



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
AIR QUALITY PROGRAM

PLAN APPROVAL

Issue Date: August 14, 2023

Effective Date: August 11, 2026

Revision Date: July 30, 2026

Expiration Date: February 8, 2027

Revision Type: Extension

In accordance with the provisions of the Air Pollution Control Act, the Act of January 8, 1960, P.L. 2119, as amended, and 25 Pa. Code Chapter 127, the Owner, [and Operator if noted] (hereinafter referred to as permittee) identified below is authorized by the Department of Environmental Protection (Department) to construct, install, modify or reactivate the air emission source(s) more fully described in the site inventory list. This Facility is subject to all terms and conditions specified in this plan approval. Nothing in this plan approval relieves the permittee from its obligations to comply with all applicable Federal, State and Local laws and regulations.

The regulatory or statutory authority for each plan approval condition is set forth in brackets. All terms and conditions in this permit are federally enforceable unless otherwise designated as "State-Only" requirements.

Plan Approval No. 09-0152G

Federal Tax Id - Plant Code: 23-2499368-1

Owner Information

Name: GELEST INC

Mailing Address: 11 STEEL RD E
MORRISVILLE, PA 19067-3613

Plant Information

Plant: GELEST INC/FALLS TWP

Location: 09 Bucks County 09002 Falls Township

SIC Code: 2869 Manufacturing - Industrial Organic Chemicals, Nec

Responsible Official

Name: CHRISTOPHER BENFER

Title: SR MANAGER, OPERATIONS

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Plan Approval Contact Person

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Title: SR MGR REGULATORY AFFAIRS

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[Signature] _____

JILLIAN A. GALLAGHER, SOUTHEAST REGION AIR PROGRAM MANAGER



Plan Approval Description

This plan approval is for the installation and operation of 10 reactors and a dryer.

Auth ID 1496869. This Minor Modification:

1. Decreases the number of batches per year in 500-gallon Vessel #2 (RGS-506) from 104 to 52 (permit has no batch limits but batch derived VOC and HAP emissions limits)
2. Removes the cold dewar and charge vessel in process (100-gallon Vessel #1, RGS-106) and
3. Adds a new 100-gallon Vessel #2 (RGS-105) with condenser (increase number of reactors from 10 to 11).
4. Reduces source VOC and HAP emissions to: 4.63 tpy and 1.63 tpy respectively.

Auth ID 1532037 This Minor Modification is for the increase of the allowable Scrubber (CD7) pH range to greater than 10. With this permit action the following additional updates were made:

- 1) scrubber flow rate was corrected,
- 2) an exempt emergency generator was added to the miscellaneous section of the Plan Approval,
- 3) the three 2,000-gallon reactors and the filter dryer have been removed and associated allowable source VOC and HAP emissions were reduced and
- 4) a plan approval extension was issued.

Auth ID 1554154 This Minor Modification is to allow RTOs (CD11 and CD8) to be operated interchangeably; previously they were operated in a primary/backup mode. With this permit action the following additional updates were made:

- 1) removal of the three 2,000-gallon reactors and filter dryer. And the removal of the condensers associated with these 2,000-gallon reactors; these were inadvertently not removed in the previous Minor Modification (Auth ID 1532037).
- 2) Reduce VOC and HAP emissions from 1.93 and 1.33 to 1.890 and 1.259 tpy respectively.
- 3) Increased allowable scrubber (CD7) flow rate to 20-30 gpm.
- 4) Change the names of the reactors.
- 5) Added a note that reactor 100-2 is composed of two (2) packed distillation columns with a process condenser on each.



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Note: These same sub-sections are repeated for each source!

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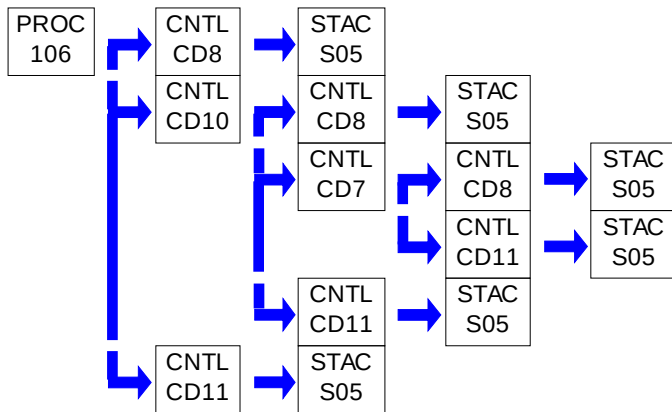
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**SECTION A. Plan Approval Inventory List**

Source ID	Source Name	Capacity/Throughput	Fuel/Material
106	REACTORS		
CD10	CHILLED FLUID CONDENSERS		
CD11	RTO-A		
CD7	ACID GAS SCRUBBER (AGS-1)		
CD8	RTO-B		
S05	OXIDIZER STACK		

PERMIT MAPS

**SECTION B. General Plan Approval Requirements****#001 [25 Pa. Code § 121.1]****Definitions**

Words and terms that are not otherwise defined in this plan approval shall have the meanings set forth in Section 3 of the Air Pollution Control Act (35 P.S. § 4003) and 25 Pa. Code § 121.1.

#002 [25 Pa. Code § 127.12b (a) (b)]**Future Adoption of Requirements**

The issuance of this plan approval does not prevent the future adoption by the Department of any rules, regulations or standards, or the issuance of orders necessary to comply with the requirements of the Federal Clean Air Act or the Pennsylvania Air Pollution Control Act, or to achieve or maintain ambient air quality standards. The issuance of this plan approval shall not be construed to limit the Department's enforcement authority.

#003 [25 Pa. Code § 127.12b]**Plan Approval Temporary Operation**

This plan approval authorizes temporary operation of the source(s) covered by this plan approval provided the following conditions are met.

(a) When construction, installation, modification, or reactivation is being conducted, the permittee shall provide written notice to the Department of the completion of the activity approved by this plan approval and the permittee's intent to commence operation at least five (5) working days prior to the completion of said activity. The notice shall state when the activity will be completed and when the permittee expects to commence operation. When the activity involves multiple sources on different time schedules, notice is required for the commencement of operation of each source.

(b) Pursuant to 25 Pa. Code § 127.12b (d), temporary operation of the source(s) is authorized to facilitate the shakedown of sources and air cleaning devices, to permit operations pending the issuance of a permit under 25 Pa. Code Chapter 127, Subchapter F (relating to operating permits) or Subchapter G (relating to Title V operating permits) or to permit the evaluation of the air contaminant aspects of the source.

(c) This plan approval authorizes a temporary operation period not to exceed 180 days from the date of commencement of operation, provided the Department receives notice from the permittee pursuant to paragraph (a), above.

(d) The permittee may request an extension of the 180-day shakedown period if further evaluation of the air contamination aspects of the source(s) is necessary. The request for an extension shall be submitted, in writing, to the Department at least 30 days prior to the end of the initial 180-day shakedown period and shall provide a description of the compliance status of the source, a detailed schedule for establishing compliance, and the reasons compliance has not been established. This temporary operation period will be valid for a limited time and may be extended for additional limited periods, each not to exceed 180 days.

(e) The notice submitted by the permittee pursuant to subpart (a) above, prior to the expiration of the plan approval, shall modify the plan approval expiration date on Page 1 of this plan approval. The new plan approval expiration date shall be 180 days from the date of commencement of operation.

#004 [25 Pa. Code § 127.12(a) (10)]**Content of Applications**

The permittee shall maintain and operate the sources and associated air cleaning devices in accordance with good engineering practice as described in the plan approval application submitted to the Department.

#005 [25 Pa. Code §§ 127.12(c) and (d) & 35 P.S. § 4013.2]**Public Records and Confidential Information**

(a) The records, reports or information obtained by the Department or referred to at public hearings shall be available to the public, except as provided in paragraph (b) of this condition.

(b) Upon cause shown by the permittee that the records, reports or information, or a particular portion thereof, but not emission data, to which the Department has access under the act, if made public, would divulge production or sales figures or methods, processes or production unique to that person or would otherwise tend to affect adversely the

**SECTION B. General Plan Approval Requirements**

competitive position of that person by revealing trade secrets, including intellectual property rights, the Department will consider the record, report or information, or particular portion thereof confidential in the administration of the act. The Department will implement this section consistent with sections 112(d) and 114(c) of the Clean Air Act (42 U.S.C.A. § 7412(d) and 7414(c)). Nothing in this section prevents disclosure of the report, record or information to Federal, State or local representatives as necessary for purposes of administration of Federal, State or local air pollution control laws, or when relevant in a proceeding under the act.

#006 [25 Pa. Code § 127.12b]**Plan Approval Terms and Conditions**

[Additional authority for this condition is derived from 25 Pa. Code Section 127.13]

(a) This plan approval will be valid for a limited time, as specified by the expiration date contained on Page 1 of this plan approval. Except as provided in § § 127.11a and 127.215 (relating to reactivation of sources; and reactivation), at the end of the time, if the construction, modification, reactivation or installation has not been completed, a new plan approval application or an extension of the previous approval will be required.

(b) If construction has commenced, but cannot be completed before the expiration of this plan approval, an extension of the plan approval must be obtained to continue construction. To allow adequate time for departmental action, a request for the extension shall be postmarked at least thirty (30) days prior to the expiration date. The request for an extension shall include the following:

- (i) A justification for the extension,
- (ii) A schedule for the completion of the construction

If construction has not commenced before the expiration of this plan approval, then a new plan approval application must be submitted and approval obtained before construction can commence.

(c) If the construction, modification or installation is not commenced within 18 months of the issuance of this plan approval or if there is more than an 18-month lapse in construction, modification or installation, a new plan approval application that meets the requirements of 25 Pa. Code Chapter 127, Subchapter B (related to plan approval requirements), Subchapter D (related to prevention of significant deterioration of air quality), and Subchapter E (related to new source review) shall be submitted. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified.

#007 [25 Pa. Code § 127.32]**Transfer of Plan Approvals**

(a) This plan approval may not be transferred from one person to another except when a change of ownership is demonstrated to the satisfaction of the Department and the Department approves the transfer of the plan approval in writing.

(b) Section 127.12a (relating to compliance review) applies to a request for transfer of a plan approval. A compliance review form shall accompany the request.

(c) This plan approval is valid only for the specific source and the specific location of the source as described in the application.

#008 [25 Pa. Code § 127.12(a)(4) & 35 P.S. § 4008 & § 114 of the CAA]**Inspection and Entry**

(a) Pursuant to 35 P.S. § 4008, no person shall hinder, obstruct, prevent or interfere with the Department or its personnel in the performance of any duty authorized under the Air Pollution Control Act.

(b) The permittee shall also allow the Department to have access at reasonable times to said sources and associated air cleaning devices with such measuring and recording equipment, including equipment recording visual observations, as the Department deems necessary and proper for performing its duties and for the effective enforcement of the Air Pollution Control Act and regulations adopted under the act.

**SECTION B. General Plan Approval Requirements**

(c) Nothing in this plan approval condition shall limit the ability of the Environmental Protection Agency to inspect or enter the premises of the permittee in accordance with Section 114 or other applicable provisions of the Clean Air Act.

#009 [25 Pa. Code 127.13a]**Plan Approval Changes for Cause**

This plan approval may be terminated, modified, suspended or revoked and reissued if one or more of the following applies:

- (a) The permittee constructs or operates the source subject to the plan approval in violation of the act, the Clean Air Act, the regulations promulgated under the act or the Clean Air Act, a plan approval or permit or in a manner that causes air pollution.
- (b) The permittee fails to properly or adequately maintain or repair an air pollution control device or equipment attached to or otherwise made a part of the source.
- (c) The permittee fails to submit a report required by this plan approval.
- (d) The Environmental Protection Agency determines that this plan approval is not in compliance with the Clean Air Act or the regulations thereunder.

#010 [25 Pa. Code §§ 121.9 & 127.216]**Circumvention**

- (a) The permittee, or any other person, may not circumvent the new source review requirements of 25 Pa. Code Chapter 127, Subchapter E by causing or allowing a pattern of ownership or development, including the phasing, staging, delaying or engaging in incremental construction, over a geographic area of a facility which, except for the pattern of ownership or development, would otherwise require a permit or submission of a plan approval application.
- (b) No person may permit the use of a device, stack height which exceeds good engineering practice stack height, dispersion technique or other technique which, without resulting in reduction of the total amount of air contaminants emitted, conceals or dilutes an emission of air contaminants which would otherwise be in violation of this plan approval, the Air Pollution Control Act or the regulations promulgated thereunder, except that with prior approval of the Department, the device or technique may be used for control of malodors.

#011 [25 Pa. Code § 127.12c]**Submissions**

Reports, test data, monitoring data, notifications shall be submitted to the:

Regional Air Program Manager
PA Department of Environmental Protection
(At the address given on the plan approval transmittal letter or otherwise notified)

#012 [25 Pa. Code § 127.12(a)(9) & 40 CFR Part 68]**Risk Management**

- (a) If required by Section 112(r) of the Clean Air Act, the permittee shall develop and implement an accidental release program consistent with requirements of the Clean Air Act, 40 CFR Part 68 (relating to chemical accident prevention provisions) and the Federal Chemical Safety Information, Site Security and Fuels Regulatory Relief Act (P.L. 106-40).
- (b) The permittee shall prepare and implement a Risk Management Plan (RMP) which meets the requirements of Section 112(r) of the Clean Air Act, 40 CFR Part 68 and the Federal Chemical Safety Information, Site Security and Fuels Regulatory Relief Act when a regulated substance listed in 40 CFR § 68.130 is present in a process in more than the listed threshold quantity at the facility. The permittee shall submit the RMP to the Environmental Protection Agency according to the following schedule and requirements:
 - (1) The permittee shall submit the first RMP to a central point specified by the Environmental Protection Agency no later than the latest of the following:

**SECTION B. General Plan Approval Requirements**

- (i) Three years after the date on which a regulated substance is first listed under § 68.130; or,
- (ii) The date on which a regulated substance is first present above a threshold quantity in a process.

(2) The permittee shall submit any additional relevant information requested by the Department or the Environmental Protection Agency concerning the RMP and shall make subsequent submissions of RMPs in accordance with 40 CFR § 68.190.

(3) The permittee shall certify that the RMP is accurate and complete in accordance with the requirements of 40 CFR Part 68, including a checklist addressing the required elements of a complete RMP.

(c) As used in this plan approval condition, the term "process" shall be as defined in 40 CFR § 68.3. The term "process" means any activity involving a regulated substance including any use, storage, manufacturing, handling, or on-site movement of such substances or any combination of these activities. For purposes of this definition, any group of vessels that are interconnected, or separate vessels that are located such that a regulated substance could be involved in a potential release, shall be considered a single process.

#013 [25 Pa. Code § 121.7]**Prohibition of Air Pollution**

No person may permit air pollution as that term is defined in the Air Pollution Control Act (35 P.S. §§ 4001-4015).

#014 [25 Pa. Code § 127.25]**Compliance Requirement**

A person may not cause or permit the operation of a source subject to § 127.11 (relating to plan approval requirements), unless the source and air cleaning devices identified in the application for the plan approval and the plan approval issued to the source, are operated and maintained in accordance with specifications in the application and conditions in the plan approval issued by the Department. A person may not cause or permit the operation of an air contamination source subject to this chapter in a manner inconsistent with good operating practices.

**SECTION C. Site Level Plan Approval Requirements****I. RESTRICTIONS.****Emission Restriction(s).****# 001 [25 Pa. Code §121.7]****Prohibition of air pollution.**

No person may permit air pollution as that term is defined in the Air Pollution Control Act (35 P.S. Section 4003).

002 [25 Pa. Code §123.1]**Prohibition of certain fugitive emissions**

(a) No person may permit the emission into the outdoor atmosphere of fugitive air contaminant from a source other than the following:

- (1) Construction or demolition of buildings or structures.
- (2) Grading, paving and maintenance of roads and streets.
- (3) Use of roads and streets. Emissions from material in or on trucks, railroad cars and other vehicular equipment are not considered as emissions from use of roads and streets.
- (4) Clearing of land.
- (5) Stockpiling of materials.
- (6) Open burning operations, as specified in 25 Pa. Code § 129.14.
- (7) N/A
- (8) N/A
- (9) Sources and classes of sources other than those identified in (1)-(8) of this condition, for which the permittee has obtained a determination from the Department that fugitive emissions from the source, after appropriate control, meet the following requirements:
 - (i) The emissions are of minor significance with respect to causing air pollution; and
 - (ii) The emissions are not preventing or interfering with the attainment or maintenance of any ambient air quality standard.

003 [25 Pa. Code §123.2]**Fugitive particulate matter**

A person may not permit fugitive particulate matter to be emitted into the outdoor atmosphere from a source specified in 25 Pa. Code § 123.1(a) (relating to prohibition of certain fugitive emissions) if such emissions are visible at the point the emissions pass outside the person's property.

004 [25 Pa. Code §123.31]**Limitations**

A person may not permit the emission into the outdoor atmosphere of any malodorous air contaminants from any source in such a manner that the malodors are detectable outside the property of the person on whose land the source is being operated.

005 [25 Pa. Code §123.41]**Limitations**

A person may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following:

- (a) Equal to or greater than 20% for a period or periods aggregating more than three minutes in any 1 hour; or
- (b) Equal to or greater than 60% at any time.

006 [25 Pa. Code §123.42]**Exceptions**

The opacity limitations as per 25 Pa. Code § 123.41 shall not apply to a visible emission in any of the following instances:

**SECTION C. Site Level Plan Approval Requirements**

- (a) When the presence of uncombined water is the only reason for failure of the emission to meet the limitations.
- (b) When the emission results from the operation of equipment used solely to train and test persons in observing the opacity of visible emissions.
- (c) When the emission results from the sources specified in 25 Pa. Code § 123.1(a) (relating to prohibition of certain fugitive emissions).

007 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

The permittee shall limit facility-wide Hazardous Air Pollutant (HAP) and Volatile Organic Compounds (VOC) emissions as follows:

- (a) less than 25 tons per year any combination HAPs, based on a 12-month rolling sum,
- (b) less than 10 tons per year any individual HAP, based on a 12-month rolling sum, and
- (c) less than 25 tons per year any combination VOC, based on a 12-month rolling sum,

008 [25 Pa. Code §129.14]**Open burning operations**

No person may permit the open burning of material in the Southeast Air Basin except where the open burning operations result from:

- (a) A fire set to prevent or abate a fire hazard, when approved by the Department and set by or under the supervision of a public officer.
- (b) Any fire set for the purpose of instructing personnel in fire fighting, when approved by the Department.
- (c) A fire set for the prevention and control of disease or pests, when approved by the Department.
- (d) A fire set in conjunction with the production of agricultural commodities in their unmanufactured state on the premises of the farm operation.
- (e) A fire set for the purpose of burning domestic refuse, when the fire is on the premises of a structure occupied solely as a dwelling by two families or less and when the refuse results from the normal occupancy of the structure.
- (f) A fire set solely for recreational or ceremonial purposes.
- (g) A fire set solely for cooking food.

II. TESTING REQUIREMENTS.**# 009 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

- (a) If at any time the Department has cause to believe that air contaminant emissions from any source may be in excess of the limitations specified in this Plan Approval, or established pursuant to, any applicable rule or regulation contained in 25 Pa. Code Article III, the permittee shall be required to conduct whatever tests are deemed necessary by the Department to determine the actual emission rate(s).
- (b) Such testing shall be conducted in accordance with the provisions of 25 Pa. Code Chapter 139, the most current version of the DEP Source Testing Manual, and the EPA Clean Air Act National Stack Testing Guidance, when applicable, and in accordance with any restrictions or limitations established by the Department at such time as it notifies the permittee that testing is required.

010 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

The following condition applies to any source test conducted at the facility:

**SECTION C. Site Level Plan Approval Requirements**

(a) The permittee shall email all source test submissions (notifications, protocols, reports, supplemental information, etc.) to both the AQ Program Manager for the Southeast Regional Office and the PSIMS Administrator in Central Office (email addresses are provided below). Any questions or concerns about source testing submissions can be sent to RA-EPstacktesting@pa.gov and the PSIMS Administrator will address them.

Southeast Region
RA-EPSEstacktesting@pa.gov

Central Office
RA-EPstacktesting@pa.gov

(b) The following pertinent information shall be listed on the title page.

1. Test Date(s)

- a. For protocols, provide the proposed date on which testing will commence or "TBD"
- b. For reports, provide the first and last day of testing

2. Facility Identification Number (Facility - ID): For test programs that were conducted under a multi-site protocol, also include the PF ID under which the protocol was stored in PSIMS, as indicated in the protocol response letter.

3. Source ID(s) for the applicable source(s) and air pollution control device(s): The term Source ID is used in the permit but "Other Id" is used in DEP electronic systems. They are the same number and must also be listed for control equipment

4. Testing Requirements (all that apply)

- a. Plan approval number(s)
- b. Operating permit number
- c. Applicable federal subpart(s) (i.e. 40 CFR 60, Subpart JJJJ)
- d. Special purpose(s) (Consent Order, RFD, RACT, Tier II, etc.)

(c) If confidential information must be submitted, submit both a public copy, which has been redacted, and a confidential copy. The cover page of each submittal should state whether it is a "Public Copy" or "Confidential Copy" and each page of the latter must be marked "CONFIDENTIAL".

III. MONITORING REQUIREMENTS.**# 011 [25 Pa. Code §123.43]****Measuring techniques**

Visible emissions may be measured using either of the following:

- (a) A device approved by the Department and maintained to provide accurate opacity measurements; or
- (b) Observers trained and qualified to measure plume opacity with the naked eye or with the aid of any devices approved by the Department.

012 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

a) The permittee shall monitor the facility, once per operating day, for the following:

- (1) odors which may be objectionable (as per 25 Pa. Code §123.31);
- (2) visible emissions (as per 25 Pa. Code §§123.41 and 123.42); and
- (3) fugitive particulate matter (as per 25 Pa. Code §§ 123.1 and 123.2).

**SECTION C. Site Level Plan Approval Requirements**

(b) Objectionable odors, fugitive particulate emissions, and visible emissions that are caused or may be caused by operations at the site shall:

- (1) be investigated;
- (2) be reported to the facility management, or individual(s) designated by the permittee;
- (3) have appropriate corrective action taken (for emissions that originate on-site); and
- (4) be recorded in a permanent written log.

(c) After six (6) months of daily monitoring, and upon the permittee's request, the Department will determine the feasibility of decreasing the monitoring frequency to weekly.

(d) After six (6) months of weekly monitoring, and upon the permittee's request, the Department will determine the feasibility of decreasing the frequency of monitoring to monthly.

(e) The Department reserves the right to change the above monitoring requirements at any time, based on but not limited to: the review of the compliance certification (if applicable), complaints, monitoring results, and/or Department findings.

IV. RECORDKEEPING REQUIREMENTS.

013 [25 Pa. Code §127.12b]
Plan approval terms and conditions.

The permittee shall maintain a record of all monitoring of fugitive emissions, visible emissions and odors, including those that deviate from the conditions found in this permit. The record of deviations shall contain, at a minimum, the following items:

- (a) Date, time, and location of the incident(s);
- (b) The cause of the event; and
- (c) The corrective action taken, if necessary, to abate the situation and prevent future occurrences

014 [25 Pa. Code §127.12b]
Plan approval terms and conditions.

The permittee shall maintain records of all the facility's increases of emissions from the following categories:

- (a) emissions increase of minor significance without notification to the Department.
- (b) de minimis increases with notification to the Department, via letter.
- (c) increases resulting from a Request for Determination (RFD) to the Department.
- (d) increases resulting from the issuance of a plan approval and subsequent operating permit.

015 [25 Pa. Code §127.12b]
Plan approval terms and conditions.

The permittee shall maintain records of facility-wide: VOC emissions, individual HAP emissions and any combination HAP emissions on a monthly basis and 12-month rolling sum.

V. REPORTING REQUIREMENTS.

016 [25 Pa. Code §127.12b]
Plan approval terms and conditions.

(a) The permittee shall report malfunctions, emergencies or incidents of excess emissions to the Department at 484-250-5920. A malfunction is any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. An emergency is any situation arising from

**SECTION C. Site Level Plan Approval Requirements**

sudden and reasonably unforeseeable events beyond the control of the owner or operator of a facility which requires immediate corrective action to restore normal operation and which causes the emission source to exceed emissions, due to unavoidable increases in emissions attributable to the situation. An emergency shall not include situations caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error.

(b) When the malfunction, emergency or incident of excess emissions poses an imminent danger to the public health, safety, welfare, or environment, it shall be reported to the Department and the County Emergency Management Agency by telephone within one (1) hour after the discovery of the malfunction, emergency or incident of excess emissions. The owner or operator shall submit a written or emailed report of instances of such malfunctions, emergencies or incidents of excess emissions to the Department within three (3) business days of the telephone report.

(c) The report shall describe the following:

- (1) Name, permit or authorization number, and location of the facility;
- (2) Nature and cause of the malfunction, emergency or incident;
- (3) Date and time when the malfunction, emergency or incident was first observed;
- (4) Expected duration of excess emissions;
- (5) Estimated rate of emissions; and
- (6) Corrective actions or preventative measures taken.

(d) Any malfunction, emergency or incident of excess emissions that is not subject to the notice requirements of paragraph (b) of this condition shall be reported to the Department by telephone within 24 hours (or by 4:00 PM of the next business day, whichever is later) of discovery and in writing or by e-mail within five (5) business days of discovery. The report shall contain the same information required by paragraph (c), and any permit specific malfunction reporting requirements.

(e) During an emergency an owner or operator may continue to operate the source at their discretion provided they submit justification for continued operation of a source during the emergency and follow all the notification and reporting requirements in accordance with paragraphs (b)-(d), as applicable, including any permit specific malfunction reporting requirements.

(f) Reports regarding malfunctions, emergencies or incidents of excess emissions shall be submitted to the appropriate DEP Regional Office Air Program Manager.

(g) Any emissions resulted from malfunction or emergency are to be reported in the annual emissions inventory report, if the annual emissions inventory report is required by permit or authorization.

017 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this condition is also derived from 40 CFR Part 68.]

(a) If required by Section 112(r) of the Clean Air Act, the permittee shall develop and implement an accidental release program consistent with requirements of the Clean Air Act, 40 CFR Part 68 (relating to chemical accident prevention provisions) and the Federal Chemical Safety Information, Site Security and Fuels Regulatory Relief Act (P.L. 106-40).

(b) The permittee shall prepare and implement a Risk Management Plan (RMP) which meets the requirements of Section 112(r) of the Clean Air Act, 40 CFR Part 68 and the Federal Chemical Safety Information, Site Security and Fuels Regulatory Relief Act when a regulated substance listed in 40 CFR § 68.130 is present in a process in more than the threshold quantity at a facility. The permittee shall submit the RMP to the federal Environmental Protection Agency according to the following schedule and requirements:

(1) The permittee shall submit the first RMP to a central point specified by EPA no later than the latest of the following:

- (i) Three years after the date on which a regulated substance is first listed under 40 CFR § 68.130; or,
- (ii) The date on which a regulated substance is first present above a threshold quantity in a process.

**SECTION C. Site Level Plan Approval Requirements**

(2) The permittee shall submit any additional relevant information requested by the Department or EPA concerning the RMP and shall make subsequent submissions of RMPs in accordance with 40 CFR § 68.190.

(3) The permittee shall certify that the RMP is accurate and complete in accordance with the requirements of 40 CFR Part 68, including a checklist addressing the required elements of a complete RMP.

(c) As used in this permit condition, the term "process" shall be as defined in 40 CFR § 68.3. The term "process" means any activity involving a regulated substance including any use, storage, manufacturing, handling, or on-site movement of such substances or any combination of these activities. For purposes of this definition, any group of vessels that are interconnected, or separate vessels that are located such that a regulated substance could be involved in a potential release, shall be considered a single process.

(d) If this facility is subject to 40 CFR Part 68, as part of the certification required under this permit, the permittee shall:

(1) Submit a compliance schedule for satisfying the requirements of 40 CFR Part 68 by the date specified in 40 CFR § 68.10(a); or,

(2) Certify that this facility is in compliance with all requirements of 40 CFR Part 68 including the registration and submission of the RMP.

(e) If this facility is subject to 40 CFR Part 68, the permittee shall maintain records supporting the implementation of an accidental release program for five (5) years in accordance with 40 CFR § 68.200.

(f) When this facility is subject to the accidental release program requirements of Section 112(r) of the Clean Air Act and 40 CFR Part 68, appropriate enforcement action will be taken by the Department if the permittee fails to submit a compliance schedule or fails to register and submit the RMP or a revised plan pursuant to 40 CFR Part 68.

018 [25 Pa. Code §135.3]
Reporting

If the permittee has been previously advised by the Department to submit a source report, the permittee shall submit by March 1, of each year, a source report for the preceding calendar year. The report shall include information from all previously reported sources, new sources which were first operated during the preceding calendar year, and sources modified during the same period which were not previously reported, including those sources listed in the Miscellaneous Section of this permit.

The permittee may request an extension of time from the Department for the filing of a source report, and the Department may grant the extension for reasonable cause.

VI. WORK PRACTICE REQUIREMENTS.

019 [25 Pa. Code §123.1]
Prohibition of certain fugitive emissions

A person responsible for any source specified in 25 Pa. Code § 123.1 shall take all reasonable actions to prevent particulate matter from becoming airborne. These actions shall include, but not be limited to, the following

(a) Use, where possible, of water or suitable chemicals, for control of dust in the demolition of buildings or structures, construction operations, the grading of roads, or the clearing of land.

(b) Application of asphalt, water, or other suitable chemicals, on dirt roads, material stockpiles and other surfaces which may give rise to airborne dusts.

(c) Paving and maintenance of roadways.

(d) Prompt removal of earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or by other means.

**SECTION C. Site Level Plan Approval Requirements****# 020 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

The permittee shall ensure that the source(s) and air pollution control device(s), listed in this plan approval, are operated and maintained in a manner consistent with good operating and maintenance practices, and in accordance with manufacturer's specifications.

021 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

The permittee shall immediately, upon discovery, implement measures which may include the application for the installation of an air cleaning device(s), if necessary, to reduce the air contaminant emissions to within applicable limitations, if at any time the operation of the source(s) identified in this plan approval, is causing the emission of air contaminants in excess of the limitations specified in, or established pursuant to 25 Pa. Code Article III or any other applicable rule promulgated under the Clean Air Act.

VII. ADDITIONAL REQUIREMENTS.

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

VIII. COMPLIANCE CERTIFICATION.

No additional compliance certifications exist except as provided in other sections of this plan approval including Section B (relating to Plan Approval General Requirements).

IX. COMPLIANCE SCHEDULE.

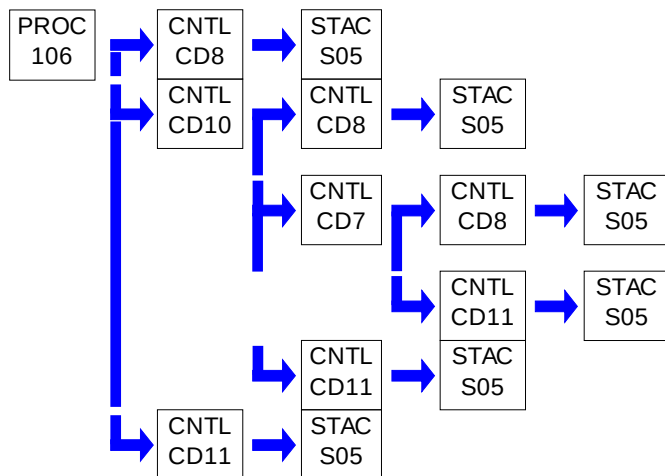
No compliance milestones exist.

**SECTION D. Source Level Plan Approval Requirements**

Source ID: 106

Source Name: REACTORS

Source Capacity/Throughput:

**I. RESTRICTIONS.****Emission Restriction(s).**

001 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

Emissions to the atmosphere from this source shall not exceed the following, based on a 12-month rolling sum:

VOC 1.890 tpy

HAP 1.259 tpy.

Note: VOC and HAP emission from 500-gallon Vessel #2 (RGS-506), 100-gallon Vessel #1 (RGS-106) and 100-gallon Vessel #2 (RGS-105) are based upon 52 batches per year.

Control Device Efficiency Restriction(s).

002 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

a) The condensers (CD10) shall reduce condensable VOC and HAP emissions by a minimum of 90 percent by weight.

b) The scrubber (CD7) shall remove hydrochloric acid (HCl) by a minimum of 99 percent by weight.

c) the RTO (CD11 or CD8) shall reduce VOC and HAP emissions by a minimum of 98 percent by weight or VOC emission shall not exceed: 6.67 ppmvd as propane (20 ppmvd as methane).

[Compliance with this permit condition, for the scrubber and RTO, will be determined during the initial source test.]

II. TESTING REQUIREMENTS.

003 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

a) Within one hundred and eighty (180) days of commencement of operation of this source, the permittee shall conduct a performance test on the Acid Gas Scrubber (CD7) and either RTO-A (CD11) or RTO-B (CD8) while operating under maximum routine conditions or under other conditions within the capacity of the equipment, which may be requested by DEP. Subsequent performance tests shall be performed on alternating RTOs, e.g., RTO-A, then RTO-B, then RTO-A, etc.

**SECTION D. Source Level Plan Approval Requirements**

These performance tests shall measure the following:

- (1) pre- and post-scrubber HCl emissions. The scrubber HCl removal efficiency shall be calculated by considering the measured pre- and post-scrubber emissions.
- (2) pre- and post-RTO VOC emissions. The RTO VOC removal efficiency shall be calculated by considering the measured pre- and post-RTO emissions. In lieu of calculating VOC removal efficiency, the permittee may measure the VOC outlet concentration in ppmvd as propane or methane.

(b) The permittee shall monitor and record the following operating parameters while conducting the performance test:

- (1) outlet temperature of the condensers (CD10)
- (2) pH of the scrubber (CD7) solution,
- (3) Flow rate of the scrubber (CD7) solution,
- (4) Pressure drop across the scrubber (CD7)
- (5) RTO (CD11) total flow rate
- (6) RTO (CD11) combustion zone temperature.

(c) A clearly defined alternate method for scrubber and RTO VOC removal efficiency may be submitted by the permittee for approval by the Department.

(d) The performance tests shall be conducted as per 25 Pa. Code Chapter 139 of the Rules and Regulations of the Department in order to verify the emission limitations established in this Plan Approval. Tests shall also be conducted in accordance with the provisions of the current version of the DEP Source Testing Manual and the EPA Clean Air Act National Stack Testing Guidance.

(e) At least ninety (90) days prior to the test, the permittee shall submit to the Department for approval the procedures for the test and a sketch with dimensions indicating the location of sampling ports and other data to ensure the collection of representative samples.

(f) At least thirty (30) days prior to the test, the Regional Air Quality Manager shall be informed of the date and time of the test.

(g) Within sixty (60) days after the source test(s), two copies of the complete test report, including all operating conditions, shall be submitted to the Regional Air Quality Manager for approval.

(h) In the event that any of the above deadlines cannot be met, the permittee may request an extension for the due date(s) in writing and include a justification for the extension. The Department may grant an extension for a reasonable cause.

[The Department reserves the right to determine whether periodic testing will be required. The subsequent testing requirement may be revised based on the results of the initial source test required above.]

III. MONITORING REQUIREMENTS.

004 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The permittee shall:

- a. Continuously monitor the outlet temperature of the reactor condensers (CD10) hourly, when in operation.
- b. Continuously monitor the pH, and recirculation mass flow rate of the scrubber (CD7) solution, hourly, when in operation.
- c. Continuously monitor the pressure drop across the scrubber (CD7), hourly, when in operation.
- d. Continuously monitor the RTO (CD11 or CD8) combustion zone temperature and 3-hour rolling average temperature, hourly when in operation.

**SECTION D. Source Level Plan Approval Requirements**

- e. Continuously monitor the RTO (CD11 or CD 8) air flow from the processes to the oxidizer hourly, when in operation.
- f. Monitor raw material usage for each reactor and quantity of product manufactured per batch.
- g. The permittee shall calculate VOC and HAP emissions monthly and on a twelve (12) month rolling sum using material balance and stoichiometry for each batch produced.

IV. RECORDKEEPING REQUIREMENTS.**# 005 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

The permittee shall:

- a. Record the outlet temperature of the reactor condensers (CD10), hourly, when in operation.
- b. Record the pH, flow rate and pressure drop of the acid gas scrubber (CD7), hourly, when in operation.
- c. The permittee shall keep the following records for the active RTO (CD11 or CD8):
 - (1) The combustion zone temperature and 3-hour rolling average temperature, hourly when in operation..
 - (2) The inlet airflow rate, hourly when the RTO is operating.
 - (3) The start-up and shut-down times.
- d. Record raw material usage for each reactor and quantity of product manufactured per batch.
- e. Record length of time for an entire batch process.
- f. Record the number of batches processed per month and 12-month rolling sum.
- g. Record the calculate VOC and HAP emissions monthly and twelve (12) month rolling sum using material balance and stoichiometry for each batch produced.
- h. Record the following for the condensers (CD10), acid gas scrubber (CD7) and thermal oxidizers (CD 11 and 8), on a monthly basis:
 - (1) inspections performed,
 - (2) maintenance performed,
 - (3) any deficiencies, and
 - (4) any corrective actions taken.

V. REPORTING REQUIREMENTS.

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

VI. WORK PRACTICE REQUIREMENTS.**# 006 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

- a) Control devices will run continuously when process volatile organic compounds and hazardous air pollutants could be emitted.
- b) Equipment will be installed so that chilled fluid condenser (CD10) outlet temperature can be measured.
- c) Equipment will be installed so that the water flow rate, pH and pressure drop of the acid gas scrubber (CD7) can be

**SECTION D. Source Level Plan Approval Requirements**

measured.

d) The RTO (CD11 and CD8) shall be equipped with a temperature monitoring, reading, and recording device to continuously measure and record the combustion zone temperature when in operation.

e) The permittee shall install airflow monitoring devices at the inlet of each RTO.

f) permittee shall ensure that the combined maximum air flow(s) from the process do not exceed the rated capacity of the RTO.

g) During the addition of materials to the reactors, the permittee shall pump in or pour materials in a manner that causes low fluid turbulence.

007 [25 Pa. Code §127.12b]**Plan approval terms and conditions.******* Condenser (CD10) *****

a. The condenser outlet temperatures must be maintained at a temperature below 40 degrees Fahrenheit (4.4 degrees Celsius).

***** RTO (CD11 and 8) *****

b. Oxidizers RTO-A and RTO-B are to be operated interchangeably, not in a primary/backup mode. These RTOs shall operate one at a time and not simultaneously.

c. The maximum RTO total flow rate shall not exceed 5,000 SCFM @ 70°F.

d. The permittee shall maintain a minimum 3-hour rolling average temperature across the combustion chamber greater than or equal to the 3-hour rolling average temperature that demonstrated compliance with the required destruction efficiency or outlet concentration emissions during the most recent stack test. Until DEP approves the initial performance test, both RTOs shall maintain a minimum combustion chamber temperature of 1,500°F, when operating, that is recommended by the manufacturer. The 3-hour average shall be calculated each hour. The permittee shall not vent any VOC emissions from the processes to the RTO until the minimum temperature is reached.

***** Acid Gas Scrubber (CD7) *****

e. The recirculation flow rate and NaOH concentration of the absorbent of the acid gas scrubber shall be 20-30 gpm 25% NaOH.

f. The pressure drop across the acid gas scrubber shall be established based upon initial stack testing.

g. The pH of the acid gas scrubber liquid shall be greater than 10.

Note: DEP reserves the right to update the allowable range of the scrubber pH based upon stack test results.

VII. ADDITIONAL REQUIREMENTS.**# 008 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

This source is composed of:

a) 8 reaction vessels:

- Two (2) 500-gallon reactors, manufacturer: Pfaudler or equivalent, model No. Varies

These reactors shall be clearly labelled:

RGS-505 (500-Gallon Vessel #1) and

RGS-506 (500-Gallon Vessel #2)

- Two (2) 200-gallon reactors, manufacturer: Pfaudler or equivalent, model No. Varies

These reactors shall be clearly labelled:

RSS-205 (200-Gallon Vessel #1) and

RGS-206 (200-Gallon Vessel #2)

**SECTION D. Source Level Plan Approval Requirements**

- Two (2) 1,000-gallon reactors, manufacturer: Pfaudler or equivalent, model No. Varies

These reactors shall be clearly labelled:

RGS-1007 (1000-Gallon Vessel #1) and
RGS-1009 (1000-Gallon Vessel #2)

- Two (2) 100-gallon reactors, manufacturer: Pfaudler or equivalent, model No. Varies

These reactors shall be clearly labelled:

RGS-106 (100-Gallon Vessel #1) and
RGS-105 (100-Gallon Vessel #2)

b) Nine (9) chilled fluid condensers (CD10), manufacturer: Perry Videx or equivalent, Model No.: TBD, Type: Shell and Tube, Coil, or alternate condenser. This control device is composed of the following condensers with associated -10 degree C operating temperatures

Process with condenser	Model Number
RGS-505	8-48 BEM
RSS-205	6-60 BEM
RGS-1007	8-84 BEM
RGS-1009	8-78 BEM
RGS-206	8-48 BEM
RGS-506	8-84 BEM
RGS-106	8-48 BEM
RGS-105	8-48 BEM*

* Process RGS-105 has two (2) packed distillation columns with a process condenser on each. Both condensers are 8-48 BEM chilled fluid condensers. Product will only be taken through one column at a time.

c) One (1) acid gas, counter-flow, packed tower scrubber (CD7), manufacturer: Monroe Environmental (?), Verantis or equivalent, model No.: TBD, Design Inlet Volume: 1,000 SCFM; maximum volume of gas handled: 30 kg/hr H-Cl.

d) Two (2) Process Combustion Corporation RTOs (CD11 and CD8), both model number QS5, Buner capacity: 2.4 MM Btu/hr, natural gas fired.



SECTION E. Source Group Plan Approval Restrictions.

**SECTION F. Alternative Operation Requirements.**

No Alternative Operations exist for this Plan Approval facility.

**SECTION G. Emission Restriction Summary.**

Source Id	Source Description
106	REACTORS
Emission Limit	
1.259 Tons/Yr	Hazardous Air Pollutants
1.890 Tons/Yr	VOC

Site Emission Restriction Summary

Emission Limit		Pollutant
24.990 Tons/Yr	Total HAPs on a 12-month rolling sum	Hazardous Air Pollutants
9.990 Tons/Yr	Single HAP on a 12-month rolling sum	Hazardous Air Pollutants
24.990 Tons/Yr	Total VOC on a 12-month rolling sum	VOC

**SECTION H. Miscellaneous.**

The Department has determined that the emissions from the following activities, excluding those indicated as site level requirements, in Section C, of this permit, do not require additional limitations, monitoring, or recordkeeping:

One (1) exempt diesel fired, 1,220 bhp, Cummins engine, engine Model Number QSK23-G7 NR2, emergency generator.



***** End of Report *****
