



Maricopa County

Air Quality Department

AIR QUALITY DEPARTMENT
1001 North Central Avenue
Phoenix, AZ 85004

NINETY-FIRST AVENUE RENEWABLE BIOGAS LLC
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FRAMINGHAM, MA 01701

This Permit is issued in accordance with Maricopa County Air Quality Department (MCAQD) Regulations, Rule 200, §303, and Arizona Revised Statutes, §49-404c and §49-480. The Permit is issued to provide regulators, site operators or owners, and members of the public, a clear picture of what the Permit holder is required to do to meet regulatory standards. As the Permit holder, you are expected to review this Permit, become familiar with its provisions and conditions and to operate in conformance with them. The Permit (and the underlying regulations upon which it is based) is an enforceable document. Failure to conform to the emission limits and any other condition contained in the Permit is a violation of law and will form the basis of enforcement action by the department which may include civil or criminal sanctions.

If the MCAQD Control Officer determines that additional monitoring, sampling, modeling and/or control of emissions from the facility may reasonably be needed to provide for the continued protection of public health, safety and/or welfare, the MCAQD Control Officer will amend the provisions of this Permit. This Permit may be subject to suspension or revocation for cause including nonpayment of fees, noncompliance with Arizona State Statutes, Maricopa County Air Quality Regulations, or the attached Permit Conditions, or if the MCAQD Control Officer determines that significant misrepresentation exists in the application and supporting documentation filed to obtain or modify this Permit.

If you need assistance with the permit, please contact the Business Assistance Coordinator at 602.506.5102 or contact the undersigned at 602.506.7248. Email communications may be sent to AQPermits@mail.maricopa.gov.

MARICOPA COUNTY AIR QUALITY DEPARTMENT

Engineering and Permitting Division

1001 N. Central Avenue, Suite 400, Phoenix, Arizona 85004

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AIR QUALITY PERMIT TO OPERATE AND/OR CONSTRUCT

(As required by Title 49, Chapter 3, Article 2, Section 49-480, Arizona Revised Statutes)

ISSUED TO

Ninety-First Avenue Renewable Biogas LLC

**5616 S. 91st Ave
Tolleson, AZ 85353**

This air quality permit to operate and/or construct does not relieve the applicant of the responsibility of meeting all air pollution regulations.

THE PERMITTEE IS SUBJECT TO THE SPECIFIC AND GENERAL CONDITIONS IDENTIFIED IN THIS PERMIT.

PERMIT NUMBER: 150120

REVISION DATE: xx/xx/2016

REVISION NUMBER: 0.0.0.0

EXPIRATION DATE: xx/xx/2021

Todd Martin, Non-Title V Permit Supervisor

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Any cited regulatory paragraphs or section numbers refer to the version of the rules and regulations that were in effect on the first date of public notice of the applicable Permit Condition unless specified otherwise. However, in the event the rules and regulations are amended during the term of this Permit, the amended rules and regulations shall apply to this Permit. Whenever the term, Control Officer, is used in this Permit it shall be interpreted to mean, Control Officer or designated representative. Where the term "Rule" appears, it shall be construed to mean "Maricopa County Air Pollution Control Regulations" unless otherwise noted.

SPECIFIC CONDITIONS

1. Allowable Emissions:

- a. The Permittee shall not allow total combined emissions of sulfur oxides (SO_x) into the atmosphere from this facility and the 91st Avenue Wastewater Treatment Plant (Permit #970580) to exceed 182,000 pounds per 12 consecutive month period.
- b. The Permittee shall not allow emissions into the atmosphere from the tail gas flare in excess of any of the following:

	Twelve Month Rolling Total Emission Limits
Carbon Monoxide (CO)	46,000 lbs
Nitrogen Oxide (NO _x)	14,000 lbs
Particulate Matter <10 Micron Diameter (PM ₁₀)	15,000 lbs
Particulate Matter <2.5 Micron Diameter (PM _{2.5})	15,000 lbs
Volatile Organic Compounds (VOC)	32,000 lbs

- c. The 12-month rolling total emissions shall be calculated monthly by the end of the following calendar month by summing the emissions over the most recent 12 calendar months. The Permittee shall keep this emission record on-site for inspection or submittal upon request.

[Rule 220 §302.2, 304.1] [Pollutants other than SO_x: Locally Enforceable Only]

2. Emission Calculations:

- a. For the purpose of this permit, waste gas includes unprocessed digester gas from the wastewater treatment plant, depress gas and tail gas removed from the biogas during processing.
- b. Daily emissions of SO_x from the combustion of waste gas in the tail gas flare shall be calculated using the following equation:

$$SO_x \text{ (as } SO_2) = \frac{(H_2S) \times (V) \times (64 \text{ kg/kg-mol}) \times (AF)}{(849.5 \text{ scf/kg-mol}) \times (0.454 \text{ kg/lb)}}$$

Where:

SO_x is calculated in terms of pounds per day.

H₂S is the concentration (ppmv) of hydrogen sulfide in the waste gas burned in the tail gas flare.

V is the total volume of waste gas in million standard cubic feet (MMscf) burned in the tail gas flare per day, standardized to 68°F and 14.7 psia.

849.5 scf/kg-mol is the molar volume conversion factor at 68°F and 14.7 psia.

64 kg/kg-mol is the molecular mass of sulfur dioxide.

AF is an adjustment factor for the total concentration of sulfur compounds in waste gas relative to H₂S. An initial value of 1.02 shall be used until valid test results are obtained in accordance with Permit Condition 9.c.

- c. Monthly SO_x emissions from waste gas combustion shall be calculated each month by the end of the following calendar month by summing the daily emissions calculated in accordance with Subsection [b] of this Permit Condition.
- d. Monthly emissions of SO_x from the combustion of supplemental fuel in the flare shall be calculated in accordance with Subsection [b] of this Permit Condition for biogas and AP-42 Table 1.4-2 for natural gas.
- e. Daily calculations required in accordance with Subsection b of this Permit Condition may be reduced to weekly if approved by the Control Officer in accordance with Permit Condition 9.b.

[Rule 220 §§302.5, 304.1]

3. Semi-Annual Emission Reporting:

The Permittee shall submit a SO_x emission report to the Control Officer (Attention: Compliance Division Manager) every six months. The reports shall cover the periods from January 1st through June 30th and July 1st through December 31st and be submitted no later than 45 days after the end of each reporting period. The SO_x emission report shall include:

- a. Monthly and 12-month rolling total emissions of SO_x from the tail gas flare during the preceding 12 months, calculated in accordance with Permit Condition 2;
- b. Monthly and 12-month rolling total emissions of SO_x from the 91st Avenue Wastewater Treatment Plant (Air Quality Permit #970580) during the preceding 12 months;
- c. Results of the digester gas H₂S tests required under Permit Condition 9;
- d. Results of the most recent sulfur characterization test obtained in accordance with Permit Condition 9.c; and
- e. Daily, monthly and 12 month rolling total volume of waste gas (MMscf) burned in the tail gas flare.

[Rule 220 §§302.7, 302.8, 302.23(a)(2), 304.1][SIP Rule 100 §502]

BIOGAS PLANT (PSA System and Tail Gas Flare)

4. Operating Requirements

- a. Only digester gas originating from the 91st Avenue WWTP shall be processed at the biogas plant and/or burned in the tail gas flare. This restriction excludes natural gas burned in the tail gas flare as supplemental fuel.
 - b. No more than 1400 MMscf of digester gas or the approved maximum flow for the 91st Avenue WWTP specified in Maricopa County Air Quality Permit #970580 shall be directed from the 91st Avenue WWTP to the biogas plant per any 12 consecutive-month period, adjusted to 68°F and 14.7 psia.
- [Rule 220 §§302.2, 304.1]
- c. The tail gas flare shall be operated at all times when emissions may be vented to it. The Permittee shall monitor the flare to ensure that it is operated and maintained in conformance with its design.
- [Rule 220 §§302.2, 302.5][SIP Rule 32.C]
- d. While waste gas is injected to the flare, the flare shall operate at a minimum temperature of 1400°F averaged over a three (3) hour period, except during shutdowns, unless a lower temperature is demonstrated through testing to meet the requirements of Subsection [e] of this Permit Condition. Shutdowns shall not exceed 15 minutes per episode.
 - e. The flare shall achieve at least a 98% VOC destruction efficiency or have a VOC outlet concentration of no more than 100 ppmv as hexane at 3% O₂, determined in accordance with Permit Condition 11.
 - f. The presence of a pilot flame shall be monitored using a thermocouple or equivalent device to ensure flare operation.

[Rule 220 §302.5][Locally Enforceable Only]

- g. Visible Emissions:
- i. Visible emissions from the flare shall not exceed 20% opacity for a period aggregating more than three minutes in any 60-minute period. If visible emissions from the flare are observed after initial startup, the Permittee shall determine compliance with the above opacity standard by having a certified Visible Emissions Evaluator determine opacity using the techniques specified in EPA Reference Method 9, 40 CFR Part 60, Appendix A. This reading shall be taken within 3 business days from that date that visible emissions were initially observed and daily thereafter during each day the flare is in operation until no visible emissions are observed.
[Rule 300 §§301, 501][Locally Enforceable Only]
 - ii. If any non-compliant visible emissions are detected or reported, the Permittee shall determine the cause and/or the source of emissions. The Permittee shall then take immediate corrective action(s) and if necessary, shut down the applicable equipment. If visible emissions exceed the above opacity standard subsequent to implementing corrective action(s), the Permittee shall shut down the applicable equipment and institute repairs or changes necessary to ensure compliance prior to resuming operations.
[Rule 220 §302.2][Locally Enforceable Only]
 - iii. The Permittee shall log the results of opacity readings conducted in accordance with EPA Reference Method 9. The log shall include the date and time that a visible emissions or Method 9 reading was taken, the name of the person who took the reading, a note indicating if visible emissions were observed, the opacity of visible emissions (if applicable), a description of any corrective action taken, the date such action was taken (if applicable), and any other related information.
[Rule 220 §302.7][Locally Enforceable Only]
 - h. The Permittee shall perform monthly inspections of the flare's piping and vapor handling system after startup to ensure vapor tightness in all piping and valves throughout the system. In these monthly inspections, detection methods incorporating sight, sound, smell and/or touch may be used. The results of each inspection shall be maintained in a log along with the name of the person who conducted the inspection and the date and time that the inspection was conducted.
[Rule 220 §§302.2, 302.7][Locally Enforceable Only]

5. Operation and Maintenance (O&M) Plan Requirements:

- a. Unless an O&M Plan has been previously submitted and approved, the Permittee shall submit an approvable O&M Plan for the tail gas flare to the Department, Attn: Permitting Manager, within 45 days of the equipment receiving exhaust, in accordance with the Department guidelines.
- b. The O&M Plan shall specify key system operating parameters, such as temperatures, pressures and/or flow rates, necessary to determine compliance and describe in detail procedures to maintain the approved emission control system. The Permittee shall monitor, operate and maintain the equipment in accordance with the device's approved O&M Plan.
- c. Changes to an existing O&M Plan shall be made by submitting a complete, revised O&M Plan along with a cover letter identifying all changes and the reason for such changes. The Permittee may implement the changes addressed in the revised O&M plan after it submits the revision to the Department. Unless disapproved in writing by the Department, the Permittee shall continue to operate in accordance with the revised O&M plan.
- d. If any control device is found to be operating outside a specified range, the Permittee shall immediately take corrective action to bring the device back into the specified operating range or shut down the device and the associated equipment vented to it.
- e. If a pattern of excursions, as determined by the Department or the Permittee, of operation outside the specified operating range develops, the Permittee shall submit for Department approval a Corrective Action Plan to bring the devices back into the specified operating range. The Plan shall be submitted to the Department, Attn: Compliance Manager, within 30 days of the determination of the existence of

excursions.

[Rule 220 §302.4][Locally Enforceable Only]

6. Odor Standards:

- a. No person shall emit gaseous or odorous air contaminants from the tail gas flare or PSA system in such quantities or concentrations as to cause air pollution.

[Rule 320 §300] [SIP Rule 32.A]

- b. Material Containment Required: Materials including, but not limited to, solvents or other volatile compounds, paints, acids, alkalis, pesticides, fertilizer and manure shall be processed, stored, used and transported in such a manner and by such means that they will not unreasonably evaporate, leak, escape or be otherwise discharged into the ambient air in such quantities or concentrations as to cause air pollution smells, aromas or stenches commonly recognized as offensive, obnoxious or objectionable to a substantial part of a community. Where means are available to reduce effectively the contribution to air pollution from evaporation, leakage or discharge, the installation and use of such control methods, devices or equipment shall be mandatory.

[Rule 320 §302][SIP Rule 32.C]

- c. Reasonable Stack Height Required: Where a stack, vent or other outlet is at such a level that air contaminants are discharged to adjoining property, the Control Officer may require the installation of abatement equipment or the alteration of such stack, vent, or other outlet to a degree that will adequately dilute, reduce or eliminate the discharge of air contaminants to adjoining property.

[Rule 320 §303][SIP Rule 32.D]

- d. H₂S Limitation: No person shall emit H₂S from any location in such a manner or amount that the concentration of such emissions into the ambient air at any occupied place beyond the premises on which the source is located exceeds 0.03 ppmv for any averaging period of 30 minutes or more.

[Rule 320 §304][SIP Rule 32.E]

7. H₂S Compliance Demonstration:

- a. The Permittee shall perform a demonstration of compliance with Permit Condition 6.d by conducting a test to monitor H₂S levels within 90 days of any of the following events:

- i. Initial start-up of the tail gas flare; or
- ii. The receipt of three (3) odor complaints related to the tail gas flare or PSA system within any 12-month period; or
- iii. The reception of a written request from the Department.

- b. The compliance demonstration shall be performed at a location representing the nearest occupied place beyond the premises on which the source of H₂S is located.

[Rule 200 §310][Locally Enforceable Only]

- c. The Permittee shall submit a report within 30 days of completion of each demonstration to the Department, Attn: Compliance Division Manager that details the results of each compliance demonstration.

[Rule 220 §302.8][Locally Enforceable Only]

8. Compliance Plan:

In the event of an exceedance of the H₂S limit specified in Permit Condition 6.d, the Permittee shall submit a Compliance Plan to the Control Officer (Attention: Compliance Division Manager) for approval within 120 days of exceeding the H₂S emission limitation. The Compliance Plan shall include the following:

- a. Technological evaluation of additional odor control alternatives at the plant.
- b. Additional monitoring and/or air dispersion modeling to determine property line concentration of H₂S based on the implementation of selected odor control alternatives.

- c. Conceptual design and preliminary cost estimate for the proposed odor control alternatives.
- d. Schedule for design and construction of the proposed control alternatives.
- e. Description of recommended actions.

[Rule 220 §303][Locally Enforceable Only]

9. Waste Gas H₂S Monitoring:

- a. The Permittee shall test the H₂S content of waste gas burned in the flare on a daily basis using EPA Method 16B or Dispersive UV-Vis / SW-NIR absorbance spectrophotometry. The Control Officer may approve the use of an alternative method to determine the H₂S content of waste gas provided it has sufficient sensitivity, does not suffer from interferences and satisfies quality assurance criteria. If requested by the Control Officer, the Permittee shall demonstrate that the accuracy of the alternative method for determining the sulfur concentrations of waste gas is equivalent to that of EPA Method 16B. If the spectrophotometry equipment is out of service, the Permittee may use Dräger tubes to measure H₂S. The Permittee shall use Dräger tubes appropriate for the concentration range of H₂S and follow the manufacturer's procedures for interpreting the results. If Dräger tube testing is required for more than seven days, weekly H₂S testing using EPA Method 16B shall be performed to confirm the accuracy of the Dräger readings. If the Dräger H₂S reading varies by more than 7% from the H₂S result of the sample using Method 16B for the same day, daily H₂S testing using Method 16B shall be performed until the spectrophotometry equipment is back in operation.
- b. Upon the approval of the Control Officer, the testing frequency may be reduced to weekly under the following provisions:
 - i. The Permittee shall calculate the coefficient of variation (C_V) for the H₂S content each day based on the 7 most recent daily H₂S test results using the following equations:

$$\mu = \frac{\sum X}{n}$$

$$\sigma = \sqrt{\frac{\sum (x - \mu)^2}{n - 1}}$$

$$C_V = \frac{\sigma}{\mu}$$

Where:

μ is the sample mean,

x is the result of each daily H₂S test during the 7-day period

n is the number of daily H₂S tests (i.e.: 7)

σ is the sample standard deviation

- ii. If results show that C_V for the H₂S content of waste gas does not exceed 15% for any rolling 7 consecutive-day period during 30 consecutive days of testing, the testing frequency may be reduced to once weekly.
- c. Within 30 days after initial startup of the tail gas flare and every 12 months thereafter, the Permittee shall characterize the concentration of all eluted sulfur compounds in waste gas vented to the tail gas flare. Based on the test results, the adjustment factor (AF) used in Condition 2.b shall be updated accordingly. Test results shall be submitted to the Control Officer (Attn: Compliance Manager) within seven days of receiving the results from the testing company.

[Rule 220 §§302.5, 304.1]

10. Recordkeeping:

The Permittee shall keep the following records on site and available upon request. The records shall be retained for 5 years.

- a. A daily log of the volume of waste gas burned in the tail gas flare.
- b. A log of the results of each test measuring the concentration of H₂S in waste gas entering the tail gas flare.
- c. Results of the most recent sulfur characterization test obtained in accordance with Permit Condition 9.c.
- d. Records of the 12-month rolling total emissions, as required by Permit Condition 1.c.
[Rule 220 §§302.7, 304.1]
- e. Monitoring and maintenance records specified in the O&M Plan:
 - i. Monitoring Records shall consist of an operations log sheet to be completed for every day the process and/or control device is in operation. Operations log sheets shall, at a minimum, contain the following information: equipment identification; date and time of readings; identification of the individual recording the data; operating parameters to be monitored including units of measure, operating limits (upper and lower limits), and locations for recording measurements; measurement frequency; and if applicable, corrective action taken. An explanation shall be recorded for any periods of operation when the control device was not operating.
 - ii. Maintenance Records shall, at a minimum, contain the following information: equipment identification; date; identification of the individual performing the maintenance check; procedures to be performed including frequency of occurrence; results of inspection; and corrective action taken.
 - iii. Whenever the O&M Plan requires that maintenance be performed, a record shall be made of the maintenance actions taken by the end of the following business day.
 - iv. Daily records of the O&M Plan's key system operating parameters. Account for any periods of operation when the control device was not operating.
 - v. An explanation shall be recorded for any scheduled maintenance that is not performed during the period designated in the O&M Plan.
- f. Records of any process upsets that would cause the release of waste gases into the atmosphere.
- g. All records pertaining to the repairs and schedules required to restore the treatment process after upset. The Permittee shall retain records of the operational parameter tests used to ensure proper operation of the process.
- h. A complaint log of odors that have been detected from complainants from off-site locations that have been attributed to the tail gas flare or PSA system. The log shall contain a description of the complaint, date and time that the complaint was received, and if given, name and/or phone number of the complainant. The logbook shall describe what actions were performed to investigate the complaint, the results of the investigation, and any corrective actions that were taken. No record is required if no complaint is received.

[Rule 220 §§302.7, 500] [Rule 100 §504][Locally Enforceable Only]

PERFORMANCE TEST REQUIREMENTS FOR THE TAIL GAS FLARE**11. Performance Test Requirements**

- a. Testing Requirements: The Permittee shall conduct performance tests on the tail gas flare within 60 days after the biogas plant has achieved the capability to operate at its maximum production rate on a sustained basis. The testing deadline may be extended by the Control Officer for good cause, but in no case shall the testing deadline, including test report submittal, extend beyond 180 days after the new applicable equipment has achieved the capability to operate at its maximum capacity.

- i. The Permittee shall measure the VOC concentrations in the flare inlet and exhaust streams to demonstrate compliance with the minimum VOC destruction efficiency requirement at the minimum allowable combustion temperature. Testing shall also demonstrate compliance with all applicable VOC emission limits of these permit conditions.
 - ii. The Permittee shall measure the concentrations of NO_x and CO in the flare exhaust stream. Testing shall demonstrate compliance with all applicable NO_x and CO emission limits of these permit conditions.
 - iii. The Permittee shall determine the volumetric flow rate, dry molecular weight, and methane content of the gas streams in order to perform the necessary calculations.
[Rule 200 §310.1][Rule 270 §401][SIP Rule 27 §A]
- b. Testing Criteria: Performance tests shall be conducted and data reduced in accordance with the test methods and procedures specified in the Test Methods section of this permit condition unless otherwise specified by the Control Officer and/or Administrator. The Control Officer and/or Administrator may specify or approve minor changes in methodology to a reference method, approve the use of an equivalent test method, approve the use of an alternative method that has been determined to be acceptable for demonstrating compliance, or waive the requirement for performance tests because the Permittee has demonstrated by other means that the source is in compliance with the standard.
[Rule 270 §402][SIP Rule 27 §B]
- c. Test Methods: Sampling sites and velocity traverse points shall be selected in accordance with EPA Test Method 1 or 1A. The gas volumetric flow rate shall be measured in accordance with EPA Test Method 2, 2A, 2C, 2D, 2F, 2G or 19. The dry molecular weight shall be determined in accordance with EPA Test Method 3, 3A or 3B. The stack gas moisture shall be determined in accordance with EPA Test Method 4. These methods must be performed, as applicable, during each test run.
- i. VOC testing shall be conducted in accordance with EPA Test Method 25, 25C or 18. In cases where the outlet concentration is less than 50 ppm as carbon (8 ppm as hexane), EPA Test Method 25A should be used in place of EPA Test Method 25. If using EPA Test Method 18, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42).
 - ii. NO_x testing shall be conducted in accordance with EPA Test Method 7E. CO testing shall be conducted in accordance with EPA Test Method 10.
[Rule 270 §§301.1, 301.2][SIP Rule 27 §B]
- d. Operating Conditions: Performance tests shall be conducted under representative operating conditions and all equipment shall be operated during testing in accordance with the most recently approved O&M Plan or according to its operations manual if no O&M Plan is required. The Permittee shall make available to the Control Officer any records necessary to determine appropriate conditions for performance tests. Operations during periods of startup, shutdown, and equipment malfunction shall not constitute representative conditions for performance tests unless otherwise specified in the applicable standard or permit conditions.
[Rule 270 §403][SIP Rule 27 §B]
- e. Monitoring Requirements: The Permittee shall record all process and control equipment information that are necessary to document operating conditions during the test and explain why the conditions represent normal operation. Operational parameters shall be monitored and recorded at least once every 30 minutes during each of the required test runs and documented in the test report. The operational parameters monitored shall be capable of indicating that the equipment is operating within the permitted limits, both during and after the performance tests.

The Permittee shall record the combustion chamber temperature and waste gas flow rate during the performance test.

[Rule 270 §301.1][SIP Rule 27 §B]

- f. Test Protocol Submittal: The Permittee shall submit a separate test protocol for each performance test to the Department for review and approval at least 30 days prior to each performance test unless otherwise specified in the applicable standard or in this permit. The test protocol shall be prepared in accordance with the most recent version of the Department's "Air Quality Performance Test Guidelines for Compliance Determination in Maricopa County." A completed copy of the Department's "Test Protocol Submittal Form" shall accompany each test protocol.

[Rule 270 §301.1][SIP Rule 27 §B]

- g. Notice of Start-up: The Permittee shall notify the Department [Attn: Permitting Manager] in writing within 30 after the new applicable equipment has achieved the capability to operate at its maximum capacity.

[Rule 220 §302.23.a(2)][Locally Enforceable Only]

- h. Notice of Testing: The Permittee shall notify the Department in writing at least two weeks in advance of the actual date and time of each performance test unless otherwise specified in the applicable standard or in this permit so that the Department may have a representative attend.

[Rule 270 §404][SIP Rule 27 §B]

- i. Testing Facilities Required: The Permittee shall install any and all sample ports or platforms necessary to conduct the performance tests, provide safe access to any platforms, and provide the necessary utilities for testing equipment.

[Rule 270 §405][SIP Rule 42]

- j. Minimum Testing Requirements: Each performance test shall consist of three separate test runs with each test run being at least one hour in duration unless otherwise specified in the applicable standard or in this permit. The same test methods shall be used simultaneously for both the inlet and outlet measurements, if applicable, or justification for any necessary exceptions shall be provided in the test protocol. Emissions rates, concentrations, grain loadings, and/or efficiencies shall be determined as the arithmetic average of the values determined for each individual test run. Performance tests may only be stopped for good cause, which includes forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control. Termination of a performance test without good cause after the first test run has commenced shall constitute a failure of the performance test.

[Rule 270 §406] [SIP Rule 27 §B]

- k. Test Report Submittal: The Permittee shall complete and submit a separate test report for each performance test to the Department within 45 days after the completion of testing unless otherwise specified in the applicable standard or in this permit. The test report shall be prepared in accordance with the most recent version of the Department's "Air Quality Performance Test Guidelines for Compliance Determination in Maricopa County." A completed copy of the Department's "Test Report Submittal Form" shall accompany each test report.

Reports shall be sent to: Maricopa County Air Quality Department, Attn: Permit Division Manager, 1001 Central Ave., Suite 400, Phoenix, AZ 85004-1944.

[Rule 270 §301.1][SIP Rule 27 §B]

- l. Compliance with Emission Limits: Compliance with allowable emission limits and standards shall be determined by the performance tests specified in this permit. If test results do not demonstrate compliance with the requirements of these permit conditions, the Permittee shall make the necessary repairs and/or adjustments to the equipment and demonstrate compliance through retesting. In lieu of retesting, the Permittee may be able to submit an application for a permit revision to establish operational limitations or allowable emission limits based on the equipment's actual performance. Neither option will nullify the fact that test results did not demonstrate compliance with the requirements of the permit conditions or nullify any violations that may result from this noncompliance. In addition to compliance demonstrations, test results shall be used for annual emissions inventory purposes if the Permittee is required to complete an emissions inventory survey.

[Rule 270 §407] [Locally Enforceable Only]

- m. Correspondence: All test extension requests, test protocols, test date notifications, and test reports required by this permit shall be submitted to the Department and addressed to the attention of the Performance Test Evaluation Supervisor.

[Rule 270 §301.1][SIP Rule 27 §B]

- n. Authority: The above testing requirements represent the minimum level of testing to monitor for compliance with the emission limits in this permit. Nothing in this section shall prevent the Control Officer from requiring additional performance testing as deemed necessary to ensure permit compliance and protection of the public health and welfare.

[Rule 200 §310][Rule 270 §402.5] [Locally Enforceable Only]

RULE 310: FUGITIVE DUST FROM DUST-GENERATING OPERATIONS

12. Applicability:

- a. The provisions of this Permit Section apply to all dust-generating operations except for those dust-generating operations listed in the Condition below. Any person engaged in a dust-generating operation subject to this Permit Section shall be subject to the standards and/or requirements of this Permit Section before, after, and while conducting such dust-generating operation, including during weekends, after work hours, and on holidays.
- b. For the purpose of Rule 310, any control measure that is implemented must achieve the applicable standard(s) described in Rule 310, as determined by the corresponding test method(s), as applicable, and must achieve other applicable standard(s) set forth in Rule 310.
- c. Regardless of whether a dust-generating operation is in compliance with an approved Dust Control Plan or there is no approved Dust Control Plan, the owner and/or operator of a dust-generating operation shall be subject to all requirements of Rule 310 at all times.
- d. Failure to comply with the provisions of these requirements, as applicable, and/or of an approved Dust Control Plan, shall constitute a violation.

[SIP Rule 310 §§102, 301]

13. Exemptions:

The provisions of this Permit Section shall not apply to the following activities:

- a. Emergency activities that may disturb the soil conducted by any utility or government agency in order to prevent public injury or to restore critical utilities to functional status.
- b. Establishing of initial landscapes without the use of mechanized equipment or conducting landscape maintenance without the use of mechanized equipment. However, establishing initial landscapes without the use of mechanized equipment and conducting landscape maintenance without the use of mechanized equipment shall not include grading or trenching performed to establish initial landscapes or to redesign existing landscapes.

[SIP Rule 310 §103]

14. Operational Limitation:

The owner and/or operator of a dust-generating operation shall limit routine dust-generating activities to no more than 0.10 acre (4,356 square feet) unless a Dust Control Plan has been submitted and approved.

[Rule 220 §302.2] [Locally Enforceable Only]

15. Visible Emission Requirements for Dust-Generating Operations:

- a. The Permittee shall not cause or allow visible fugitive dust emissions to exceed 20% opacity.
- b. The Permittee shall not cause or allow visible emissions of particulate matter, including fugitive dust, beyond the property line within which the emissions are generated. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined by using EPA Reference Method 22. This requirement does not apply to dust-generating operations conducted within 25 feet of the property line.

[SIP Rule 310 §303.1]

16. Exemptions from Dust-Generating Operation Opacity Limitation Requirement:

- a. If wind conditions cause fugitive dust emissions to exceed the opacity requirements in this permit, despite implementation of the controls required in this Permit, an owner and/or operator shall:
 - i. Ensure that all control measures and requirements of this permit are implemented and the subject violations cannot be prevented by better application, operation, or maintenance of these measures and requirements.
 - ii. Cease dust-generating operations and stabilize any disturbed surface area consistent with the Stabilization Requirements of these conditions.
 - iii. Compile records consistent with the recordkeeping requirements of these Permit Conditions and document the control measure and other Permit requirements implemented.
- b. Emergency Maintenance of Flood Control Channels and Water Retention Basins: The opacity limit shall not apply to emergency maintenance of flood control channels and water retention basins, provided that control measures are implemented.

[SIP Rule 310 §303.2]

17. Stabilization Requirements for Dust-Generating Operations:

- a. Unpaved Parking Lot: The owner and/or operator of any unpaved parking lot shall not allow visible fugitive dust emissions to exceed 20% opacity and shall not allow silt loading equal to or greater than 0.33 oz/ft². However, if silt loading is equal to or greater than 0.33 oz/ft², then the owner and/or operator shall not allow the silt content to exceed 8%. An unpaved parking lot includes any area that is not paved and that is used for parking, maneuvering, material handling, or storing motor vehicles and equipment

[SIP Rule 310 §§ 232, 304.1]

- b. Unpaved Haul/Access Road:
An unpaved haul/access road includes any on-site road or equipment path that is not paved and is used by commercial, industrial, institutional, and/or governmental traffic.
 - i. The owner and/or operator of any unpaved haul/access road (whether at a work site that is under construction or at a work site that is temporarily or permanently inactive) shall not allow visible fugitive dust emissions to exceed 20% opacity and shall not allow silt loading equal to or greater than 0.33 oz/ft². However, if silt loading is equal to or greater than 0.33 oz/ft², then the owner and/or operator shall not allow the silt content to exceed 6%.
 - ii. The owner and/or operator of any unpaved haul/access road (including at a work site that is under construction or a work site that is temporarily or permanently inactive) shall, as an alternative to meeting the stabilization requirements for an unpaved haul/access road in Subsection [17.b.i] of this Condition, limit vehicle trips to no more than 20 per day per road and limit vehicle speeds to no more than 15 miles per hour. If complying with this subsection of this Permit, the owner and/or operator must include, in a Dust Control Plan, the maximum number of vehicle trips on the unpaved haul/access roads each day (including number of employee vehicles, earthmoving equipment, haul trucks, and water trucks) and a description of how vehicle speeds will be restricted to no more than 15 miles per hour.

[SIP Rule 310 §304.2]

- c. Disturbed Surface Area: The owner and/or operator of any disturbed surface area on which no activity is occurring (including at a work site that is under construction or a work site that is temporarily or permanently inactive) shall meet at least one of the standards described below, as applicable. Should such a disturbed surface area contain more than one type of stabilization characteristic, such as soil, vegetation, or other characteristic, which is visibly distinguishable, then the owner and/or operator shall test each representative surface separately for stability, in an area that represents a random portion of the overall disturbed conditions of the site, in accordance with the appropriate test methods described in Section 501.2(c) of Rule 310 and in Appendix C (Fugitive Dust Test Methods) of MCAQD rules. The

owner and/or operator of such disturbed surface area on which no activity is occurring shall be considered in violation of Rule 310 if the area is not maintained in a manner that meets at least one of the standards listed below, as applicable. An area is considered to be a disturbed surface area until the activity that caused the disturbance has been completed and the disturbed surface area meets the standards described in this subsection.

- i. Maintain a soil crust;
- ii. Maintain a threshold friction velocity (TFV) for disturbed surface areas corrected for non-erodible elements of 100 cm/second or higher;
- iii. Maintain a flat vegetative cover (i.e., attached (rooted) vegetation or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind) that is equal to at least 50%;
- iv. Maintain a standing vegetative cover (i.e., vegetation that is attached (rooted) with a predominant vertical orientation) that is equal to or greater than 30%;
- v. Maintain a standing vegetative cover (i.e., vegetation that is attached (rooted) with a predominant vertical orientation) that is equal to or greater than 10% and where the threshold friction velocity is equal to or greater than 43 cm/second when corrected for non-erodible elements;
- vi. Maintain a percent cover that is equal to or greater than 10% for non-erodible elements; or
- vii. Comply with a standard of an alternative test method, upon obtaining the written approval from the Control Officer and the Administrator.

[SIP Rule 310 §304.3]

18. Control Measures for Dust-Generating Operations:

When engaged in a dust-generating operation, the owner and/or operator shall install, maintain, and use control measures, as applicable. Control measures for specific dust-generating operations are described this Permit Condition. The owner and/or operator of a dust-generating operation shall implement control measures before, after, and while conducting dust-generating operations, including during weekends, after work hours, and on holidays.

For the purpose of this Permit an “AREA ACCESSIBLE TO THE PUBLIC” is defined as any paved parking lot or paved roadway that can be entered or used for public travel primarily for purposes unrelated to the dust-generating operation.

- a. Unpaved Staging Areas, Unpaved Parking Areas, Unpaved Material Storage Areas, and unpaved haul/access roads: The owner and/or operator of a dust-generating operation that involves unpaved staging areas, unpaved parking areas, unpaved material storage areas, and unpaved haul/access roads shall implement one or more of the following control measures:
 - i. Apply water so that the surface is visibly moist;
 - ii. Pave;
 - iii. Apply and maintain gravel, recycled asphalt, or other suitable material;
 - iv. Apply and maintain a suitable dust suppressant other than water; or
 - v. Limit vehicle trips to no more than 20 per day per road and limit vehicle speeds to no more than 15 miles per hour. If complying with this subsection, the owner and/or operator shall provide to the Control Officer the maximum number of vehicle trips on the staging areas, parking areas, and/or material storage areas each day (including number of employee vehicles, earthmoving equipment, haul trucks, and water trucks) and a description of how vehicle speeds will be restricted to no more than 15 miles per hour.

[SIP Rule 310 §§305.6, 305.7]

- b. Weed Abatement by Discing or Blading:

The owner and/or operator of a dust-generating operation that involves weed abatement by discing or blading shall comply with all of the following control measures:

- i. Before weed abatement by discing or blading occurs, apply water;
- ii. While weed abatement by discing or blading is occurring, apply water; and
- iii. After weed abatement by discing or blading occurs, pave, apply gravel, apply water, apply a suitable dust suppressant other than water, or establish vegetative ground cover.

[SIP Rule 310 §305.8]

c. Disturbed Surface Areas:

The owner and/or operator of a dust-generating operation that involves disturbed surface areas shall implement the following control measures, as applicable:

- i. Before disturbed surface areas are created, implement one of the following control measures:
 - 1) Pre-water site to depth of cuts, allowing time for penetration; or
 - 2) Phase work to reduce the amount of disturbed surface areas at any one time.
- ii. While disturbed surface areas are being created, implement one of the following control measures:
 - 1) Apply water or other suitable dust suppressant other than water, to keep the soil visibly moist throughout the process;
 - 2) Apply water to maintain a soil moisture content at a minimum of 12%, as determined by ASTM Method D2216-05 or other equivalent method as approved by the Control Officer and the Administrator. For areas that have an optimum moisture content for compaction of less than 12%, as determined by ASTM Method D1557-02e1 or other equivalent method approved by the Control Officer and the Administrator, maintain at least 70% of the optimum soil moisture content; or
 - 3) Implement one of the control measures in Subsection [c.ii.1)] or [c.ii.2)] of this Permit Condition and construct fences or three-foot to five-foot high wind barriers with 50% or less porosity adjacent to roadways or urban areas to reduce the amount of windblown material leaving a site.
- iii. When the dust-generating operation is finished for a period of 30 days or longer – for longer than temporary pauses that occur during a dust-generating operation, the owner and/or operator shall implement one or more of the following control measures within ten days following the completion of such dust-generating operation:
 - 1) Pave, apply gravel, or apply a suitable dust suppressant other than water;
 - 2) Establish vegetative ground cover;
 - 3) Implement one of the control measures in Subsection [c.iii.1)] or [c.iii.2)] of this Permit Condition and restrict vehicle access to the area;
 - 4) Pave, apply gravel, or apply a suitable dust suppressant other than water; or
 - 5) Apply water and prevent access by fences, ditches, vegetation, berms, or other suitable barrier or means sufficient to prevent trespass as approved by the Control Officer; or
 - 6) Restore area such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby undisturbed native conditions.

[SIP Rule 310 §305.11]

d. Easements, Rights-of-Way, and Access Roads for Utilities (Transmission of Electricity, Natural Gas, Oil, Water, and Gas): The owner and/or operator of a dust-generating operation that involves an easement, right-of-way, and access road for utilities (transmission of electricity, natural gas, oil, water, and gas) shall implement at least one of the following control measures:

- i. Inside Area A, limit vehicle speed to 15 miles per hour or less and vehicle trips to no more than 20 per day per road;

- ii. Implement control measures described in Subsection [a] of this Permit Condition.
[SIP Rule 310 §305.12]

19. Trackout, Carry-Out, Spillage, and/or Erosion:

The owner and/or operator of a dust-generating operation shall control trackout, carry-out, spillage, and/or erosion.

- a. Criterion for Clean Up of Trackout: Remove trackout, carry-out, spillage, and/or erosion from areas accessible to the public including curbs, gutters, and sidewalks, on the following time-schedule:
 - i. Immediately, when trackout, carry-out, or spillage extends a cumulative distance of 25 linear feet or more; and
 - ii. At the end of the workday, for all other trackout, carry-out, spillage, and/or erosion.
- b. Control Measures:
 - i. Operate a street sweeper or wet broom with sufficient water, or including but not limited to kick broom, steel bristle broom, Teflon broom, vacuum, at the speed recommended by the manufacturer and at the frequency(ies) described in this permit; or
 - ii. Manually sweep up deposits to comply with this Permit Condition.

[SIP Rule 310 §306.2]

20. Dust Control Training Classes for Dust-Generating Operations:

- a. At least once every three years, the following people shall successfully complete a Basic Dust Control Training Class conducted or approved by the Control Officer.
 - i. Water truck drivers.
 - ii. Water-pull drivers.
- b. Any certification issued to a person having successfully completed a Basic Dust Control Training Class conducted or approved by the Control Officer may be suspended or revoked for cause, including, but not limited to, inappropriate ethical activities or conduct associated with the dust control program.

[SIP Rule 310 §309.1]

21. Recordkeeping:

The Permittee shall maintain the following records for at least five years from the date of such records and make them available to the Control Officer upon request:

- a. The Permittee shall compile and retain records (including records on any street sweeping, water applications, and maintenance of trackout control devices, gravel pads, fences, wind barriers, and tarps) that provide evidence of control measure application, by indicating the type of treatment or control measure, extent of coverage, and date applied.
- b. Upon verbal or written request by the Control Officer, the log or the records and supporting documentation shall be provided as soon as possible but no later than 48 hours after the request, excluding weekends. If the Control Officer is at the site where requested records are kept, records shall be provided without delay.

[SIP Rule 310 §502.1]

[SIP Rule 310 §§502.3]

GENERAL CONDITIONS**22. Posting of Permit:**

This Permit shall be posted in a clearly visible and accessible location on the site where the equipment is installed.

[Rule 200 §312][Locally Enforceable Only]

23. Compliance:

- a. The issuance of any Permit or Permit revision shall not relieve the Permittee from compliance with any Federal laws, Arizona laws, or the County or SIP Rules, nor does any other law, regulation or permit relieve the Permittee from obtaining a Permit or Permit revision required under the County Rules.
[Rule 200 §309][Rule 220 §406.3][Locally Enforceable Only]
- b. The Permittee shall comply with all conditions of this Permit including all applicable requirements of Federal laws, Arizona laws, and Maricopa County Air Pollution Control Rules and Regulations now in effect and as amended in the future. Any Permit noncompliance is grounds for enforcement action, Permit termination or revocation, or for denial of a renewal application. In addition, non-compliance with any federally enforceable requirements constitutes a violation of the Clean Air Act.
[Rule 200 §310.4][Rule 220 §302.24] [A.A.C R18-2-306.A.8.a][Locally Enforceable Only]
- c. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with these Permit Conditions.
[Rule 220 §302.10][A.A.C. R18-2-306.A.8.b][Locally Enforceable Only]
- d. Rights and Privileges: This Permit does not convey any property rights or exclusive privilege of any sort.
[Rule 220 §302.12][Locally Enforceable Only]
- e. Fees: The Permittee shall pay all fees to the Control Officer in accordance with Rule 280. No permit or permit revision is valid until the applicable permit fee has been received and until the permit is issued by the Control Officer.
[Rule 200 §409][Rule 280 §302][A.R.S. 49-480(D)][SIP Rule 28]

24. Malfunctions, Emergency Upsets, and Excess Emissions:

An affirmative defense of an emergency, excess emission, and/or during startup and shutdown shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence as outlined in Rule 130 for emergencies and Rule 140 for excess emissions.

[Rule 130 §§201, 400][Rule 140 §§400, 500][SIP Rule 140]

25. Revision / Reopening / Revocation:

The Permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any Permit Condition.

[Rule 220 §302.11][Locally Enforceable Only]

26. Records:

- a. The Permittee shall furnish information that the Control Officer may request in writing to determine whether cause exists for revising, revoking and reissuing this permit, or terminating this permit, or to determine compliance with this permit. The information shall be provided in a timeframe specified by the Control Officer. Upon request, the Permittee shall also furnish to the Control Officer copies of records required to be kept by this Permit. For information claimed to be confidential, the Permittee shall furnish a copy of such records directly to the Administrator along with a claim of confidentiality.
[Rule 220 §302.13][SIP Rule 40]
- b. If the Permittee fails to submit any relevant facts or has submitted incorrect information in a permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, the Permittee shall provide additional information as necessary to address any requirements that become applicable to the source after the date a complete application is filed but prior to release of a proposed permit. Willful misrepresentation of facts in a permit application is cause for revocation or denial of a permit.
[Rule 220 §§301.5, 301.6][Locally Enforceable Only]

27. Right to Entry:

- a. The Control Officer during reasonable hours, for the purpose of enforcing and administering County or SIP Rules or the Clean Air Act, or any provision of the Arizona Revised Statutes relating to the emission or control prescribed pursuant thereto, may enter every building, premises, or other place, except the interior of structures used as private residences. Every person is guilty of a petty offense under A.R.S. 49-488 who in any way denies, obstructs or hampers such entrance or inspection that is lawfully authorized by warrant.
- b. The Permittee shall allow the Control Officer or his designated representatives, upon presentation of proper credentials (e.g., Maricopa County Air Quality Department identification) and other documents as may be required by law, to:
 - i. Enter upon the Permittee's premises where a source is located or emissions-related activity is conducted, or where records are required to be kept pursuant to the conditions of the permit;
 - ii. Have access to and copy, at reasonable times, any records that are required to be kept pursuant to the conditions of the permit;
 - iii. Inspect, at reasonable times, any sources, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required pursuant to this permit;
 - iv. Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the Permit or other applicable requirements; and
 - v. To record any inspection by use of written, electronic, magnetic, and photographic media.

[Rule 100 §105][Rule 220 §302.17-21][SIP Rule 43]

28. Severability:

The rules, paragraphs, clauses, provisions, and/or sections of this Permit are severable, and, if any rule, paragraph, clause, provision, and/or section of this Permit is held invalid, the remainder of this Permit shall not be affected thereby.

[Rule 220 §302.9][SIP Rule 80]

Equipment List

NINETY-FIRST AVENUE RENEWABLE BIOGAS LLC

Permit Number 150120

Issue Date:

Equipment Description	Rated Capacity	Quantity Exist/Future
1. EQUIPMENT - PRESSURE SWING ADSORPTION SYSTEM	3,000.00 CFM	1 /
2. EQUIPMENT - ENCLOSED FLARE	26.10 MM BTU/HF	1 /