

STATE OF MISSISSIPPI AIR POLLUTION CONTROL PERMIT

TO CONSTRUCT AIR EMISSIONS EQUIPMENT

THIS CERTIFIES THAT

Air Liquide Advanced Technologies U.S. LLC
2941 County Road 302
Walnut, Mississippi
Tippah County

ALATUS RNG Project-NEML

has been granted permission to construct air emissions equipment to comply with the emission limitations, monitoring requirements and other conditions set forth herein. This permit is issued in accordance with the provisions of the Mississippi Air and Water Pollution Control Law (Section 49-17-1 et. seq., Mississippi Code of 1972), and the regulations and standards adopted and promulgated thereunder.

MISSISSIPPI ENVIRONMENTAL QUALITY PERMIT BOARD



AUTHORIZED SIGNATURE

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

Issued: MAY 22 2017

Permit No.: 2620-00066

SECTION 1

A. GENERAL CONDITIONS

1. This permit is for air pollution control purposes only. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.1.D.)
2. Any activities not identified in the application are not authorized by this permit. (Ref.: Miss. Code Ann. 49-17-29 1.b)
3. The knowing submittal of a permit application with false information may serve as the basis for the Permit Board to void the permit issued pursuant thereto or subject the applicant to penalties for operating without a valid permit pursuant to State Law. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(5).)
4. It is the responsibility of the applicant/permittee to obtain all other approvals, permits, clearances, easements, agreements, etc., which may be required including, but not limited to, all required local government zoning approvals or permits. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.1.D(6).)
5. The issuance of a permit does not release the permittee from liability for constructing or operating air emissions equipment in violation of any applicable statute, rule, or regulation of state or federal environmental authorities. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(7).)
6. 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, unless halting or reducing activity would create an imminent and substantial endangerment threatening the public health and safety of the lives and property of the people of this state. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(15)(a).)
7. The permit and/or any part thereof may be modified, revoked, reopened, and reissued, or terminated for cause. Sufficient cause for a permit to be reopened shall exist when an air emissions stationary source becomes subject to Title V. 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. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(15)(b).)
8. The permit does not convey any property rights of any sort, or any exclusive privilege. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(15)(c).)
9. The permittee shall furnish to the DEQ within a reasonable time any information the DEQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the DEQ copies of records required to be kept by the permit or, for information claimed to be confidential, the permittee shall furnish such records to the DEQ along with a claim of confidentiality. The permittee may furnish such records directly to the

Administrator along with a claim of confidentiality. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(15)(d).)

10. Design and Construction Requirements: The stationary source shall be designed and constructed so as to operate without causing a violation of an Applicable Rules and Regulations, without interfering with the attainment and maintenance of State and National Ambient Air Quality Standards, and such that the emission of air toxics does not result in an ambient concentration sufficient to adversely affect human health and well-being or unreasonably and adversely affect plant or animal life beyond the stationary source boundaries. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.5.A.)
11. Solids Removal: The necessary facilities shall be constructed so that solids removed in the course of control of air emissions may be disposed of in a manner such as to prevent the solids from becoming windborne and to prevent the materials from entering State waters without the proper environmental permits. (Ref.: Miss. Code Ann. 49-17-29)
12. Diversion and Bypass of Air Pollution Controls: The air pollution control facilities shall be constructed such that diversion from or bypass of collection and control facilities is not needed except as provided for in 11 Miss. Admin. Code Pt. 2, R. 1.10., "Air Emission Regulations for the Prevention, Abatement, and Control of Air Contaminants." (Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.10.)
13. Fugitive Dust Emissions from Construction Activities: The construction of the stationary source shall be performed in such a manner so as to reduce fugitive dust emissions from construction activities to a minimum. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.5.A(4).)
14. Right of Entry: The permittee shall allow the Mississippi Department of Environmental Quality Office of Pollution Control and the Mississippi Environmental Quality Permit Board and/or their representatives upon presentation of credentials:
 - a) To enter upon the permittee's premises where an air emission source is located or in which any records are required to be kept under the terms and conditions of this permit; and
 - b) At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to sample any air emissions. (Ref.: Miss. Code Ann. 49-17-21)
15. Permit Modification or Revocation: After notice and opportunity for a hearing, the Permit Board may modify the permit or revoke it in whole or in part for good cause shown including, but not limited to:
 - a) Persistent violation of any of the terms or conditions of this permit;
 - b) Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

- c) A change in federal, state, or local laws or regulations that require either a temporary or permanent reduction or elimination of previously authorized air emission.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.C.)

- 16. Public Record and Confidential Information: Except for data determined to be confidential under the Mississippi Air & Water Pollution Control Law, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Mississippi Department of Environmental Quality, Office of Pollution Control. (Ref.: Miss. Code Ann. 49-17-39)
- 17. Permit Transfer: This permit shall not be transferred except upon approval of the Permit Board. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.16.B)
- 18. Severability: The provisions of this permit are severable. If any provision of the permit, or the application of any provision of the permit to any circumstances, is challenged or held invalid, the validity of the remaining permit provisions and/or portions thereof or their application to other persons or sets of circumstances, shall not be affected thereby. (Ref. 11 Miss. Admin. Code Pt. 2, R. 2.1.D(7).)
- 19. Permit Expiration: The permit to construct will expire if construction does not begin within eighteen (18) months from the date of issuance or if construction is suspended for eighteen (18) months or more. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.5.C(1).)
- 20. Certification of Construction: A new stationary source issued a Permit to Construct cannot begin operation until certification of construction by the permittee. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.5.D(3).)
- 21. Beginning Operation: Except as prohibited in Section 1, Condition 24 of this permit, after certification of construction by the permittee, the Permit to Construct shall be deemed to satisfy the requirement for a permit to operate until the date the application for issuance or modification of the Title V Permit or the application for issuance or modification of the State Permit to Operate, whichever is applicable, is due. This provision is not applicable to a source excluded from the requirement for a permit to operate as provided by 11 Miss. Admin. Code Pt. 2, R. 2.13.G. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.5.D(4).)
- 22. Application for a Permit to Operate: Except as otherwise specified in Section 1, Condition 24 of this permit, the application for issuance or modification of the State Permit to Operate or the Title V Permit, whichever is applicable, is due twelve (12) months after beginning operation or such earlier date or time as specified in the Permit to Construct. The Permit Board may specify an earlier date or time for submittal of the application. Beginning operation will be assumed to occur upon certification of construction, unless the permittee specifies differently in writing. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.5.D(5).)
- 23. Operating Under a Permit to Construct: Except as otherwise specified in Section 1, Condition 24 of this permit, upon submittal of a timely and complete application for issuance or

modification of a State Permit to Operate or a Title V Permit, whichever is applicable, the applicant may continue to operate under the terms and conditions of the Permit to Construct and in compliance with the submitted application until the Permit Board issues, modifies, or denies the Permit to Operate. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.5.D(6).)

24. Application Requirements for a Permit to Operate for Moderate Modifications: For moderate modifications that require contemporaneous enforceable emissions reductions from more than one emission point in order to “net” out of PSD/NSR, the applicable Title V Permit to Operate or State Permit to Operate must be modified prior to beginning operation of the modified facilities. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.5.D(7).)
25. General Duty: All air emission equipment shall be operated as efficiently as possible to provide the maximum reduction of air contaminants. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(10).)
26. Deviation Reporting: Except as otherwise specified herein, the permittee shall report all deviations from permit requirements, including those attributable to upsets, the probable cause of such deviations, and any corrective actions or preventive measures taken. Said report shall be made within five (5) working days of the time the deviation began. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(10).)
27. Compliance Testing: Regarding compliance testing:
 - a) The results of any emissions sampling and analysis shall be expressed both in units consistent with the standards set forth in any Applicable Rules and Regulations or this permit and in units of mass per time.
 - b) Compliance testing will be performed at the expense of the permittee.
 - c) Each emission sampling and analysis report shall include but not be limited to the following:
 - (1) detailed description of testing procedures;
 - (2) sample calculation(s);
 - (3) results; and
 - (4) comparison of results to all Applicable Rules and Regulations and to emission limitations in the permit.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.6.B(3), (4), and (6).)

B. GENERAL NOTIFICATION REQUIREMENTS

1. Within fifteen (15) days of beginning actual construction, the permittee must notify DEQ in writing that construction has begun. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.5.C(2).)
2. The permittee must notify DEQ in writing when construction does not begin within eighteen (18) months of issuance or if construction is suspended for eighteen (18) months or more. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.5.C(3).)
3. Upon the completion of construction or installation of an approved stationary source or modification, and prior to commencing operation, the applicant shall notify the Permit Board that construction or installation was performed in accordance with the approved plans and specifications on file with the Permit Board. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.5.D(1) and (3).)
4. The Permit Board shall be promptly notified in writing of any change in construction from the previously approved plans and specifications or permit. If the Permit Board determines the changes are substantial, it may require the submission of a new application to construct with “as built” plans and specifications. Notwithstanding any provision herein to the contrary, the acceptance of an “as built” application shall not constitute a waiver of the right to seek compliance penalties pursuant to State Law. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.5.D(2).)

SECTION 2
EMISSION POINT DESCRIPTION

The permittee is authorized to construct and operate, upon certification of construction, air emissions equipment, as described in the following table.

Emission Point	Description
AA-001	Landfill Gas (LFG) Treatment Process, rated at 3,100 scfm LFG, equipped with a thermal oxidizer to control treatment process waste gas, which is rated for 1,400 scfm waste gas with 98% destruction efficiency or reduce the outlet nonmethane organic compounds (NMOC) concentration to less than 20 ppmvd as hexane at 3% oxygen
AA-002	Flare to combust off-specification product gas from the LFG Treatment Process, of a vertical design, rated for 1,850 scfm product gas with 98% destruction efficiency
AA-003	LFG Condensate Tank, containing landfill leachate that condensed from the LFG through the LFG Treatment Process, 3,000-gallon capacity, above ground tank that is atmospherically vented
AA-004	Horizontal Pressure Vessel, containing propane (no routine emissions)
AA-005	Fugitive roadway dust due to vehicular traffic

SECTION 3 EMISSION LIMITATIONS AND STANDARDS

Emission Point	Applicable Requirement	Condition Number(s)	Pollutant/Parameter	Limitation/Standard
Facility-Wide	11 Miss. Admin. Code Pt. 2, R. 1.3.A.	3.1	Smoke	$\leq 40\%$ opacity
	11 Miss. Admin. Code Pt. 2, R. 1.3.B.	3.2	Opacity	$\leq 40\%$ equivalent opacity
	11 Miss. Admin. Code Pt. 2, R. 1.3.F(1).	3.3	PM (filterable)	$E = 4.1p^{0.67}$
	11 Miss. Admin. Code Pt. 2, R. 2.2.B(10).	3.4	LFG	No discharge of untreated Landfill Gas (LFG)
AA-001 AA-002	11 Miss. Admin. Code Pt. 2, R. 1.4.B(1).	3.5	SO ₂	500 ppm
AA-001	11 Miss. Admin. Code Pt. 2, R. 1.4.B(2).	3.6	H ₂ S	Temperature $\geq 1600^{\circ}\text{F}$ Residence Time ≥ 0.5 seconds
	11 Miss. Admin. Code Pt. 2, R. 2.2.B(10).	3.7	NMOC	Reduction of NMOC by 98% wt, or Outlet NMOC concentration < 20 ppmv
	11 Miss. Admin. Code Pt. 2, R. 2.2.B(10).	3.8	Construction and Operating Requirement	No bypass around thermal oxidizer
AA-002	11 Miss. Admin. Code Pt. 2, R. 2.2.B(10).	3.9	Visible Emissions	No visible emissions
		3.10	Operating Requirements	Operate flare at all times when emissions may be vented to it
		3.11		Periods of allowable operation

- 3.1 The permittee shall not cause, permit, or allow the emission of smoke from a point source into the open air from any manufacturing, industrial, commercial or waste disposal process which exceeds forty (40) percent opacity, except that startup operations may produce emissions which exceed 40% opacity for up to fifteen (15) minutes per startup in any one hour and not to exceed three (3) startups per stack in any twenty-four (24) hour period. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.A.)
- 3.2 The permittee shall not cause, allow, or permit the discharge into the ambient air from any point source or emissions, any air contaminant of such opacity as to obscure an observer's view to a degree in excess of 40% opacity, equivalent to that provided in 11 Miss. Admin. Code Pt. 2, R. 1.3.A(1). This shall not apply to vision obscuration caused by uncombined water droplets. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.B.)

- 3.3 The permittee shall not cause, permit, or allow the emission of particulate matter in total quantities in any one hour from any manufacturing process, which includes any associated stacks, vents, outlets, or combination thereof, to exceed the amount determined by the relationship:

$$E = 4.1p^{0.67}$$

where E is the emission rate in pounds per hour and p is the process weight input rate in tons per hour.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.F(1).)

- 3.4 The permittee shall construct and operate the facility such that there will be no discharge of untreated Landfill Gas (LFG) to the atmosphere. All LFG shall be treated through the LFG Treatment Process, consistent with the provisions of 40 CFR 60.752(b)(2)(iii). (Ref. 11 Miss. Admin. Code Pt. 2, R. 2.2.B(10).)
- 3.5 For Emission Points AA-001 and AA-002, the permittee shall not cause or permit the emission of gas containing sulfur oxides (measured as sulfur dioxide) in excess of 500 ppm. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.4.B(1).)
- 3.6 For Emission Point AA-001, the permittee shall not cause or permit the emission of any gas stream which contains hydrogen sulfide in excess of one grain per 100 standard cubic feet (1 gr/100 scf). Gas streams containing hydrogen sulfide in excess of 1 gr/100 scf shall be incinerated at temperatures of not less than 1600°F for a period of not less than 0.5 seconds, or processed in such a manner which is equivalent to or more effective for removal of hydrogen sulfide. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.4.B(2).)
- 3.7 For Emission Point AA-001, the permittee shall control any atmospheric vent from the LFG Treatment Process through reducing NMOC by 98 weight-percent, or reducing the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen, consistent with the provisions of 40 CFR 60.752(b)(2)(iii). (Ref. 11 Miss. Admin. Code Pt. 2, R. 2.2.B(10).)
- 3.8 For AA-001, the permittee shall construct and operate the LFG Treatment Process such that there is no bypass around the thermal oxidizer. (Ref. 11 Miss. Admin. Code Pt. 2, R. 2.2.B(10).)
- 3.9 For Emission Point AA-002, the permittee shall construct a flare designed and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. (Ref. 11 Miss. Admin. Code Pt. 2, R. 2.2.B(10).)
- 3.10 For Emission Point AA-002, the permittee shall operate the flare at all times when emissions may be vented to it. (Ref. 11 Miss. Admin. Code Pt. 2, R. 2.2.B(10).)

- 3.11 For Emission Point AA-002, the permittee may operate the flare for up to sixty (60) consecutive days, 24 hours/day, during the first 120 days after startup to demonstrate that the LFG Treatment Process can achieve purchaser requirements. Afterwards, the permittee shall only operate the flare to combust off-specification product gas from the LFG Treatment Process, unless required to combust product gas by the purchaser to subsequently demonstrate treatment process performance. In no situation shall the subsequent demonstrations result in the flare operating more than 4,380 hours in any consecutive 12-month period. (Ref. 11 Miss. Admin. Code Pt. 2, R. 2.2.B(10).)

**SECTION 4
WORK PRACTICES**

THIS SECTION WAS INTENTIONALLY LEFT BLANK SINCE NO WORK PRACTICE STANDARDS APPLY TO THIS PERMIT ACTION.

SECTION 5 MONITORING AND RECORDKEEPING REQUIREMENTS

Emission Point	Applicable Requirement	Condition Number(s)	Pollutant/Parameter	Monitoring/Recordkeeping Requirement
AA-001	11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).	5.1	Thermal Oxidizer Monitoring	Monitor temperature
		5.2	Testing	Perform initial performance test
		5.3	Recordkeeping	Operating Parameters
		5.4		Exceedances
AA-002	11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).	5.5	Visible Emissions	Perform Visual Emission Evaluations
		5.6	Hours of Operation	Maintain Log
Facility-Wide	11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).	5.7	Recordkeeping	Maintain records for 5-years

5.1 For Emission Point AA-001, the permittee shall install, calibrate, maintain, and operate according to the manufacturer's specifications, the following equipment on the thermal oxidizer, consistent with the provisions of 40 CFR 60.756(b).

- a) A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ± 1 percent of the temperature being measured expressed in degrees Celsius or ± 0.5 degrees Celsius, whichever is greater.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).)

5.2 For Emission Point AA-001, the permittee shall conduct an initial performance test of the thermal oxidizer within 180 days after initial startup of the LFG Treatment Process, consistent with the provisions of 40 CFR 60.752(b)(2)(iii)(B) and 60.754(d). Method 25, 25C, or Method 18 of Appendix A to 40 CFR Part 60 must be used to determine compliance with the 98 weight-percent efficiency or the 20 ppmv outlet concentration level specified in Section 3 of this permit. Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18 of Appendix A to 40 CFR Part 60, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency of the thermal oxidizer:

$$\text{Control Efficiency} = (\text{NMOC}_{\text{in}} - \text{NMOC}_{\text{out}}) / (\text{NMOC}_{\text{in}})$$

where,

$NMOC_{in}$ = mass of NMOC entering thermal oxidizer

$NMOC_{out}$ = mass of NMOC exiting thermal oxidizer

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).)

- 5.3 For Emission Point AA-001, the permittee shall keep up-to-date, readily accessible records for the life of the thermal oxidizer of the data listed below, consistent with the provisions of 40 CFR 60.758(b), as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the thermal oxidizer vendor specifications shall be maintained until removal.

- a) The average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test.
- b) The percent reduction of NMOC determined consistent with the provisions of 40 CFR 60.752(b)(2)(iii)(B) achieved by the thermal oxidizer.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).)

- 5.4 For Emission Point AA-001, the permittee shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in this Section, as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded, consistent with the provisions of 40 CFR 60.758(c). For the purpose of this condition, exceedances that shall be recorded include all 3-hour periods of operation during which the average combustion temperature was more than 28 °C below the average combustion temperature during the most recent performance test at which compliance with 98 weight-percent efficiency or the 20 ppmv outlet concentration level specified in Section 3 of this permit was determined. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).)

- 5.5 For Emission Point AA-002, the permittee shall perform visual emission evaluations (VEEs) on a weekly basis during periods the flare is in continuous operation for more than a week to demonstrate compliance with the no visible emission requirement prescribed in Section 3 of this permit. VEEs shall be conducted in accordance with Method 22 of Appendix A to 40 CFR Part 60 with an observation period of 2 hours. Results of the VEEs should be recorded, maintained onsite and made available to MDEQ personnel for inspection upon request. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).)

- 5.6 For Emission Point AA-002, the permittee shall maintain a log of the flare operating hours, documenting the date of each flaring event, the hours of flare operation for each day and the reason for flaring. A log shall be prepared for each calendar month. In the event that no flaring occurs in a given calendar month, the log shall document that no flaring occurred

during that month. The permittee shall calculate the hours of flare operation in hours/year for each consecutive 12-month period, determined on a monthly basis. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).)

- 5.7 Unless otherwise specified herein, the permittee shall maintain copies of all records and reports associated with this permit on site for at least five (5) years and shall make them available for inspection upon request by Mississippi Department of Environmental Quality (MDEQ) personnel. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).)

SECTION 6
REPORTING REQUIREMENTS

**THIS SECTION WAS INTENTIONALLY LEFT BLANK SINCE NO REPORTING
REQUIREMENTS APPLY TO THIS PERMIT ACTION.**