(11)(e), TAPCR 1200-03-09-.02(11)(f) and TAPCR 1200-03-09-.02(11)(g) for significant permit modifications.
- (c) Proceedings to review and grant administrative permit amendments shall be limited to only those parts of the permit for which cause to amend exists, and not the entire permit.

TAPCR 1200-03-09-.02(11)(f)4

C4. Minor permit modifications.

- (a) The permittee may submit an application for a minor permit modification in accordance with TAPCR 1200-03-09-.02(11)(f)5(ii).
- (b) The permittee may make the change proposed in its minor permit modification immediately after an application is filed with the Technical Secretary.
- (c) Proceedings to review and modify permits shall be limited to only those parts of the permit for which cause to modify exists, and not the entire permit.
- (d) Minor permit modifications do not qualify for a permit shield.

TAPCR 1200-03-09-.02(11)(f)5(ii)

C5. Significant permit modifications.

- (a) The permittee may submit an application for a significant modification in accordance with TAPCR 1200-03-09-.02(11)(f)5(iv).
- (b) Proceedings to review and modify permits shall be limited to only those parts of the permit for which cause to modify exists, and not the entire permit.

TAPCR 1200-03-09-.02(11)(f)5(iv)

C6. New construction or modifications.

Future construction at this facility that is subject to the provisions of TAPCR 1200-03-09-.01 shall be governed by the following:

- (a) The permittee shall designate in their construction permit application the route that they desire to follow for the purposes of incorporating the newly constructed or modified sources into their existing operating permit. The Technical Secretary shall use that information to prepare the operating permit application submittal deadlines in their construction permit.
- (b) Sources desiring the permit shield shall choose the administrative amendment route of TAPCR 1200-03-09-.02(11)(f)4 or the significant modification route of TAPCR 1200-03-09-.02(11)(f)5(iv).
- (c) Sources desiring expediency instead of the permit shield shall choose the minor permit modification procedure route of TAPCR 1200-03-09-.02(11)(f)5(ii) or group processing of minor modifications under the provisions of TAPCR 1200-03-09-.02(11)(f)5(iii) as applicable to the magnitude of their construction.

TAPCR 1200-03-09-.02(11)(d) 1(i)(V)

SECTION D

GENERAL APPLICABLE REQUIREMENTS

- D1. Visible emissions.** With the exception of air emission sources exempt from the requirements of TAPCR Chapter 1200-03-05 and air emission sources for which a different opacity standard is specifically provided elsewhere in this permit, the permittee shall not cause, suffer, allow or permit discharge of a visible emission from any air contaminant source with an opacity in excess of twenty (20) percent for an aggregate of more than five minutes in any one (1) hour or more than 20 minutes in any 24-hour period; provided, however, that for fuel burning installations with fuel burning equipment of input capacity greater than 600 million btu per hour, the permittee shall not cause, suffer, allow, or permit discharge of a visible emission from any fuel burning installation with an opacity in excess of twenty (20) percent (six-minute average) except for one six minute period per one hour of not more than forty (40) percent opacity. Sources constructed or modified after July 7, 1992 shall utilize six-minute averaging.

Consistent with the requirements of TAPCR Chapter 1200-03-20, due allowance may be made for visible emissions in excess of that permitted under TAPCR 1200-03-05 which are necessary or unavoidable due to routine startup and shutdown conditions. The facility shall maintain a continuous, current log of all excess visible emissions showing the time at which such conditions began and ended and that such record shall be available to the Technical Secretary or his representative upon his request.

TAPCR 1200-03-05-.01(1), TAPCR 1200-03-05-.03(6) and TAPCR 1200-03-05-.02(1)

- D2. General provisions and applicability for non-process gaseous emissions.** Any person constructing or otherwise establishing a non-portable air contaminant source emitting gaseous air contaminants after April 3, 1972, or relocating an air contaminant source more than 1.0 km from the previous position after November 6, 1988, shall install and utilize the best equipment and technology currently available for controlling such gaseous emissions.

TAPCR 1200-03-06-.03(2)

- D3. Non-process emission standards.** The permittee shall not cause, suffer, allow, or permit particulate emissions from non-process sources in excess of the standards in TAPCR 1200-03-06.

- D4. General provisions and applicability for process gaseous emissions.** Any person constructing or otherwise establishing an air contaminant source emitting gaseous air contaminants after April 3, 1972, or relocating an air contaminant source more than 1.0 km from the previous position after November 6, 1988, shall install and utilize equipment and technology which is deemed reasonable and proper by the Technical Secretary.

TAPCR 1200-03-07-.07(2)

- D5. Particulate emissions from process emission sources.** The permittee shall not cause, suffer, allow, or permit particulate emissions from process sources in excess of the standards in TAPCR 1200-03-07.

- D6. Sulfur dioxide emission standards.** The permittee shall not cause, suffer, allow, or permit Sulfur dioxide emissions from process and non-process sources in excess of the standards in TAPCR 1200-03-14. Regardless of the specific emission standard, new process sources shall utilize the best available control technology as deemed appropriate by the Technical Secretary of the Tennessee Air Pollution Control Board.

- D7. Fugitive Dust.**

(a) The permittee shall not cause, suffer, allow, or permit any materials to be handled, transported, or stored; or a building, its appurtenances, or a road to be used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Such reasonable precautions shall include, but not be limited to, the following:

1. Use, where possible, of water or chemicals for control of dust in demolition of existing buildings or structures, construction operations, grading of roads, or the clearing of land;
2. Application of asphalt, oil, water, or suitable chemicals on dirt roads, material stock piles, and other surfaces which can create airborne dusts;

3. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Adequate containment methods shall be employed during sandblasting or other similar operations.

(b) The permittee shall not cause, suffer, allow, or permit fugitive dust to be emitted in such manner to exceed five minutes per hour or 20 minutes per day as to produce a visible emission beyond the property line of the property on which the emission originates, excluding malfunction of equipment as provided in Chapter 1200-03-20.

TAPCR 1200-03-08

D8. Open burning. The permittee shall comply with the TAPCR 1200-03-04 for all open burning activities at the facility.

TAPCR 1200-03-04

D9. Asbestos. Where applicable, the permittee shall comply with the requirements of 1200-03-11-.02(2)(d) when conducting any renovation or demolition activities at the facility.

TAPCR 1200-03-11-.02(2)(d) and 40 CFR, Part 61

D10. Annual certification of compliance. The generally applicable requirements set forth in Section D of this permit are intended to apply to activities and sources that are not subject to source-specific applicable requirements contained in State of Tennessee and U.S. EPA regulations. By annual certification of compliance, the permittee shall be considered to meet the monitoring and related record keeping and reporting requirements of TAPCR 1200-03-09-.02(11)(e)1.(iii) and 1200-03-10-.04(2)(b)1 and compliance requirements of TAPCR 1200-03-09-.02(11)(e)3.(i). The permittee shall submit compliance certification for these conditions annually.

D11. Emission Standards for Hazardous Air Pollutants. Where applicable, the permittee shall comply with TAPCR 0400-30-38 for all emission sources subject to a requirement contained therein.

TAPCR Chapter 0400-30-38

D12. Standards of Performance for New Stationary Sources. Where applicable, the permittee shall comply with TAPCR 0400-30-39 for all emission sources subject to a requirement contained therein.

TAPCR Chapter 0400-30-39

D13. Gasoline Dispensing Facilities. Where applicable, the permittee shall comply with TAPCR 1200-03-18-.24 for all emission sources subject to a requirement contained therein.

D14. Internal Combustion Engines.

(a) All stationary reciprocating internal combustion engines, including engines deemed insignificant activities and insignificant emission units, shall comply with the applicable provisions of TAPCR 0400-30-38-.01.

(b) All stationary compression ignition internal combustion engines, including engines deemed insignificant activities and insignificant emission units, shall comply with the applicable provisions of TAPCR 0400-30-39-.01.

(c) All stationary spark ignition internal combustion engines, including engines deemed insignificant activities and insignificant emission units, shall comply with the applicable provisions of TAPCR 0400-30-39-.02.

TAPCR 0400-30-38 and 39

SECTION E**SOURCE SPECIFIC EMISSION STANDARDS, OPERATING LIMITATIONS, and MONITORING, RECORDKEEPING and REPORTING REQUIREMENTS**

43-0007	Facility Description:	The Chemours Company FC, LLC facility produces titanium dioxide which is a white pigment that imparts whiteness and brightness to paints, plastics, rubber, glass, fibers, and other products. The plant uses the chloride production process to produce titanium dioxide. The chloride production process consists of three steps: chlorination, oxidation, and finishing.
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Conditions E1 through E3-9 apply to all sources in Section E of this permit unless otherwise noted.

E1. Fee payment**FEE EMISSIONS SUMMARY TABLE FOR MAJOR SOURCE 43-0007**

REGULATED POLLUTANTS	ALLOWABLE EMISSIONS (tons per AAP)	ACTUAL EMISSIONS (tons per AAP)	COMMENTS
PARTICULATE MATTER (PM)	248.14 SM1	AEAR	Does not include PM₁₀ emissions
PM₁₀	49.3 SM1	AEAR	Fee emissions are not included with PM.
SO₂	574.67 SM1	AEAR	Includes all fee emissions.
VOC	3,206.93 SM1	AEAR	Includes all fee emissions.
NO_x	212.73 SM1	AEAR	Includes all fee emissions.
CATEGORY OF MISCELLANEOUS HAZARDOUS AIR POLLUTANTS (HAPs WITHOUT A STANDARD)*			
VOC FAMILY GROUP		AEAR	Fee emissions are included in VOC above.
NON-VOC GASEOUS GROUP	HCl 52 Cl₂ 10	AEAR	TAPCR 1200-03-07-.07(2). Fee emissions are not included above
PM FAMILY GROUP		AEAR	Fee emissions are included in PM above.
CATEGORY OF SPECIFIC HAZARDOUS AIR POLLUTANTS (HAPs WITH A STANDARD)**			
VOC FAMILY GROUP		AEAR	Fee emissions are included in VOC above.
NON-VOC GASEOUS GROUP		AEAR	Fee emissions are not included above.
PM FAMILY GROUP		AEAR	Fee emissions are included in PM above.
CATEGORY OF NSPS POLLUTANTS NOT LISTED ABOVE***			
EACH NSPS POLLUTANT NOT LISTED ABOVE	H₂S 9.9	AEAR	List the appropriate Standard. H₂S is covered by certain NSPS rules, although no H₂S-subject NSPS units are at this plant Fee emissions are not included above.

NOTES

AAP The Annual Accounting Period (AAP) is a 12-consecutive month period that either (a) begins each July 1st and ends June 30th of the following year when fees are paid on a fiscal year basis, or (b) begins January 1st and ends December 31st of the same year when paying on a calendar year basis. The Annual Accounting Period at the time of permit modification began **July 1, 2020 and ends June 30, 2021**. The next Annual Accounting Period begins **July 1, 2021 and ends June 30, 2022** unless a request to change the annual accounting period is submitted by the responsible official as required by subparagraph 1200-03-26-.02(9)(b) and approved by the Technical Secretary. If the permittee wishes to revise their annual accounting period or their annual emission fee basis as allowed by subparagraph 1200-03-26-.02(9)(b), the responsible official must submit the request to the Division in writing on or before December 31 of the annual accounting period for which the fee is due. If a change in fee basis from allowable emissions to actual emissions for any pollutant is requested, the request from the responsible official must include the methods that will be used to determine actual emissions.

N/A N/A indicates that no emissions are specified for fee computation.

AEAR If the permittee is paying annual emission fees on an actual emissions basis, **AEAR** indicates that an **Actual Emissions Analysis** is **Required** to determine the actual emissions of:

- (1) **each regulated pollutant** (Particulate matter, SO₂, VOC, NO_x and so forth. See TAPCR 1200-03-26-.02(2)(i) for the definition of a regulated pollutant.),
- (2) **each pollutant group** (VOC Family, Non-VOC Gaseous, and Particulate Family),
- (3) the **Miscellaneous HAP Category**,
- (4) the **Specific HAP Category**, and
- (5) the **NSPS Category**

under consideration during the **Annual Accounting Period**.

* **Category Of Miscellaneous HAP (HAP Without A Standard):** This category is made-up of hazardous air pollutants that do not have a federal or state standard. Each HAP is classified into one of three groups, the **VOC Family** group, the **Non-VOC Gaseous** group, or the **Particulate (PM) Family** group. **For fee computation**, the **Miscellaneous HAP Category** is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i).

** **Category Of Specific HAP (HAP With A Standard):** This category is made-up of hazardous air pollutants (HAP) that are subject to Federally promulgated Hazardous Air Pollutant Standards that can be imposed under Chapter 1200-03-11 or Chapter 1200-03-31. Each individual hazardous air pollutant is classified into one of three groups, the **VOC Family** group, the **Non-VOC Gaseous** group, or the **Particulate (PM) Family** group. **For fee computation**, each individual hazardous air pollutant of the **Specific HAP Category** is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(I).

*** **Category Of NSPS Pollutants Not Listed Above:** This category is made-up of each New Source Performance Standard (NSPS) pollutant whose emissions are not included in the **PM, SO₂, VOC** or **NO_x** emissions from each source in this permit. **For fee computation**, each **NSPS pollutant not listed above** is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i).

END NOTES

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- The permittee shall:**
- (1) Pay Title V **annual emission fees**, on the emissions and year bases requested by the responsible official and approved by the Technical Secretary, for each annual accounting period (AAP) by the payment deadline(s) established in TAPCR 1200-03-26-.02(9)(g). Fees may be paid on an **actual, allowable, or mixed** emissions basis; and on either a **state fiscal year** or a **calendar year**, provided the requirements of 1200-03-26-.02(9)(b) are met. If any part of any fee imposed under TAPCR 1200-03-26-.02 is not paid within fifteen (15) days of the due date, penalties shall at once accrue as specified in TAPCR 1200-03-26-.02(8).
 - (2) Sources paying annual emissions fees on an allowable emissions basis: pay annual allowable based emission fees for each annual accounting period pursuant to TAPCR 1200-03-26-.02(9)(d).
 - (3) Sources paying annual emissions fees on an actual emissions basis: prepare an **actual emissions analysis** for each AAP and pay **actual based emission fees** pursuant to TAPCR 1200-03-26-.02(9)(d). The **actual emissions analysis** shall include:
 - (a) the completed **Fee Emissions Summary Table**,
 - (b) each **actual emissions analysis** required, and
 - (c) the actual emission records for each pollutant and each source as required for actual emission fee determination, or a summary of the actual emission records required for fee determination, as specified by the Technical Secretary or the Technical Secretary's representative. These calculations must be based on the annual fee basis approved by the Technical Secretary (a state fiscal year [July 1 through June 30] or a calendar year [January 1 through December 31]). These records shall be used to complete the **actual emissions analyses** required by the above **Fee Emissions Summary Table**.
 - (4) Sources paying annual emissions fees on a mixed emissions basis: for all pollutants and all sources for which the permittee has chosen an actual emissions basis, prepare an **actual**

emissions analysis for each AAP and pay **actual based emission fees** pursuant to TAPCR 1200-03-26-.02(9)(d). The **actual emissions analysis** shall include:

- (a) the completed **Fee Emissions Summary Table**,
- (b) each **actual emissions analysis** required, and
- (c) the actual emission records for each pollutant and each source as required for actual emission fee determination, or a summary of the actual emission records required for fee determination, as specified by the Technical Secretary or the Technical Secretary's representative. These calculations must be based on the fee bases approved by the Technical Secretary (payment on an actual or mixed emissions basis) and payment on a state fiscal year (July 1 through June 30) or a calendar year (January 1 through December 31). These records shall be used to complete the **actual emissions analysis**.

For all pollutants and all sources for which the permittee has chosen an allowable emissions basis, pay allowable based emission fees pursuant to TAPCR 1200-03-26-.02(9)(d).

- (5) When paying on an actual or mixed emissions basis, submit the **actual emissions analyses** at the time the fees are paid in full.

The annual emission fee due dates are specified in TAPCR 1200-03-26-.02(g) and are dependent on the Responsible Official's choice of fee bases as described above. If any part of any fee imposed under TAPCR 1200-03-26-.02 is not paid within fifteen (15) days of the due date, penalties shall at once accrue as specified in TAPCR 1200-03-26-.02(8). Emissions for regulated pollutants shall not be double counted as specified in Condition A8(d) of this permit.

Payment of the fee due and the actual emissions analysis (if required) shall be submitted to The Technical Secretary at the following address:

Payment of Fee to:

The Tennessee Department of Environment and Conservation
Division of Fiscal Services
Consolidated Fee Section – APC (43-0007)
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 10th Floor
Nashville, Tennessee 37243

Actual Emissions Analyses to:

The Tennessee Department of Environment and Conservation
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, Tennessee 37243

or

An electronic copy (PDF) of actual emissions analysis can also be submitted to: apc.inventory@tn.gov

E2 (SM1). Reporting requirements.

- (a) **Semiannual reports.** Reporting periods shall be **October 1 to March 31** and **April 1 to September 30** of each calendar year. The semiannual reports shall be submitted within 60 days after the end of each six-month reporting period. Semiannual reports of this facility (43-0007) shall include:
 - (1) Any monitoring and recordkeeping required by Conditions ***E3-7, E5-6, E8-1, E8-2, E8-3, E8-4, E11-1, E11-2, E13-1, E14-1, E32-1, E32-4, E32-7, E33-1, E33-4, E33-8, E53-1, E55-1, E56-1, E61-2, E63-1, E63-2, E63-4, E64-1, E64-4, E67-1, E67-12, E68-1, E68-3, E70-1, E71-1, E75-1, E90-2, E90-5, E105-1, and E105-2*** of this permit. A summary report of this data is acceptable provided there is sufficient information to enable the Technical Secretary to evaluate compliance.
 - (2) The visible emission evaluation readings from Conditions ***E3-4*** (general requirement), ***E8-5, E11-5, E32-8, E33-6, E53-2, E55-2, E56-2, E60-3, E61-3, E63-6, E64-6, E67-2, E67-7, E67-8, E67-11, E90-6, E90-7, E90-8, and E105-4*** of this permit if required. A summary report of this data is acceptable provided there is sufficient information to enable the Technical Secretary to evaluate compliance.
 - (3) Identification of all instances of deviations from **ALL PERMIT REQUIREMENTS.**

These reports must be certified by a responsible official consistent with condition B4 of this permit and shall be submitted to The Technical Secretary at the address specified below:

Division of Air Pollution Control
Nashville Environmental Field Office

711 R.S. Gass Blvd.
Nashville, Tennessee 37216

or

APC.NashEFO@tn.gov

TAPCR 1200-03-09-.02(11)(e)1.(iii)

(b) **Annual compliance certification.** The permittee shall submit annually compliance certifications with terms and conditions contained in Sections A, B, D and E of this permit, including emission limitations, standards, or work practices. This compliance certification shall include all of the following (provided that the identification of applicable information may cross-reference the permit or previous reports, as applicable):

- (1) The identification of each term or condition of the permit that is the basis of the certification;
- (2) The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period. Such methods and other means shall include, at a minimum, the methods and means required by this permit. If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Act, which prohibits knowingly making a false certification or omitting material information;
- (3) The status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the method or means designated in E2(b)2 above. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion* or exceedance** as defined below occurred; and
- (4) Such other facts as the Technical Secretary may require to determine the compliance status of the source.

* “Excursion” shall mean a departure from an indicator range established for monitoring under this paragraph, consistent with any averaging period specified for averaging the results of the monitoring.

** “Exceedance” shall mean a condition that is detected by monitoring that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) are greater than the applicable emission limitation or standard (or less than the applicable standard in the case of a percent reduction requirement) consistent with any averaging period specified for averaging the results of the monitoring.

Annual compliance certifications shall cover the 12-month periods from April 1 to March 31 and shall be submitted within 60 days after the 12-month reporting period. These certifications shall be submitted to: Tennessee Division of Air Pollution Control TN APCD and EPA

The Technical Secretary
Division of Air Pollution Control
Nashville Environmental Field Office
711 R.S. Gass Blvd.
Nashville, Tennessee 37216

and

Air and EPCRA Enforcement Branch
US EPA Region IV
61 Forsyth Street, SW
Atlanta, Georgia 30303

or

APC.NashEFO@tn.gov

40 CFR Part 70.6(c)(5)(iii) as amended in the Federal Register Vol. 79, No.144, July 28, 2014, pages 43661 through 43667

- (d) **MACT Reports (40 CFR 63 Subpart DDDDD).** The permittee shall submit the MACT reports required by 40 CFR 63 Subpart DDDDD.

The permittee shall submit each report in accordance with §63.7550(h) and Table 9 of Subpart DDDDD. Since affected units covered by this permit are subject only to a requirement to conduct an annual tune-up according to §63.7540(a)(10), the permittee may submit an annual compliance report instead of a semiannual compliance report.

Subsequent tune-ups shall be conducted in accordance with the schedule specified at 40 CFR §63.7550 and the associated reports shall be submitted in accordance with the same rule.

Pursuant to §63.7550(h)(3) the permittee shall submit all reports required by Table 9 of Subpart DDDDD electronically using CEDRI that is accessed through the EPA's Central Data Exchange (CDX) (www.epa.gov/cdx), if the reporting form specific to Subpart DDDDD is available in CEDRI at the time that the report is due. If the reporting form specific to Subpart DDDDD is not available in CEDRI at the time that the report is due, the permittee must submit the report to the Administrator at the address listed in §63.13

TAPCR 1200-03-09-.03(8) and 40 CFR §63.7550

The permittee shall keep a copy of each notification and report submitted to comply with this subpart, including all supporting documentation.

The permittee shall maintain records of the calendar date, time, occurrence and duration of each startup and shutdown, and shall maintain records of the type(s) and amount(s) of fuels used during each startup and shutdown.

The permittee shall keep records in a form suitable and readily available for expeditious review, in accordance with § 63.7560 and § 63.10(b)(1).

For a source required to meet an applicable tune-up work practice standard, the permittee must conduct an annual, biennial, or 5-year performance tune-up according to §63.7540(a)(10), (11), or (12), respectively. Each annual tune-up specified in §63.7540(a)(10) must be no more than 13 months after the previous tune-up. Each biennial tune-up specified in §63.7540(a)(11) must be conducted no more than 25 months after the previous tune-up. Each 5-year tune-up specified in §63.7540(a)(12) must be conducted no more than 61 months after the previous tune-up. For a new or reconstructed affected source (as defined in §63.7490), the first annual, biennial, or 5-year tune-up must be no later than 13 months, 25 months, or 61 months, respectively, after April 1, 2013 or the initial startup of the new or reconstructed affected source, whichever is later.

40 CFR §63.7515

The following boilers or process heaters are subject to the above requirements:

Reference No.	Unit ID	Unit Name	Maximum Heat Input Capacity (MMBtu/hr)	Fuels Used
43-0007-13	EP13A	L202	15.5	Natural Gas
43-0007-13	EP13B	L2Ti	33.0	Natural Gas
43-0007-70	EP70	L101	19.0	Natural Gas
43-0007-71	EP71	L1Ti	40.0	Natural Gas
43-0007-80	EP80	Steam Superheater	5.0	Natural Gas

- (e) **Retention of Records** All records required by any condition in Section E of this permit must be retained for a period of not less than five years. Additionally, these records shall be kept available for inspection by the Technical Secretary or his representative.

TAPCR 1200-03-09-.02(11)(e)1.(iii)(II)II

E3. General Facility Conditions:

E3-1 (SM1). Reserved – SM1 deletes this condition.

E3-2. Routine maintenance, as required to maintain the specified emission limits of this permit, shall be performed on the air pollution control devices. Maintenance records of the date of each inspection and the nature and date of any repairs to the devices shall be recorded in a log and kept available for inspection by the Division. These records must be retained for a period of not less than five years. TAPCR 1200-03-10-.02(2)(a)

TAPCR 1200-03-10-.02(2)(a)

E3-3. Any logs, documents, and records required by this permit to be maintained and/or available for inspection by the Division may be recorded or maintained in paper or electronic form.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

E3-4. Except as otherwise specified below, visible emissions from this facility shall not exhibit greater than 20% opacity, except for one (1) six-minute period in any one hour period, and for no more than four six-minute periods in any 24-hour period. Visible emissions from this facility (unless specified below) shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average).

Compliance Method: Compliance with this condition shall be determined in accordance with the procedures of the Division’s Opacity Matrix dated June 18, 1996 as amended September 13, 2013 (Attachment 1).

For all emission sources that use the opacity matrix decision trees (Attachment 1) to comply with any visible emissions requirement, including emission sources for which visible emissions are not required by the opacity matrix, if the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

For the following units opacity is read by TVEE Method 2.

Ref. No. 43-0007	Description	Opacity Limit
08/09	Chlorinators	20%
53	#1 Finishing Operation	20%
55	#2 Finishing Operation	20%
56	Slurry Pneumatic Conveying	20%
60	HCl Eductor	20%
61	Coke Unloading	20%

For the following units opacity is read by EPA Method 9 and the opacity limit is 10%.

Ref. No. 43-0007	Description	Opacity Limit
32	Spray Dryer #1	10%
33	Spray Dryer #2	10%
63	Spray Dryer #3	10%
64	Pilot Plant Dryer	10%

TAPCR 1200-03-09-.02(11)(e)1.(iii)

E3-5. Unless otherwise noted, record keeping requirements for the permittee, including all data and calculations, must be updated and maintained based on the following schedule:

Recordkeeping Type	Update Requirement
Monthly Log	Recorded within 30 days after the end of the month
Weekly Log	Recorded within seven days after the end of the week

Daily Log	Recorded within seven days after the end of the day
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TAPCR 1200-03-10-.02(2)(a)

E3-6(MM1). Reserved

- E3-7.** Volatile organic compounds (VOC) emissions from the following combined sources shall not exceed 268 tons during all intervals of 12 consecutive months: Spray Dryer #1 (43-0007-32), Spray Dryer #3 (43-0007-63), and the Pilot Plant Dryer (43-0007-64).

TAPCR 1200-03-07-.07(2) and June 5, 2014 Application

Compliance Method: Assurance of compliance for the volatile organic compounds (VOC) emission limit is based upon the analysis of stack results found at Attachment I Table I-3 of the permittee's June 5, 2014 permit application, which indicates the VOC emission rate from Spray Dryer #1 and Spray dryer #3 will (each) not exceed 29 pounds VOC per hour. Also, the VOC emission rate for the Pilot Plant Spray Dryer is calculated to be 3 pounds VOC per hour. The maximum VOC emission rate shall be calculated monthly by the equation:

Monthly VOC emission rate = (monthly hours of production at this source) x (maximum pounds of VOC per hour) / (2000 pounds per ton). Calculate the VOC emissions during the previous 12-month period by adding the monthly VOC emission rate calculated for Spray Dryer #1, Spray Dryer #3, and the Pilot Plant Dryer, to the sum of their total monthly emissions for the previous eleven (11) months. These calculations shall be recorded in a log to be maintained at the facility. VOC emissions from Spray Dryer #1 are calculated from condition # E32-4. VOC emissions from Spray Dryer #3 are calculated from condition # E63-4. VOC emissions from the Pilot Plant Spray Dryer are calculated from condition # E64-4.

- E3-8. Compliance Assurance Monitoring: General Requirements:** For each emission control device that uses a secondary (or backup) indicator to comply with any CAM Plan requirement during periods when the primary indicator is not operating, if the duration and frequency of non-operation of the primary indicator reported by the permittee is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional requirements related to CAM monitoring.

TAPCR 1200-03-09-.03(8)

E3-9 (SM1). Identification of Responsible Official, Technical Contact, and Billing Contact

- (a) The application that was utilized in the preparation of this renewal permit is dated June 5, 2014. The letter application dated April 1, 2019 identifies C. J. Hilton, Plant Manager, as the Responsible Official for the permitted facility. If this person terminates employment or is assigned different duties and is no longer a Responsible Official for this facility as defined in part 1200-03-09-.02(11)(b)21 of the Tennessee Air Pollution Control Regulations, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification must be in writing and must be submitted within 30 days of the change. The notification shall include the name and title of the new Responsible Official and certification of truth and accuracy. All representations, agreement to terms and conditions, and covenants made by the former Responsible Official that were used in the establishment of the permit terms and conditions will continue to be binding on the facility until such time that a revision to this permit is obtained that would change said representations, agreements, and/or covenants.
- (b) The application that was utilized in the preparation of this renewal permit is dated June 5, 2014. The letter dated July 25, 2019 identifies Gregg Martin as the Principal Technical Contact for the permitted facility. If this person terminates employment or is assigned different duties and is no longer the Principal Technical Contact for this facility, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification must be in writing and must be submitted within 30 days of the change. The notification shall include the name and title of the new Principal Technical Contact and certification of truth and accuracy.
- (c) The application that was utilized in the preparation of this renewal permit is dated June 5, 2014. The letter dated July 25, 2019 identifies Gregg Martin as the Billing Contact for the permitted facility. If this person terminates employment or is assigned different duties and is no longer the Billing Contact for this facility, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification must be in writing and must be submitted within 30 days of the change. The notification shall include the name and title of the new Billing Contact and certification of truth and accuracy.

43-0007-05-15	Source Description: Ore Roasters: Two natural gas fired ore roasters for drying of titanium ore and two natural gas fired air heaters, all with a combined 75 million Btu/hr Nominal Heat Input Capacity; One reverse jet wet scrubber control unit for emissions from all four units. NSPS Subpart UUU
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Conditions E5-1 through E5-8 apply to source 43-0007-05-15
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- E5-1.** The stated maximum combined heat input rate at this source is 75 MMBtu/hr for two ore roasters and two direct-contact natural gas-fired air heaters. The vendor supplied design heat input rate for the two ore roaster burners is 30 million Btu/hr each. The stated design heat input rate for the two direct-contact natural gas fired air heaters upstream of the existing scrubber is 3 million Btu/hr each. After including a safety factor to account for future variability, the facility estimates that the maximum heat input to all four (4) sources is 75 million Btu/hr.

TAPCR 1200-03-09-.03(8)

Compliance Method: Compliance with this condition shall be assured by compliance with **Condition E5-7** and by the monitoring and recordkeeping required by **Condition E5-6**.

- E5-2 (SM1).** Particulate matter emitted from this source shall not exceed 0.025 grains of particulate matter per dry standard cubic foot of exhaust gas. TAPCR 1200-03-09-.03(8)

40 CFR § 60.732 for grain loading standard Subpart UUU—Standards of Performance for Calciners and Dryers in Mineral Industries

Compliance Method: The permittee shall comply with the particulate CAM plan for this source found at Attachment 4.

TAPCR 1200-03-09-.02(11)(e)1(iii)

- E5-3.** Sulfur dioxide emitted from this source (both ore roasters and the two natural gas-fired air heaters combined) shall not exceed 0.1 pounds per hour.

TAPCR 1200-03-14-.03(5)

Compliance Method: Compliance with this condition shall be assured by annual certification, as required in **Condition E2(b)**.

- E5-4.** Carbon monoxide (CO) emitted from this source (both ore roasters and the two natural gas-fired air heaters combined) shall not exceed 6.3 pounds per hour.

TAPCR 1200-03-07-.07(2) Reasonable and Proper

Compliance Method: Compliance with this condition shall be assured by compliance with **Condition E5-7** and by the monitoring and recordkeeping required by **Condition E5-6**. Compliance is based upon the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds per million cubic feet gas)</u>
Carbon monoxide	84
Data from AP-42, Table 1.4-2	

TAPCR 1200-03-09-.02(11)(e)1(iii)

- E5-5.** Nitrogen oxides (NOx) emitted from this source (both ore roasters and the two natural gas-fired air heaters combined) shall not exceed 100 pounds per million dry standard cubic feet of natural gas combusted (7.5 pounds per hour).

TAPCR 1200-03-07-.07(2)

Compliance Method: Compliance with this condition shall be assured by compliance with **Condition E5-7** and by the monitoring and recordkeeping required by **Condition E5-6**. Compliance is based upon the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds per million cubic feet gas)</u>
Nitrogen oxides	100
Data from AP-42, Table 1.4-2	

TAPCR 1200-03-09-.02(11)(e)1(iii)

- E5-6.** A monthly log of the natural gas fuel usage at this source shall be maintained at the facility. This log shall include fuel used by both ore roasters and the two air heaters, combined. TAPCR 1200-03-10-.02(2)(a)

- E5-7.** Only natural gas shall be used as fuel for this source. TAPCR 1200-03-09-.03(8)

Compliance Method: Compliance with this condition shall be assured by annual certification, as required in **Condition E2(b)**.

TAPCR 1200-03-09-.02(11)(e)1(iii)

- E5-8 (SM1).** Reserved – SM deletes this requirement.

43-0007-08-09	<p>Source Description: #1 and #2 Chlorinators: In each chlorinator, titanium dioxide, ore, coke and chlorine are mixed in chlorinators. Iron chloride and titanium tetrachloride are condensed from the gas stream generated followed by equipment to remove non-condensable gases. Each of the two (2) chlorinator lines consists of a titanium dioxide ore chlorinator, iron chloride and titanium tetrachloride condensing equipment, titanium tetrachloride storage tanks, HCl removal stage, and process gas scrubbing system with stack. HCl is removed by water for recycle and the removal stages are an inherent part of the process. The process gas scrubbing systems use a water and sodium hydroxide mixture to remove sulfur dioxide, chlorine, and residual HCl, titanium tetrachloride, and particulate matter. The process gas scrubbing systems on each chlorinator line is considered the control device. Startup Stack ID #EP08/09 is used during periodic maintenance activities while the process is shut down. During this period, emissions are governed by TAPCR 1200-03-20 Chlorinator Line #1 - PES No. 6 (EP08) and Chlorinator Line #2 - PES No. 7 (EP09) CAM for PM and SO₂ PSD</p>
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Conditions E8-1 through E8-5 apply to source 43-0007-08-09
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E8-1 (SM1). Particulate matter emitted from each chlorinator line (EP08 and EP09) of this source shall not exceed 0.25 grains per dry standard cubic foot of exhaust gases and 10.99 pounds per hour.

TAPCR 1200-03-07-.04(2) for 0.25 gr/dscf and 1200-03-07-.01(5) with application dated April 3, 2000 for 10.99 lb/hr (from first amendment to 953817)

Compliance Method: The permittee shall comply with the particulate CAM plan for this source found at Attachment 4.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E8-2 (SM1). This source shall comply with the following SO₂ limits:

(a) Sulfur dioxide (SO₂) emitted from each chlorinator line (EP08 and EP09) of this source shall not exceed 800 ppm.

(b) Sulfur dioxide emitted from this source shall not exceed a total of 503 tons per year (EP08 and EP09 combined).

TAPCR 1200-03-09-.01(4)(b)4, TAPCR 1200-03-19-.14(1)(c)(3)(i)

Compliance Method: The permittee shall comply with the sulfur dioxide CAM plan for this source found at Attachment 4.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E8-3. Carbon monoxide (CO) emitted from this source shall not exceed 18,400 tons per year.

TAPCR 1200-03-09-.01(4)(b)4.

Compliance Method: Beginning in calendar year 2018, the permittee shall input data for each calendar year into the spreadsheet model to predict actual chlorinator emissions. The model shall be run by March 31 of the following year to calculate tons of CO emissions for the prior calendar year.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E8-4. Carbonyl sulfide⁽¹⁾ (COS) emitted from this source shall not exceed 1,715 tons during all intervals of 12 consecutive months.

⁽¹⁾ Carbonyl sulfide is defined as both a reduced sulfur compound (RSC) and a volatile organic compound (VOC).

TAPCR 1200-03-09-.01(4)(b)4.

Compliance Method: Beginning in calendar year 2018, the permittee shall input data for each month into the spreadsheet model to predict actual chlorinator air emissions. The model shall be run by the last day of the following month to calculate tons of COS emissions for the prior consecutive 12-month interval.

The permittee has stated that COS emissions are not controlled by the process gas scrubbing system.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E8-5. Visible emissions from this source shall not exhibit greater than 20% opacity, except for an aggregate of no more than five minutes in any one hour period, and no more than 20 minutes in any 24-hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2 (aggregate count). TAPCR 1200-03-05-.01(1)

Compliance Method: Compliance with this condition shall be determined in accordance with the procedures of the Division's Opacity Matrix dated September 11, 2013 (Attachment 1).

TAPCR 1200-03-09-.02(11)(e)1(iii)

43-0007-11 **Titanium Tetrachloride Purification Process:** Production of purified Titanium Tetrachloride (TiCl₄) intermediate controlled by caustic scrubbing system (sodium hydroxide solution) consisting of three (3) venturi scrubbers. Compliance Assurance Monitoring (CAM)

Conditions E11-1 through E11-5 apply to source 43-0007-11

E11-1 (SM1). Particulate matter emitted from this source shall not exceed 3.5 lb/hr.

TAPCR 1200-03-07-.01(5) and the agreement letter dated November 7, 2006

Compliance Method: The permittee shall comply with the particulate matter CAM plan for this source found at Attachment 4.

E11-2 (SM1). Sulfur dioxide emitted from this source shall not exceed 100 parts per million (ppm) and 8.9 lb/hr.

TAPCR 1200-03-19-.14(1)(c)3(viii), 1200-03-14-.01(3), and the agreement letter dated November 7, 2006

Compliance Method: The permittee shall comply with the sulfur dioxide CAM plan for this source found at Attachment 4.

E11-3. Hydrogen chloride (HCl) emitted from this source shall not exceed 38.9 tons per year.

TAPCR 1200-03-07-.07(2) (State Only)

Compliance Method: Compliance with monitoring and recordkeeping required by **Condition E11-2** above will assure compliance with this HCl emission limit.

E11-4. The exhaust gases from the purification scrubbing system shall be discharged unobstructed vertically upwards to the ambient air from stacks with inside dimensions at exhaust of 1.0 to 1.6 feet not less than 70 feet above ground level.

TAPCR 1200-03-09-.03(8) (State Only)

E11-5. Visible emissions from this source shall not exhibit greater than 20% opacity, except for an aggregate of no more than five minutes in any one hour period, and no more than 20 minutes in any 24-hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2 (aggregate count). TAPCR 1200-03-05-.01(1)

Compliance Method: Compliance with this condition shall be determined in accordance with the procedures of the Division's Opacity Matrix dated June 18, 1996 Amended September 11, 2013 (Attachment 1).

43-0007-13 **Source Description: Two Natural gas fired Non-Contact Heaters-L202 & L2Ti** for heating of oxygen and titanium tetrachloride; L202 Nominal Heat Input Capacity 15.5 Million Btu/hr; L2Ti Nominal Heat Input Capacity 33.0 Million Btu/hr. MACT Subpart DDDDD

Conditions E13-1 through E13-8 apply to source 43-0007-13

E13-1. The maximum heat input to this source shall not exceed 48.5 MMBtu/hr.

Compliance Method: A log of monthly natural gas usage and operating hours of the two heaters shall be maintained at the facility and kept available for inspection by a representative of the Division.

TAPCR 1200-03-09-.02(11)(e)1(iii), construction permit no. 741591F

E13-2. Particulate matter emitted from this source shall not exceed 1.37 pounds per hour.

TAPCR 1200-03-06-.01(7) and agreement letter dated August 29, 2017

Compliance Method: Compliance for the particulate emission standard is assured based upon the recordkeeping in **Condition E13-1** and the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds per million cubic feet gas)</u>
Particulate matter	7.6
Data from AP-42, Table 1.4-2 (enclosed as Attachment 2)	

E13-3. Sulfur dioxide emitted from this source shall not exceed 2.28 pounds per hour.

TAPCR 1200-03-14-.01(3) and agreement letter dated August 29, 2017

Compliance Method: Compliance for the sulfur dioxide emission limit is assured based upon the recordkeeping in **Condition E13-1** and the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds per million cubic feet gas)</u>
Sulfur dioxide	0.6
Data from AP-42, Table 1.4-2 (enclosed as Attachment 2)	

E13-4. Nitrogen oxides emitted from this source (43-0007-13) shall not exceed 9.22 pounds per hour.

TAPCR 1200-03-06-.03

Compliance Method: Compliance for the nitrogen oxides emission standard is assured based upon the following emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds per million cubic feet gas)</u>
Nitrogen oxides	190
Data from manufacturer	

E13-5. Volatile organic compounds emitted from this source (43-0007-13) shall not exceed 0.50 pounds per hour.

TAPCR 1200-03-06-.03

Compliance Method: Compliance for the volatile organic compound emission standard is assured based upon the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds per million cubic feet gas)</u>
Volatile organic compounds	5.5
Data from AP-42, Table 1.4-2 (enclosed as Attachment 2)	

E13-6. Carbon monoxide emitted from this source (43-0007-13) shall not exceed 4.1 pounds per hour.

TAPCR 1200-03-06-.03

Compliance Method: Assurance of compliance for the carbon monoxide emission standard is assured based upon the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds per million cubic feet gas)</u>
Carbon monoxide	84
Data from AP-42, Table 1.4-1 (enclosed as Attachment 2)	

E13-7. Only natural gas shall be used as fuel for this source.

TAPCR 1200-03-09-.03(8) (This requirement is from construction permit no. 741591F.)

Compliance Method: Compliance with this condition shall be assured by the monitoring and recordkeeping required by **Condition E13-1.**

E13-8 (MM1). The permittee must meet the applicable work practice standards in Table 3 to 40 CFR 63 Subpart DDDDD INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL BOILERS AND PROCESS HEATERS, for each affected unit designed to burn gas 1 type fuel in accordance with 40 CFR §63.7500, as specified below:

Type of Unit	Associated Requirement
A boiler or process heater without a continuous oxygen trim system and with heat input capacity of 10 million Btu per hour or greater for units designed to burn Gas 1.	Conduct a tune-up of the boiler or process heater annually in accordance with § 63.7540.

The testing, recordkeeping and reporting requirements are found at **Condition E2(d)** of this permit.

TAPCR 1200-03-09-.03(8), 40 CFR §63.7550

43-0007-14	<p>Source Description: <u>Wet Treatment:</u> Treatment of titanium dioxide slurry with chemical additives; chlorine and hydrochloric acid removal from vent gas by (3) scrubbers with sodium hydroxide/water scrubbing solution</p> <p>This source processes titanium dioxide slurry with resultant emissions of particulate matter, chlorine (Cl₂) and Hydrogen Chloride (HCl). Emissions from the process are controlled by one or more of three sodium hydroxide solution scrubbers.</p>
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Conditions E14-1 through E14-3 apply to source 43-0007-14

E14-1. Total Particulate matter (PM) emitted from this source shall not exceed 1.5 pounds per hour. This emission limit is established pursuant to Rule 1200-03-07-.01(5) of the TAPCR and the information contained in the application/agreement dated July 12, 2017, from the permittee.

Compliance Method: The sodium hydroxide/water flow to each of the three (3) scrubbers shall be read every shift when the source is in operation. Two (2) flow readings per shift per each scrubber shall be recorded in a log to be maintained at the facility to assure a minimum of 500 gallons per minute flow rate to each of the scrubbers. Compliance shall be determined on a daily average basis. The vent gas can be directed to any one of three (3) sodium hydroxide scrubbers to remove particulate matter, chlorine, and hydrogen chloride. If the source is not operating, no flow rate readings are required. At least one of the three scrubbers shall be operating at any time the process is operating. No control device is required to operate at any time when the wet treatment process is not operational. The permittee shall maintain records of the scrubbers that are operating on any day.

E14-2. Chlorine (Cl₂) emitted from this source shall not exceed 2.1 pounds per hour. Compliance with this limit is based on the monitoring as specified in **Condition E14-1.** This emission limit is established pursuant to Rule 1200-03-07-.07(2) of the TAPCR and the information contained in the application dated July 12, 2017, from the permittee.

E14-3. Hydrogen chloride (HCl) emitted from this source shall not exceed 1.0 pounds per hour. Compliance with this limit is based on the monitoring as specified in **Condition E14-1.** This emission limit is established pursuant to Rule 1200-03-07-.07(2) of the TAPCR and the information contained in the application dated July 12, 2017, from the permittee.

43-0007-32	Source Description: <u>Spray Dryer #1</u>: titanium dioxide slurry is fed into a natural gas fired dryer; air is separated from the dry titanium dioxide in a product recovery chamber (baghouse) ; combustion gases and moist air are vented to the atmosphere. Dryer nominal heat input capacity of 120.0 million Btu/hr.
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Conditions E32-1 through E32-9 apply to source 43-0007-32

E32-1. Particulate matter emitted from this source is subject to the following limit:

Hourly Emission Limit	Basis	Rule
2.5 lb/hr	Agreement from application dated June 5, 2014	TAPCR 1200-03-07-.01(5)

Compliance Method: Compliance is assured by maintaining a minimum pressure drop for each of the three Product Recovery devices (baghouses) of 0.4 inches of water. This parameter shall be measured and recorded for each unit twice each shift (a shift is typically up to 12-hours in length) in a log when the process is operating. Compliance shall be determined on a daily average basis. Days when the process is not operating shall be noted in the log.

For lower pressure drop reading(s) resulting from replacement of bags, the permittee shall record the deviation(s) as such in their daily records. Due allowance will be made for lower pressure drop reading(s) which follow replacement of bags provided the permittee establishes to the satisfaction of the Technical Secretary that these lower readings resulted from the replacement of bags.

Each of the three Product Recovery Devices must be inspected at least once per calendar year. Results of the inspection must be recorded and kept available for inspection by a representative of the Division.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E32-2. Sulfur dioxide emitted from this source shall not exceed 1.14 pounds per hour.

TAPCR 1200-03-14-.01(3), agreement letter dated September 12, 1995

Compliance Method: Assurance of compliance for the sulfur dioxide emission limit is based upon the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
Sulfur dioxide	0.6
Data from AP-42, Table 1.4-2 (enclosed as Attachment 2)	

E32-3. Nitrogen oxides (NO_x) emitted from this source shall not exceed 4.8 pounds per hour.

TAPCR 1200-03-07-.07(2)

Compliance Method: Assurance of compliance for the nitrogen oxides emission limit is based upon the following emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
Nitrogen oxides	40

E32-4 (MM1). Volatile organic compounds (VOC) emitted from this spray dryer shall not exceed 11 tons during any one month.

TAPCR 1200-03-07-.07(2), application dated June 5, 2014.

Compliance Method: Assurance of compliance for the volatile organic compounds (VOC) emission limit is based upon the analysis of stack results on Attachment I Page 5 of the permittee’s June 5, 2014 permit application, which indicates the VOC emission rate from Spray Dryer #1 will not exceed 29 pounds per hour. The maximum VOC emission rate shall be calculated monthly by the equation:

Monthly VOC emission rate = (monthly hours of production at this source) x (29 pounds of VOC per hour) / (2000 pounds per ton). In accordance with the provisions of condition E3-7, the permittee shall calculate the VOC emissions during the previous 12-month period by adding the monthly VOC emission rate calculated for the past month to the sum of their total monthly emissions for the previous eleven (11) months. These calculations shall be recorded in a log to be maintained at the facility. Calculations of 12-month VOC emissions from this source for purposes of compliance determination with the VOC emission limit in condition E3-7 will serve as compliance with the 12-month VOC emission calculation for this condition.

E32-5. Carbon monoxide emitted from this source shall not exceed 10.1 pounds per hour.

TAPCR 1200-03-07-.07(2)

Compliance Method: Assurance of compliance for the carbon monoxide (CO) emission limit is based upon the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
CO	84
Data from AP-42, Table 1.4-1 (enclosed as Attachment 2)	

E32-6. Only natural gas shall be used as fuel for this source.

Compliance Method: Compliance with this condition shall be assured by the monitoring and recordkeeping required by **Condition E32-7.**

Operating permit 045444P

E32-7. A log of the monthly production rate and natural gas usage for this source must be maintained at the facility.

TAPCR 1200-03-10-.02(2)(a), operating permit no. 045444P

E32-8. Visible emissions from this source shall not exceed 10% opacity as determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average).

TAPCR 1200-03-09-.03(8) and 40 CFR 60.732(b)

Compliance Method: Compliance with this condition shall be determined by the procedures of the Division’s Opacity Matrix dated September 11, 2013 (Attachment 1). Based on the hourly particulate emission rate determined from the October 11-12, 2012 testing and utilizing unlimited hours of operation, an annual particulate emission rate of 8.5 tons can be calculated. Consistent with EPA Applicability Determination #9700071 (January 30, 1997) this source is exempt from the opacity monitoring requirement set forth in 40 CFR 60.734(a) and the daily visible emission reading requirement set forth in 40 CFR 60.734(a).

TAPCR 1200-03-9-.02(11)(e)1(iii)

E32-9. This process shall comply with all applicable provisions of 40 CFR 60 Subpart UUU—Standards of Performance for Calciners and Dryers in Mineral Industries. This rule is found at Attachment 3 of this permit. This includes the 0.025 grain per dry standard cubic foot particulate matter limit (superseded by the more stringent 2.5 lb. pm/hr limit at **Condition E32-1**) and the 10% opacity limit at **Condition E32-8** of this permit.

TAPCR 1200-03-09-.03(8), 1200-03-16-.74

43-0007-33 **Source Description: Spray Dryer #2:** Titanium dioxide slurry is fed into a natural gas fired dryer; air is separated from the dry titanium dioxide in a product recovery chamber (baghouse); combustion gases and moist air are vented to the atmosphere. Dryer nominal heat input capacity of 120.0 million Btu/hr.

Conditions 33-1 through E33-9 apply to source 43-0007-33

E33-1. Particulate matter emitted from this source shall not exceed the following limits:

Hourly Emission Limit	Basis	Rule
2.5 lb/hr	Agreement from application dated June 5, 2014	TAPCR 1200-03-07-.01(5)

Compliance Method: Compliance is assured by maintaining a minimum pressure drop for each of the three Product Recovery devices (baghouses) of 0.4 inches of water. This parameter shall be measured and recorded for each unit twice each shift (a shift is typically up to 12-hours in length) in a log when the process is operating. Compliance shall be determined on a daily average basis. Days when the process is not operating shall be noted in the log

For lower pressure drop reading(s) resulting from replacement of bags, the permittee shall record the deviation(s) as such in their daily records. Due allowance will be made for lower pressure drop reading(s) which follow replacement of bags provided the permittee establishes to the satisfaction of the Technical Secretary that these lower readings resulted from the replacement of bags.

Each of the three Product Recovery Devices must be inspected at least once per calendar year. Results of the inspection must be recorded and kept available for inspection by a representative of the Division.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E33-2. Sulfur dioxide emitted from this source (43-0007-33) shall not exceed 1.14 pounds per hour.

TAPCR 1200-03-14-.01(3) (agreement letter dated September 12, 1995)

Compliance Method: Assurance of compliance for the sulfur dioxide emission limit is based upon the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
Sulfur dioxide	0.6
Data from AP-42, Table 1.4-2 (enclosed as Attachment 2)	

E33-3. Nitrogen oxides (NO_x) emitted from this source (43-0007-33) shall not exceed 4.8 pounds per hour.

TAPCR 1200-03-07-.07(2)

Compliance Method: Assurance of compliance for the nitrogen oxides emission limit is based upon the following emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
nitrogen oxides	40
Manufacturer's specification data	

E33-4. Volatile organic compounds (VOC) emitted from this source shall not exceed 150 tons for any month and 1,200 tons during all intervals of 12 consecutive months. TAPCR 1200-03-07-.07(2)

Compliance Method: Assurance of compliance for the volatile organic compounds (VOC) emission limit is based upon the stack test conducted October 10, 1996 at this spray dryer. From test results referenced on page 126 of the permittee's June 26, 1997 permit application, the VOC emission rate was 103.06 pounds per hour. The monthly VOC emission rate shall be calculated monthly by the equation:

Monthly VOC emission rate = (monthly hours of production at this source) X (103.06 pounds of VOC per hour) / (2,000 pounds per ton).

Calculate the VOC emissions during the previous 12-month period by adding the monthly VOC emission rate calculated for the past month to the sum of their total monthly emissions for the previous eleven (11) months.

These calculations shall be recorded in a log to be maintained at the facility.

E33-5. Carbon monoxide emitted from this source (43-0007-33) shall not exceed 10.1 pounds per hour.

TAPCR 1200-03-07-.07(2)

Compliance Method: Assurance of compliance for the carbon monoxide (CO) emission limit is based upon the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
CO	84
Data from AP-42, Table 1.4-1 (enclosed as Attachment 2)	

E33-6. Visible emissions from this source shall not exceed 10% opacity as determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average).

Compliance Method: Compliance with this condition shall be determined by the procedures of the Division’s Opacity Matrix dated September 11, 2013 (Attachment 1). Based on the hourly particulate emission rate determined from the October 12, 2012 testing and utilizing unlimited hours of operation, an annual particulate emission rate of 10.3 tons can be calculated. Consistent with EPA Applicability Determination #9700071 (January 30, 1997) this source is exempt from the opacity monitoring requirement set forth in 40 CFR 60.734(a) and the daily visible emission reading requirement set forth in 40 CFR 60.734(b).

TAPCR 1200-03-09-.02(11)(e)1(iii), TAPCR 1200-03-09-.03(8) and 40 CFR 60.732(b)

E33-7. Only natural gas shall be used as fuel for this source.

Compliance Method: Compliance with this condition shall be assured by the monitoring and recordkeeping required by **Condition E33-8**

TAPCR 1200-03-09-.02(11)(e)1(iii), operating permit no. 045790P

E33-8. A log of the monthly production rate and monthly natural gas usage must be maintained at the facility.

(This requirement is from the operating permit no. 045790P).
 TAPCR 1200-03-10-.02(2)(a)

E33-9. This process shall comply with all applicable provisions of 40 CFR 60 Subpart UUU—Standards of Performance for Calciners and Dryers in Mineral Industries. This rule is found at Attachment 3 of this permit. This includes the 0.025 grain per dry standard cubic foot particulate matter limit (superseded by the more stringent 2.5 lb. pm/hr limit at E33-1) and the 10% opacity limit at E33-6 of this permit.

TAPCR 1200-03-09-.03(8) and 1200-03-16-.74

43-0007-53	Source Description: #1 Finishing Operations: pneumatic transport and storage of dry titanium dioxide pigment for support of processes for finished products CAM
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Conditions E53-1 through E53-2 apply to source 43-0007-53

E53-1 (SM1). Particulate matter emitted from this source shall not exceed 1.5 pounds per hour.

TAPCR 1200-03-07-.01(5) (agreement letter dated February 1, 1989)

Compliance Method: The permittee shall comply with the PM CAM plan for this source found at Attachment 4.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E53-2. Visible emissions from this source shall not exhibit greater than 20% opacity, except for an aggregate of no more than five minutes in any one hour period, and no more than 20 minutes in any 24-hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2 (aggregate count). TAPCR 1200-03-05-.01(1)

Compliance method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 (amended on September 11, 2013) that is enclosed as Attachment 1. Reports and certifications shall be submitted in accordance with **Condition E2** of this permit.

TAPCR 1200-03-09-.02(11)(e)1(iii)

43-0007-55	Source Description: #2 Finishing Operations: pneumatic transport and storage of dry titanium dioxide pigment for support of processes for finished products CAM
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Conditions E55-1 through E55-2 apply to source 43-0007-55

E55-1 (SM1). Particulate matter emitted from this source shall not exceed 1.5 pounds per hour.

TAPCR 1200-03-07-.01(5), agreement letter dated February 1, 1989

Compliance Method: The permittee shall comply with the PM CAM plan for this source found at Attachment 4.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E55-2. Visible emissions from this source shall not exhibit greater than 20% opacity, except for an aggregate of no more than five minutes in any one hour period, and no more than 20 minutes in any 24-hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2 (aggregate count). TAPCR 1200-03-05-.01(1)

Compliance method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 (amended on September 11, 2013) that is enclosed as Attachment 1. Reports and certifications shall be submitted in accordance with **Condition E2** of this permit.

TAPCR 1200-03-09-.02(11)(e)1(iii)

43-0007-56	Source Description: Slurry Pneumatic Conveying Operations: pneumatic transport and storage of dry titanium dioxide pigment for support of processes for finished products CAM
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Conditions E56-1 through E56-2 apply to source 43-0007-56

E56-1 (SM1). Particulate matter emitted from this source shall not exceed 1.5 pounds per hour.

TAPCR 1200-03-07-.01(5), agreement letter dated February 1, 1989

Compliance Method: The permittee shall comply with the PM CAM plan for this source found at Attachment 4.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E56-2. Visible emissions from this source shall not exhibit greater than 20% opacity, except for an aggregate of no more than five minutes in any one hour period, and no more than 20 minutes in any 24-hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2 (aggregate count). TAPCR 1200-03-05-.01(1)

Compliance method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 (amended on September 11, 2013) that is enclosed as Attachment 1. Reports and certifications shall be submitted in accordance with **Condition E2** of this permit.

TAPCR 1200-03-09-.02(11)(e)1(iii)

43-0007-60

Source Description: HCl Filtration Eductor: The HCl eductor blower pulls HCl fumes from the gas space of two thickeners and educts HCl fumes off of the catch tank gas space. The combined exhaust stream passes through a water spray which removes HCl.

Conditions E60-1 through E60-3 apply to source 43-0007-60

E60-1. STATE ONLY: Hydrochloric acid emitted from this source shall not exceed 1.5 pounds per hour.

TAPCR 1200-03-07-.07(2)

Compliance Method: The water flow to the HCl eductor shall be read every shift (a shift is typically up to 12-hours in length) when the source is in operation. Two (2) flow rate readings per shift shall be recorded in a log to be maintained at the facility to ensure a minimum of 30 gallons per minute water flow rate to the eductor on a daily average. If this source is not operating, no flow rate readings are required.

E60-2. The combined maximum throughput for all three tanks shall not exceed 3,000 gallons per minute. Any increase above this rate will require a permit modification.

TAPCR 1200-03-09-.03(8), operating permit no. 044762P

Compliance Method: Compliance with this condition shall be assured by annual certification, as required in **Condition E2(b)**.

E60-3. Visible emissions from this source shall not exhibit greater than 20% opacity, except for an aggregate of no more than five minutes in any one hour period, and no more than 20 minutes in any 24-hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2 (aggregate count). TAPCR 1200-03-05-.01(1)

Compliance method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 (amended on September 11, 2013) that is enclosed as Attachment 1. Reports and certifications shall be submitted in accordance with **Condition E2** of this permit.

TAPCR 1200-03-09-.02(11)(e)1(iii)

43-0007-61

Source Description: Coke Unloading and Storage System: Discharge of coke from conveyor inside of unloading building; transfer of coke from building by conveyor and bucket elevator system to two storage silos; bag filter control for coke unloading and transfer system; fabric filter dust socks control on silo vents. Material captured by filters is returned to process. From the silos coke is conveyed to the chlorinators.

Conditions E61-1 through E63-3 apply to source 43-0007-61

E61-1. Input capacity for this source shall not exceed 200 tons per hour. Any increase above this process rate will require a construction permit.

TAPCR 1200-03-09-.03(8), operating permit no. 036050P

Compliance Method: Compliance with this condition shall be assured by annual certification, as required in **Condition E2(b)**.

E61-2. Particulate matter emitted from this source shall not exceed 5.5 pounds per hour.

TAPCR 1200-03-07-.01(5), agreement letter dated February 7, 1989

Compliance Method for Baghouse 61A: Coke unloading and transfer system baghouse shall be inspected monthly for leaks to verify the integrity of the baghouse housing and filter bags. The results of these inspections shall be recorded in a log to be maintained at the facility.

Compliance Method for Baghouses 61B and 61C: Fabric filter dust socks on silo vents shall be inspected annually for leaks to verify the integrity of each filter dust sock. The results of these inspections shall be recorded in a log to be maintained at the facility.

Compliance Method for Baghouses 61A, 61B and 61C: The control devices shall be in operation when the equipment controlled by the control devices is in operation. In the event of malfunction/ failure of the control devices, the operation of the source shall be regulated by TAPCR 1200-03-20 (Malfunctions, Startups, and Shutdowns).

TAPCR 1200-03-09-.02(11)(e)1(iii)

E61-3. Visible emissions from this source shall not exhibit greater than 20% opacity, except for an aggregate of no more than five minutes in any one hour period, and no more than 20 minutes in any 24-hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2 (aggregate count). TAPCR 1200-03-05-.01(1)

Compliance method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 (amended on September 11, 2013) that is enclosed as Attachment 1. Reports and certifications shall be submitted in accordance with **Condition E2** of this permit.

TAPCR 1200-03-09-.02(11)(e)1(iii)

43-0007-62	Source Description: Chlorine Unloading Scrubber: One (1) packed column caustic scrubber will be used to control chlorine emissions resulting from chlorine railcar unloading and liquid chlorine storage handling activities. Chlorine unloading from barges has been discontinued.
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Condition E62-1 applies to source 43-0007-62
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E62-1. STATE ONLY: Chlorine (Cl₂) emitted from this source shall not exceed 1 ton per year.

TAPCR 1200-03-07-.07(2)

Compliance Method: Compliance with this condition shall be assured by the following periodic monitoring program:

- A minimum scrubbing liquor pH of 7.0 shall be maintained on a daily average from the two pH readings per shift.
- A minimum scrubber liquor flow of 95 gallons per minute shall be maintained on a daily average from the two flow readings per shift (a shift is typically up to 12 hours in length).
- Two pH and two flow rate readings per shift shall be recorded in a log to be maintained at the site location and made available to a representative of the Division. The readings shall not be made within one hour of each other. If this source is not operating, no flow rate or pH readings are required. All data must be entered into the log no later than seven days from the end of the day on which the readings were taken.

43-0007-63	Source Description: Spray Dryer #3: Titanium dioxide slurry is fed into a natural gas fired spray dryer; dry titanium dioxide is separated from the air in a product recovery chamber (baghouse); combustion gas and process exhaust vent stack. Dryer nominal heat input capacity 120.0 million Btu/hr.
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Conditions E63-1 through E63-7 apply to source 43-0007-63

E63-1. Maximum fuel usage for this source shall not exceed 1051.2 million cubic feet per year and only natural gas shall be used as fuel for this source.

TAPCR 1200-03-09-.01(1)(d), construction permit no. 947789P

Compliance Method: A log of the monthly fuel usage for this source must be maintained at the facility.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E63-2. Particulate matter emitted from this source is subject to the following limit:

Hourly PM Emission Limit	Basis	Rule
2.5 lb/hr pm	Agreement from application dated June 5, 2014	TAPCR 1200-03-07-.01(5)

Compliance Method: Compliance is assured by maintaining a minimum pressure drop for the product recovery device (baghouse) of 0.4 inches of water. This parameter shall be measured and recorded for each unit twice each shift (a shift is typically up to 12-hours in length) in a log when the process is operating. Compliance shall be determined on a daily average basis. Days when the process is not operating shall be noted in the log.

For lower pressure drop reading(s) resulting from replacement of bags, the permittee shall record the deviation(s) as such in their daily records. Due allowance will be made for lower pressure drop reading(s) which follow replacement of bags provided the permittee establishes to the satisfaction of the Technical Secretary that these lower readings resulted from the replacement of bags.

The product recovery device must be inspected at least once per calendar year. Results of the inspection must be recorded and kept available for inspection by a representative of the Division.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E63-3. Sulfur dioxide emitted from this source shall not exceed 0.1 pounds per hour.

TAPCR 1200-03-14-.01(3)

Compliance Method: Assurance of compliance for the sulfur dioxide emission limit is based upon the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
Sulfur dioxide	0.6
Data from AP-42, Table 1.4-2 (enclosed as Attachment 2)	

TAPCR 1200-03-09-.02(11)(e)1(iii)

E63-4. Volatile organic compounds (VOC) emitted from this spray dryer shall not exceed 11 tons during any one month.

TAPCR 1200-03-07-.07(2) and information contained in the application dated June 5, 2014

Compliance Method: Assurance of compliance for the volatile organic compounds (VOC) emission limit is based upon the analysis of stack results on Table I-3 Attachment I Page 5 of the permittee's June 5, 2014 permit application, which indicates the VOC emission rate from Spray Dryer #3 will not exceed 29 pounds per hour. The maximum VOC emission rate shall be calculated monthly by the equation:

Monthly VOC emission rate = (monthly hours of production at this source) x (29 pounds of VOC per hour) / (2000 pounds per ton). These calculations shall be recorded in a log maintained at the facility.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E63-5. The following emission factors shall be used to determine emissions of Nitrogen oxides (NO_x) and Carbon monoxide (CO) from this source.

Compliance Method: Assurance of compliance for the sulfur dioxide emission limit is based upon the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
Nitrogen oxides	100

Carbon monoxide

84

Data from AP-42, Tables 1.4-1 and 1.4-2 (enclosed as Attachment 2).

TAPCR 1200-03-09-.02(11)(e)1(iii) November 22, 2017

- E63-6.** Visible emissions from this source shall not exceed 10% opacity as determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average).

TAPCR 1200-03-09-.03(8) and 40 CFR 60.732(b)

Compliance Method: Compliance with this condition shall be determined by the procedures of the Division's Opacity Matrix dated September 11, 2013 (enclosed as Attachment 1). If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

Based on the hourly particulate emission rate determined from the October 14, 2012 testing and utilizing unlimited hours of operation, an annual particulate emission rate of 3.0 tons can be calculated. Consistent with EPA Applicability Determination #9700071 (January 30, 1997) this source is exempt from the opacity monitoring requirement set forth in 40 CFR 60.734(a) and the daily visible emission reading requirement set forth in 40 CFR 60.734(b).

TAPCR 1200-03-09-.02(11)(e)1(iii)

- E63-7.** This process shall comply with all applicable provisions of 40 CFR 60 Subpart UUU (Standards of Performance for Calciners and Dryers in Mineral Industries). This rule is found at Attachment 3 of this permit. This includes the 0.025 grain per dry standard cubic foot particulate matter limit and the 10% opacity limit at **Condition E63-6** of this permit.

TAPCR 1200-03-09-.03(8) and 1200-03-16-.74

43-0007-64

Source Description: Pilot Plant Dryer: When not being used for experimental/developmental testing (R&D facility), this pilot plant will be used to make saleable product (production facility). Dryer maximum heat input is 4.5 million Btu/hr. NSPS Subpart UUU. The product collector is a baghouse.

Conditions E64-1 through E64-7 apply to source 43-0007-64

- E64-1.** Particulate matter emitted from this source shall not exceed 0.057 gram per dry standard cubic meter of exhaust gas (equivalent to 0.025 grain/dscf of exhaust gas) and 0.5 lb/hr. These limits shall apply whether the dryer is functioning as an experimental pilot plant or as a production facility.

TAPCR 1200-03-16-.74 and 40 CFR §60.732(a)

Compliance Method: Compliance shall be assured as follows:

- (1) **Pressure Drop:** Compliance is assured by maintaining a minimum pressure drop for the Product Recovery device (baghouse) of 1.1 inches of water. This parameter shall be measured and recorded for each unit twice each shift (a shift is typically up to 12-hours in length) in a log when the process is operating. Compliance shall be determined on a daily average basis. Days when the process is not operating shall be noted in the log.

For lower pressure drop reading(s) resulting from replacement of bags, the permittee shall record the deviation(s) as such in their daily records. Due allowance will be made for lower pressure drop reading(s) which follow replacement of bags provided the permittee establishes to the satisfaction of the Technical Secretary that these lower readings resulted from the replacement of bags.

- (2) **Recordkeeping:** This unit may operate as a Research and Development (R&D) unit or it may operate to produce saleable product. The permittee shall maintain a log denoting in which operating mode the unit is running (Production or R&D). In accordance with TAPCR 1200-03-09-.02(11)(e)1(ix), the source, contemporaneously with making a

change from one operating scenario to another, shall record in a log at the permitted facility the scenario under which it is operating. Days when the source is not operating shall be noted. All data, including all required calculations, must be entered in the log no later than 7 days from the end of the day for which the data is required.

TAPCR 1200-03-09-.02(11)(e)1(iii), TAPCR 1200-03-10-.02(2)(a)

E64-2. Only natural gas shall be used as fuel for this source.

TAPCR 1200-03-09-.03(8)

Compliance Method: Compliance with this condition shall be assured by annual certification, as required in **Condition E2(b)**.

E64-3. Sulfur dioxide (SO₂) emitted from this source shall not exceed 0.1 lb/hr.

TAPCR 1200-03-14-.03(5)

Compliance Method: Compliance with this limitation is based on compliance with **Condition E64-2** and use of the emission factor for calculating SO₂ emissions from natural gas combustion contained in Table 1.4-2 of AP-42, Sec. 1.4, dated 7/98 (Attachment 2).

E64-4. Volatile organic compounds (VOC) emitted from this source shall not exceed 14 tons during all intervals of 12 consecutive months.

TAPCR 1200-03-07-.07(2) and information contained in the application dated June 5, 2014

Compliance Method: Assurance of compliance for the volatile organic compounds (VOC) emission limit is based upon the analysis of stack results on Table I-3 Attachment I Page 5 of the permittee's June 5, 2014 permit application, which indicates the VOC emission rate from the Pilot Plant Spray Dryer will not exceed 3 pounds per hour. Assurance of compliance for the volatile organic compounds (VOC) emission limit for this source (43-0007-64) is determined monthly, based upon the annual VOC emissions rate for the previous 12 months, which shall be calculated using the following steps:

1. Calculate VOC emissions during the previous month as follows: monthly VOC emission rate = (monthly hours of production at this source) x (maximum pounds of VOC per hour emitted) / (2,000 pounds per ton).
2. Calculate the VOC emissions during the previous 12-month period by adding the monthly VOC emission rate calculated above, to the sum of the monthly VOC emissions for the previous eleven (11) months.

These calculations shall be recorded in a log to be maintained at the facility.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E64-5. Emissions of carbon monoxide (CO) and nitrogen oxides (NO_x) from this source shall not exceed the following limitations:

<u>Pollutant</u>	<u>Limitation</u>
CO	0.37 lb/hr
NO _x	0.44 lb/hr

TAPCR 1200-03-07-.07(2)

Compliance Method: Compliance with these limitations is based on compliance with **Condition E64-2** and use of the emission factors for calculating CO and NO_x emissions from natural gas combustion contained in Tables 1.4-1 and 1.4-2 of AP-42, Sec. 1.4, dated 7/98 (enclosed as Attachment 2).

E64-6. Visible emissions from this source shall not exhibit greater than ten percent (10%) opacity as determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average).

TAPCR 1200-03-16-.74 and 40 CFR §60.732(b)

Compliance Method: Compliance with this opacity limitation shall be certified through utilization of the Division's Opacity Matrix dated June 18, 1996 using EPA Method 9 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

Based on the particulate emission rate of 0.028 lb/hr determined from the May 1, 2008 testing and utilizing unlimited hours of operation, an annual particulate emission rate of 0.13 tons can be calculated. Consistent with EPA Applicability Determination #9700071 (January 30, 1997) this source is exempt from the opacity monitoring requirement set forth in 40 CFR 60.734(a) and the daily visible emission reading requirement set forth in 40 CFR §60.734(a).

E64-7. This process shall comply with all applicable provisions of 40 CFR 60 Subpart UUU—Standards of Performance for Calciners and Dryers in Mineral Industries, including, but not limited to, those requirements specified in this permit. This rule is found at Attachment 3 of this permit. This includes the 0.025 grain per dry standard cubic foot particulate matter limit and the 10% opacity limit at **Condition E64-6** of this permit.

TAPCR 1200-03-09-.03(8) and 1200-03-16-.74

43-0007-67

Source Description: Iron Co-product Production Facility: Reaction of iron chlorides with soda ash to form iron carbonate and sodium chloride; (2) soda ash storage silos and bagfilter, reactor with H₂S scrubber, HCl storage tank, salt dryer with scrubber. Salt dryer nominal heat input capacity 7.6 million Btu/hr. Steam venting to a thermojet vent stack in lieu of steam compressors.
SM-PSD

Conditions E67-1 through E67-12 apply to source 43-0007-67

E67-1 (SM1). Particulate matter emitted from the controlled stack emission points (see description below) at this source shall not exceed 3.42 lb/hr (daily average). Particulate matter emitted from controlled (stack) sources and fugitive sources combined at this process shall not exceed 174 tons per consecutive 12-month period, and PM₁₀ emitted from controlled (stack) sources and fugitive sources combined at this process shall not exceed 58 tons per consecutive 12-month period TAPCR 1200-03-07-.01 and agreement dated July 14, 2014 and application dated August 14, 2017.

Compliance Method: The permittee shall comply with the PM and H₂S CAM plans for the above sources (as found at Attachment 4).

Compliance with the annual PM and PM₁₀ emission limits will be based upon combining the calculated actual and potential emissions from sources within EP67 during each 12-month period. Each month, actual fugitive PM and PM₁₀ emissions during each month will be calculated from transferring sludge to the landfill, and potential PM and PM₁₀ emissions during each month will be calculated from all other EP67 sources. Emissions during each consecutive 12-month period will be calculated by adding the monthly PM and PM₁₀ emission rate to the sum of the total monthly PM and PM₁₀ emissions for the previous 11 months. These calculations shall be recorded in a log to be maintained at the facility.

Compliance Method for Fugitive Emissions

- (1) The soda ash handling system, enclosed salt conveying system, and iron carbonate sludge transport and landfilling operations shall be maintained, kept in good operating condition, and inspected semiannually to ensure compliance with the applicable particulate matter limits. Documentation of the semiannual inspections and any maintenance performed shall be kept on site for a period of not less than five years.
- (2) Monthly records shall be maintained of the amount of soda ash unloaded, solid salt conveyed to the salt plant, and iron carbonate sludge landfilled. All data, including all required calculations, must be entered in the log no later than 30 days from the end of the month for which the data is required. The log must be maintained at the source location and kept available for inspection by the Technical Secretary or his representative. This log must be retained for a period of not less than five years.

E67-2. Fugitive emissions from this source shall be controlled as specified in Rule 1200-03-08-.01. Specifically, no person shall cause, suffer, allow, or permit fugitive dust to be emitted in such manner to exceed five minutes per hour or 20 minutes per day as to produce a visible emission beyond the property line of the property on which the emission originates, excluding malfunction of equipment as provided in Chapter 1200-03-20. Fugitive emissions from this source shall be determined by Tennessee Visible Emissions Evaluation Method 4 as adopted by the Tennessee Air Pollution Control Board on April 16, 1986.

E67-3. Sulfur dioxide emitted from this source (43-0007-67) shall not exceed 0.035 pounds per hour (0.15 tons per year).

TAPCR 1200-03-09-.02(11)(e)1(iii), TAPCR 1200-03-14-.01(3)

Compliance Method: Assurance of compliance for the sulfur dioxide emission limit is based upon the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
Sulfur dioxide	0.6
Data from AP-42, Table 1.4-2 (enclosed as Attachment 2)	

E67-4. Nitrogen oxides (NO_x) emitted from this source (43-0007-67) shall not exceed 5.76 pounds per hour (25.2 tons per year).

TAPCR 1200-03-07-.07(2)

Compliance Method: Assurance of compliance for the nitrogen oxides emission limit is based upon the following emission factors for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factors (pounds/million cubic feet gas)</u>
Nitrogen oxides	60 for salt dryer

Data from the calculations on page 243 and 253 of the permittee's June 26, 1997 permit application. Emission factors based upon salt dryer design specifications.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E67-5. Volatile organic compounds (VOC) emitted from this source (43-0007-67) shall not exceed 0.32 pounds per hour (1.4 tons per year). TAPCR 1200-03-07-.07(2)

Compliance Method: Assurance of compliance for the volatile organic compounds (VOC) emission limit is based upon the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
VOC	5.5
Data from AP-42, Table 1.4-2 (enclosed as Attachment 2)	

TAPCR 1200-03-09-.02(11)(e)1(iii)

E67-6. Carbon monoxide emitted from this source (43-0007-67) shall not exceed 16.0 pounds per hour (70.1 tons per year).

TAPCR 1200-03-07-.07(2)

Compliance Method: Assurance of compliance for the carbon monoxide (CO) emission limit is based upon the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
CO	150 for salt dryer
Data from manufacturers	

TAPCR 1200-03-09-.02(11)(e)1(iii)

E67-7. Visible emissions from this source, except for the storage silos identified in **condition E67-8** and the thermojet vent stack identified in **condition E67-11**, shall not exceed 20% opacity as determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average).

TAPCR 1200-03-05-.03(6)

Compliance Method: Compliance with this condition shall be determined by the procedures of the Division's Opacity Matrix dated September 11, 2013 (enclosed as Attachment 1).

TAPCR 1200-03-09-.02(11)(e)1(iii)

E67-8. Visible emissions from the two storage silos (soda ash raw material) shall not exceed 7.5 % opacity as determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average).

TAPCR 1200-03-05-.01(3), agreement letter dated June 9, 1998

Compliance Method: Compliance with this condition shall be determined by the procedures of the Division's Opacity Matrix dated September 11, 2013 (Attachment 1).

TAPCR 1200-03-09-.02(11)(e)1(iii)

E67-9. Reserved

E67-10. Only natural gas shall be used as fuel for this source.

TAPCR 1200-03-09-.01(1)(d), construction permit no. 949396P

Compliance Method: Compliance with this condition shall be assured by annual certification, as required in **Condition E2(b)**.

E67-11. Visible emissions from the thermojet vent stack shall not exceed 7.5 % opacity as determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average).

TAPCR 1200-03-05-.01(3), agreement letter dated May 29, 1998

Compliance Method: Compliance with this condition shall be determined by the procedures of the Division's Opacity Matrix dated September 11, 2013 (enclosed as Attachment 1). If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E67-12 (SM1). Hydrogen sulfide (H₂S) emitted from this source shall not exceed 2.26 pounds per hour (9.9 tons per year).

TAPCR 1200-03-07-.01(5) and application/agreement of June 5, 2014

Compliance Method: Compliance with this condition shall be assured by compliance with the particulate monitoring CAM plan specified at **Condition E67-1** (Attachment 4).

For purposes of compliance verification, the permittee shall note and record those time periods as identified above when flow readings or pH readings are not required.

43-0007-68

Source Description: Two Toluene Storage Tanks: 30,000 gallons capacity each. NSPS Subpart Kb does not affect vessels between 75 and 151 m³ with a maximum true vapor pressure of less than 15.0 kPa. The approximate volume of these units is 113.6 cubic meters each and maximum true vapor pressure for toluene is less than 15.0 kPa. Therefore, 40 CFR 60 Subpart Kb for VOL Storage Vessels does not apply.

Conditions E68-1 through E68-5 apply to source 43-0007-68

E68-1(AA1). Volatile organic compound (toluene) emissions from this source shall not exceed 1.7 tons per year.

TAPCR 1200-03-07-.07(2)

Compliance Method: Assurance with this emissions limit shall be based upon the calculation of emissions by the most recent AP-42 methodology using data from the toluene receipt log of **condition E68-3**. This calculation shall be performed on a yearly basis.

E68-2. The following storage tanks are identified with this source (43-0007-68):

<u>Tank I.D. No.</u>	<u>Contents*</u>	<u>Capacity (Gallons)</u>
1	Toluene	30,000
2	Toluene	30,000

E68-3. A log shall be maintained to assure compliance with the receipt of a maximum of 3,900,000 gallons per year of toluene.

TAPCR 1200-03-10-.02 (2)(a)

E68-4. No changes in the tank contents and/or annual throughput shall be made without the prior approval of the Technical Secretary. Use of a material that is subject to NSPS Subpart Kb will require a Significant Modification to this permit.

TAPCR 1200-03-09-.03(9), operating permit no. 044940P

E68-5. The permittee shall comply with all applicable provisions of 40 CFR 63 Subpart EEEE—National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline). The permittee shall comply with all applicable notification, recordkeeping, and reporting requirements for emission sources identified in 40 CFR §63.2338 (storage tanks and loading racks) that do not require control under 40 CFR 63 Subpart EEEE. This includes the following provisions:

The permittee must submit a subsequent compliance report according to the schedule in 40 CFR §63.2386(b) whenever any of the events as indicated below occur, as applicable:

- (1) Any storage tank or transfer rack became subject to control under this subpart EEEE; or
- (2) Any storage tank equal to or greater than 18.9 cubic meters (5,000 gallons) became part of the affected source but is not subject to any of the emission limitations, operating limits, or work practice standards of this subpart; or
- (3) Any transfer rack (except those racks at which only unloading of organic liquids occurs) became part of the affected source; or
- (4) Any of the information required in §63.2386(c)(1), §63.2386(c)(2), or §63.2386(c)(3) has changed.

40 CFR §63.2343(b)(2)

For each storage tank that meets the conditions identified in paragraph 40 CFR §60.4243(b), the permittee must keep documentation, including a record of the annual average true vapor pressure of the total organic HAP in the stored organic liquid, that verifies the storage tank is not required to be controlled under subpart EEEE. The documentation must be kept up-to-date and must be in a form suitable and readily available for expeditious inspection and review according to §63.10(b)(1), including records stored in electronic form in a separate location.

40 CFR §63.2343(b)(3)

For each transfer rack that meets the conditions identified in 40 CFR §63.2343(c), the permittee must keep documentation, including the records specified in §63.2390(d), that verifies the transfer rack is not required to be controlled under this subpart.

The documentation must be kept up-to-date and must be in a form suitable and readily available for expeditious inspection and review according to §63.10(b)(1), including records stored in electronic form in a separate location.

§63.2390(d) specifies that the permittee must keep records of the total actual annual facility-level organic liquid loading volume as defined in 40 CFR §63.2406 through transfer racks to document the applicability, or lack thereof, of the emission limitations in table 2 to 40 CFR 63 subpart items 7 through 10.

40 CFR §63.2343(c)(3)

For the storage tanks and transfer racks identified in §63.2338 that do not require control under subpart EEEE, the permittee must keep all records identified in §63.2343. For the storage tanks and transfer racks identified in §63.2338 that do not require control under subpart EEEE:

- (1) The permittee must keep all records identified in 40 CFR 63 subpart SS and in table 12 (Applicability of General Provisions) to 40 CFR 63 subpart EEEE this subpart that are applicable, including records related to notifications and reports, SSM, performance tests, CMS, and performance evaluation plans; and
- (2) Records must be in a form suitable and readily available for expeditious inspection and review according to §63.10(b)(1), including records stored in electronic form at a separate location.

As specified in §63.10(b)(1), files of all information (including all reports and notifications) must be kept for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. Each record must be kept on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1). You may keep the records may be kept off site for the remaining 3 years.

TAPCR 1200-03-09-.03(8), 40 CFR §63.2390 (a) and (b), 40 CFR §63.2394 (a) through (c)

43-0007-70	Source Description: <u>Non-Contact Heater-L101</u>: non-contact natural gas fired process heater for heating oxygen for further processing; heater nominal heat input capacity 19.0 million Btu/hr. MACT Subpart DDDDD
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Conditions E70-1 through E70-7 apply to source 43-0007-70

E70-1. The maximum heat input to this source shall not exceed 19 MMBtu/hr and only natural gas shall be used as fuel for this source.

TAPCR 1200-03-09-.03(8), operating permit no. 045893F

Compliance Method: A log of the monthly natural gas fuel usage and monthly operating hours for this source shall be maintained at the facility.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E70-2. Particulate matter emitted from this source shall not exceed 0.34 pounds per hour.

TAPCR 1200-03-06-.01(7) and agreement letter dated August 29, 2017.

Compliance Method: Compliance for the particulate emission standard is based on the records in **Condition E70-1** and upon the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds per million cubic feet gas)</u>
Particulate matter	7.6
Data from AP-42, Table 1.4-2 (enclosed as Attachment 2)	

TAPCR 1200-03-09-.02(11)(e)1(iii)

E70-3. Sulfur dioxide emitted from this source (43-0007-70) shall not exceed 1.14 pounds per hour.

TAPCR 1200-03-14-.01(3) and agreement letter dated August 29, 2017.

Compliance Method: Compliance for the sulfur dioxide emission limit is based on the records in **Condition E70-1** and upon the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
Sulfur dioxide	0.6
Data from AP-42, Table 1.4-2 (enclosed as Attachment 2)	

TAPCR 1200-03-09-.02(11)(e)1(iii)

E70-4. Nitrogen oxides (NO_x) emitted from this source (43-0007-70) shall not exceed 1.90 pounds per hour.

TAPCR 1200-03-06-.03

Compliance Method: Compliance for the nitrogen oxides emission limit is based on the records in **Condition E70-1** and upon the following emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
Nitrogen oxides	100

Data from calculations on page 289 of the permittee’s June 26, 1997 permit application. Emission factor per heater manufacturer.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E70-5. Volatile organic compounds (VOC) emitted from this source shall not exceed 0.10 pounds per hour.

TAPCR 1200-03-06-.03

Compliance Method: Assurance of compliance for the volatile organic compounds (VOC) emission limit is based upon the on the records in **Condition E70-1** and following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
VOC	5.5
Data from AP-42, Table 1.4-2 (enclosed as Attachment 2)	

TAPCR 1200-03-09-.02(11)(e)1(iii)

E70-6. Carbon monoxide emitted from this source shall not exceed 1.6 pounds per hour.

TAPCR 1200-03-06-.03

Compliance Method: Assurance of compliance for the carbon monoxide (CO) emission limit is based upon the records in **Condition E70-1** and the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
CO	84
Data from AP-42, Table 1.4-1 (enclosed as Attachment 2)	

TAPCR 1200-03-09-.02(11)(e)1(iii)

E70-7(MM1). The permittee must meet the applicable work practice standards in Table 3 to 40 CFR 63 Subpart DDDDD INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL BOILERS AND PROCESS HEATERS for each affected unit designed to burn gas 1 type fuel in accordance with 40 CFR §63.7500, as specified below:

Type of Unit	Associated Requirement
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A boiler or process heater without a continuous oxygen trim system and with heat input capacity of 10 million Btu per hour or greater for units designed to burn Gas 1.	Conduct a tune-up of the boiler or process heater annually in accordance with § 63.7540
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The testing, recordkeeping and reporting requirements are found at **Condition E2(d)** of this permit.

TAPCR 1200-03-09-.03(8) and 40 CFR §63.7550

43-0007-71	Source Description: <u>Non-Contact Heater-L1Ti</u>: non-contact natural gas fired process heater for heating titanium tetrachloride for further processing; heater nominal heat input capacity 40.0 million Btu/hr. MACT Subpart DDDDD
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Conditions E71-1 through E71-7 apply to source 43-0007-71

E71-1. The maximum heat input to this source shall not exceed 40 million Btu/hour and only natural gas shall be used as fuel for this source.

TAPCR 1200-03-09-.03(8) and TAPCR 1200-03-09-.02(11)(e)1(iii), construction permit no. 943372F

Compliance Method: A log of the monthly natural gas fuel usage and monthly operating hours for this source shall be maintained at the facility.

E71-2. Particulate matter emitted from this source shall not exceed 1.03 pounds per hour.

TAPCR 1200-03-06-.01(7) and agreement letter dated August 29, 2017.

Compliance Method: Assurance of compliance for the particulate emission standard is based upon the records in **Condition E71-1** and the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds per million cubic feet gas)</u>
Particulate matter	7.6
Data from AP-42, Table 1.4-2 (enclosed as Attachment 2)	

TAPCR 1200-03-09-.02(11)(e)1(iii)

E71-3. Sulfur dioxide emitted from this source shall not exceed 1.14 pounds per hour.

TAPCR 1200-03-14-.01(3) and agreement letter dated August 29, 2017.

Compliance Method: Assurance of compliance for the sulfur dioxide emission limit is based upon the records in **Condition E71-1** and the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
Sulfur dioxide	0.6
Data from AP-42, Table 1.4-2 (enclosed as Attachment 2)	

TAPCR 1200-03-09-.02(11)(e)1(iii)

E71-4. Nitrogen oxides (NO_x) emitted from this source shall not exceed 2.0 pounds per hour.

TAPCR 1200-03-06-.03

Compliance Method: Assurance of compliance for the nitrogen oxides emission limit is based upon the records in **Condition E71-1** and the following emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
Nitrogen oxides	50

Data from calculations on page 304 of the permittee's June 26, 1997 permit application. Emission factor is per heater manufacturer.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E71-5. Volatile organic compounds (VOC) emitted from this source shall not exceed 0.5 pounds per hour.

TAPCR 1200-03-06-.03

Compliance Method: Compliance for the volatile organic compounds (VOC) emission limit is based on the records in **Condition E71-1** and upon the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
VOC	5.5
Data from AP-42, Table 1.4-2 (enclosed as Attachment 2)	

TAPCR 1200-03-09-.02(11)(e)1(iii)

E71-6. Carbon monoxide emitted from this source shall not exceed 3.4 pounds per hour. TAPCR 1200-03-06-.03

Compliance Method: Compliance for the carbon monoxide (CO) emission limit is based on the records in **Condition E71-1** and upon the following EPA AP-42 emission factor for combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds/million cubic feet gas)</u>
CO	84
Data from AP-42, Table 1.4-1 (enclosed as Attachment 2)	

E71-7(MM1). The permittee must meet the applicable work practice standards in Table 3 to 40 CFR 63 Subpart DDDDD INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL BOILERS AND PROCESS HEATERS for each affected unit designed to burn gas 1 type fuel in accordance with 40 CFR §63.7500, as specified below:

Type of Unit	Associated Requirement
A boiler or process heater without a continuous oxygen trim system and with heat input capacity of 10 million Btu per hour or greater for units designed to burn Gas 1.	Conduct a tune-up of the boiler or process heater annually in accordance with § 63.7540

The testing, recordkeeping and reporting requirements are found at condition E2(d) of this permit.

TAPCR 1200-03-09-.03(8) and 40 CFR §63.7550

43-0007-72	Source Description: (3) Hydrochloric Acid (HCl) Tanks: Tanks HCL-35, HCL-36, and HCL-37; tank capacity 369,180 gallons each; HCl Tank Eductor (Wet Scrubber) for Control
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Conditions E72-1 through E72-5 apply to source 43-0007-72

E72-1. STATE ONLY: Annual throughput of 35 % by weight Hydrochloric acid shall not exceed 40.9 million gallons, or an equivalent volume based upon the acid concentration involved.

TAPCR 1200-03-09-.03(8), operating/ construction permit 741933P

E72-2. STATE ONLY: Hydrochloric acid (HCl) emitted from this source shall not exceed 0.62 pounds per hour from all tanks.

TAPCR 1200-03-07-.07(2)

E72-3. STATE ONLY: The exhaust gases shall be discharged unobstructed vertically upwards from a stack with an exit diameter of 6 inches and not less than 16 feet from the ground level.

TAPCR 1200-03-09-.03(8), operating/construction permit no. 741933P

E72-4. STATE ONLY: No changes in the tank contents and/or annual throughput shall be made without the prior approval of the Technical Secretary.

TAPCR 1200-03-09-.03(8), operating/construction permit no. 741933P

E72-5. STATE ONLY: A log of acid receipts or production shall be maintained at the facility.

TAPCR 1200-03-10-.02(2)(a), operating/construction permit no. 741933P

43-0007-75	Source Description: Fugitive Dust Scrubbers: Two (2) wet scrubbers used to control area-wide fugitive dust emissions for employee safety purposes.
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Condition E75-1 applies to source 43-0007-75

E75-1 (SM1). Particulate matter emitted from this source shall not exceed 3.4 pounds per hour.

TAPCR 1200-03-07-.01(5) and the agreement letter dated November 7, 2006

Compliance Method: The permittee shall comply with the particulate CAM plan for this source found at Attachment 4.

43-0007-79	Source Description: Diesel-fuel Engine powering back-up Leachate Pumps for Landfill rated at 107 hp (0.75 MMBtu/hr heat input) Non-emergency unit NSPS Subpart IIII
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Conditions E79-1 through E79-7 apply to source 43-0007-79

E79-1. Stationary reciprocating internal combustion engines are subject to regulation under 40 CFR part 63, subpart ZZZZ, NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES. The permittee shall meet the requirements of 40 CFR part 63, subpart ZZZZ, by meeting the requirements of 40 CFR part 60, subpart IIII. No further requirements apply for these engines under 40 CFR part 63, subpart ZZZZ.

40 CFR §63.6590(c) and TAPCR 1200-03-09-.03(8)

E79-2. New (manufactured after April 1, 2006) stationary compression ignition engines are subject to regulations under 40 CFR Part 60, Subpart IIII, STANDARDS OF PERFORMANCE FOR STATIONARY COMPRESSION IGNITION INTERNAL COMBUSTION ENGINES including all applicable emission limitations, notifications, compliance options, records and reports, including, the requirements in **Conditions E79-3 through E79-7** that follow.

The following non-emergency unit is subject to Subpart IIII:

Pt. 43-0007	Description	Manufacture/ installation date	Rated Output (hp)	Heat Input (MMBtu/hr)
79	Diesel fired engine driving a Power Prime HH-125C for leachate / landfill	Model Year 2015	107	0.75

40 CFR part 60 subpart IIII, TAPCR 1200-03-09-.03(8)

E79-3. The permittee of 2007 model year and later non-emergency stationary CI ICE with a displacement of less than **30** liters per cylinder, a maximum engine power less than or equal to 2,237 KW (3,000 HP), must comply with the emission standards for the same model year and maximum engine power in 40 CFR §89.112 and 40 CFR §89.113 40 CFR 1039.101, 40 CFR 1039.102, 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, and 40 CFR 1039.115, as applicable, for all pollutants, for the same model year and maximum engine power. Applicable emission limits are given in the table below.

Pollutant	Emission Limit, grams per kilowatt-hour	Reference
Particulate	0.04	Table 2 of §1039.101- Tier 4 FEL Caps after the 2014 Model Year
Nitrogen Oxides	0.40	Table 1 of §1039.101- Tier 4 Exhaust Emission Standards after the 2014 Model Year
Nonmethane Hydrocarbon	0.19	Table 1 of §1039.101- Tier 4 Exhaust Emission Standards after the 2014 Model Year
Carbon Monoxide	5.0	Table 1 of §1039.101- Tier 4 Exhaust Emission Standards after the 2014 Model Year

40 CFR §60.4204(b) and 40 CFR §60.4201(a)

E79-4. The permittee must operate and maintain the non-emergency stationary ICE and control device (Diesel oxidation/selective catalytic reduction system) to achieve the emission standards as required in **Condition E79-3** over the entire life of the engine.

40 CFR §60.4206

E79-5. The permittee must use diesel fuel that meets the requirements of 40 CFR §60.4207(b) and 40 CFR §80.510(b) & (c). The diesel fuel used for this source is subject to the following per-gallon standards:

A sulfur content of 15 parts per million (ppm) maximum and cetane index or aromatic content, as follows: a minimum cetane index of 40; or a maximum aromatic content of 35 volume percent.

The permittee shall maintain purchase receipts, vendor certifications, material safety data sheets, or other records to demonstrate that all fuel purchased for this source meets the requirements of this condition (any fuel labeled as ultra-low sulfur non-highway diesel fuel or ultra-low sulfur highway diesel fuel meets these requirements). These records shall be made available to the Technical Secretary for inspection upon request. These records must be maintained for a period of at least five years from the purchase date.

TAPCR 1200-03-09-.02(11)(e)1 (iii)

E79-6. The permittee must comply by purchasing an engine certified to the emission standards in **Condition E79-3** for the same model year and maximum engine power. The permittee must do all of the following, except as permitted in **Condition E79-7**:

- (a) Install and configure the engine according to the manufacturer's emission-related specifications;
- (b) Operate and maintain the emergency stationary ICE and control device (Diesel oxidation/selective catalytic reduction system) according to the manufacturer's emission-related written instructions;
- (c) Change only those emission-related settings that are permitted by the manufacturer; and
- (d) Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply.

40 CFR §60.4211(a) and (c)

E79-7. If the stationary ICE and control device (if present) is not installed, configured, operated, and maintained according to the manufacturer's emission-related written instructions, or the emission-related settings are changed in a way that is not permitted by the manufacturer, the permittee must demonstrate compliance by the following:

Requirements for 100 – 500 HP Units

Keep a maintenance plan and records of conducted maintenance and, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions.

Conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after a change to emission-related settings in a way that is not permitted by the manufacturer.

40 CFR §60.4211(g)

43-0007-80 **Source Description:** Natural gas-fired Steam Superheater (5 MMBtu/hr heat input) MACT Subpart DDDDD

Conditions E80-1 through E80-4 apply to source 43-0007-80

E80-1. The heat input for this source shall not exceed 5 MMBtu/hr.

TAPCR 1200-03-09-.03(8)

Compliance Method: Compliance with this condition shall be assured by annual certification, as required in **Condition E2(b)**.

E80-2. Particulate emissions from this source shall not exceed 0.1 lb/MMBtu.

TAPCR 1200-03-06-0.2

Compliance Method: Compliance with this condition shall be assured by annual certification, as required in **Condition E2(b)**.

E80-3. Only natural gas shall be used as a fuel at this source.

TAPCR 1200-03-09-.03(8)

Compliance Method: Compliance with this condition shall be assured by annual certification, as required in **Condition E2(b)**.

E80-4(MM1). The permittee must meet the applicable work practice standards in Table 3 to 40 CFR 63 Subpart DDDDD INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL BOILERS AND PROCESS HEATERS, for each affected unit designed to burn gas 1 type fuel in accordance with 40 CFR §63.7500, as specified below:

Type of Unit	Associated Requirement
A boiler or process heater without a continuous oxygen trim system and with heat input capacity of less than or equal to 5 million Btu per hour for units designed to burn Gas 1.	Conduct a tune-up of the boiler or process heater every five years in accordance with § 63.7540

The testing, recordkeeping and reporting requirements are found at condition E2(d) of this permit.

TAPCR 1200-03-09-.03(8) and 40 CFR §63.7550

43-0007- 81 **Source Description:** Diesel-fuel Engine powering back-up Leachate Pumps for Landfill rated at 147 HP (1.03 MMBtu/hr heat input) - Non-emergency units. NSPS Subpart IIII

Conditions E81-1 through E81-7 apply to source 43-0007-81

E81-1. Stationary reciprocating internal combustion engines are subject to regulation under 40 CFR part 63, subpart ZZZZ, NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES. The permittee shall meet the requirements of 40 CFR part 63, subpart ZZZZ, by meeting the requirements of 40 CFR part 60, subpart IIII. No further requirements apply for these engines under 40 CFR part 63, subpart ZZZZ.

40 CFR §63.6590(c) and TAPCR 1200-03-09-.03(8)

- E81-2.** New (manufactured after April 1, 2006) stationary compression ignition engines are subject to regulations under 40 CFR Part 60, Subpart III, STANDARDS OF PERFORMANCE FOR STATIONARY COMPRESSION IGNITION INTERNAL COMBUSTION ENGINES including all applicable emission limitations, notifications, compliance options, records and reports, including, the requirements in **Conditions E81-3 through E81-7** that follow.

The following Non-Emergency units are subject to Subpart III:

Pt. 43-0007	Description	Manufacture/ installation date	Rated Output (hp)	Heat Input (MMBtu/hr)
81	Diesel fired engine driving a Power Prime HH-125C for leachate / landfill	Model Year 2009	147	1.03

40 CFR part 60 subpart III, TAPCR 1200-03-09-.03(8)

- E81-3.** The permittee of 2007 model year and later non-emergency stationary CI ICE with a displacement of less than **30** liters per cylinder, a maximum engine power less than or equal to 2,237 KW (3,000 HP), must comply with the emission standards for the same model year and maximum engine power in 40 CFR §89.112 and 40 CFR §89.113 40 CFR 1039.101, 40 CFR 1039.102, 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, and 40 CFR 1039.115, as applicable, for all pollutants, for the same model year and maximum engine power. Applicable emission limits are given in the table below. Compliance with this requirement is assured by compliance with **Condition E81-6**. The following requirements apply to Source 43-0007-81

Pollutant	Emission Limit (g/kWh)	Reference
Particulate	0.3	40 CFR 89.112
NMHC + NO _x	4.0	40 CFR 89.112
Carbon Monoxide	5.0	40 CFR 89.112

40 CFR §60.4204, §60.4201(a), and 40 CFR 89.112

- E81-4.** The permittee must operate and maintain the non-emergency stationary ICE to achieve the emission standards as required in **Condition E81-3** over the entire life of the engine.

40 CFR §60.4206

- E81-5.** The permittee must use diesel fuel that meets the requirements of 40 CFR §60.4207(b) and 40 CFR §80.510(b) & (c). The diesel fuel used for this source is subject to the following per-gallon standards:

A sulfur content of 15 parts per million (ppm) maximum and cetane index or aromatic content, as follows: a minimum cetane index of 40; or a maximum aromatic content of 35 volume percent.

The permittee shall maintain purchase receipts, vendor certifications, material safety data sheets, or other records to demonstrate that all fuel purchased for this source meets the requirements of this condition (any fuel labeled as ultra-low sulfur non-highway diesel fuel or ultra-low sulfur highway diesel fuel meets these requirements). These records shall be made available to the Technical Secretary for inspection upon request. These records must be maintained for a period of at least five years from the purchase date.

TAPCR 1200-03-09-.02(11)(e)1 (iii)

- E81-6.** The permittee must comply by purchasing an engine certified to the emission standards in **Condition E81-3** for the same model year and maximum engine power. The permittee must do all of the following, except as permitted in **Condition E81-7**:

- (a) Install and configure the engine according to the manufacturer's emission-related specifications;

- (b) Operate and maintain the emergency stationary ICE and control device (Diesel oxidation/selective catalytic reduction system) according to the manufacturer's emission-related written instructions;
- (c) Change only those emission-related settings that are permitted by the manufacturer; and
- (d) Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply.

40 CFR §60.4211(a) and (c)

E81-7. If the stationary ICE and control device (if present) is not installed, configured, operated, and maintained according to the manufacturer's emission-related written instructions, or the emission-related settings are changed in a way that is not permitted by the manufacturer, the permittee must demonstrate compliance by the following:

Requirements for 100 – 500 hp Units
Keep a maintenance plan and records of conducted maintenance and, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions.
Conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after a change to emission-related settings in a way that is not permitted by the manufacturer.

40 CFR §60.4211(g)

43-0007-84	<u>Diesel-Fired Emergency Stationary Compression Ignition (CI) Internal Combustion Engines (ICE)</u>
MM1	Caterpillar Model Year 2003, installed Sep. 2004 Rated Output HP 1,120 Heat Input 5.19 MMBtu/hr

Conditions E84-1 through E84-5 apply to this source.

E84-1. The following existing Emergency (built prior to June 12, 2006) stationary CI RICE is subject to 40 CFR Part 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, including applicable recordkeeping as referenced below.

Pt. 43-0007	Description	Manufacture/ Installation Date	Rated Output (hp)	Heat Input (MMBtu/hr)
84	ICE Caterpillar	2003/2004	1,120	5.19

40 CFR 63, Subpart ZZZZ and TAPCR 1200-03-09-.03(8)

E84-2. The permittee shall maintain a copy of the initial notification.

40 CFR Part 63 Subpart A, §63.9(b)(1)

E84-3. Particulate matter emitted from this source shall not exceed 0.6 pounds per million British thermal unit of heat input.

TAPCR 1200-03-06-.02(2)(b)

Compliance Method: Compliance with this emission limit shall be assured by compliance with **Conditions E84-1** of this permit and the emission factor of 0.000721 lb PM10/hp-hr from Ap-42 Table 3.3-1 .

E84-4. Sulfur dioxide (SO₂) emitted from this source shall not exceed 2.6 lb/hr.

TAPCR 1200-03-14-.03(5)

Compliance Method: Compliance with this emission limit shall be assured by compliance with **Conditions E84-5** of this permit and the emission factor of 0.00205 lb SO_x/hp-hr from Ap-42 Table 3.3-1.

E84-5. Only diesel fuel shall be used as fuel for this emergency engine. The sulfur content of the diesel fuel shall not exceed 0.05 percent by weight.

TAPCR 1200-03-14-.03(5)

Compliance Method: The permittee shall either obtain certification from the fuel oil supplier of the sulfur content (by weight) for each shipment of fuel oil, OR alternatively, obtain an annual statement from each fuel vendor that guarantees in advance that all fuel oil shipments will contain no more than or 0.05 percent sulfur by weight. This record shall be kept available for inspection by the Technical Secretary or his representative and be retained for a period of not less than two (2) years.

43-0007-86 and 87 Two (2) Diesel-Fired Emergency Stationary Compression Ignition (CI) Internal Combustion Engines (ICE)– Subject to the requirements of NESHAP Subpart ZZZZ

Conditions E86-1 through E86-13 apply to this source.

E86-1. The following existing Emergency stationary CI RICE (built prior to June 12, 2006) are subject to 40 CFR Part 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, including all applicable emission limitations, notifications, compliance options, records, and reports as referenced below.

The following Emergency units are subject to Subpart ZZZZ:

Pt. 43-0007	Description	Installation Date	Rated Output (hp)	Heat Input (MMBtu/hr)
86	ICE Clark Fire Pump (Diesel)	2002	235	1.64
87	ICE ONAN Diesel	1987	168	0.778
Total				2.418

40 CFR 63, Subpart ZZZZ and TAPCR 1200-03-09-.03(8)

E86-2. For each emergency stationary compression ignition RICE, the permittee shall:

- (a) Change oil and filter every 500 hours of operation or annually, whichever comes first; however, the permittee has the option to utilize an oil analysis program as described in 40 CFR §63.6625(i) or (j) in order to extend the specified oil change requirement.
- (b) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; and replace as necessary; and
- (c) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

If an emergency engine is operating during an emergency and it is not possible to shut it down in order to perform the management practice requirements as described in (a), (b), and (c) of this condition, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. The permittee must report any failure to perform the management practice on the schedule required and the Federal, State, or local law under which the risk was deemed unacceptable.

40 CFR §63.6602 and Table 2c(1)

E86-3. Each affected source that has obtained a Title V operating permit pursuant to 40 CFR Part 70 or 71 must report all deviations as defined in this subpart in the semiannual report required by 40 CFR §70.6(a)(3)(iii)(A) or 40 CFR §71.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to Table 7 of Subpart ZZZZ along with , or as part of, the semiannual monitoring

report required by 40 CFR §70.6(a)(3)(iii)(A) or 40 CFR §71.6(a)(3)(iii)(A), and the Compliance report includes all required information concerning deviations from any emission or operating limitation in this subpart, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.

40 CFR §63.6650(f)

E86-4. The permittee must be in compliance with the applicable emission limitations, operating limitations and other requirements in Subpart ZZZZ at all times. At all times the permittee must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Technical Secretary which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

40 CFR §63.6605

E86-5. The permittee must operate and maintain each engine and after-treatment control device (if any) according to the manufacturer's emission-related written instructions, or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

40 CFR §63.6625(e)(3)

E86-6. The permittee must install a non-resettable hour meter to each engine if one is not already installed.

40 CFR §63.6625(f)

E86-7. The permittee must minimize each engine's time spent at idle during startup and minimize each engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.

40 CFR §63.6625(h)

E86-8. The permittee must operate each emergency stationary RICE according to the requirements in (a) through (c) of this condition in order for the engines to be considered emergency stationary RICE under Subpart ZZZZ. Any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described (a) through (c) of this condition, is prohibited. If any engine is not operated according to the requirements in (a) through (c) of this condition, the engine will not be considered an emergency engine under Subpart ZZZZ and must meet all requirements for non-emergency engines.

(a) There is no time limit on the use of emergency stationary RICE in emergency situations.

(b) The permittee may operate each emergency stationary RICE for any combination of the purposes specified in (i) below for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by (c) below counts as part of the 100 hours per calendar year.

(i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Technical Secretary for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the permittee maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.

(c) The permittee (located at a major source of HAP) may operate each emergency stationary RICE for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing as provided in (b) above. The 50 hours per year for non-

emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

40 CFR §63.6640(f)

E86-9. The permittee must keep records of the maintenance conducted on each engine in order to demonstrate that the engine and after-treatment control device (if any) were operated and maintained according to the permittee's maintenance plan.

40 CFR §63.6655(e)

E86-10. If the emergency stationary RICE does not meet the standards that are applicable to non-emergency engines, the permittee must keep records of the hours of operation of the emergency engine that is recorded through the non-resettable hour meter. The permittee must document how many hours are spent for emergency operation; including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in **Condition E86-8(c)**, the permittee must also keep the following records of the non-emergency situation: the date, start time, and end time the engine was operated for these purposes.

40 CFR §63.6655(f)

E86-11. Particulate matter emitted from each engine listed above at this source shall not exceed 0.6 pounds per million British thermal unit of heat input.

TAPCR 1200-03-06-.02(2)(b)

Compliance Method: Compliance with this emission limit shall be assured by compliance with **Conditions E86-1 and E86-4** of this permit.

E86-12. Sulfur dioxide (SO₂) emitted from this source shall not exceed 1.22 lb/hr combined total for the identified units, combined.

TAPCR 1200-03-14-.03(5)

Compliance Method: Compliance with this emission limit shall be assured by compliance with **Conditions E86-1 and E86-13** of this permit.

E86-13. Only diesel fuel shall be used as fuel for the emergency engines. Otherwise, if 40 CFR 80.510(b) does not apply to these units, the sulfur content of the diesel fuel shall not exceed **0.05** percent by weight.

TAPCR 1200-03-14-.03(5)

Compliance Method: The permittee shall either obtain certification from the fuel oil supplier of the sulfur content (by weight) for each shipment of fuel oil, or alternatively, obtain an annual statement from each fuel vendor that guarantees in advance that all fuel oil shipments will contain no more than 0.5 percent sulfur by weight. This record shall be kept available for inspection by the Technical Secretary or their representative and be retained for a period of not less than five years.

43-0007-88	Source Description: Replacement Radio ICE – Kohler Propane-fueled Engine rated at 49 HP (0.34 MMBtu/hr heat input) Emergency Engine NSPS Subpart JJJJ
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Conditions E81-1 through E81-6 apply to source 43-0007-88

E88-1. The stated design power output capacity of the engine is 49 brake horsepower (bhp).

Compliance method: Compliance with this condition shall be assured by annual certification, as required in Condition E2(b).

E88-2. Particulate matter (PM) emitted from the engine shall not exceed 0.6 pounds per million British thermal units (MMBtu) of heat input (0.171 lb/hr). TAPCR 1200-03-06-.03(2).

Compliance method: Compliance is assured by consuming only propane at the rated capacity listed in **Condition E88-1**, and the emission factor for particulate matter from AP-42, Chapter 3.2, Natural Gas-fired Reciprocating Engines.

E88-3. Only propane shall be used as fuel for this source. TAPCR 1200-03-14-.03(5)

E88-4. The new (manufactured after January 1, 2009) emergency engine is subject to regulations under 40 CFR Part 60, Subpart JJJJ, Standards of Performance For Stationary Spark Ignition Internal Combustion Engines including all applicable emission limitations, notifications, compliance options, records, reports, etc. as referenced below in this condition. The permittee's engine identified below shall be in compliance with the following requirements (a) through (g) below:

Engine Model	Engine Model Year	Engine Power (hp)
Kohler : 25REZG	2013	49 (0.34 MMBtu/hr heat input)

(a) Pursuant to 40 CFR §60.4233 (c) and §60.4231 (c), the emergency engine must comply with the emission standards at 40 CFR §90.103 Table 1 Class II standards, as shown below. The permittee must operate and maintain the engine to achieve these emission standards over the entire life of the engine.

Maximum engine power	Manufacture date	HC+ NO _x (g/kW-hr)	CO (g/kW-hr)
49 hp	2013	13.4	519

(b) Monitoring for the emergency engine shall meet all applicable monitoring requirements specified in 40 CFR §60.4237(c), including the installation and use of a non-resettable hour meter (if required).

(c) Pursuant to 40 CFR §60.4243(a), the permittee will comply by purchasing an engine certified to the emission standards in **Condition E88-4(a)**. The engine must be operated and maintained according to the manufacturer's emission-related instructions. The permittee must keep records of conducted maintenance to demonstrate compliance. The permittee must also meet the requirements as specified in 40 CFR Part 1068, Subparts A through D, as applicable. If engine settings are adjusted according to and consistent with the manufacturer's instructions, the engine will not be considered out of compliance.

(d) Pursuant to 40 CFR §60.4243(d), the permittee must operate the emergency stationary ICE according to the following requirements. In order for the engine to be considered an emergency stationary ICE, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for **50** hours per year, as described below, is prohibited. If the engine is not operated according to the following requirements, the engine will not be considered an emergency engine and must meet all requirements for non-emergency engines.

- (1) There is no time limit on the use of this engine in emergency situations.
- (2) The permittee may operate this engine for any combination of the purposes specified in (i) below for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by **Condition E88-4(d)(3)** counts as part of the 100 hours per calendar year allowed by this **Condition E88-4(d)(2)**.
 - (i) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the permittee maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond **100** hours per calendar year.
- (3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in Condition E88-4(d)(2) above. Except as provided in (i) below, the

50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

- (i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:
 - (A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;
 - (B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
 - (C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
 - (D) The power is provided only to the facility itself or to support the local transmission and distribution system.
 - (E) The permittee identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the permittee.
- (f) Pursuant to §60.4243(f), if the emergency stationary ICE is not operated and maintained according to the manufacturer's written emission-related instructions, the permittee is required to perform initial performance testing as indicated in §60.4244, but the permittee is not required to conduct subsequent performance testing unless the engine is rebuilt or undergoes major repair or maintenance. A rebuilt stationary SI ICE means an engine that has been rebuilt as that term is defined in 40 CFR 94.11(a).
- (g) Pursuant to §60.4245(a), the permittee must keep records of (1) through (4) as follows:
 - (1) All notifications submitted to comply with this subpart and all documentation supporting any notification.
 - (2) Maintenance conducted on the engine.
 - (3) If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR Parts 90, 1048, 1054, and 1060, as applicable.
 - (4) If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), documentation that the engine meets the emission standards.

E88-5. The permittee shall keep a log of the number of operating hours for each calendar year, in a form that readily demonstrates compliance with **Condition E88-4(d)**. All data, including all required calculations, must be entered in the log no later than 30 days from the end of the calendar year for which the data is required. The permittee shall retain this record at the source location for a period of not less than five years and keep this record available for inspection by the Technical Secretary or Division representative.

E88-6. The emergency engine is subject to regulation under 40 CFR Part 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. Pursuant to 40 CFR 63.6590(c), the permittee shall meet the requirements of 40 CFR Part 63, Subpart ZZZZ, by meeting the requirements of 40 CFR Part 60, Subpart JJJJ. No further requirements apply for the emergency engine under 40 CFR 63 Subpart ZZZZ.

TAPCR 1200-03-09-.03(8) and 40 CFR Part 63, Subpart ZZZZ

43-0007-89	Source Description: Kohler Diesel fueled Emergency Engine rated at 80 HP (0.56 MMBtu/hr heat input) 700 Bldg. NSPS Subpart III
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Conditions E89-1 through E89-11 apply to source 43-0007-89
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E89-1. The stated design power output capacity of the engine is 80 brake horsepower (Hp).

Compliance method: Compliance with this condition shall be assured by annual certification, as required in Condition E2(b).

TAPCR 1200-03-08-.03(9)

E89-2. Stationary reciprocating internal combustion engines are subject to regulation under 40 CFR part 63, subpart ZZZZ, NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES. The permittee shall meet the requirements of 40 CFR part 63, subpart ZZZZ, by meeting the requirements of 40 CFR part 60, subpart IIII. No further requirements apply for the emergency engine under 40 CFR part 63, subpart ZZZZ.

40 CFR §63.6590(c)

E89-3. New (manufactured after April 1, 2006) stationary compression ignition engines are subject to regulations under 40 CFR Part 60, Subpart IIII, STANDARDS OF PERFORMANCE FOR STATIONARY COMPRESSION IGNITION INTERNAL COMBUSTION ENGINES including all applicable emission limitations, notifications, compliance options, records, and reports, as shown in **Conditions E89-4** through - **E89-11**.

40 CFR part 60 subpart IIII, TAPCR 1200-03-09-.03(8)

E89-4. The permittee of 2007 model year and later emergency stationary CI ICE that are not fire pump engines with a displacement of less than 10 liters per cylinder, a maximum engine power greater than or equal to 37 KW (50 HP), and a maximum engine power less than or equal to 2,237 KW (3,000 HP) must comply with the emission standards for the same model year and maximum engine power in 40 CFR §89.112 and 40 CFR §89.113 for all pollutants beginning in model year 2007.

The following limits apply to this source from 40 CFR 89.112:

Pollutant	Emission Limit (g/kWh)
PM	0.40
CO	5.0
NMHC +NO _x	4.7

Compliance Method: Compliance with this requirement is assured by compliance with **Condition E89-8**.

40 CFR §60.4202(a)(2) and 40 CFR §60.4205(b)

E89-5. The permittee must operate and maintain this engine to achieve the emission standards as required in **Condition E89-4** over the entire life of the engine.

40 CFR §60.4206

E89-6. The permittee must use diesel fuel that meets the requirements of 40 CFR §60.4207(b) and 40 CFR §80.510(b) & (c). The diesel fuel used for this source is subject to the following per-gallon standards:

A sulfur content of 15 parts per million (ppm) maximum and cetane index or aromatic content, as follows: a minimum cetane index of 40; or a maximum aromatic content of 35 volume percent.

The permittee shall maintain purchase receipts, vendor certifications, material safety data sheets, or other records to demonstrate that all fuel purchased for this source meets the requirements of this condition (any fuel labeled as ultra-low sulfur non-highway

diesel fuel or ultra-low sulfur highway diesel fuel meets these requirements). These records shall be made available to the Technical Secretary for inspection upon request. These records must be maintained for a period of at least (2) years from the purchase date.

TAPCR 1200-03-10-.02(2)(a), 40 CFR §60.4207(b)

E89-7. The permittee of an emergency stationary CI internal combustion engine that does not meet the standards applicable to non-emergency engines must install a non-resettable hour meter.

E89-8. The permittee must comply by purchasing an engine certified to the emission standards in **Condition E89-4** for the same model year and maximum engine power. The permittee must do all of the following, except as provided in **Condition E89-10**:

- (a) Install and configure the engine according to the manufacturer's emission-related specifications;
- (b) Operate and maintain the emergency stationary ICE and control device (if present) according to the manufacturer's emission-related written instructions;
- (c) Change only those emission-related settings that are permitted by the manufacturer; and
- (d) Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply.

40 CFR §60.4211(a) and (c)

E89-9. The permittee must operate the emergency stationary ICE according to the requirements in (a) through (c) of this condition. In order for the engine to be considered an emergency stationary ICE under 40 CFR part 60 subpart IIII, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in (a) through (c) of this condition, is prohibited. If the permittee does not operate the engine according to the requirements in (a) through (c) of this condition, the engine will not be considered an emergency engine under 40 CFR part 60 subpart IIII and must meet all requirements for non-emergency engines.

- (a) There is no time limit on the use of emergency stationary ICE in emergency situations.
- (b) The permittee may operate the emergency stationary ICE for any combination of the purposes specified in (b)(i) of this condition for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by (c) of this condition counts as part of the 100 hours per calendar year allowed by (b).
 - (i) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Technical Secretary for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the permittee maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.
- (c) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in (b) of this condition. Except as provided in (c)(i) of this condition, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.
 - (i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following, (A) through (E), are met:
 - (A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;

- (B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
- (C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
- (D) The power is provided only to the facility itself or to support the local transmission and distribution system.
- (E) The permittee identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the permittee.

40 CFR §60.4211(f)

E89-10. If this engine is not installed, configured, operated, and maintained according to the manufacturer's emission-related written instructions, or the emission-related settings are changed in a way that is not permitted by the manufacturer, the permittee must demonstrate compliance by the following:

Keep a maintenance plan and records of conducted maintenance to demonstrate compliance and, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions.

In addition, if the permittee does not install and configure the engine and control device according to the manufacturer's emission-related written instructions, or changes the emission-related settings in a way that is not permitted by the manufacturer, the permittee must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of such action.

40 CFR §60.4211(g)

E89-11. If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the permittee is not required to submit an initial notification. Starting with the model year in the table below, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the permittee must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The permittee must record the time of operation of the engine and the reason the engine was in operation during that time. The permittee must comply with the labeling requirements in 40 CFR §60.4210(f) and the recordkeeping requirements in this condition for new emergency stationary CI ICE beginning in the following model years:

Engine power	Starting model year
56 ≤ kW < 130 (75 ≤ hp < 175)	2012

40 CFR §60.4214(b)

43-0007-90	<p>Source Description: Coke and Ore Operations and Fugitive Emissions.</p> <ol style="list-style-type: none"> Ore and coke conveying from barge to storage permitted by construction permit 973602 and operated by Watco Transloadng, LLC: One hopper and four covered conveyor belts used to unload ore and coke from barges and transfer to subsequent processing facilities. Controlled by one cartridge filter and three baghouses. Ore and coke conveying sources operated by Chemours: six conveyors, radial stacker, and three ore piles (East Shed, Ore Pile, West Shed Ore Pile, and South Shed Ore Pile). Chemours fugitive emission sources: Front end loader dumping of virgin ore or dried recovered ore to pad, bulldozing of ore, fugitive emissions from truck and loader operations, and wind erosion of storage piles.
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Conditions E90-1 through E90-8 apply to source 43-0007-90

E90-1 (SM1). The stated design capacity of this system is 500 tons of ore per hour, and 200 tons of coke per hour.

TAPCR 1200-03-09-.03(8) and the applications dated April 8, 2019 and November 19, 2019

Compliance Method: This condition is a statement of design input capacity for this source. If the permittee needs to increase the design or maximum capacity of this source, the permittee shall apply for and obtain a construction permit or Title V modification in accordance with TAPCR 1200-03-09-.01 or 1200-03-09-.02(11)(d)1.(i)(V) prior to making the change. Compliance shall be assured by annual certification, as required in **Condition E2(b)**.

E90-2 (SM1). Particulate matter emitted from baghouses controlling this source shall not exceed a combined total of 10.64 pounds per hour. This emission limitation is established pursuant to Rule 1200-03-07-.01(5) of the Tennessee Air Pollution Control Regulations and the information contained in the agreement letters dated December 4, 2017 and November 19, 2019 (Attachment 7).

Emission Point	Control Device	Flow rate (ft ³ /min)	Maximum controlled emissions (lb/hr)
Barge unloading to hopper	Cartridge Filter HBM-01-A	20,000	4.85
Conveyor #1 transfer to Conveyor #2	Baghouse HBM-01-B	900	1.93
Conveyor #2 transfer to Conveyor #3	Baghouse HBM-01-C	900	1.93
Conveyor #3 coke transfer to Conveyor #6	Baghouse HBM-01-D	900	1.93

Compliance Method: Compliance with this condition shall be assured as follows:

- (a) The source(s) controlled by the air pollution control device(s) shall not operate unless the control device(s) is in operation. In the event a malfunction/failure of a control device(s) occurs, the operation of the process(es) controlled

by the control device(s) shall be regulated by the provisions of Chapter 1200-03-20 of the Tennessee Air Pollution Control Regulations.

- (b) The permittee shall maintain a required minimum pressure drop of 0.5 inches of water across cartridge filter HBM-01-A. The pressure drop across the baghouse shall be recorded once daily when the source is in operation. Days when the source is not operating shall be noted. For lower pressure drop reading(s) resulting from replacement of bags, the permittee shall record the deviation(s) as such in their daily records. Due allowance will be made for lower pressure drop reading(s) which follow replacement of bags provided the permittee establishes to the satisfaction of the Technical Secretary that these lower readings resulted from the replacement of bags.
- (c) For baghouses HBM-01-B, HBM-01-C, and HBM-01-D, each baghouse will be maintained, kept in good operating condition, and inspected semiannually to ensure compliance with the applicable particulate matter limit. The permittee shall keep documentation of the semiannual inspections and any maintenance performed on the baghouse.

E90-3 (SM1). To assure that the baghouse catch materials from HBM-01-A do not create a fugitive emissions problem while being disposed of or recycled, the collected material will only be removed from the collection bin on days with limited wind exposure, and transfer methods will reduce the loss of product by reducing drop height.

Compliance Method: Compliance shall be assured by annual certification, as required in **Condition E2(b)**.

TAPCR 1200-03-09-.03(8)

E90-4 (SM1). Particulate matter (PM) emitted from controlled (stack) sources and fugitive sources combined at this process shall not exceed 88.3 tons during any period of 12 consecutive months, and PM₁₀ from controlled (stack) sources and fugitive sources combined at this process shall not exceed 49.3 tons during any period of 12 consecutive months. These limits are established pursuant to Rule 1200-03-07-.01(5) of the Tennessee Air Pollution Control Regulations and the information contained in the agreement letter dated November 19, 2019 (Attachment 7).

Compliance Method: Compliance with these limits is assured by compliance with **Conditions E90-2, E90-3, and E90-5**, and by utilizing closed conveyors and partially enclosed transfer points (partially enclosed transfer points are estimated to reduce emissions by 75%).

E90-5 (SM1). Annual throughput of ore and coke material shall not exceed the following:

- 800,000 tons of ore during any interval of 12 consecutive months, and
- 200,000 tons of coke during any interval of 12 consecutive months

These throughput limits are established pursuant to Rule 1200-03-09-.03(8) of the Tennessee Air Pollution Control Regulations and the information contained in the agreement letters dated March 5, 2018 and November 19, 2019 (Attachment 7).

Compliance Method: The permittee shall record the amount of ore and coke delivered during each calendar month and maintain these records in a form that readily shows compliance with this condition (see example below). All data, including any required calculations, must be entered in the log no later than 30 days from the end of the month for which the data is required, and shall be maintained at the source location. This log shall be kept available for inspection by the Technical Secretary or Division representative and must be retained for a period of not less than five years.

Month/Year	Ore Delivered (tons)	12-Month Consecutive Total (tons of ore)*	Coke Delivered (tons)	12-Month Consecutive Total (tons of coke)*

(*) The 12-consecutive month total is the sum of the material (ore or coke) delivered in the current month, plus the material delivered in the 11 months preceding the current month.

E90-6 (SM1). Visible emissions from this source shall not exhibit greater than 20% opacity, except for one six-minute period in any one-hour period and for no more than four six-minute periods in any 24-hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average). TAPCR 1200-03-05-.03(6) and 1200-03-05-.01(1).

Compliance Method: Compliance with this condition shall be determined in accordance with the procedures of the Division's Opacity Matrix dated June 18, 1996 as amended September 13, 2013 (Attachment 1).

E90-7 (SM1). Fugitive emissions at this facility shall be controlled as specified in TAPCR 1200-03-08-.01. Specifically, no person shall cause, suffer, allow, or permit fugitive dust to be emitted in such manner to exceed five minutes per hour or 20 minutes per day as to produce a visible emission beyond the property line of the property on which the emission originates, excluding malfunction of equipment as provided in Chapter 1200-03-20. Fugitive emissions from this facility shall be determined by Tennessee Visible Emissions Evaluation Method 4 as adopted by the Tennessee Air Pollution Control Board on April 16, 1986.

Compliance Method: Compliance with this standard shall be determined by Tennessee Visible Emissions Evaluation Method 4 as adopted by the Tennessee Air Pollution Control Board on April 16, 1986. These evaluations shall be made semiannually. The permittee shall maintain a log of visible emissions beyond the property line due to coke and ore operations complaints of off-property fugitive dust that may originate from coke and ore operations.

E90-8 (SM1). Visible emissions from roads and parking areas shall not exhibit greater than 10% opacity utilizing Tennessee Visible Emissions Evaluation (TVEE) Method 1. This condition is established pursuant to Rule 1200-03-08-.03 of the Tennessee Air Pollution Control Regulations.

Compliance Method: Compliance with this condition shall be determined in accordance with the procedures of the Division's Opacity Matrix dated June 18, 1996 as amended September 13, 2013 (Attachment 1).

43-0007-95 **Source Description:** Toluene Equipment Tanks / Process piping and Components

Condition E95-1 applies to source 43-0007-95

E95-1 (AA1). Volatile organic Compound (including toluene) emissions from this source shall not exceed 2.0 tons per year.

TAPCR 1200-03-07-.07(2)

Compliance Method: Assurance with this emissions limit shall be based upon the calculation of equipment leaks emissions by using an estimation method in Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017, November 1995. Site-specific equipment leaks emission factors may be used. This calculation shall be performed on a yearly basis.

43-0007-100 **Source Description:** Sandblasting - Hoppers and Abrasive Blasting Machines. Sandblasting operations occur both in a specific location at the facility, and at various locations throughout the site, depending on the equipment which is sandblasted

Conditions E100-1 through E100-3 apply to source 43-0007-100

E100-1. Adequate containment methods shall be employed during sandblasting.

TAPCR 1200-03-09-.03(8)

Compliance Method: Compliance with this condition shall be assured by annual certification, as required in **Condition E2(b)**.

E100-2. Fugitive emissions from this source shall be controlled as specified in Rule 1200-03-08-.01. Specifically, no person shall cause, suffer, allow, or permit fugitive dust to be emitted in such manner to exceed five minutes per hour or 20 minutes per day as to produce a visible emission beyond the property line of the property on which the emission originates, excluding malfunction of equipment as provided in Chapter 1200-03-20.

Compliance Method: Compliance with this condition shall be assured as follows:

- (a) The permittee shall apply asphalt, water, or suitable chemicals on material stock piles and other surfaces which can create airborne dusts.
- (b) Compliance with this standard shall be determined by Tennessee Visible Emissions Evaluation Method 4 as adopted by the Tennessee Air Pollution Control Board on April 16, 1986. Readings shall be conducted as directed by the Technical Secretary.

E100-3. For purposes of calculation of fees, the estimated maximum fugitive particulate emissions rate is 35.7 tons per year. This is not an emission limit.

TAPCR 1200-03-26

43-0007-105 **Source Description:** Sodium Chloride Processing Facility with Baghouse Control (43-0007-105A). Formerly permitted to Industrial Painting 1410 DuPont Access Road Permit 063736P with previous reference No. 43-0057-01.

Conditions E105-1 through E105-4 apply to source 43-0007-105

E105-1. Process material (Raw salt) input rate shall not exceed 60,000 pounds per hour (lb/hr).

TAPCR 1200-03-09-.03(8)

Compliance Method: A log of the raw salt input, in a form that readily shows compliance with this limit, must be maintained at the source location and kept available for inspection by the Technical Secretary or his representative. This log must be retained for a period of not less than five years.

E105-2. Particulate matter emitted from this source shall not exceed 3.42 lb/hr.

TAPCR 1200-03-07-.01(5) and agreement letter dated March 10, 1995.

Compliance Method:

The permittee will commence using the CAM plan found in Attachment 4 of this permit upon permit issuance

E105-3. This source shall not be operated without the control equipment (fabric filter) indicated in the approved application dated December 22, 1994.

Compliance Method: Compliance with this condition shall be assured by annual certification, as required in **Condition E2(b)**.

E105-4. Visible emissions from doors, windows, etc. shall not exhibit greater than 20% opacity, except for one (1) six-minute period in any one hour period, and for no more than four (4) six-minute periods in any twenty-four (24) hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average). TAPCR 1200-03-05-.01(1) and 1200-03-05-.03(6)

Compliance Method: Compliance with this condition shall be determined in accordance with the procedures of the Division's Opacity Matrix dated June 18, 1996 as amended September 13, 2013 (Attachment 1).

43-0007-111 **Source Description: Benzene Waste Operations.** Subject to 40 CFR 61 Subpart FF

Condition E111-1 applies to source 43-0007-111

E111-1. This facility shall comply with the following provisions of 40 CFR 61 Subpart FF—National Emission Standard for Benzene Waste Operations

40 CFR 61.355 Test methods, procedures, and compliance provisions

- (a) An owner or operator shall determine the total annual benzene quantity from facility waste by the following procedure:
 - (5) If the total annual benzene quantity from facility waste is less than 1 Mg/year (1.1 tons/year), then the owner or operator shall:
 - (i) Comply with the recordkeeping requirements of §61.356 and reporting requirements of §61.357 of this subpart; and
 - (ii) Repeat the determination of total annual benzene quantity from facility waste whenever there is a change in the process generating the waste that could cause the total annual benzene quantity from facility waste to increase to 1 Mg/year (1.1 tons/year) or more.

40 CFR 61.356 Recordkeeping requirements

- (a) Each owner or operator of a facility subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section. Each record shall be maintained in a readily accessible location at the facility site for a period not less than two years from the date the information is recorded unless otherwise specified.
- (b) Each owner or operator shall maintain records that identify each waste stream at the facility subject to this subpart and indicate whether or not the waste stream is controlled for benzene emissions in accordance with this subpart.

40 CFR 61.357 Reporting requirements

- (c) If the total annual benzene quantity from facility waste is less than 1 Mg/year (1.1 tons/year), then the owner or operator shall submit to the Administrator a report that updates the information listed in paragraphs (a)(1) through (a)(3) of this section whenever there is a change in the process generating the waste stream that could cause the total annual benzene quantity from facility waste to increase to 1 Mg/year (1.1 tons/year) or more.

END OF CONDITIONS FOR SIGNIFICANT MODIFICATION #1 TO TITLE V PERMIT #569782

ATTACHMENT 1

**OPACITY MATRIX DECISION TREE FOR
VISIBLE EMISSION EVALUATION METHODS 1, 2, AND 9
AMENDED SEPTEMBER 11, 2013**

**Decision Tree PM for Opacity from
 Nontraditional Sources (Roads and Parking Areas)
 Utilizing TVEE Method 1**

Notes:

The use of Tennessee Visible Emission Evaluation (TVEE) Method 1 is only applicable where the use of the method is specified as a permit condition.

PM = Periodic Monitoring required by 1200-03-09-.02(11)(e)(1)(iii).

This Decision Tree outlines the criteria by which major sources can meet the PM requirements of Title V for demonstrating compliance with the visible emissions standard for nontraditional sources (roads and parking areas). It is not intended to determine compliance requirements for EPA's Compliance Assurance Monitoring (CAM) Rule (formerly referred to as Enhanced Monitoring – Proposed 40 CFR 64).

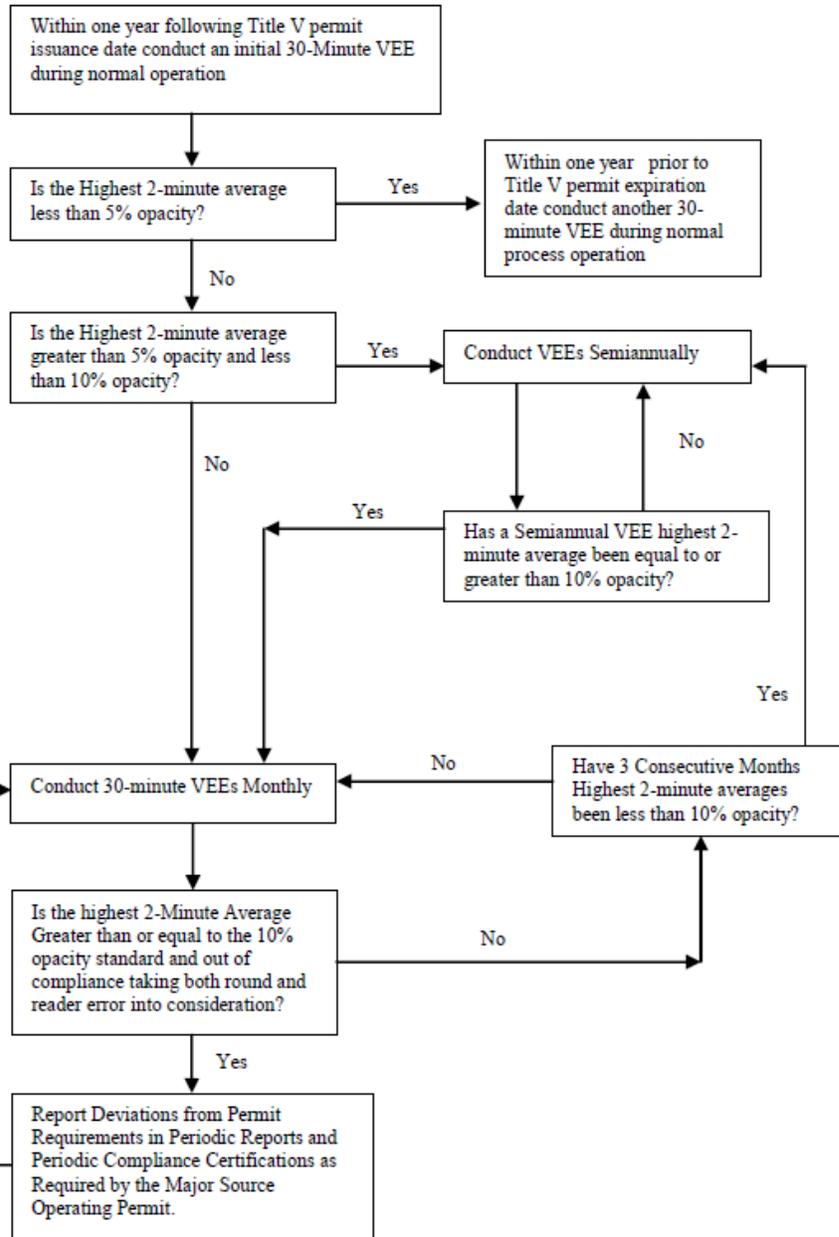
Visible Emissions Evaluations (VEEs) are to be conducted utilizing TVEE Method 1. The observer must be properly certified according to criteria specified in TVEE Method 1 to conduct Method 1 evaluations.

Initial observations are to be repeated within 90 days of startup of a modified source if a new construction permit is issued for modification of the source.

A VEE conducted by TDAPC personnel after the Title V permit is issued will also constitute an initial reading.

Reader Error
 For TVEE Method 1, the TDAPC declares non-compliance when the highest two-minute average exceeds the standard plus 10% opacity for sources having this standard applied prior to August 24, 1984 or 8.8% for sources having this standard applied on or after August 24, 1984.

Dated June 18, 1996
 Amended September 11, 2013



**Decision Tree PM for Opacity for
 Sources Subject to Rule 1200-03-05-.01
 Utilizing TVEE Method 2**

Notes:

PM = Periodic Monitoring required by 1200-03-09-.02(11)(e)(iii).

This Decision Tree outlines the criteria by which major sources can meet the periodic monitoring and testing requirements of Title V for demonstrating compliance with the visible emission standard in Rule 1200-03-05-.01. It is not intended to determine compliance requirements for EPA's Compliance Assurance Monitoring (CAM) Rule (formerly referred to as Enhanced Monitoring – Proposed 40 CFR 64).

Examine each emission unit using this Decision Tree to determine the PMT required.

Use of continuous emission monitoring systems eliminates the need to do any additional periodic monitoring.

Visible Emission Evaluations (VEEs) are to be conducted utilizing Tennessee Visible Emission Evaluation Method 2. The observer must be properly certified according to the criteria specified in EPA Method 9 to conduct TVEE Method 2 evaluations.

Typical Pollutants
 Particulates, VOC, CO, SO₂, NO_x, HCl, HF, HBr, Ammonia, and Methane.

Initial observations are to be repeated within 90 days of startup of a modified source, if a new construction permit is issued for modification of the source.

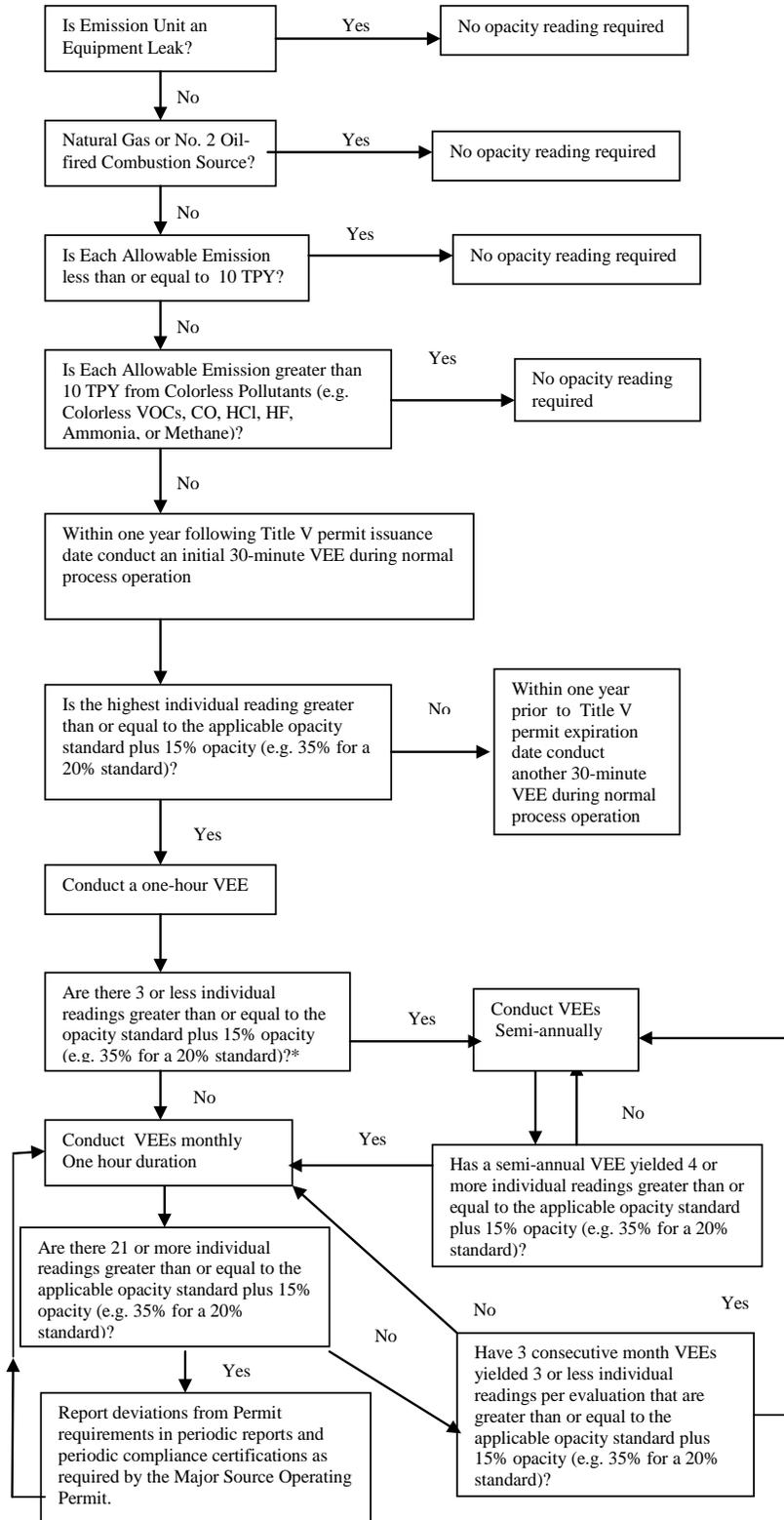
A VEE conducted by TAPCD personnel after the Title V permit is issued will also constitute an initial reading.

Reader Error
 TVEE Method 2: The TAPCD declares non-compliance when 21 observations are read at the standard plus 15% opacity (e.g. 35% for a 20% standard).

*The rationale for this is the fact that Rule 1200-03-05-.01 allows for an exemption of 5 minutes (20 readings) per hour and up to 20 minutes (80 readings) per day. With 4 or more excessive individual readings per hour the possibility of a daily exceedance exists.

Note: A company could mutually agree to have all of its sources regulated by EPA Method 9. Caution: Agreement to use Method 9 could potentially place some sources in non-compliance with visible emission standards. Please be sure before you agree.

Dated June 18, 1996
 Amended September 11, 2013



Decision Tree PM for Opacity for Sources Utilizing EPA Method 9*

Notes:

PM = Periodic Monitoring required by 1200-03-09-.02(11)(e)(iii).

This Decision Tree outlines the criteria by which major sources can meet the periodic monitoring and testing requirements of Title V for demonstrating compliance with the visible emission standards set forth in the permit. It is not intended to determine compliance requirements for EPA's Compliance Assurance Monitoring (CAM) Rule (formerly referred to as Enhanced Monitoring – Proposed 40 CFR 64).

Examine each emission unit using this Decision Tree to determine the PM required.*

Use of continuous emission monitoring systems eliminates the need to do any additional periodic monitoring.

Visible Emission Evaluations (VEEs) are to be conducted utilizing EPA Method 9. The observer must be properly certified to conduct valid evaluations.

Typical Pollutants

Particulates, VOC, CO, SO₂, NO_x, HCl, HF, HBr, Ammonia, and Methane.

Initial observations are to be repeated within 90 days of startup of a modified source, if a new construction permit is issued for modification of the source.

A VEE conducted by TAPCD personnel after the Title V permit is issued will also constitute an initial reading.

Reader Error

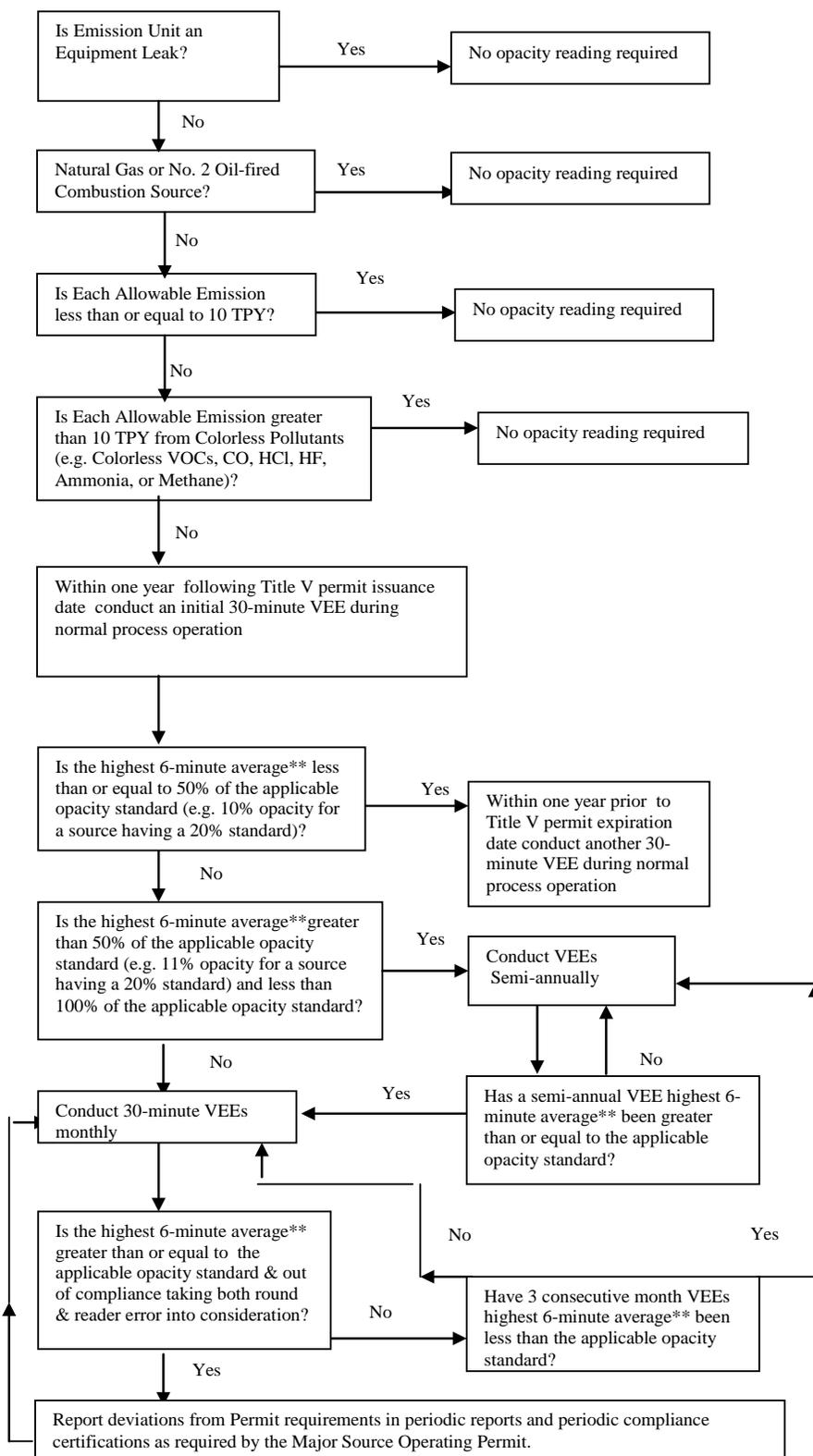
EPA Method 9, Non-NSPS or NESHAPS stipulated opacity standards: The TAPCD guidance is to declare non-compliance when the highest six-minute average** exceeds the standard plus 6.8% opacity (e.g. 26.8% for a 20% standard).

EPA Method 9, NSPS or NESHAPS stipulate opacity standards: EPA guidance is to allow only engineering round. No allowance for reader error is given.

*Not applicable to Asbestos manufacturing subject to 40 CFR 61.142

**Or second highest six-minute average, if the source has an exemption period stipulated in either the regulations or in the permit.

Dated June 18, 1996
 Amended September 11, 2013



ATTACHMENT 2

**AP-42 FIFTH EDITION EMISSION FACTORS FOR
NATURAL GAS COMBUSTION (REVISED 7-98)**

AP-42 Table 1.4-1. NO_x and CO Emission Factors for Natural Gas Combustion ^a				
Combustor Type (MMBtu/hr Heat Input) [SCC]	NO_x^b		CO	
	Emission Factor (lb/10⁶ scf)	Emission Factor Rating	Emission Factor (lb/10⁶ scf)	Emission Factor Rating
Large Wall-Fired Boilers (>100 MMBtu/hr) [1-01-006-01, 1-02-006-01, 1-03-006-01]				
Uncontrolled (Pre-NSPS) ^c	280	A	84	B
Uncontrolled (Post-NSPS) ^c	190	A	84	B
Controlled - Low NO _x burners	140	A	84	B
Controlled - Flue gas recirculation	100	D	84	B
Small Boilers (<100 MMBtu/hr) [1-01-006-02, 1-02-006-02, 1-03-006-02, 1-03-006-03]				
Uncontrolled	100	B	84	B
Controlled - Low NO _x burners	50	D	84	B
Controlled - Low NO _x burners/Flue gas recirculation	32	C	84	B
Tangential-Fired Boilers (All Sizes) [1-01-006-04]				
Uncontrolled	170	A	24	C
Controlled - Flue gas recirculation	76	D	98	D
Residential Furnaces (<0.3 MMBtu/hr) [No SCC]				
Uncontrolled	94	B	40	B

^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. Emission factors are based on an average natural gas higher heating value of 1,020 Btu/scf. To convert from lb/10⁶ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. SCC = Source Classification Code. ND = no data. NA = not applicable.

^b Expressed as NO₂. For large and small wall fired boilers with SNCR control, apply a 24 percent reduction to the appropriate NO_x emission factor. For tangential-fired boilers with SNCR control, apply a 13 percent reduction to the appropriate NO_x emission factor.

^c NSPS=New Source Performance Standard as defined in 40 CFR 60 Subparts D and Db. Post-NSPS units are boilers with greater than 250 MMBtu/hr of heat input that commenced construction modification, or reconstruction after August 17, 1971, and units with heat input capacities between 100 and 250 MMBtu/hr that commenced construction modification, or reconstruction after June 19, 1984.

AP-42 Table 1.4-2. Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion^a		
Pollutant	Emission Factor (lb/10⁶ scf)	Emission Factor Rating
CO ₂ ^b	120,000	A
Lead	0.0005	D
N ₂ O (Uncontrolled)	2.2	E
N ₂ O (Controlled-low-NO _x burner)	0.64	E
PM (Total) ^c	7.6	D
PM (Condensable) ^c	5.7	D
PM (Filterable) ^c	1.9	B
SO ₂ ^d	0.6	A
TOC	11	B
Methane	2.3	B
VOC	5.5	C

^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. To convert from lb/10⁶ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. TOC = Total Organic Compounds. VOC = Volatile Organic Compounds.

^b Based on approximately 100% conversion of fuel carbon to CO₂. CO₂[lb/10⁶ scf] = (3.67) (CON) (C)(D), where CON = fractional conversion of fuel carbon to CO₂, C = carbon content of fuel by weight (0.76), and D = density of fuel, 4.2x10⁴ lb/10⁶ scf.

^c All PM (total, condensable, and filterable) is assumed to be less than 1.0 micrometer in diameter. Therefore, the PM emission factors presented here may be used to estimate PM₁₀, PM_{2.5} or PM emissions. Total PM is the sum of the filterable PM and condensable PM. Condensable PM is the particulate matter collected using EPA Method 202 (or equivalent). Filterable PM is the particulate matter collected on, or prior to, the filter of an EPA Method 5 (or equivalent) sampling train.

^d Based on 100% conversion of fuel sulfur to SO₂. Assumes sulfur content is natural gas of 2,000 grains/10⁶ scf. The SO₂ emission factor in this table can be converted to other natural gas sulfur contents by multiplying the SO₂ emission factor by the ratio of the site-specific sulfur content (grains/10⁶ scf) to 2,000 grains/10⁶ scf.

ATTACHMENT 3

**40 CFR 60 SUBPART UUU—STANDARDS OF PERFORMANCE FOR
CALCINERS AND DRYERS IN MINERAL INDUSTRIES**

40 CFR 60 Subpart UUU—Standards of Performance for Calciners and Dryers in Mineral Industries

§60.730 Applicability and designation of affected facility.

- (a) The affected facility to which the provisions of this subpart apply is each calciner and dryer at a mineral processing plant. Feed and product conveyors are not considered part of the affected facility. For the brick and related clay products industry, only the calcining and drying of raw materials prior to firing of the brick are covered.
- (b) An affected facility that is subject to the provisions of subpart LL, Metallic Mineral Processing Plants, is not subject to the provisions of this subpart. Also, the following processes and process units used at mineral processing plants are not subject to the provisions of this subpart: vertical shaft kilns in the magnesium compounds industry; the chlorination-oxidation process in the titanium dioxide industry; coating kilns, mixers, and aerators in the roofing granules industry; and tunnel kilns, tunnel dryers, apron dryers, and grinding equipment that also dries the process material used in any of the 17 mineral industries (as defined in §60.731, “Mineral processing plant”).
- (c) The owner or operator of any facility under paragraph (a) of this section that commences construction, modification, or reconstruction after April 23, 1986, is subject to the requirements of this subpart.

§60.731 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

Calciner means the equipment used to remove combined (chemically bound) water and/or gases from mineral material through direct or indirect heating. This definition includes expansion furnaces and multiple hearth furnaces.

Control device means the air pollution control equipment used to reduce particulate matter emissions released to the atmosphere from one or more affected facilities.

Dryer means the equipment used to remove uncombined (free) water from mineral material through direct or indirect heating.

Installed in series means a calciner and dryer installed such that the exhaust gases from one flow through the other and then the combined exhaust gases are discharged to the atmosphere.

Mineral processing plant means any facility that processes or produces any of the following minerals, their concentrates or any mixture of which the majority (>50 percent) is any of the following minerals or a combination of these minerals: alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller's earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculite.

§60.732 Standards for particulate matter.

Each owner or operator of any affected facility that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test required by §60.8 is completed, but not later than 180 days after the initial startup, whichever date comes first. No emissions shall be discharged into the atmosphere from any affected facility that:

- (a) Contains particulate matter in excess of 0.092 gram per dry standard cubic meter (g/dscm) [0.040 grain per dry standard cubic foot (gr/dscf)] for calciners and for calciners and dryers installed in series and in excess of 0.057 g/dscm (0.025 gr/dscf) for dryers; and
- (b) Exhibits greater than 10% opacity, unless the emissions are discharged from an affected facility using a wet scrubbing control device.

§60.733 Reconstruction.

The cost of replacement of equipment subject to high temperatures and abrasion on processing equipment shall not be considered in calculating either the “fixed capital cost of the new components” or the “fixed capital cost that would be required to construct a

comparable new facility” under §60.15. Calciner and dryer equipment subject to high temperatures and abrasion are: end seals, flights, and refractory lining.

§60.734 Monitoring of emissions and operations.

- (a) With the exception of the process units described in paragraphs (b), (c), and (d) of this section, the owner or operator of an affected facility subject to the provisions of this subpart who uses a dry control device to comply with the mass emission standard shall install, calibrate, maintain, and operate a continuous monitoring system to measure and record the opacity of emissions discharged into the atmosphere from the control device.
- (b) In lieu of a continuous opacity monitoring system, the owner or operator of a ball clay vibrating grate dryer, a bentonite rotary dryer, a diatomite flash dryer, a diatomite rotary calciner, a feldspar rotary dryer, a fire clay rotary dryer, an industrial sand fluid bed dryer, a kaolin rotary calciner, a perlite rotary dryer, a roofing granules fluid bed dryer, a roofing granules rotary dryer, a talc rotary calciner, a titanium dioxide spray dryer, a titanium dioxide fluid bed dryer, a vermiculite fluid bed dryer, or a vermiculite rotary dryer who uses a dry control device may have a certified visible emissions observer measure and record three six-minute averages of the opacity of visible emissions to the atmosphere each day of operation in accordance with Method 9 of appendix A of part 60.
- (c) The owner or operator of a ball clay rotary dryer, a diatomite rotary dryer, a feldspar fluid bed dryer, a fuller's earth rotary dryer, a gypsum rotary dryer, a gypsum flash calciner, gypsum kettle calciner, an industrial sand rotary dryer, a kaolin rotary dryer, a kaolin multiple hearth furnace, a perlite expansion furnace, a talc flash dryer, a talc rotary dryer, a titanium dioxide direct or indirect rotary dryer or a vermiculite expansion furnace who uses a dry control device is exempt from the monitoring requirements of this section.
- (d) The owner or operator of an affected facility subject to the provisions of this subpart who uses a wet scrubber to comply with the mass emission standard for any affected facility shall install, calibrate, maintain, and operate monitoring devices that continuously measure and record the pressure loss of the gas stream through the scrubber and the scrubbing liquid flow rate to the scrubber. The pressure loss monitoring device must be certified by the manufacturer to be accurate within 5 percent of water column gauge pressure at the level of operation. The liquid flow rate monitoring device must be certified by the manufacturer to be accurate within 5 percent of design scrubbing liquid flow rate.

§60.735 Recordkeeping and reporting requirements.

- (a) Records of the measurements required in §60.734 of this subpart shall be retained for at least two years.
- (b) Each owner or operator who uses a wet scrubber to comply with §60.732 shall determine and record once each day, from the recordings of the monitoring devices in §60.734(d), an arithmetic average over a two-hour period of both the change in pressure of the gas stream across the scrubber and the flowrate of the scrubbing liquid.
- (c) Each owner or operator shall submit written reports semiannually of exceedances of control device operating parameters required to be monitored by §60.734 of this subpart. For the purpose of these reports, exceedances are defined as follows:
 - (1) All six-minute periods during which the average opacity from dry control devices is greater than 10 percent; or
 - (2) Any daily two-hour average of the wet scrubber pressure drop determined as described in §60.735(b) that is less than 90 percent of the average value recorded according to §60.736(c) during the most recent performance test that demonstrated compliance with the particulate matter standard; or
 - (3) Each daily wet scrubber liquid flow rate recorded as described in §60.735(b) that is less than 80 percent or greater than 120 percent of the average value recorded according to §60.736(c) during the most recent performance test that demonstrated compliance with the particulate matter standard.
- (d) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Clean Air Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected facilities within the State will be relieved of the obligation to comply with this section provided that they comply with the requirements established by the State.

§60.736 Test methods and procedures.

- (a) In conducting the performance tests required in §60.8, the owner or operator shall use the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).
- (b) The owner or operator shall determine compliance with the particulate matter standards in §60.732 as follows:
 - (1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and volume for each test run shall be at least 2 hours and 1.70 dscm.
 - (2) Method 9 and the procedures in §60.11 shall be used to determine opacity from stack emissions.
- (c) During the initial performance test of a wet scrubber, the owner or operator shall use the monitoring devices of §60.734(d) to determine the average change in pressure of the gas stream across the scrubber and the average flowrate of the scrubber liquid during each of the particulate matter runs. The arithmetic averages of the three runs shall be used as the baseline average values for the purposes of §60.735(c).

§60.737 Delegation of authority.

- (a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.
- (b) Authorities which will not be delegated to States: No restrictions.

ATTACHMENT 4

COMPLIANCE ASSURANCE MONITORING (CAM) PLANS

Compliance Assurance Monitoring General Requirements

Operation of approved monitoring (§64.7):

Proper maintenance: At all times, permittee shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.

Continued operation: Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The permittee shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Response to excursions or exceedances: Upon detecting an excursion or exceedance, the permittee shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

Determination of whether the permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.

Documentation of need for improved monitoring: If the permittee identifies a failure to comply with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or if the results of compliance or performance testing document a need to modify the existing indicator ranges, the permittee shall promptly notify the Technical Secretary and, if necessary, submit a proposed modification to this permit to address the necessary monitoring changes.

Reporting and recordkeeping requirements (§64.9)

General reporting requirements: On and after the issue date of this permit, the permittee shall submit monitoring reports to the Technical Secretary in accordance with **Condition E2** of this permit. The report shall include, at a minimum, the information required by **Condition E2** and the following information, as applicable:

- (1) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken; and
- (2) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable).

General recordkeeping requirements: The permittee shall comply with the applicable recordkeeping requirements of §70.6(a)(3)(ii) and shall maintain records of monitoring data, monitor performance data, corrective actions taken, and other supporting information required to be maintained under 40 CFR 64. The permittee may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.

Quality Improvement Plan (§64.8)

Based on the results of a determination made under §64.7(d)(2), the Technical Secretary may require the owner or operator to develop and implement a Quality Improvement Plan (QIP) if the procedures used by the permittee in response to an excursion or exceedance are determined to be unacceptable.

43-0007-05-15: Ore Roaster Scrubber Particulate Matter (PM) CAM Plan**I. Background/Summary Source Information**

The emission control device for the Ore Roasters (EP-05) is a wet scrubber with a PM removal efficiency of 95%. Based on the 9.38 lb/hr PM limit in the current Title V permit, the Ore Roasters have potential pre-control PM emissions of 822 tons per year, and potential post-control emissions of 41.1 tons per year. Thus, as specified in 40 CFR Part 64.5 this emissions source is defined as an *other pollutant-specific emissions unit*, and this proposed CAM Plan is being submitted to TN DEC for monitoring indicators of PM emissions from the scrubber in accordance with the submittal requirements of 40 CFR 64.4.

A. Emission Unit

Description: Ore Roasters
Identification: EP-05-15

B. Applicable Regulations, Emission Limitations, and Monitoring Requirements

E5-2. Particulate matter emitted from this source shall not exceed 0.025 grains of particulate matter per dry standard cubic foot of exhaust gas

Regulations: TAPCR 1200-03-07-.01, 40 CFR Part 60, Subpart UUU

Emission Limits:

Particulate matter: 9.38 lb/hr [TAPCR 1200-03-07-.03]
0.025 gr/dscf [40 CFR 60.732(a)]

Monitoring Requirements:

40 CFR 60.734(d) requires the following monitoring: *The owner or operator of an affected facility subject to the provisions of this subpart who uses a wet scrubber to comply with the mass emission standard for any affected facility shall install, calibrate, maintain, and operate monitoring devices that continuously measure and record the pressure loss of the gas stream through the scrubber and the scrubbing liquid flow rate to the scrubber. The pressure loss monitoring device must be certified by the manufacturer to be accurate within 5 percent of water column gauge pressure at the level of operation. The liquid flow rate monitoring device must be certified by the manufacturer to be accurate within 5 percent of design scrubbing liquid flow rate.*

C. Control Technology

Wet scrubber

II. Monitoring Approach

The key elements of the monitoring approach are presented in Table A.1-1. The selected scrubber performance indicators are those already required by 40 CFR 60.734(d), and those indicators also meet the requirements of 40 CFR Part 64.3(a)(2) and 64.4(a)(2). The chosen performance indicators are pressure loss of the gas stream through the scrubber and scrubbing liquid flow rate to the scrubber.

The control device for this emission unit cannot be bypassed; therefore, no bypass monitoring is necessary, and none is proposed. The key elements of the monitoring approach presented in Table A.1-1 will apply when the source is operating. If the source is not operating, no readings are required.

Table A.1-1 – Monitoring Approach		
	Indicator No. 1	Indicator No. 2
Indicator 40 CFR 64.3(a)(1)-(2) 40 CFR 64.4(a)(1)	Pressure loss of the gas stream through the scrubber	Scrubbing liquid flow rate to the scrubber
Measurement Approach	Pressure loss of the gas stream through the scrubber (pressure drop) will be measured in inches of water using a pressure transmitter	Scrubbing liquid flow rate to the scrubber will be measured in gallons per minute using a flow transmitter
Monitoring Methods and Location	Continuously measure and record the pressure loss of the gas stream through the scrubber. [required by §60.734(d)] Determine and record, once each day, an arithmetic average over a 2-hour period of the change in pressure of the gas stream across the scrubber. [required by §60.735(b)]	Continuously measure and record the scrubbing liquid flow rate to the scrubber. [required by §60.734(d)] Determine and record, once each day, an arithmetic average over a 2-hour period of the flow rate of the scrubbing liquid. [required by §60.735(b)]
Indicator Range	An excursion is defined as any daily 2-hour average of the wet scrubber pressure drop determined as described in §60.735(b) that is less than 90 percent of the average value recorded according to §60.736(c) during the most recent performance test that demonstrated compliance with the particulate matter limits. [a requirement of §60.735(c)(2)] An excursion (exceedance) triggers an inspection, corrective action, and a reporting requirement.	An excursion is defined as each daily wet scrubber liquid flow rate recorded as described in §60.735(b) that is less than 80 percent or greater than 120 percent of the average value recorded according to §60.736(c) during the most recent performance test that demonstrated compliance with the particulate matter limits. [a requirement of §60.735(c)(3)] An excursion (exceedance) triggers an inspection, corrective action, and a reporting requirement.
Data Collection Frequency	Minimum once every 15 minutes	Minimum once every 15 minutes
Recordkeeping	Records of the daily arithmetic averages defined above shall be maintained for a period of at least five years from the date of the record.	Records of the daily arithmetic averages defined above shall be maintained for a period of at least five years from the date of the record.
Reporting	Written reports shall be submitted semiannually of exceedances of control device operating parameters. [required by §60.735(c)] These reports shall be submitted as part of the Title V semiannual compliance report.	Written reports shall be submitted semiannually of exceedances of control device operating parameters. [required by §60.735(c)] These reports shall be submitted as part of the Title V semiannual compliance report.
QA/QC	The pressure loss monitoring device must be certified by the manufacturer to be accurate within 5 percent of water column gauge pressure at the level of operation. [required by §60.734(d)]	The liquid flow rate monitoring device must be certified by the manufacturer to be accurate within 5 percent of design scrubbing liquid flow rate. [required by §60.734(d)]
Averaging Period 40 CFR 64.3(d)	2-hour block average	2-hour block average

III. Monitoring Approach Justification (§64.4(b))

A. Background/Emission Unit Description

Wet ore is fed into the natural gas fired ore roasters. The dry ore exits the roasters and is transferred to storage bins. The ore roaster scrubber removes particulate matter from the exhaust gas prior to discharge through the scrubber stack.

B. Rationale for Selection of Performance Indicators

Pressure loss of the gas stream through the scrubber was selected as a performance indicator because it is one of the two indicators required to be continuously monitored in accordance with 40 CFR Part 60.734(d). In developing the Subpart UUU monitoring requirements for scrubbers, EPA chose this indicator, along with scrubbing liquid flow rate to the scrubber as the second indicator, because together these two indicators provide measurements that closely correlate with the degree of gas-liquid contact within the scrubber. Gas-liquid contact is necessary for removing particulate matter from the gas stream.

C. Rationale for Selection of Indicator Ranges

The indicator range for the pressure loss of the gas stream through the scrubber is specified by 40 CFR 60.735(c)(2). The indicator range for the scrubbing liquid flow rate to the scrubber is specified by 40 CFR 60.735(c)(3).

43-0007-08-09: #1 and #2 Chlorinators: PM CAM Plan

I. Background Information

A. Emission Units

43-0007-08-09: #1 and #2 Chlorinators: Titanium dioxide ore, coke, and chlorine are mixed in chlorinators. Iron chloride and titanium tetrachloride are condensed from the gas stream generated followed by equipment to remove non-condensable gases. Each of the two (2) chlorinator lines consists of a titanium dioxide ore chlorinator, iron chloride and titanium tetrachloride condensing equipment, titanium tetrachloride storage tanks, HCl removal stage, and process gas scrubbing system with stack. HCl is removed by water for recycle and the removal stages are an inherent part of the process. The process gas scrubbing systems use a water and sodium hydroxide mixture to remove sulfur dioxide, chlorine, and residual HCl, titanium tetrachloride, and particulate matter. The process gas scrubbing systems are considered the control devices.

B. Applicable Regulations and PM Emission Limitations

43-0007-08-09 #1 and #2 Chlorinators:

E8-1. Particulate matter emitted from each chlorinator line (EP08 and EP09) of this source shall not exceed 0.25 grains per dry standard cubic foot of exhaust gases and 10.99 pounds per hour.

TAPCR 1200-03-07-.04(2) for 0.25 gr/dscf and 1200-03-07-.01(5) with application dated April 3, 2000 for 10.99 lb/hr (from first amendment to 953817)

C. Control Technology

Emissions of filterable particulate matter from each Chlorinator are controlled by a process gas scrubbing system which includes recirculating a water and sodium hydroxide liquor through a baffle column and associated equipment. .

II. Monitoring Approach

The key elements of the monitoring approach are presented in the following table. The selected scrubber performance indicators are chosen in accordance with the requirements of 40 CFR 64.3(a)(2) and 64.4(a)(2). The chosen performance indicators are sodium hydroxide/water recirculating liquor flow to the baffle column, and differential pressure across the system. The following shall apply whenever emissions are vented to the control device.

CAM Plan –43-0007-08-09: #1 and #2 Chlorinators: PM		
	Indicator No. 1	Indicator No. 2
Indicator 40 CFR 64.3(a)(1)-(2) 40 CFR 64.4(a)(1)	Liquor Flow	Differential Pressure
Measurement Approach	Liquor recirculation flow to each baffle column shall be measured continuously.	Differential pressure (across each system) shall be measured using a pressure transmitter.
Monitoring Methods and Location	Continuous measurement	Continuous measurement
Indicator Range	<u>Minimum values</u> 08 and 09: 300 gallons per minute, each baffle column A 3-hour block average below the minimum value shown above constitutes an excursion.	<u>Minimum values</u> 08 and 09: 2 psig pressure into fume disposal area, each system A 3-hour block average below the minimum value shown above constitutes an excursion.

CAM Plan –43-0007-08-09: #1 and #2 Chlorinators: PM		
	Indicator No. 1	Indicator No. 2
Data Collection Frequency	Normally continuous, with a minimum of once per shift, when the reaction line is operating	Normally continuous, with a minimum of once per shift, when the reaction line is operating
Recordkeeping Records shall be maintained for a period of five years from the date of the record.	Records shall be maintained of liquor flow readings and any excursions.	Records shall be maintained of differential pressure readings and any excursions.
QA/QC	Each recirculation flow transmitter will be periodically calibrated according to the site’s maintenance plan specifications.	Each system’s pressure transmitter will be periodically calibrated according to the site’s maintenance plan specifications.
Averaging Period 40 CFR 64.3(d)	3-hour block average	3-hour block average

Notes:

1. Each excursion shall be reported as an instance of deviation from permit requirements in the semiannual reports submitted pursuant to Condition E2 of the Major Source Operating Permit.
2. In this CAM Plan, an *excursion* means:
 - i. A departure from an indicator range as defined in the Indicators section of the above table and in these Notes, or
 - ii. A measured value is available less than 75 percent of the time within a 24-hour period, unless manual readings of the parameter are made at least once per operating shift as a backup *during* periods of automatic monitoring system breakdown.
3. The number of excused excursions for each monitored parameter for each semiannual reporting period are shown below:

First semiannual period:	Six excused excursions
Second semiannual period:	Five excused excursions
Third semiannual period:	Four excused excursions
Fourth semiannual period:	Three excused excursions
Fifth and all subsequent semiannual periods:	Two excused excursions
4. A monitored parameter found outside its established range during startup, shutdown, or malfunction conditions or during periods of non-operation of the source or lack of monitoring data during startup, shutdown, or malfunction conditions or during periods of non-operation of the source, does not count toward the number of excused excursions.

IV. Monitoring Approach Justification (§64.4(b))

A. Background/Emission Unit Description

Titanium dioxide ore, coke, and chlorine are mixed in chlorinators. Iron chloride and titanium tetrachloride are condensed from the gas stream followed by equipment to remove non-condensable gases. Each of the two (2) chlorinator lines consists of a titanium dioxide ore chlorinator, iron chloride and titanium tetrachloride condensing equipment, titanium tetrachloride storage tanks, HCl removal stage, and process gas scrubbing system with stack. HCl is removed by water for recycle and the removal stages are an inherent part of the process. The process gas scrubbing systems use a water and sodium hydroxide mixture to remove sulfur dioxide, chlorine, and residual HCl, titanium tetrachloride, and particulate matter. The process gas scrubbing systems are considered the control devices.

B. Rationale for Selection of Performance Indicators

The HCl removal stage is efficient at removing HCl and titanium tetrachloride, the main generator of particulate matter in downstream equipment. Efficient scrubbing of particulate matter requires pressure drop and intimate contact with scrubbing liquor.

Liquor recirculation flow to each baffle column was selected as a key performance indicator of sufficient scrubbing liquor for contact.

Differential pressure across the system was selected as a key performance indicator of driving force to remove particulate matter.

C. Rationale for Selection of Indicator Ranges

The indicator ranges covered by this Plan are shown in the above table. The ranges were selected such that these indicators could be monitored across the operating range of the process. The 300 gallon per minute minimum recirculating liquor flow rate was selected based on historical data obtained during normal operation. The 2 psig minimum pressure drop, measured as pressure into the fume disposal area, was selected based on an analysis of process data.

A report that provides Test data that demonstrates compliance with the applicable PM limits, including liquor flow and differential pressure indicator data for the tested scrubber, : *CAM Implementation Plan and Schedule Required by 40 CFR 64.4(d) and (e) - Reaction Area: Chlorinator Scrubbers*. Data from test reports and Monitoring as defined in this Plan shall be submitted to the Division within 180 days of permit approval.

43-0007-08-09: #1 and #2 Chlorinators: Sulfur Dioxide (SO₂) CAM Plan

I. Background Information

A. Emission Units

43-0007-08-09: #1 and #2 Chlorinators: Titanium dioxide ore, coke, and chlorine are mixed in chlorinators. Iron chloride and titanium tetrachloride are condensed from the gas stream generated followed by equipment to remove non-condensable gases. Each of the two (2) chlorinator lines consists of a titanium dioxide ore chlorinator, iron chloride and titanium tetrachloride condensing equipment, titanium tetrachloride storage tanks, HCl removal stage, and process gas scrubbing system with stack. HCl is removed by water for recycle and the removal stages are an inherent part of the process. The process gas scrubbing systems use a water and sodium hydroxide mixture to remove sulfur dioxide, chlorine, and residual HCl, titanium tetrachloride, and particulate matter. The process gas scrubbing systems are considered the control devices.

B. Applicable Regulations and SO₂ Emission Limitations

43-0007-08-09 #1 and #2 Chlorinators:

E8-2. This source shall comply with the following SO₂ limits:

- (a) Sulfur dioxide (SO₂) emitted from each chlorinator line (EP08 and EP09) of this source shall not exceed 800 ppm. TAPCR 1200-03-19-.14(1)(c)(3)(i)
- (b) Sulfur dioxide emitted from this source shall not exceed a total of 503 tons per year (EP08 and EP09 combined). TAPCR 1200-03-09-.01(4)(b)4

C. Control Technology

Emissions of sulfur dioxide from each Chlorinator are controlled by a process gas scrubbing system which includes recirculating a water and sodium hydroxide liquor through a baffle column and associated equipment.

II. Monitoring Approach

The key elements of the monitoring approach are presented in the following table. The selected scrubber performance indicators are chosen in accordance with the requirements of 40 CFR 64.3(a)(2) and 64.4(a)(2). The chosen performance indicators are: sodium hydroxide/water recirculating liquor flow and pH to the baffle column. The following shall apply whenever emissions are vented to the control device.

CAM Plan – 43-0007-08-09: #1 and #2 Chlorinators: SO₂		
	Indicator No. 1	Indicator No.2
Indicator 40 CFR 64.3(a)(1)-(2) 40 CFR 64.4(a)(1)	Liquor Flow	Liquor pH
Measurement Approach	Liquor recirculation flow to each baffle column shall be measured continuously.	The liquor pH of each baffle column’s recirculation flow shall be measured using an on-line transmitter.
Monitoring Methods and Location	Continuous measurement	Continuous measurement
Indicator Range	<u>Minimum values</u> 08 and 09: 300 gallons per minute, each baffle column A 3-hour block average below the minimum value shown above constitutes an excursion.	<u>Minimum values</u> 08 and 09: 5 pH standard units (s.u.), each baffle column A 3-hour block average below the minimum value shown above constitutes an excursion.

CAM Plan – 43-0007-08-09: #1 and #2 Chlorinators: SO₂		
	Indicator No. 1	Indicator No.2
Data Collection Frequency	Minimum of once every 15 minutes, when reaction line is operating	Minimum of once every 15 minutes, when reaction line is operating
Recordkeeping Records shall be maintained for a period of five years from the date of the record.	Records shall be maintained of liquor recirculation flow readings and any excursions.	Records shall be maintained of liquor pH readings and any excursions.
QA/QC	Each recirculation flow transmitter will be periodically calibrated according to the site’s maintenance plan specifications.	Each pH measurement equipment is periodically calibrated.
Averaging Period 40 CFR 64.3(d)	3-hour block average	3-hour block average

Notes:

1. Each excursion shall be reported as an instance of deviation from permit requirements in the semiannual reports submitted pursuant to Condition E2 of the Major Source Operating Permit.
2. In this CAM Plan, an excursion means:
 - i. A departure from an indicator range as defined in the Indicators section of the above table and in these Notes, or
 - ii. A measured value is available less than 75 percent of the time within a 24-hour period, unless manual readings of the parameter are made at least once per operating shift as a backup during periods of automatic monitoring system breakdown.
3. The number of excused excursions for each monitored parameter for each semiannual reporting period are shown below:

First semiannual period:	Six excused excursions
Second semiannual period:	Five excused excursions
Third semiannual period:	Four excused excursions
Fourth semiannual period:	Three excused excursions
Fifth and all subsequent semiannual periods:	Two excused excursions
4. A monitored parameter found outside its established range during startup, shutdown, or malfunction conditions or during periods of non-operation of the source or lack of monitoring data during startup, shutdown, or malfunction conditions or during periods of non-operation of the source, does not count toward the number of excused excursions.

III. Monitoring Approach Justification (§64.4(b))

A. Background/Emission Unit Description

Titanium dioxide ore, coke, and chlorine are mixed in chlorinators. Iron chloride and titanium tetrachloride are condensed from the gas stream generated followed by equipment to remove non-condensable gases. Each of the two (2) chlorinator lines consists of a titanium dioxide ore chlorinator, iron chloride and titanium tetrachloride condensing equipment, titanium tetrachloride storage tanks, HCl removal stage, and process gas scrubbing system with stack. HCl is removed by water for recycle and the removal stages are an inherent part of the process. The process gas scrubbing systems use a water and sodium hydroxide mixture to remove sulfur dioxide, chlorine, and residual HCl, titanium tetrachloride, and particulate matter. The process gas scrubbing systems are considered the control devices.

B. Rationale for Selection of Performance Indicators

Liquor recirculation flow to each baffle column was selected as a key performance indicator of sufficient scrubbing liquor for contact.

Liquor pH was selected as a key performance indicator because the pH affects the SO₂ removal efficiency.

C. Rationale for Selection of Indicator Ranges

The indicator ranges covered by this Plan are shown in the above table. The ranges were selected such that these indicators could be monitored across the operating range of the process. The 300 gallon per minute minimum recirculating liquor flow rate was selected based on historical data obtained during normal operation. The minimum pH of 5 s.u. was selected based on the theoretical relationship between SO₂ removal efficiency and pH.

Test data that demonstrates compliance with the applicable SO₂ limits, including liquor flow and pH indicator data for the tested scrubber, will be submitted in accordance with the document: *CAM Implementation Plan and Schedule Required by 40 CFR 64.4(d) and (e) - Reaction Area: Chlorinator Scrubbers*. Monitoring defined in this Plan will commence within 180 days of permit approval.

43-0007-11: 3 Purification Area Scrubbers: PM CAM Plan

I. Background Information

A. Emission Units

43-0007-011: Titanium Tetrachloride Purification Process: Production of purified Titanium Tetrachloride (TiCl₄) intermediate controlled by caustic scrubbing system (sodium hydroxide solution) consisting of three (3) scrubbing systems, which combined with separators remove SO₂, particulates, and HCl from the vapor stream. Abatement relies on a water/caustic scrubbing mixture and overall pressure drop across the scrubbing system. The system configuration allows for gases from all purification and maintenance operations to be directed to any of the three scrubbers.

B. Applicable Regulations and PM Emission Limitations

43-0007-011: Titanium Tetrachloride Purification Process:

E11-1. Particulate matter emitted from this source shall not exceed 3.5 lb/hr. TAPCR 1200-03-07-.01(5) and the agreement letter dated November 7, 2006

C. Control Technology

Emissions of SO₂, OxyChloride particulates, and HCl from the TiCl₄ Purification Process are controlled by a caustic scrubbing system (sodium hydroxide solution) consisting of three scrubbers.

II. Monitoring Approach

The key elements of the monitoring approach are presented in the following table. The selected scrubber performance indicators are chosen in accordance with the requirements of 40 CFR 64.3(a)(2) and 64.4(a)(2). The chosen performance indicators are: sodium hydroxide/water flow to the scrubber and pressure drop (i.e., differential pressure). The following shall apply whenever emissions are vented to the control device.

43-0007-11: 3 Purification Area Scrubbers: PM CAM Plan		
	Indicator No. 1	Indicator No. 2
Indicator 40 CFR 64.3(a)(1)-(2) 40 CFR 64.4(a)(1)	Liquor Flow	Differential Pressure
Measurement Approach	Liquor flow to each scrubber shall be measured continuously.	Differential pressure shall be measured by a pressure transmitter.
Monitoring Methods and Location	Continuous measurement	Continuous measurement
Indicator Range	<u>Minimum value</u> 125 gallons per minute, each scrubber when scrubber is operating. A 3-hour block average below the minimum value shown above constitutes an excursion.	<u>Minimum value</u> 25 in. w.g., each scrubber when scrubber is operating. A 3-hour block average below the minimum value shown above constitutes an excursion.
Data Collection Frequency	Normally continuous, with a minimum of once per shift, when Purification Area is operating	Normally continuous, with a minimum of once per shift, when Purification Area is operating
Recordkeeping: Records shall be maintained for a period of five years from the date of the record.	Records shall be maintained of liquor flow readings and any excursions.	Records shall be maintained of differential pressure readings and any excursions.
QA/QC	Each scrubber's flow transmitter will be periodically calibrated according to the site's maintenance plan.	Each scrubber's pressure transmitter will be periodically calibrated according to the site's maintenance plan.
Averaging Period 40 CFR 64.3(d)	3-hour block average	3-hour block average

Notes:

1. Each excursion shall be reported as an instance of deviation from permit requirements in the semiannual reports submitted pursuant to Condition E2 of the Major Source Operating Permit.
2. In this CAM Plan, an excursion means:
 - i. A departure from an indicator range as defined in the Indicators section of the above table and in these Notes, or
 - ii. A measured value is available less than 75% of the time within a 24-hour period, unless manual readings of the parameter are made at least once per operating shift as a backup during periods of automatic monitoring system breakdown.
3. For each scrubber, the number of excused excursions for each monitored parameter for each semiannual reporting period are shown below:

First semiannual period:	Six excused excursions
Second semiannual period:	Five excused excursions
Third semiannual period:	Four excused excursions
Fourth semiannual period:	Three excused excursions
Fifth and all subsequent semiannual periods:	Two excused excursions
4. A monitored parameter found outside its established range during startup, shutdown, or malfunction conditions or during periods of non-operation of the source or lack of monitoring data during startup, shutdown, or malfunction conditions or during periods of non-operation of the source, does not count toward the number of excused excursions.

III. Monitoring Approach Justification (§64.4(b))

A. Background/Emission Unit Description

Gases from production of purified Titanium Tetrachloride (TiCl₄) intermediate are cleaned by passing them through a caustic scrubbing system (sodium hydroxide solution) consisting of three (3) scrubbing systems, which combined with separators remove SO₂, particulates, and HCl. Abatement relies on a water/caustic scrubbing mixture and overall pressure drop across the scrubbing system. The system configuration allows for gases from all purification and maintenance operations to be directed to any of the three scrubbers.

B. Rationale for Selection of Performance Indicators

Liquor flow to each scrubber was selected as a key performance indicator because efficient scrubbing of TiCl₄ requires intimate contact with water. Sufficient flow is needed to ensure this contact occurs throughout the gas stream.

Differential pressure was selected because sufficient differential pressure is also necessary for effective scrubbing of TiCl₄ fumes.

C. Rationale for Selection of Indicator Ranges

The indicator ranges for the scrubbers covered by this Plan are shown in the above table. The ranges were selected such that these indicators could be monitored across the operating range of the process. The minimum liquor flow was selected based on internal standards which recommend ranges in gallons per minute (gpm) of liquor flow per cubic feet per minute (cfm) of gas, with minimum differential pressure chosen based on the theoretical particulate removal efficiency of 99.9% based on scrubber design data.

Test data that demonstrates compliance with the applicable PM limit, including liquor flow and differential pressure indicator data for the tested scrubbers, will be submitted within 180 days of permit approval in accordance with the document: *CAM Implementation Plan and Schedule Required by 40 CFR 64.4(d) and (e) - Purification Area Scrubbers*. Monitoring defined in this Plan will commence within 180 days of permit approval.

43-0007-11: 3 Purification Area Scrubbers: SO₂ CAM Plan

I. Background Information

A. Emission Units

43-0007-011: Titanium Tetrachloride Purification Process: Production of purified Titanium Tetrachloride (TiCl₄) intermediate controlled by caustic scrubbing system (sodium hydroxide solution) consisting of three (3) scrubbing systems, which combined with separators remove SO₂, particulates, and HCl from the vapor stream. Abatement relies on a water/caustic scrubbing mixture sprayed and overall pressure drop across the scrubbing system. The system configuration allows for gases from all purification and maintenance operations to be directed to any of the three scrubbers.

B. Applicable Regulations and SO₂ Emission Limitations

43-0007-011: Titanium Tetrachloride Purification Process:

E11-2. Sulfur dioxide emitted from this source shall not exceed 100 parts per million (ppm) and 8.9 lb/hr. TAPCR 1200-03-19-.14(1)(c)3(viii), 1200-03-14-.01(3), and the agreement letter dated November 7, 2006

C. Control Technology

Emissions of SO₂ particulates, and HCl from the TiCl₄ Purification Process are controlled by a caustic scrubbing system (sodium hydroxide solution) consisting of three (3) scrubbers.

II. Monitoring Approach

The key elements of the monitoring approach are presented in the following table. The selected scrubber performance indicators are chosen in accordance with the requirements of 40 CFR 64.3(a)(2) and 64.4(a)(2). The chosen performance indicators are: sodium hydroxide/water flow to the scrubber and scrubber liquor pH. The following shall apply whenever emissions are vented to the control device.

43-0007-11: 3 Purification Area Scrubbers: SO₂ CAM Plan		
	Indicator No. 1	Indicator No. 2
Indicator 40 CFR 64.3(a)(1)-(2) 40 CFR 64.4(a)(1)	Liquor Flow	Liquor pH
Measurement Approach	Liquor flow to each scrubber shall be measured continuously.	The liquor pH of each scrubber shall be measured using an on-line transmitter.
Monitoring Methods and Location	Continuous measurement	Continuous measurement
Indicator Range	<u>Minimum value</u> 125 gallons per minute, each scrubber when scrubber is operating 3-hour block average below the minimum value shown above constitutes an excursion.	<u>Minimum value</u> 6 s.u. each scrubber when scrubber is operating 3-hour block average below the minimum value shown above constitutes an excursion.
Data Collection Frequency	Normally continuous, with a minimum of once per shift, when Purification Area is operating	Normally continuous, with a minimum of once per shift, when Purification Area is operating
Recordkeeping	Records shall be maintained of liquor flow readings and any excursions.	Records shall be maintained of liquor pH readings and any excursions.

43-0007-11: 3 Purification Area Scrubbers: SO₂ CAM Plan		
	Indicator No. 1	Indicator No. 2
Records shall be maintained for a period of five years from the date of the record.		
QA/QC	Each scrubber’s flow transmitter will be periodically calibrated according to the site’s maintenance plan specifications.	Each scrubber’s pH measurement equipment is periodically calibrated.
Averaging Period 40 CFR 64.3(d)	3-hour block average	3-hour block average

Notes:

1. Each excursion shall be reported as an instance of deviation from permit requirements in the semiannual reports submitted pursuant to Condition E2 of the Major Source Operating Permit.
2. In this CAM Plan, an excursion means:
 - i. A departure from an indicator range as defined in the Indicators section of the above table and in these Notes, or
 - ii. A measured value is available less than 75 percent of the time within a 24-hour period, unless manual readings of the parameter are made at least once per operating shift as a backup during periods of automatic monitoring system breakdown.
3. For each scrubber, the number of excused excursions for each monitored parameter for each semiannual reporting period are shown below:

First semiannual period:	Six excused excursions
Second semiannual period:	Five excused excursions
Third semiannual period:	Four excused excursions
Fourth semiannual period:	Three excused excursions
Fifth and all subsequent semiannual periods:	Two excused excursions
4. A monitored parameter found outside its established range during startup, shutdown, or malfunction conditions or during periods of non-operation of the source or lack of monitoring data during startup, shutdown, or malfunction conditions or during periods of non-operation of the source, does not count toward the number of excused excursions.

III. Monitoring Approach Justification (§64.4(b))

A. Background/Emission Unit Description

Gases from production of purified Titanium Tetrachloride (TiCl₄) intermediate are cleaned by passing them through a caustic scrubbing system (sodium hydroxide solution) consisting of three (3) scrubbing systems, which combined with separators remove SO₂, particulates, and HCl. Abatement relies on a water/caustic scrubbing mixture and overall pressure drop across the scrubbing system. The system configuration allows for gases from all purification and maintenance operations to be directed to any of the three scrubbers.

B. Rationale for Selection of Performance Indicators

Liquor flow to each scrubber was selected as a key performance indicator because of the need to have sufficient liquid contact with the SO₂ to ensure a high degree of removal. Low liquor flow results in insufficient liquid-gas contact for effective pollutant removal.

Liquor pH was selected as a performance indicator because the pH directly determines the SO₂ emission reduction efficiency of the scrubber.

C. Rationale for Selection of Indicator Ranges

The indicator ranges for the scrubbers covered by this Plan are shown in the above table. The ranges were selected such that these indicators could be monitored across the operating range of the process. The minimum liquor flow was selected based on internal standards which recommend ranges in gallons per minute (gpm) of liquor flow per cubic feet per minute (cfm) of gas, with minimum pH chosen based on the theoretical absorption efficiency of 90% SO₂ removal based on scrubber design data.

Test data that demonstrates compliance with the applicable SO₂ limits, including liquor flow and pH indicator data for the tested scrubbers, will be submitted within 180 days of permit approval in accordance with the document: *CAM Implementation Plan and Schedule Required by 40 CFR 64.4(d) and (e) - Purification Area Scrubbers*. Monitoring defined in this Plan will commence within 180 days of permit approval.

43-0007-53, 43-0007-55, 43-0007-56: Finishing and Finished Products Area Baghouses: PM CAM Plan

I. Background Information

A. Emission Units

43-0007-53 #1 Finishing Operations: six micronizer feed bins, seven packer bins
 43-0007-55 #2 Finishing Operations: five micronizer feed bins, eight packer bins
 43-0007-56 Slurry Pneumatic Conveying Operations: 10 silo collectors, three weigh bins

B. Applicable Regulations and Emission Limitations

43-0007-53 #1 Finishing Operations:

E53-1. Particulate matter emitted from this source shall not exceed 1.5 pounds per hour. TAPCR 1200-03-07-.01(5), agreement letter dated February 1, 1989

43-0007-55 #2 Finishing Operations:

E55-1. Particulate matter emitted from this source shall not exceed 1.5 pounds per hour. TAPCR 1200-03-07-.01(5), agreement letter dated February 1, 1989

43-0007-56 Slurry Pneumatic Conveying Operations:

E56-1. Particulate matter emitted from this source shall not exceed 1.5 pounds per hour. TAPCR 1200-03-07-.01(5), agreement letter dated February 1, 1989

C. Control Technology

The baghouses covered by this plan provide control of filterable particulate matter emissions.

II. Monitoring Approach

The key elements of the monitoring approach are presented in the following table. The selected baghouse performance indicators are chosen in accordance with the requirements of 40 CFR 64.3(a)(2) and 64.4(a)(2). The chosen performance indicators are: filter differential pressure and baghouse condition.

The control devices for these emissions units cannot be bypassed; therefore, no bypass monitoring is necessary and as a result none is proposed. The following apply whenever emissions are vented to the control device.

43-0007-53, 43-0007-55, 43-0007-56: Finishing and Finished Products Area Baghouses: PM CAM Plan		
	Indicator No. 1	Indicator No. 2
Indicator 40 CFR 64.3(a)(1)-(2) 40 CFR 64.4(a)(1)	Filter differential pressure	Baghouse condition
Measurement Approach	Differential Pressure shall be measured continuously	Visual baghouse inspections shall be conducted two (2) times within the annual compliance certification period (April 1- March 31)
Monitoring Methods and Location	Continuous measurement	Baghouse inspections conducted to ensure that the equipment is operating properly and that deterioration of the equipment is not occurring
Indicator Range	<u>Minimum values:</u> Each micronizer feed bin: 0.5 in.w.g. Each packer bin: 0.5 in.w.g.	Evidence of deterioration of the equipment indicates that maintenance needs to be performed

43-0007-53, 43-0007-55, 43-0007-56: Finishing and Finished Products Area Baghouses: PM CAM Plan		
	Indicator No. 1	Indicator No. 2
	Each silo collector: 0.5 in.w.g. Each weigh bin: 0.5 in.w.g. 3-hour block average below the minimum value shown above constitutes an excursion	
Minimum Data Collection Frequency	Once per hour	Two (2) times per the annual compliance certification period (April 1- March 31)
Recordkeeping Records shall be maintained for a period of five years from the date of the record.	Records shall be maintained of differential pressure readings and any excursions	Records shall be maintained of each inspection and any resulting maintenance performed
QA/QC	The pressure transmitter is periodically calibrated according to the site's maintenance plan specifications	Maintenance procedures describe the actions required to adequately maintain the baghouse
Averaging Period 40 CFR 64.3(d)	3-hour block average	Not applicable

Notes:

1. Each excursion shall be reported as an instance of deviation from permit requirements in the semiannual reports submitted pursuant to Condition E2 of the Major Source Operating Permit.
2. In this CAM Plan, an excursion means:
 - i. A departure from a filter differential pressure indicator range as defined in the Indicators section of the above table and in these Notes, or
 - ii. For a particular baghouse, availability of less than 75 percent of the measured filter differential pressure values within a 24-hour period of time, unless manual readings of the parameter are made at least once per operating shift as a backup during periods of automatic monitoring system breakdown.
 - iii. A failure to conduct the required baghouse inspection
3. For each emission control device, the number of excused excursions for each continuously monitored indicator for each semiannual reporting period are shown below:

First semiannual period:	Six excused excursions
Second semiannual period:	Five excused excursions
Third semiannual period:	Four excused excursions
Fourth semiannual period:	Three excused excursions
Fifth and all subsequent semiannual periods:	Two excused excursions
4. A monitored indicator found outside its established range during startup, shutdown, or malfunction conditions or during periods of non-operation of the source or lack of monitoring data during startup, shutdown, or malfunction conditions or during periods of non-operation of the source, does not count toward the number of excused excursions.
5. Monitoring in accordance with this Plan shall commence within 180 days of permit approval.

III. Monitoring Approach Justification (§64.4(b))

A. Background/Emission Unit Description

These operations consist of pneumatic transport and storage of dry titanium dioxide pigment for support of processes for finished products. Baghouses are used to recover product and to prevent excessive dust emissions.

B. Rationale for Selection of Performance Indicators

Differential pressure across the filter was selected as a performance indicator because:

1. A decrease in pressure drop below the minimum value can indicate that the filter (or bag) is torn or not properly installed.
2. An increase can indicate blinding of the filter media and a subsequent bypassing of the gaskets can occur

Implementation of a baghouse inspection and maintenance program was selected as an indicator because this type of program provides assurance that a baghouse is in good repair and operating properly. Each baghouse will undergo an internal maintenance inspection at least two (2) times during the annual compliance certification period (April 1-March 31) to ensure that the equipment is operating properly, and that deterioration of the equipment is not occurring. Trained personnel will conduct these inspections and keep records of the inspections and any resulting maintenance performed on the baghouse.

C. Rationale for Selection of Indicator Ranges

The indicator ranges for the baghouses covered by this plan are shown in the above table. The minimum pressure drop values shown were selected such that baghouse pressure drop could be monitored across the operating range of the process. These minimums were selected based on historical data obtained during normal operation at this plant or at nearly identical baghouses at another titanium dioxide pigment plant, manufacturer's design, or good engineering practice in consideration of the physical characteristics of each baghouse.

Test data that demonstrates compliance with the applicable Particulate Matter limit for each source, including indicator data, will be submitted within 180 days of permit approval in accordance with the document: *CAM Implementation Plan and Schedule Required by 40 CFR 64.4(d) and (e) - Finishing and Finished Products Area Baghouses*. Monitoring defined in this Plan will commence within 180 days of permit approval.

43-0007-67: Iron Co-product Production Facility Soda Ash Baghouses: PM CAM Plan

I. Background Information

A. Emission Unit

Iron Co-product Production Facility Soda Ash Baghouses: 43-0007-67SA-1, 43-0007-67SA-2

B. Applicable Regulations and Emission Limitations

E67-1. Particulate matter emitted from the controlled stack emission points (see description below) at this is source shall not exceed 3.42 lb/hr (daily average).

C. Control Technology

The baghouses covered by this plan provide control of filterable PM and PM₁₀ emissions from soda ash transfer operations.

II. Monitoring Approach

The key elements of the monitoring approach are presented in the following table. The selected baghouse performance indicators are chosen in accordance with the requirements of 40 CFR 64.3(a)(2) and 64.4(a)(2). The chosen performance indicators are filter differential pressure, and, as a backup indicator, visible emissions at the filter vent.

43-0007-67: Soda Ash Baghouses PM CAM Plan		
	Indicator No. 1	Backup to Indicator No. 1
Indicator 40 CFR 64.3(a)(1)-(2) 40 CFR 64.4(a)(1)	Filter differential pressure	Visible Emissions
Measurement Approach	Differential Pressure shall be measured continuously.	Baghouse exhaust stack observed for visible emissions.
Monitoring Methods and Location	Continuous measurement	Visual observations of exhaust stacks to ensure equipment is operating properly and filter media is not deteriorating
Indicator Range	<u>Minimum values:</u> Each Soda Ash baghouse: 0.27 in.w.g. A 3-hour average below the minimum value shown above constitutes an excursion.	Upon any observation of visible emissions from a baghouse stack, take corrective action to eliminate visible emissions. If the corrective action taken eliminates the visible emissions, no further action is needed. Otherwise, a visible emission evaluation (VEE) shall be performed on the unit if it remains operating, using EPA Reference Method 9. An excursion is defined as any observation above 20% opacity using Method 9.
Minimum Data Collection Frequency	Once per hour	Only when dP transmitters are not functioning correctly.
Recordkeeping Records shall be maintained for a period of five years from the date of the record.	Records shall be maintained of differential pressure readings and any excursions.	Records shall be maintained of the visual observations, and any Method 9 readings.

43-0007-67: Soda Ash Baghouses PM CAM Plan		
	Indicator No. 1	Backup to Indicator No. 1
QA/QC	The pressure transmitter is periodically calibrated according to the site's maintenance plan specifications.	Visual emissions observers shall be trained on stack observation procedures. If visible emissions are observed, and corrective action does not eliminate visible emissions, a VEE using Method 9 shall be performed.
Averaging Period 40 CFR 64.3(d)	3-hour block average	Not applicable

Notes:

1. Each excursion shall be reported as an instance of deviation from permit requirements in the semiannual reports submitted pursuant to Condition E2 of the Major Source Operating Permit.
2. In this CAM Plan, an excursion means:
 - a) A departure from an indicator range as defined in the Indicators section of the above table and in these Notes, or
 - b) A measured value is available less than 75 percent of the time within a 24-hour period, unless manual readings of the parameter are made at least once per operating shift as a backup during periods of automatic monitoring system breakdown.
3. For each emission control device, the number of excused excursions for each continuously monitored indicator for each semiannual reporting period are shown below:

First semiannual period:	Six excused excursions
Second semiannual period:	Five excused excursions
Third semiannual period:	Four excused excursions
Fourth semiannual period:	Three excused excursions
Fifth and all subsequent semiannual periods:	Two excused excursions
4. A monitored indicator found outside its established range during startup, shutdown, or malfunction conditions or during periods of non-operation of the source or lack of monitoring data during startup, shutdown, or malfunction conditions or during periods of non-operation of the source, does not count toward the number of excused excursions. Monitoring data from the Backup to Indicator 1 may be used during those periods when reliable Indicator 1 monitoring data are not available.

III. Monitoring Approach Justification (§64.4(b))

A. Background/Emission Unit Description

Purchased soda ash is transferred, via enclosed screw conveyors, from the top of a bucket elevator system into two (2) unloading silos for process neutralization. The baghouses operate to prevent dusting during these transfer operations.

B. Rationale for Selection of Indicator Range

Differential pressure across each baghouse was selected as a performance indicator because a decrease in pressure drop can indicate a torn or otherwise damaged bag, and an increase in pressure drop can indicate that the bag cleaning cycle is not frequent enough, that the cleaning equipment is damaged or that the bags are becoming blinded. Visible emissions (opacity) was selected as a back-up performance indicator because opacity below the applicable standard is indicative of good operation and maintenance of the baghouse. When a baghouse is operating optimally, there will be little or no visible emissions from the exhaust. In general, an increase in visible emissions indicates reduced performance of the baghouse. Plant personnel will

conduct visual observations of exhaust stacks to ensure equipment is operating when dP transmitters are not on-line and functioning.

C. Rationale for Selection of Indicator Ranges

The minimum pressure drop across each baghouse covered by this plan is shown in the above table. During normal unloading operations, one baghouse is operated and the second baghouse serves as a backup. The following is documentation demonstrating that one baghouse will achieve the required PM emission rate during maximum loading conditions, at the minimum pressure drop.

Based on data provided by the filter cloth manufacturer, the expected pressure drop across a new bag is 0.5 in.w.g. for 8 cfm/ft². These data were input to a flux model to determine the expected pressure drop of the baghouse filter cloth based on the total surface area of the filter cloth and the expected air flow from the fan. The flux model predicts a minimum pressure drop of 0.27 in.w.g. across a new, clean filter cloth at the full fan load of 3450 RPM and 7.5 HP. The emissions calculations were conducted by lab analysis of a soda ash sample to determine the particle size distribution, and calculations were then performed based on removal efficiencies for each range of particle sizes based on AP-42 guidelines. The actual soda ash % removal efficiency of each size group was applied to the uncontrolled mass emission rate of each size group. The sum of controlled emissions of all size groups were accounted as total emissions to the atmosphere in pounds per hour. Maximum emissions of 0.06 lb/hr of filterable PM (or PM₁₀) emissions were predicted at the minimum expected pressure drop of 0.27 in.w.g. This is well below the proposed permit limits.

The indicator range for visible emissions is the presence of visible emissions in the baghouse vent during a stack observation. Historically, the observation of visible emissions has been associated with poor baghouse performance caused by conditions that may require maintenance.

43-0007-67 Iron Co-product Production Facility Salt Dryer: PM CAM Plan (MM1)

I. Background Information

A. Emission Units

43-0007-67E – Iron Co-product Production Facility: Salt dryer

B. Applicable Regulations and Emission Limitations

E67-1. Particulate matter emitted from the controlled stack emission points (see description below) at this is source shall not exceed 3.42 lb/hr (daily average).

C. Control Technology

Emissions of PM and PM₁₀ from the salt dryer are controlled by a tray type wet scrubber.

II. Monitoring Approach

The key elements of the monitoring approach are presented in the following table. The selected scrubber performance indicator, water flow, was chosen in accordance with the requirements of 40 CFR 64.3(a)(2) and 64.4(a)(2). The following shall apply whenever emissions are vented to the control device.

43-0007-67: Salt Dryer Scrubber PM CAM Plan	
	Indicator No. 1
Indicator 40 CFR 64.3(a)(1)-(2) 40 CFR 64.4(a)(1)	Water Flow
Measurement Approach	Water flow to the scrubber shall be measured continuously.
Monitoring Methods and Location	Continuous measurement
Indicator Range	<u>Minimum value:</u> 15 gallons per minute A 3-hour average below the minimum value shown above constitutes an excursion.
Data Collection Frequency	Minimum once every 15 minutes
Recordkeeping Records shall be maintained for a period of five years from the date of the record.	Records shall be maintained of water flow readings and any excursions.
QA/QC	The scrubber’s flow transmitter will be periodically calibrated according to the site’s maintenance plan specifications.
Averaging Period 40 CFR 64.3(d)	3-hour block average

Notes:

1. Each excursion shall be reported as an instance of deviation from permit requirements in the semiannual reports submitted pursuant to Condition E2 of the Major Source Operating Permit.
2. In this CAM Plan, an excursion means:
 - a) A departure from an indicator range as defined in the Indicators section of the above table and in these Notes, or

- b) A measured value is available less than 75 percent of the time within a 24-hour period, unless manual readings of the parameter are made at least once per operating shift as a backup during periods of automatic monitoring system breakdown.
- 3. For each emission control device, the number of excused excursions for each continuously monitored indicator for each semiannual reporting period are shown below:

First semiannual period:	Six excused excursions
Second semiannual period:	Five excused excursions
Third semiannual period:	Four excused excursions
Fourth semiannual period:	Three excused excursions
Fifth and all subsequent semiannual periods:	Two excused excursions
- 4. A monitored indicator found outside its established range during startup, shutdown, or malfunction conditions or during periods of non-operation of the source or lack of monitoring data during startup, shutdown, or malfunction conditions or during periods of non-operation of the source, does not count toward the number of excused excursions.

III. Monitoring Approach Justification (§64.4(b))

A. Background/Emission Unit Description

Wet salt from the evaporation plant is dried in a natural gas-fired dryer. The vent gas from the dryer contains particulate matter. The vent gas is directed to a tray type water scrubber, which uses once-through water to remove the particulate matter.

B. Rationale for Selection of Performance Indicators

Water flow to the scrubber was selected as the key performance indicator because efficient scrubbing of particulate matter requires intimate contact with the water. Sufficient water flow is needed to ensure this contact occurs throughout the gas stream.

C. Rationale for Selection of Indicator Range

The indicator range (minimum value) of water flow rate for the scrubber covered by this plan is shown in the above table. This value was selected based on historical data obtained during normal operation, such that this indicator could be monitored across the operating range of the process.

Test data that demonstrates compliance with the applicable PM and PM₁₀ limits, including water flow data, will be submitted within 180 days of permit approval in accordance with the document: *CAM Implementation Plan and Schedule Required by 40 CFR 64.4(d) and (e) – Iron Co-product Production Facility: Salt Dryer Scrubber.*

43-0007-67: Iron Co-product Production Facility H₂S Scrubber: PM CAM Plan (MM1)

I. Background Information

A. Emission Unit

43-0007-67F – Iron Co-product Production Facility: H₂S Scrubber

B. Applicable Regulations and Emission Limitations

E67-1(MM1). Particulate matter emitted from the controlled stack emission points (see description below) at this is source shall not exceed 3.42 lb/hr (daily average).

C. Control Technology

Emissions of PM and PM₁₀ from the iron co-products reactor vent stream are controlled by a packed bed wet scrubber.

II. Monitoring Approach

The key elements of the monitoring approach are presented in the following table. The selected scrubber performance indicator liquor flow was chosen in accordance with the requirements of 40 CFR 64.3(a)(2) and 64.4(a)(2). The following shall apply whenever emissions are vented to the control device.

43-0007-67: Iron Co-product Production Facility H₂S Scrubber: PM CAM Plan	
	Indicator No. 1
Indicator 40 CFR 64.3(a)(1)-(2) 40 CFR 64.4(a)(1)	Liquor Flow
Measurement Approach	Liquor flow to the scrubber shall be measured continuously.
Monitoring Methods and Location	Continuous measurement
Indicator Range	<u>Minimum value:</u> 200 gallons per minute A 3-hour block average below the minimum value shown above constitutes an excursion.
Data Collection Frequency	Minimum once per hour
Recordkeeping Records shall be maintained for a period of five years from the date of the record.	Records shall be maintained of liquor flow readings and any excursions.
QA/QC	The scrubber’s flow transmitter will be periodically calibrated.
Averaging Period 40 CFR 64.3(d)	3-hour block average

Notes:

- Each excursion shall be reported as an instance of deviation from permit requirements in the semiannual reports submitted pursuant to Condition E2 of the Major Source Operating Permit.
- In this CAM Plan, an excursion means:

- a) A departure from an indicator range as defined in the Indicators section of the above table and in these Notes, or
 - b) A measured value is available less than 75 percent of the time within a 24-hour period, unless manual readings of the parameter are made at least once per operating shift as a backup during periods of automatic monitoring system breakdown.
3. For each emission control device, the number of excused excursions for each continuously monitored indicator for each semiannual reporting period are shown below:
- | | |
|--|--------------------------|
| First semiannual period: | Six excused excursions |
| Second semiannual period: | Five excused excursions |
| Third semiannual period: | Four excused excursions |
| Fourth semiannual period: | Three excused excursions |
| Fifth and all subsequent semiannual periods: | Two excused excursions |
4. A monitored indicator found outside its established range during startup, shutdown, or malfunction conditions or during periods of non-operation of the source or lack of monitoring data during startup, shutdown, or malfunction conditions or during periods of non-operation of the source, does not count toward the number of excused excursions.
5. Monitoring in accordance with this Plan shall commence within 180 days of permit issuance
6. No flow readings are required when lime slurry or sodium hydroxide solution is being added to the Reactor. For purposes of compliance verification, the permittee shall note and record those time periods as identified above when flow readings are not required.

III. Monitoring Approach Justification (§64.4(b))

A. Background/Emission Unit Description

Purchased soda ash is added to the aqueous metal chloride solution in the reactor. The vent gas from the reactor contains PM and PM₁₀. The vent gas is directed to a packed bed type scrubber, which uses a recirculating caustic/peroxide solution (liquor) to remove the PM and PM₁₀ from the vent gas stream.

B. Rationale for Selection of Performance Indicators

Liquor flow to the scrubber was selected as a key performance indicator because efficient scrubbing of particulates requires intimate contact with the liquor. Sufficient liquor flow is needed to ensure this contact occurs throughout the gas stream.

C. Rationale for Selection of Indicator Range

The minimum liquor flow to the scrubber covered by this plan is shown in the above table. The following is documentation demonstrating the scrubber will achieve the required control efficiency during maximum loading conditions.

The normal maximum loading of all PM/PM₁₀ to the scrubber is 105.5 lb/hr in the form of Na₂CO₃ (soda ash) in the inlet gas. Scrubber process modeling was performed using Aspen software at various inlet loading conditions to determine scrubber performance. At inlet PM/PM₁₀ loads between 50 and 500 lb/hr, at a liquor flow of 200 GPM, the Aspen model predicts that the scrubber is 100% efficient in removing these particulates from the inlet gas.

43-0007-75: Fugitive Dust Scrubbers: PM CAM Plan

I. Background Information

A. Emission Units

43-0007-75: Two (2) Fugitive Dust Scrubbers: Two wet scrubbers used to control area-wide fugitive dust emissions for employee safety purposes.

B. Applicable Regulations and Emission Limitations

E75-1. Particulate matter emitted from this source shall not exceed 3.4 pounds per hour. TAPCR 1200-03-07-.01(5) and the agreement letter dated November 7, 2006

C. Control Technology

Two fixed-impeller type scrubbers are used to remove particulate matter. Each scrubber uses once-through plant water as the scrubbing liquor, and each scrubber and its associated vapor capture system are operated under vacuum created by a fan. Each scrubber controls emissions collected from a unique set of pickup points but can be connected on the suction to allow operation with a single scrubber. Scrubber water is discharged to the plant's on-site wastewater treatment plant.

II. Monitoring Approach

The key elements of the monitoring approach are presented in the following table. The selected scrubber and capture system performance indicators are chosen in accordance with the requirements of 40 CFR 64.3(a)(2) and 64.4(a)(2). The chosen scrubber performance indicator is liquid level. In addition, emissions could potentially bypass a scrubber's capture system if a pickup point becomes plugged or disconnected from its material handling device or storage bin. Thus, the chosen capture system performance indicator is capture system condition. The following CAM requirements shall apply:

43-0007-75: Fugitive Dust Scrubbers: PM CAM Plan		
	Indicator No. 1	Indicator No. 2
Indicator 40 CFR 64.3(a)(1)-(2) 40 CFR 64.4(a)(1)	Liquid Level	Capture System Condition
Measurement Approach	Liquid level in each scrubber shall be measured continuously.	Capture system inspections shall be conducted monthly.
Monitoring Methods and Location	Continuous measurement	Capture system inspections conducted to check all pickup points for pluggage, and that all are properly connected.
Indicator Range	<u>Minimum value:</u> 75A and 75B: 6 inches A 3-hour block average below the minimum value shown above constitutes an excursion, unless the crossover valve is open allowing one scrubber operation.	An excursion is defined as a failure to conduct an inspection of the capture system at least once during a calendar month.
Data Collection Frequency	Minimum once per hour	Once per calendar month
Recordkeeping Records shall be maintained for a period of five years from the date of the record.	Records shall be maintained of liquid level readings and any excursions.	Records shall be maintained of each monthly inspection, and any excursions.

43-0007-75: Fugitive Dust Scrubbers: PM CAM Plan		
	Indicator No. 1	Indicator No. 2
QA/QC	Each scrubber’s level transmitter will be periodically calibrated according to site maintenance procedures.	Not applicable
Averaging Period 40 CFR 64.3(d)	3-hour block average	Not applicable

Notes:

1. Each excursion shall be reported as an instance of deviation from permit requirements in the semiannual reports submitted pursuant to Condition E2 of the Major Source Operating Permit.
2. In this CAM Plan, an excursion means:
 - a) A departure from an indicator range as defined in the Indicators section of the above table and in these Notes, or
 - b) Availability of less than 75 percent of the measured values within a 24-hour period of time, unless manual readings of the parameter are made at least once per operating shift as a backup during periods of automatic monitoring system breakdown.
 - c) Failure to conduct a required scrubber inspection
3. For each emission control device, the number of excused excursions for each continuously monitored indicator for each semiannual reporting period are shown below:

First semiannual period:	Six excused excursions
Second semiannual period:	Five excused excursions
Third semiannual period:	Four excused excursions
Fourth semiannual period:	Three excused excursions
Fifth and all subsequent semiannual periods:	Two excused excursions
4. A monitored indicator found outside its established range during startup, shutdown, or malfunction of a scrubber or during periods of non-operation of the source or lack of monitoring data during startup, shutdown, or malfunction of a scrubber or during periods of non-operation of the source, does not count toward the number of excused excursions.

III. Monitoring Approach Justification (§64.4(b))

A. Background/Emission Unit Description

Each wet scrubber is a unique fixed-impeller type scrubber. The key to the scrubber’s ability to remove particulate materials from the air stream are the fixed impellers, located above a reservoir of water with a variable level. Shaped somewhat like a curved airfoil, the impeller surfaces create a round chamber that induces rotation of the liquid stream residing between the impeller surfaces as long as the liquid in the vessel is maintained at or above an appropriate level and the appropriate driving force is provided. The driving force to induce rotation is the ID fan, which draws particulate laden air from the various pickup points. The rotation induced in the impeller chamber causes intimate contact between the particulate in the air and the scrubber water. Once the particles become entrained in the scrubber water, they cannot become airborne again and settle to the bottom of the scrubber where they are removed from the system via a drain line. The drain line takes the particulate laden water down to the ground level sump for disposal and recovery of the coke and ore particles. Clean air exits the scrubber via the ID fan to a stack.

B. Rationale for Selection of Performance Indicators

Liquid level in each scrubber was selected as a key performance indicator because for scrubber control purposes, the level of water in the scrubber is critical for operation. With insufficient water level in the scrubber, particulate laden air can pass unimpeded through the system and out of the stack with little or no scrubbing of the particulate matter. With higher than

normal water levels in the scrubber, scrubbing will be even more thorough, but inefficient in the sense that more energy will be consumed by the ID fan motor to pull the air through the impellers to the clean air side of the plenum.

Capture system condition refers to the implementation of a capture system inspection and maintenance program. This was selected as an indicator because this type of program provides assurance that the pickup points are not plugged and are properly connected. The capture system will undergo an inspection at least once per calendar month. Trained personnel will conduct these inspections and keep records of the inspections and any actions taken.

C. Rationale for Selection of Indicator Ranges

The indicator ranges for the scrubbers covered by this plan are shown in the above table.

The design basis for both of the scrubbers combined includes 800 lb/hr inlet particulate loading at a volumetric flow rate of 14,200 cfm. Scrubber process modeling was performed at these conditions to ensure the required scrubber performance and efficiency at known material densities. Using momentum transfer equations specific to this scrubber configuration, the model predicts cumulative particulate emissions of 0.87 lb/hr when the differential pressure is maintained at 6 inches of water column gage (iwcg) or higher, with the bulk of the particulate comprised of particles that range from 14-17 μm in diameter. As such, the process model predicts compliance with the permit limit of 3.4 pounds per hour of particulate matter at a minimum differential pressure across each scrubber vessel of 6 iwcg. A minimum liquid level of 6 inches ensures that the differential pressure across each scrubber vessel will not fall below 6 iwcg.

The model also predicts compliance during one-scrubber operation.

43-0007-105: Sodium Chloride Processing Baghouse: PM CAM Plan

I. Background Information

A. Emission Unit

43-0007-105A – Sodium Chloride Processing Baghouse

B. Applicable Regulation or Emission Limitation

E105-2. Particulate matter emitted from this source shall not exceed 3.42 lb/hr. TAPCR 1200-03-07-.01(5) and agreement letter dated March 10, 1995.

C. Control Technology

The baghouse covered by this plan provides control of filterable particulate matter emissions.

II. Monitoring Approach

The key elements of the monitoring approach are presented in the following table. The selected baghouse performance indicators are chosen in accordance with the requirements of 40 CFR 64.3(a)(2) and 64.4(a)(2). The chosen performance indicator is filter differential pressure. In addition, emissions could potentially bypass the capture system if a pickup point becomes plugged or disconnected from its material handling device or storage bin. Thus, the chosen capture system performance indicator is capture system condition. The following CAM requirements shall apply:

43-0007-105: Sodium Chloride Processing Baghouse: PM CAM Plan		
	Indicator No. 1	Indicator No. 2
Indicator 40 CFR 64.3(a)(1)-(2) 40 CFR 64.4(a)(1)	Filter differential pressure	Capture System Condition
Measurement Approach	Differential Pressure shall be measured continuously.	Capture system inspections shall be conducted monthly.
Monitoring Methods and Location	Daily reading	Capture system inspections conducted to ensure that all pickup points and are not plugged and are properly connected.
Indicator Range	<u>Minimum value:</u> 0.3 in.w.g. <u>Normal maximum value:</u> 2.1 in.w.g. A reading below the minimum value shown above constitutes an excursion. A reading above the normal maximum value shown above requires an investigation of the cause.	An excursion is defined as a failure to conduct an inspection of the capture system at least once during a calendar month.
Minimum Data Collection Frequency	Once per day	Once per calendar month
Recordkeeping Records shall be maintained for a period of five years from the date of the record.	Records shall be maintained of differential pressure readings and any excursions.	Records shall be maintained of each monthly inspection, maintenance performed related to unplugging/re-connecting pickup points, and any excursions.
QA/QC	The pressure gage will be checked for accuracy at least once per calendar year and will be replaced if it is reading greater than or less than 20% of the true reading.	Not applicable

43-0007-105: Sodium Chloride Processing Baghouse: PM CAM Plan		
	Indicator No. 1	Indicator No. 2
Averaging Period 40 CFR 64.3(d)	Not applicable	Not applicable

Notes:

1. Each excursion shall be reported as an instance of deviation from permit requirements in the semiannual reports submitted pursuant to Condition E2 of the Major Source Operating Permit.
2. In this CAM Plan, an excursion means a departure from an indicator range as defined in the Indicators section of the above table and in these Notes.
3. For each emission control device , the number of excused excursions for each continuously monitored indicator for each semiannual reporting period are shown below:

First semiannual period:	Six excused excursions
Second semiannual period:	Five excused excursions
Third semiannual period:	Four excused excursions
Fourth semiannual period:	Three excused excursions
Fifth and all subsequent semiannual periods:	Two excused excursions
4. A monitored indicator found outside its established range during startup, shutdown, or malfunction conditions or during periods of non-operation of the source or lack of monitoring data during startup, shutdown, or malfunction conditions or during periods of non-operation of the source, does not count toward the number of excused excursions.

III. Monitoring Approach Justification (§64.4(b))

A. Background/Emission Unit Description

The emission unit consists of mechanical conveyors, transfer points, and storage of dry sodium chloride, to facilitate the loading of railcars and trucks that ship the dry salt product to customers. A pneumatic collection system collects salt dust from multiple pickup points and routes the dust to a baghouse.

B. Rationale for Selection of Performance Indicators

Differential pressure across the baghouse was selected as a performance indicator because a decrease in pressure drop can indicate that there is significant hole or tear in a bag. A significant increase in pressure drop can indicate that the bag cleaning cycle is not frequent enough, that the cleaning equipment is damaged, or that the bags are becoming blinded.

Capture system condition refers to the implementation of a capture system inspection and maintenance program. This was selected as an indicator because this type of program provides assurance that the pickup points are not plugged and are properly connected. The capture system will undergo a maintenance inspection at least once per calendar month. Trained personnel will conduct these inspections and keep records of the maintenance performed related to unplugging/re-connecting pickup points.

C. Rationale for Selection of Indicator Ranges

The indicator range for pressure drop is shown in the above table. The minimum and normal maximum values shown were selected based on historical data obtained during normal operation.

Test data that demonstrates compliance with the applicable Particulate Matter limit for this source, including indicator data, will be submitted within 180 days of permit approval in accordance with the document: *CAM Implementation Plan and Schedule Required by 40 CFR 64.4(d) and (e) - Sodium Chloride Processing Baghouse*. Monitoring defined in this Plan will commence within 180 days of permit approval.

ATTACHMENT 5

CALCULATIONS FOR ACTUAL EMISSIONS TONNAGE (AEAR)

Emissions Analysis Required for Title V Fee Calculations, 43-0007			
Pollutants	Source Identification	Calculation Reference	Emission Factor Reference
Particulate Matter	43-0007- 13, 70 and 71	1	A. EPA AP-42, Tables 1.4-1 through 1.4-3 (July 1998).
	43-0007-05-15	3	B. Current Stack test data to be used
	43-0007-14, 08-09	3	C. Current Stack Test Data .
Sulfur Dioxide	43-0007-05-15, 13, 32, 33, 63, 64, 67, 70 and 71	1	A. EPA AP-42, Tables 1.4-1 through 1.4-3 (July 1998).
	43-0007-08-09	3	B. Current Stack Test Data
NO _x	43-0007-05-15, 13, 32, 33, 63, 64 & 67	1	A. EPA AP-42, Tables 1.4-1 through 1.4-3 (July 1998).
	43-0007-70 & 71	1	B. Emission factor per heater manufacturer.
VOC	43-0007- 05-15, 13, 67, 70 & 71	1	A. EPA AP-42, Tables 1.4-1 through 1.4-3 (July 1998).
VOC, VOC HAP, non-VOC HAP	43-0007-08-09	2	B. VOC is assumed equivalent to COS, from JV Reaction Area Air Emissions model for period. Chlorine calculations based on maximum emissions from Title V application
HCl and Chlorine	43-0007-14	3	C. Current Stack Test data for HCl and Chlorine
HCl	43-0007-67	3	D. Emission calculation based on lbs. HCl to Scrubber during period.
VOC	43-0007-32, 33, 63, and 64	3	C. Current Stack Test Data
H ₂ S	43-0007-67	2	Emission calculation program based on data from H ₂ S detectors and gas flow meters

ATTACHMENT 6

RESERVED

ATTACHMENT 7

MUTUAL AGREEMENT LETTER: 43-0007-90



15 DEC 2017 9:10:38

APC RQVD

December 4, 2017

Greg Forte
State of Tennessee
Department of Environment and Conservation
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243

Re: WTPS New Johnsonville Terminal – Air Operating Permit No. 070154P – Construction Permit Application for Emission Modification

Mr. Forte:

As discussed during our meeting on October 5th, attached is the construction permit application to revise the emission rate originally permitted in 1996 as Permit Number 945311P to Hall-Buck Marine, Inc. The emission estimates are being revised due to inconsistencies identified between the permit and the physical operation. The emission rate for the facility is identified as condition 3 and reads as follows:

Particulate matter emitted from this source shall not exceed 2.8 pounds per hour. This emission limitation is established pursuant to Rule 1200-3-7-.01(5) of the Tennessee Air Pollution Control Regulations and the information contained in the agreement letter dated August 9, 1996 from the permittee.

Revised emission calculations have been provided within this letter that account for both fugitive emissions at conveyor transfer points as well as process emissions from the existing baghouses. Since the facility's operation will soon transition within Chemours' Title V Permit, these emissions have also been revised to use identical emission factors provided by Chemours.

The WTPS New Johnsonville Terminal requests that the 2.8 lbs/hr emission rate for particulate matter be increased to either of the following:

Process Emission Rate (Baghouse Emissions Only)	Process + Fugitive Emission Rate (Baghouse + Fugitive Conveyor Emissions)
10.64 lbs/hr	23.93 lbs/hr



Attached to this letter you will find the following:

- TDEC Form CN-0730 – Non-Title V Facility Identification
- TDEC Form CN-0741 – Non-Title V Process Source Description
- TDEC Form CN-0742 – Non Title V Emission Point Description
 - HBM-01-A
 - HBM-01-B
 - HBM-01-C
 - HBM-01-D
 - Fugitive - Feeder Belt to Conveyor 1
 - Fugitive – Conveyor 3 to Conveyor 4 – Ore Only
- Ore and Coke Operation Site Map
- Ore and Coke Transfer Process Map
- Air Emission Calculations

Should you have any questions or comments, please contact Environmental Manager, Brent Shields, by phone at 662-587-0067, or by e-mail at Brent.Shields@watcocompanies.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'Derek Damesworth', with a stylized flourish at the end.

Derek "Dee" Damesworth
Terminal Manager
WTPS New Johnsonville Terminal
Phone: 931-535-2742
E-mail: ddamesworth@watcocompanies.com



March 5, 2018

Michelle Walker-Owenby
State of Tennessee
Department of Environment and Conservation
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243

Re: WTPS New Johnsonville Terminal – Air Operating Permit No. 070154P – Proposed Limitations

Ms. Owenby:

In response to your request, the WTPS New Johnsonville Terminal is proposing the following limitations:

- Annual Throughput Limit for Ore = 800,000 tons
- Annual Throughput Limit for Coke = 200,000 tons
- Annual PM Limit = 18.73 tons
- Annual PM10 Limit = 11.38 tons
- Annual PM2.5 Limit = 2.94 tons

The particulate matter emissions were generated using the same methods identified in the permit application.

Proposed Limit - Total Emissions - 800k Tons of Ore - 200k Tons of Coke				
Emission Point	PM (tons)	PM10 (tons)	PM2.5 (tons)	Comment
Ore Operation	6.76	5.72	2.08	The emissions shown include a control of 95% by the baghouses and 75% control for mostly enclosed transfer points.
Coke Operation	11.97	5.66	0.86	
Total	18.73	11.38	2.94	

Should you have any questions or comments, please contact Environmental Manager, Brent Shields, by phone at 662-587-0067, or by e-mail at Brent.Shields@watcocompanies.com.

Sincerely,

Derek "Dee" Damesworth
Terminal Manager
WTPS New Johnsonville Terminal
Phone: 931-535-2742
E-mail: ddamesworth@watcocompanies.com



The Chemours Company
Johnsonville Plant
P.O. Box 219
New Johnsonville, TN 37134-0219

931-535-2111
chemours.com

November 19, 2019

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

7017 1000 0000 1933 4895

Ms. Michelle Owenby, Director
Tennessee Division of Air Pollution Control
Department of Environment and Conservation
William R. Snodgrass TN Tower
312 Rosa L. Parks Ave., 15th Floor
Nashville, TN 37243-1531

21 NOV 2019 09:39
APC RCU0

Re: 43-0007 Chemours Johnsonville Plant Title V Permit # 569782
EP90 Coke & Ore Operations
Update to Significant Modification

PUBLIC REVIEW VERSION

Appendix A of this letter contains the public review version of the updated application for the significant modification of the Chemours Johnsonville Plant's Title V permit for Emission Source EP90 – Coke and Ore Operations. This update is submitted in response to the request contained in TDAPC's letter dated October 21, 2019. This updated application rescinds the permit applications submitted on March 25, 2019 (Confidential version), and April 8, 2019 (Public Review version). Specifically, this updated application requests the same limits (including the limit on annual tons of Titanium Dioxide ore unloaded) established by the Watco Transloading, LLC permit-to-construct No. 973602 issued on April 6, 2018.

Following Form APC18 for EP90A within Appendix A, specifications are provided for a new cartridge filter that will replace the existing Barge-dock baghouse (HBM-1). The new filter has greater removal efficiency for particulate matter.

Based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete. If you have any questions or require any additional information, please contact Ed Ramos at 931-535-7316.

Sincerely,

C. J. Hilton
Plant Manager

TITLE V PERMIT STATEMENT

Facility Name:	The Chemours Company FC LLC
City:	New Johnsonville
County:	Humphreys

Date Application Received:	June 26, 1997; Revisions dated February 26, 1998, August 21, 1998, September 15, 1998, January 27, 1999, April 7, 1999, October 25, 1999, February 10, 2000, April 10, 2000, March 21 and 22, 2001, June 1, 2002, and June 20, 2002 and letters dated January 15, 1999, February 5, 1999, October 30, 2001, February 19, 2002, June 6, 2002, and Minor Modification #4 dated April 23, 2015/ update with compliance schedule received by email April 24, 2015 , Minor Modification #5 application dated November 23, 2015
Date Application Deemed Complete:	June 5, 2014

Emission Source Reference No.:	43-0007
Permit No.:	569782

INTRODUCTION

This narrative is being provided to assist the reader in understanding the content of the attached Title V operating permit. This Title V Permit Statement is written pursuant to Tennessee Air Pollution Control Rule 1200-3-9-.02(11)(f)1.(v). The primary purpose of the Title V operating permit is to consolidate and identify existing state and federal air requirements applicable to the Chemours Company FC, LLC and to provide practical methods for determining compliance with these requirements. The following narrative is designed to accompany the Title V Operating Permit. It initially describes the facility receiving the permit, then the applicable requirements and their significance, and finally the compliance status with those applicable requirements. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the public participation process will be described in an addendum to this narrative.

Acronyms

PSD - Prevention of Significant Deterioration
NESHAP - National Emission Standards for Hazardous Air Pollutants
NSPS - New Source Performance Standards
MACT - Maximum Achievable Control Technology
NSR - New Source Review

I. Identification Information

A. Listing and description of emission sources: Please list, identify, and describe briefly process emission sources, fuel burning installations, and incinerators that are contained in this application.

Source Number	Description
05-15	Ore Roasters
08	#1 Chlorinator
09	#2 Chlorinator
11	Titanium Tetrachloride Purification Process
13	Natural gas fired Non-contact Heaters- L202 & L2Ti
14	Wet Treatment
32	Spray Dryer #1
33	Spray Dryer #2
53	#1 Finishing Operations
55	#2 Finishing Operations
56	Slurry Pneumatic Conveying Operations
60	HCl Filtration Eductor
61	Coke Unloading and Storage
62	Chlorine Unloading Scrubber
63	Spray Dryer #3
64	Pilot Plant Dryer
67	Iron Co-product Production Facility
68	Organic storage tanks

Source Number	Description
70	Non-Contact Heater-L101
71	Non-Contact Heater-L1Ti
72	HCl storage tanks
75	Fugitive Dust Scrubbers
79	Ross Hollow Leachate Diesel Pump ICE
80	Natural Gas Fired Steam Superheater
81	Leachate Diesel Pump ICE
84	633-00032 P ICE Caterpillar
86	671-00049 P ICE Clark Fire Pump
87	633-00072 ICE ONAN Diesel
88	Replacement Ice Kohler
89	New Kohler Diesel 700 Bldg
90	Coke and Ore Operations
95	Toluene Equipment
100	Sandblasting
105	Sodium Chloride Processing
111	Benzene Waste Operations fugitives

B. Facility Classification

1. Attainment or Non-Attainment Area Location: Area is designated as an attainment area for all criteria pollutants.
2. Company is located in a Class II area (this means that the facility is not located within a national park or national wilderness area; see 40 CFR 52.21(e) for complete definition).

C. Regulatory Status

1. PSD/NSR: This facility is an existing major source under PSD.
2. Title V Major Source Status by Pollutant

Pollutant	Is the pollutant emitted?	Major Source Status
PM	Yes	Major Source
PM ₁₀	Yes	Major Source
SO ₂	Yes	Major Source
VOC	Yes	Major Source
NO _x	Yes	Major Source
CO	Yes	Major Source
Individual HAP	Yes	Major Source
Total HAPs	Yes	Major Source

3. NESHAP/MACT Standards: This facility is a major source for HAPs. This facility is subject to the following standards:

NESHAP Subpart	Rule
40 CFR 61 Subpart JJJJ	Benzene Waste Operations
40 CFR 63 Subpart ZZZZ	Stationary Reciprocating Internal Combustion Engines
40 CFR 63 Subpart DDDDD	Boilers and Process Heaters – Major Sources

4. Program Applicability: Are the following programs applicable to the facility?

PSD: yes
 NESHAP: yes
 NSPS: yes (Subparts UUU and IIII)

40 CFR Part 64 (Compliance Assurance Monitoring [CAM]) applies to the following sources: 05-15 (Ore Roasters), 08 (#1 Chlorinator), 09 (#2 Chlorinator), 11 (Titanium Tetrachloride Purification Process), 53 (#1 Finishing Operations), 55 (#2 Finishing Operations), 56 (Slurry Pneumatic Conveying Operations), 67 (Iron Co-product Production Facility), 75 (Fugitive Dust Scrubbers), and 105 (Sodium Chloride Processing).

43-0007-74 (Wet Treatment): PM testing for the Wet Treatment Process (July 12-13, 2016) indicated pre-treatment PM at 0.95 lb/hr; post-treatment PM was 0.4 lb/hr. Therefore, PM CAM does not apply. The chlorine and HCl limits for this source are state-only requirements, and CAM does not apply.

43-0007-32, 33, 63 and 64 (Spray Dryers): Because the material collected is subsequently used as process material, the baghouses are inherent process equipment. The uncontrolled emissions are below the CAM threshold for PM, and the spray dryers are not subject to CAM.

II. Compliance Information

A. Compliance Status

Is the facility currently in compliance with all applicable requirements? The facility entered into a Consent Order with the Division concerning measured violation of the particulate emission limit. Source 43-0007-05-15 (Ore Roasters), controlled by a common wet scrubber, has tested out of compliance with the NSPS particulate limit of 0.025 gr/dscf (40 CFR §60.732(a)).

III. Other Requirements

A. Emissions Trading: The facility is not involved in an emissions trading program.

B. Acid Rain Requirements

This facility had opted into the acid rain program under Title IV of the Clean Air Act. In a letter dated November 16, 2016, the facility announced their intention to opt out of the Acid Rain Program. A letter from TVA dated November 17, 2016 indicated that the action would become effective on January 1, 2018 for units JVD-1, JVD-2, JVD-3, and JVD-4.

C. Prevention of Accidental Releases

This facility is subject to 40 CFR Part 68. The facility must annually report that they have complied with program requirements.

D. General Source-specific Considerations

43-0007-05 and 15 (Ore Roasters): For condition E5-2, the NSPS UUU PM Standard of 0.025 gr/dscf is approximately equivalent to 4.8 lb/hr.

43-0007-08 and 09 (#1 and #2 Chlorinators): Compliance will be determined from the permittee's Spreadsheet model JV Reaction Area Air Emissions. Emissions of carbon monoxide, carbonyl sulfide, and sulfur dioxide are calculated using a site spreadsheet model that estimates emission rates of each compound based on measured parameters which include the consumption rates of the carbon sources. Since sulfur dioxide is removed in scrubbers, the scrubbers' efficiency is applied to the model-predicted sulfur dioxide emission rate to quantify the controlled emission rate.

This permit includes emissions resulting from a netting analysis for the following modifications:

VOC: October 1990 installation of Dryer Additive System for Spray Dryers- analysis included with June 5, 2014 application.

PM and PM10: September 1994 Installation of Iron Co-Products facility and recent Ross Hollow Landfill Upgrades Project – analysis included with June 5, 2014 application and August 14, 2017 application.

43-0007-95 Toluene Equipment consists of leaks from piping and equipment around the facility
 43-0007-100 Sandblasting occurs at various locations around the facility

43-0007-105 NaCl Processing is operated by IPL (Ref. 43-0057) but is at this time being permitted under Chemours because they are adjacent and their entire output is directed to Chemours

43-0007-84 Emergency Engine 1,020 HP constructed 2003 – This unit is not subject to NESHAP ZZZZ as follows: §63.6590(a)(2)(i) (stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after December 19, 2002).

IV. Public Participation Procedures

Notification of this draft permit was emailed to the following environmental agencies:

1. EPA Region 4 Atlanta
2. State of Kentucky Department for Environmental Protection
3. Nashville/ Davidson County Metropolitan Health Department

VI. Dates of Applications and Application revisions

Date	Activity	Affected Source	Doc. ID for Depository
August 14, 2017	Application update	EP 67 Iron Co-Product - Additional Information	1
July 26, 2017	Application update	EP 15 Ore Roasters - Additional Information	2
July 12, 2017	Construction Application	EP14 Wet Treatment update to reflect current configuration of equipment	2a
March 22, 2017	Application update	EP-81 Leachate Diesel Pump information	3a
January 31, 2017	Minor Modification Request	EP 15 Ore Roasters - new information for control system	3
November 21, 2016	Acid Rain Opt-out	See permit attachment 8	-
August 9, 2016	Application Update	EP 95 Toluene Equipment, EP67 Iron Coproducts, EP62 Chlorine unloading, EP100 Sandblasting	4
March 2, 2016	Minor Modification request	Pt 08 – 09 Chlorinators request to defer testing due to past compliance record	5
January 29, 2016	Acid rain opt-in	Plantwide	5a
November 23, 2015	Minor Modification request	Pt 79 Diesel Engine for Leachate Pump	6
November 11, 2015	Minor Modification request	Remove Heaters from permit Pt 12	7
June 16, 2015	App update	Pt 68 Toluene storage – revised emission calculations	7a
April 23, 2015	Minor Modification Request	Pts 05-15 Roasters – remove process limit (with no effect on emissions) update	8

Date	Activity	Affected Source	Doc. ID for Depository
April 1, 2015	Minor Modification Request	Pts 05-15 remove process limit (with no effect on emissions) Roasters-	9
March 2, 2015	Exemption Request	Pilot Plant Study for Pt 67 Iron Co-products	9a
Feb 23, 2015	Minor Modification	Pt 69 Solids Conveying System- equipment removed	10
Feb 2, 2015	Application update	Pt 67 Iron Co-product- monitoring revision	10a
Jan 13, 2015	Administrative Amendment request	Plantwide – ownership change	11
Jan 7, 2015	Application update	Pt 62 Chlorine unload new information	11a
Nov 20, 2014	Administrative Amendment	Name Change	12
Oct 3, 2014	Application update	Pts 62 Chlorine unload and 64 Pilot Plant new information	12a
Jun 5, 2014	Modification request	Pts 32 Spray Dryer #1 , 63 Spray Dryer #3, 64 Pilot Plant Dryer and 67 Iron Co-products Requested new limits	12b
Jun 5, 2014	Renewal application	Plantwide	12c
Nov 5, 2013	Insignificant request	R&D project	12d
Dec 17, 2012	Minor Modification	Pt 05-15 Ore Roasters- partial equipment replacement	13
July 25, 2012	App update	Pt 61 coke handling new information	13a
May 30, 2012	Administrative Amendment	Pt 75 Fugitive Dust Scrubber- change in monitoring parameters	14
Feb 6, 2012	Administrative Amendment	Responsible Official Change	15
Feb 6, 2012	Operational Flexibility	Pt 67 Iron Co-products scrubber changeout	16
Jan 26, 2012	Operational Flexibility	Pt 14 Wet Treatment Piping Replacement	17
May 9, 2011	App update	Pt 67 Iron Co-product information	17a
Jan 29, 2009	Administrative Amendment request	Pt 11 Purification Pressure Drop change	18
May 21, 2007	Operational Flexibility request	Pt 68 Alternate Material Usage for Toluene Storage 19	19
April 18, 2006 (permit)	Significant Modification #2	Pt 62 Chlorine Unloading, Pt 64 Pilot Plant Dryer, Pt 75 Fugitive Dust Scrubbers (handling ore conveying into chlorinators)	19a
December 5, 2002 (permit)	Significant Modification #1	Spray Dryer #1 modification of existing equipment	20

Plantwide Potential-to-Emit Values (tons/year)							
ID	PM	SO ₂	CO	VOC	NO _x	HCl	Cl ₂
# 05-15 Roasters	27	0	27.6	1.8	32.85		
# 08-09 Chlorinators	48	503	18,400	1715	0		
# 11 TiCl ₄ Purification	15	38.3	0			38.9	
# 13 NG NC Heaters	6	10	18	2.2	40		
# 14 Wet Treatment	7	0	0			4.4	9.2
# 32 Spray Dryer #1	11	5	44	268	21		
# 33 Spray dryer #2	11	5	44.2	1,200	21		
# 53 #1 Finishing	6.6	0	0				
# 55 #2 Finishing	7	5	0				0.44
#56 Slurry Pneu Convey	7	0					
#60 HCl Filt Eductor						6.6	
#61 Coke Unload/Store	24.1	0					
#62 Chlorine Unload	0	0					1
#63 Spray Dryer #3	11	0.4	44	11	53		
#64 Pilot Plant Dryer	2.2	0.4	2		1.9		
#67 Iron Co-Products	174	0	70.1	1.4	25.2		
#68 Toluene Storage Tks.	0	0		1.7			
#70 NC Heater L101	1.5	5	7	0.4	8.3		
#71 NC Heater LiTi	4.5	5	15	2.2	8.8		
#72 (2) HCl Tanks	0	0				2.7	
#75 Fug. Dust Scrubber	14.8	0					
#79 Ross Hollow Diesel			0.2		0.1		
#80 Superheater	0.2	0	1.8	0.1	2.2		
#81 Leachate Diesel Pump			0.3		0.3		
#84 ICE Caterpillar	17.9	0.14	2.1	0.41	9.2		
#86 Clark Diesel Pump	0	0					
#87 Onan Diesel	0	0	0				
#88 Radio ICE Kohler	0.01	0.002	10.4	1.1	1.1		
#89 Kohler Diesel Bld 700	0.01	0.002	0.2	0.02	0.02		
90 Coke and Ore Operations	88.3						
#95 Toluene Equipment				2.0			
#100 Sandblasting	37.2						
#105 NaCl Processing	14.9						
#111 Benzene Waste				1			
Total	536.22	577.244	18686.9	3208.33	224.97	52.6	10.64

RESPONSE TO COMMENTS

General Information

Facility Name:	The Chemours Company FC LLC
City:	New Johnsonville
County:	Humphreys

Date Applications Received:	June 26, 1997; Revisions dated February 26, 1998, August 21, 1998, September 15, 1998, January 27, 1999, April 7, 1999, October 25, 1999, February 10, 2000, April 10, 2000, March 21 and 22, 2001, June 1, 2002, and June 20, 2002 and letters dated January 15, 1999, February 5, 1999, October 30, 2001, February 19, 2002, June 6, 2002, and Minor Modification #4 dated April 23, 2015/ update with compliance schedule received by email April 24, 2015 , Minor Modification #5 application dated November 23, 2015
Date Application Deemed Complete:	

Emission Source Reference No.:	43-0011
Permit No.:	569782

Date of Public Notice:	June 5, 2014
Date of Public Hearing:	N/A

Comment Summary

Commenter	Comment	Response
	No comments from public or EPA	
Tim Steward, Chemours	1. H2S Scrubber CAM Plan – Remove back-up indicator, interlock in system will not allow to work.	Removed from permit
	2. Condition E86-13 – Is 0.5% Sulfur an error?	Changed to 0.05% sulfur
	3. Sodium Chloride Processing Facility CAM Plan – needs a revised dP – sent 12/20/17 by email to John Fuss and Greg Forte.	Permit updated to reflect new value

Changes to Title V Permit 569782 Since Renewal Issuance

Permit Modification	Issue Date	Condition or Section	Modification				
Administrative Amendment #1 (AA1)	February 23, 2018	General Information	Administrative Amendment #1 corrects typographical errors in the Title V Renewal.				
		E2(b)(4)	The Annual Compliance Certification was corrected from October 1 – September 30 to April 1 – March 30.				
		E68-1	The VOC limit for this source was corrected as shown below: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Original VOC limit (tons/year)</th> <th>Corrected VOC limit (tons/year)</th> </tr> </thead> <tbody> <tr> <td align="center">2.0</td> <td align="center">1.7</td> </tr> </tbody> </table>	Original VOC limit (tons/year)	Corrected VOC limit (tons/year)	2.0	1.7
		Original VOC limit (tons/year)	Corrected VOC limit (tons/year)				
2.0	1.7						
E95-1	The VOC limit for this source was corrected as shown below: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Original VOC limit (tons/year)</th> <th>Corrected VOC limit (tons/year)</th> </tr> </thead> <tbody> <tr> <td align="center">1.5</td> <td align="center">2.0</td> </tr> </tbody> </table>	Original VOC limit (tons/year)	Corrected VOC limit (tons/year)	1.5	2.0		
Original VOC limit (tons/year)	Corrected VOC limit (tons/year)						
1.5	2.0						
Minor Modification #1 (MM1)	September 21, 2018	General Information	Attachment 7 included documents pertaining to Acid Rain Program Opt-In and Attachment 8 consisted of a letter from TVA to Chemours addressing the Chemours withdrawal from the Acid Rain opt-in Program. A letter from Reid P. Harvey, director of the EPA Clean Air Markets Division, dated February 15, 2018, stated that U.S. EPA accepted the Chemours request to withdraw Chemours New Johnsonville from the Acid rain Program effective January 1, 2018 (concurrent with the shutdown of the Johnsonville Coal-fired units). Therefore, the Acid Rain-related documents found at Attachments 7 and 8 are herewith removed from the permit. Also being removed is condition E3-6 which is related to Acid-Rain requirements.				
		Section D	Added new general conditions D11 (NESHAP), D12 (NSPS), D13 (gasoline dispensing), and D14 (internal combustion engines).				
		E3-6, Attachments 7 and 8	The following language was deleted from the permit: “The Acid rain Program Opt-In application (see 40 CFR §74) for this facility is found at Attachment 7. The Acid rain Program Opt-In withdrawal (see 40 CFR §74.18) is found at Attachment 8. The withdrawal coincides with the shutdown of coal-fired units at TVA Johnsonville.”				
		E13-8, E70-7, E71-7, and E80-4	Corrected Boiler MACT reporting requirements from Condition E2(c) to E2(d).				

Changes to Title V Permit 569782 Since Renewal Issuance

Permit Modification	Issue Date	Condition or Section	Modification
Minor Modification #1 (MM1)	September 21, 2018	E32-4	<p>Revised the compliance method to cross-reference Condition E3-7, as shown below:</p> <p>Compliance Method: Assurance of compliance for the volatile organic compounds (VOC) emission limit is based upon the analysis of stack results on Attachment I Page 5 of the permittee’s June 5, 2014 permit application, which indicates the VOC emission rate from Spray Dryer #1 will not exceed 29 pounds per hour. The maximum VOC emission rate shall be calculated monthly by the equation:</p> <p>Monthly VOC emission rate = (monthly hours of production at this source) x (29 pounds of VOC per hour) / (2000 pounds per ton). <u>In accordance with the provisions of condition E3-7, the permittee shall calculate the VOC emissions during the previous 12-month period by adding the monthly VOC emission rate calculated for the past month to the sum of their total monthly emissions for the previous eleven (11) months. These calculations shall be recorded in a log to be maintained at the facility. Calculations of 12-month VOC emissions from this source for purposes of compliance determination with the VOC emission limit in condition E3-7 will serve as compliance with the 12-month VOC emission calculation for this condition.</u></p> <p>Note: Condition E3-7 establishes a combined VOC emission limit of 268 tons during all intervals of 12 consecutive months for emission sources 43-0007-32 (Spray Dryer #1), 43-0007-63 (Spray Dryer #3), and 43-0007-64 (Pilot Plant Dryer).</p>
		E67-1, Attachment 4	<p>The facility has an existing permitted reactor at source 43-0007-67 Iron Co-product Production Facility. There are currently requirements to monitor the scrubber flow and pH for the H2S scrubber controlling this source; this requirement specifies monitoring of the control parameters as an indicator of control of particulate and Hydrogen Sulfide emissions. The permittee is proposing to use different reactants with the same equipment for part of the time, but when the alternate reactants are used, there would not be emissions of particulate or hydrogen sulfide, based upon the reactants in use (when the basic pH material is introduced as a slurry or solution into the reactor, particulate matter is not generated in the reactor). Therefore, the permittee is requesting that under the above described alternate operating scenario, monitoring of scrubber flow and pH would not be required, respectively, when the reactants in use do not generate these pollutants.</p> <p>Because, within 180 days of issuance of Permit 569782, the Compliance Assurance Monitoring (CAM) method (as specified at Attachment 4 of this permit) for particulate emissions (E67-1) for this source will become effective as the new particulate compliance method, the special provisions that apply to periods when basic pH slurry or solutions are added to the reactor (that is, no flow readings required) will also apply to the CAM monitoring. Therefore the permittee is requesting that under the above described alternate operating scenario, monitoring of scrubber flow and pH would not be required, respectively, when the reactants in use do not generate these pollutants.</p>

Changes to Title V Permit 569782 Since Renewal Issuance

Permit Modification	Issue Date	Condition or Section	Modification
Minor Modification #1 (MM1)	September 21, 2018	E67-12, Attachment 4	<p>For condition E67-12 which restricts hydrogen sulfide, pH readings will not be required when basic pH materials are added (as H₂S emissions are not being generated during these time periods and chemical scrubbing will not be necessary). Also, H₂S gas is not being generated when dry lime (calcium hydroxide) is being added to the reactor however, pm will be generated during this type of scenario). Because basic pH slurry or solution is being added to the reactor during certain operating scenarios, and under these conditions particulate matter is not being generated due to the wet nature of those materials, the liquor flow rate will not need to be measured during these periods. And, accordingly, because the flow for PM compliance assurance (CAM) is not being measured during these periods, that provision should also apply to the flow rate for H₂S scrubber compliance, because no H₂S or particulate emissions are being generated.</p> <p>The above described alternate scenarios do not represent significant changes to existing monitoring requirements but are a recognition that monitoring is not required when certain pollutants are not being generated. The permittee is required to record when these alternate scenarios are occurring so that they are not mistakenly cite them for failure to operate control devices.</p> <p>Also, note that the Compliance Assurance Monitoring requirements for the H₂S Scrubber for Iron Co-product production are being modified to exclude monitoring at the same times as when the permit conditions at 43-0007-67 do not require monitoring. Within 180 days of permit issuance the permittee will be replacing the existing PM-control scrubber compliance methods with the CAM requirements. Also, note that the H₂S compliance method for the scrubber utilizes pH and scrubber liquor flow as monitoring parameters. The minimum flow requirement as specified at E67-12 (MM1) will be monitored as part of CAM when the scrubber particulate compliance (scrubber liquor flow) commences with CAM monitoring.</p>
		Section E84	The Description for this source stated that “This unit is not subject to 40 CFR 63 Subpart ZZZZ” However, Condition E84-1 stated that the unit is subject to that rule. A review of NESHAP Subpart ZZZZ indicates that there are no emission limits here, but the source is subject to initial notification only. The above sentence in the source description is being removed.
		Attachment 5	Revised calculations for actual emissions for fee purposes as submitted by the permittee are included here.
		Notifications	Initial notification to EPA and affected States: April 9, 2018 Draft permit sent to EPA: August 1, 2018 Additional information requested by EPA: None requested. The e-mail dated September 10, 2018 states that EPA has no comments on this modification.
Significant Modification #1 (SM1)	Pending	General Information:	Significant Modification #1 adds emission source 43-0007-90 (Coke and Ore Operations).
		All sections	Updated all rule citations from “Tenn. Comp. R. & Regs.” (Tennessee Comprehensive Rules & Regulations) to “TAPCR” (Tennessee Air Pollution Control Regulations) based on revised guidance. Updated numbering conventions (e. g., “twenty-four (24) hours” to “24 hours” and “five (5) minutes” to “five minutes”).
		A11	Deleted A11(a)3. “In acting on the permit application, the Technical Secretary has not determined whether all applicable requirements have been addressed for source 43-0007-90 (Watco Transloading Facility – Material Handling Operation permitted as Ref. No. 43-0058-01 a-t 1410 DuPont Access Road)”
		A20, E2(c)	Updated to use standard language and moved annual 112(r) certification requirements from E2(c) to A20.
		B6	Updated address for submittal of ACC to U. S. EPA.
		B11	Updated language to match current regulations (revised Condition B11 to be consistent with revised 1200-03-30-.06(2), (3), and (4)).
		E1	Updated fee emissions and annual accounting period dates.

Changes to Title V Permit 569782 Since Renewal Issuance

Permit Modification	Issue Date	Condition or Section	Modification
Significant Modification #1 (SM1)	Pending	E2(a)	Updated semiannual reporting requirements.
		E3-1, E61-2	Deleted the general requirement for control devices to be operating whenever the source is in operation. The condition is not required for control devices subject to NSPS or CAM requirements or when source-specific conditions include an equivalent requirement. For Condition E61-2, added a source-specific requirement for the control device to be operating whenever the process is in operation.
		E3-9	Updated Responsible Official and Technical Contact.
		E90-1 through E90-8	<p>Added source-specific conditions for 43-0007-90 (Coke and Ore Operations). The applicable requirements for this permit include the requirements of construction permit 973602, issued April 6, 2018 to Watco Transloading, LLC, and the agreement letter from Chemours dated November 19, 2019.</p> <p>Source 90 includes both the barge unloading equipment constructed in 2002 and owned by Watco (four baghouses and a conveyor system to convey coke and ore to the plant) and the coke and ore handling operations constructed prior to 1970 and owned by Chemours.</p>
		Attachment 1	Added opacity matrix for TVEE Method 1.
		E5-2, E8-1, E8-2, E11-1, E11-2, E53-1, E55-1, E56-1, E67-1, E67-12, E75-1, Attachment 4	Removed the requirement for CAM monitoring to commence within 180 days of permit issuance (this requirement is moot because the permit was issued January 30, 2018). For all conditions required to comply with CAM, removed non-CAM monitoring requirements. Updated all CAM plans to revise the definition of an excursion from less than 75% of measured values during each 24-hour period unless one manual reading is made per operating shift to less than 75% of measured values during each averaging period (three-hour blocks for most parameters) unless one manual reading is made per operating averaging period.
		E5-8, Attachment 4, Attachment 6	Deleted the requirement for monitoring of the Ore Roasters (43-0007-05, 43-0007-15) to commence 30 days after APC acceptance of a Test Report which demonstrates compliance with 40 CFR 60 Subpart UUU (see letter from Jeryl Stewart dated December 21, 2018). Removed the Title V Corrective Action Schedule for the ore roasters (Attachment 6). Review of the enforcement database indicates that the enforcement case for this source is closed.
		Attachment 7	Added mutual agreement letter for 43-0007-90.
Public Participation	The public notice for this modification will be published in the <i>Humphreys County News Democrat</i> . Any comments received during the public comment period will be noted here.		