

**STATEMENT OF BASIS**  
**Title V Permit Renewal**

**Facility Name:** FORTISTAR Methane Group / Sycamore Energy LLC  
**Title V App. Number:** APCD2021-APP-006984  
**Title V Permit Number:** APCD2015-TVP-00042  
**Facility ID:** APCD1984-SITE-03594  
**Equipment Address:** 8514 Mast Blvd, Santee, CA 92071  
**Facility Contact:** Suparna Chakladar  
**Contact Phone:** (951) 833-4153  
**Permit Engineer:** Allison Weller/Liliana Jaime  
**Date:** 05/15/2024

5/15/2024

**X** Nicholas Horres

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Nicholas Horres  
Senior Engineer  
Signed by: NHorres

**Senior Engineer:**

**1.0 Type of Action and Summary of Changes**

This application is for the renewal of the Title V operating permit (APCD2015-TVP-00042) for the Sycamore Landfill gas-to-energy site. This facility is subject to Title V permitting because it is a major source of CO emissions per Title V major source threshold of 100 tons/year.

**2.0 History of Title V Applications and Modifications/Applications since previous Renewal:**

The renewal application was received on September 24, 2021. This renewal application was submitted at least 12 months but not more than 18 months prior to permit expiration, in accordance with Rule 1410. Therefore, the renewal application is timely.

The following table summarizes all previous applications at this facility affecting the Title V permit.

<b>Title V Application History Since Initial Title V Permit</b>				
<b>Application Number</b>	<b>Title V Permit Number</b>	<b>Application Description</b>	<b>Equipment</b>	<b>Outcome</b>
APCD2013-APP-002924	APCD2015-TVP-00042	Initial Title V Permit application	Combustion Turbines	Approved
APCD2021-APP-006984	APCD2015-TVP-00042	Title V Permit Renewal (this application)	Combustion Turbines	Open

Since the initial application, the District has not received any new applications from this facility, however, there were condition changes made to the local permits based on a request by the permit holder which are described in Section 8.0 “Updates to the Title V Permit Incorporated into this Action” below and these changes are being implemented in the Title V permit as part of this action and are included in appendix A of the Title V permit.

### 3.0 Facility Description

Sycamore Energy LLC is an energy holding company that generates electricity to be sold to the power grid by combusting landfill gas.

<b>Permit Number</b>	<b>Equipment Description</b>
APCD2013-PTO-001620	Landfill Gas Energy Recovery System consisting of: Gas Turbine 1, Solar, Model Saturn 10, 1.2 MW, landfill gas fired with propane pilot, S/N TL-19-52754-10/15; with a gas compressor, and process control equipment including a landfill gas flow meter and an in-line oxygen analyzer.
APCD2013-PTO-001621	Landfill Gas Energy Recovery System consisting of: Gas Turbine 2, Solar, Model Saturn 10, 1.2 MW, landfill gas fired with propane pilot, S/N UF-19-52902-6/3; with a gas compressor, and process control equipment including a landfill gas flow meter and an in-line oxygen analyzer.
APCD2005-PTO-980112	Gas Turbine #3: Solar, Centaur 40 Series 4701, landfill gas fired, 3.7 MW, 47.7 MMBtu/hr heat input, S/N OHF11-C1790.

### 4.0 Compliance History

The following table summarizes all previous compliance violations at this facility affecting the Title V permit emission units:

<b>Title V Application History Since Initial Title V Permit</b>				
<b>Notice of Violation Record</b>	<b>Affected Permit to Operate</b>	<b>Violation Description</b>	<b>Equipment</b>	<b>Outcome</b>
APCD2014-NOV-000242	APCD2013-PTO-001620	Exceeding permitted source test limit for CO	Combustion turbine	Closed - Paid

APCD2015-NOV-000468	APCD2013-PTO-001620	Exceeding permitted source test limit for sulfur	Combustion turbine	Closed - Paid
APCD2017-NOV-000110	APCD2005-PTO-980112	Exceeding permitted source test limit for NOx	Combustion turbine	Closed - Paid
APCD2018-NOV-000118	APCD2013-PTO-001620	Exceeding permitted source test limit for CO	Combustion turbine	Closed - Paid

All violations listed were resolved in subsequent permit modifications to increase allowable testing limits or were granted previous variances to return to permitted compliance. Currently there are no open violations, hearing board variances, or abatement orders.

## 5.0 Title V Applicability

The Title V regulation applies to any stationary source that is a major stationary source as defined in Rule 1401(c)(26) or is subject to the acid rain provisions of Title IV of the federal Clean Air Act (CAA). Sycamore Energy LLC is a major source of CO. The facility is subject to Title V provisions, as discussed below.

The facility's PTE for CO exceeded the major source threshold with the replacement of its turbines #1 and #2 in 2013. Prior to these installations, the emissions remained below major source thresholds due to the aggregate capacity and emissions of the turbines. The source submitted its initial Title V application after the replacements with the initial TV permit to operate being issued in 2017.

Title IV, which is codified at 40 CFR §72.6, states that specified "utility units" are subject to acid rain provisions. This regulation defines utility unit as a fossil fuel-fired combustion device that serves a generator in any State, and that produces electricity for sale. Because these engines are fired on landfill gas and not fossil fuel, they are not considered utility units under the Acid Rain program. Therefore, Title IV does not apply.

## 6.0 Potential to Emit and Actual Emissions

The following table shows the actual and potential emissions for the facility that are used to establish the major source status for Title V. For all pollutants, emissions are below major source thresholds.

Title V Major Source Determination				
Tons per Year:				
Pollutant	Thresholds	Facility Actual Emissions	Facility Potential to Emit	Major Source
Highest Federal HAP	10	3.97	5.5	No
Sum of Federal HAPs	25	4.50	6.2	No
NOx	25	17.1	49.6	Yes
VOC	25	1.42	3.2	No
PM10	100	1.41	7.4	No
SOx	100	3.93	47.64	No
CO	100	73.2	323.5	Yes

- Actual emissions are from the District’s 2021 approved emission inventory
- SOx potential emissions are based on permit condition.
- Potential emissions calculated from most recent approved permit applications (APCD2015-APP-004230, -004197, -004198)

**7.0 40 CFR Part 64 CAM (Compliance Assurance Monitoring)**

Sycamore Energy LLC Compliance Assurance Monitoring (CAM) applicability was considered in its initial Title V permit in accordance with 40 CFR Part 64. The turbines are not equipped with a control device and are therefore not subject to CAM based on 40 CFR § 64.2(a)(1). .

The notable monitoring requirement is the annual testing provision of each of the three turbine emission units (EUs). Also included in each of these EUs are requirements to record fuel usage and hours of operation. Semi-annual reporting is required under the Title V section of permit.

**8.0 Applicable Requirements**

This section summarizes the major types of requirements for this facility. These types of requirements include facility-wide, and permit specific applicable requirements. Additionally for each emission unit, the rule that results in the primary emission limitation is listed.

General Facility-wide Applicable Requirements

<b>Regulation</b>	<b>Rule Citation</b>	<b>Title</b>
SDCAPCD Reg. II	10(a) 10(b)	Permits Required – (a) Authority to Construct Permits Required – (b) Permit to Operate
SDCAPCD Reg. II	19	Provision of Sampling & Testing Facilities
SDCAPCD Reg. II	19.3	Emission Information
SDCAPCD Reg. II	20	Standards for Granting Permits
SDCAPCD Reg. II	20.1, 20.3	New Source Review (NSR)
SDCAPCD Reg. II	21	Permit Conditions
SDCAPCD Reg. II	24	Temporary Permit to Operate
SDCAPCD Reg. II	25	Appeals
SDCAPCD Reg. IV	60	Circumvention
SDCAPCD Reg. V	98**	Breakdown Conditions: Emergency Variance
SDCAPCD Reg. VI	101	Burning Control
SDCAPCD Reg. VI	131	Stationary Source Curtailment Plan
40 CFR Part 82	Subpart B	Servicing of Motor Vehicle Air Conditioners
40 CFR Part 82	Subpart F	Recycling and Emission Reducing

Facility-wide Prohibitory Requirements

<b>Regulation</b>	<b>Rule Citation</b>	<b>Title</b>
SDCAPCD Reg. IV	50	Visible Emissions
SDCAPCD Reg. IV	51	Nuisance
SDCAPCD Reg. IV	53	Specific Contaminants
SDCAPCD Reg. IV	62	Sulfur Content of Fuels
SDCAPCD Reg. IV	67.0	Architectural Coatings
SDCAPCD Reg. IV	67.17	Storage of Materials Containing VOC
SDCAPCD Reg. IV	67.6	Solvent Cleaning Operation
SDCAPCD Reg. IV	69.3.1	Stationary Gas Turbine Engines - BARCT
SDCAPCD Reg. IV	71	Abrasive Blasting
SDCAPCD Reg. X	Subpart A	NSPS - General Provisions
SDCAPCD Reg. XI	Subpart A	NESHAP - General Provisions
SDCAPCD Reg. XI	Subpart M*	NESHAPS – Asbestos
SDCAPCD Reg. XII	1200*	Toxic Air Contaminant NSR
SDCAPCD Reg. XII	1200*	Asbestos
40 CFR Part 60	Subpart KKKK	NSPS – Stationary Combustion Turbines
California Code of Regulations (CCR) Title 17	95460-74*	Methane Emissions from Municipal Solid Waste Landfills (ATCM)

*\*Not federally enforceable*

*\*\*Breakdowns/variances are not recognized by EPA and cannot grant relief from federal enforcement of requirements*

#### New Source Review Requirements

This table summarizes all applicable requirements from new source review rules. These limits are imposed on the pollutants as indicated as part of the permit actions listed in the table.

<b>SDAPCD Permit No.</b>	<b>Permit Limit</b>	<b>Source and Explanation</b>
APCD2013-PTO-001620; APCD2013-PTO-001621; APCD2005-PTO-980112	25 ppmvd NOx at 15% oxygen	APCD2011-APP-001870/001871/001621: Standards of Performance for Stationary Combustion Turbines requires that electric producing turbines <50 MMBTU/hr meet a NOx standard of 96 ppm at 15% oxygen when fired on fuel other than natural gas while various BACT clearinghouses list BACT for landfill gas fired turbines as 25 ppm NOx at 15% oxygen - initial source testing demonstrated compliance with the lower limit therefore 25 ppm NOx was found to meet BACT requirements. Compliance in ensured through annual source tests and daily monitoring/recordkeeping of combustion parameters including temperature, gas flow rate, and oxygen concentration.

<p>APCD2013-PTO-001620;  APCD2013-PTO-001621;  APCD2005-PTO-980112</p>	<p>47.64 TPY SO2</p>	<p>APCD2015-APP-004197/004198/004230:  The 500 ppm fuel sulfur content as H2S limit was proposed by the applicant to match the requirements of landfill flares so a search of BACT Clearinghouses was performed and yielded a limit of 150 ppm H2S determined by SCAQMD Rule 431.1. A BACT analysis was performed (attached) and it was determined that reducing sulfur content as H2S from 500 to 150 ppm was not cost effective. Therefore, the limit proposed was found to be the top A/P control option for this operation and satisfied BACT requirements. Compliance is ensured through annual source tests and daily monitoring/recordkeeping of fuel consumption.</p>
<p>APCD2013-PTO-001620;  APCD2013-PTO-001621;  APCD2005-PTO-980112</p>	<p>0.15 lb SO2/MMBTU  heat input</p>	<p>APCD2011-APP-001870/001871/001621:  Standards of Performance for Stationary Combustion Turbines prohibits the discharge of gases containing SO2 in excess of 0.90lbs/MW-hr gross output. Estimated SOx emissions are 0.4 lb/hr for each 1.2 MW unit and 3.3 lbs/hr for the 3.7 MW unit, equating to 0.33 lbs/MW-hr and 0.89 lbs/MW-hr respectively, therefore the operation meets NSPS and BACT requirements. Compliance is ensured through annual source tests and daily monitoring/recordkeeping of fuel consumption.</p>
<p>APCD2013-PTO-001620;  APCD2013-PTO-001621;</p>	<p>492 ppmvd CO  at 15% oxygen</p>	<p>APCD2012-APP-002317/002318:  The 492 ppm CO limit was proposed by the applicant and found not to exceed ambient air quality standards through an AQIA performed by the District's Modeling Group (attached) therefore the limit proposed was found to be the top A/P control option and met BACT Requirements. Compliance is ensured by annual source tests and daily monitoring/recordkeeping of combustion parameters including temperature, gas flow rate, and oxygen concentration.</p>
<p>APCD2005-PTO-980112</p>	<p>130 ppmvd CO  at 15% oxygen</p>	<p>APCD2003-APP-980112:  The 130 ppm CO limit was listed by CARB clearinghouse review as the most stringent requirement for gas turbines fired on LFG - initial source testing demonstrated compliance with the CARB limit therefore 130 ppm CO was found to meet BACT requirements. Compliance in ensured through annual source tests and daily monitoring/recordkeeping of combustion</p>

	parameters including temperature, gas flow rate, and oxygen concentration.
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Note that these are not new determinations but based on applications which have already been approved according to the appropriate provisions, including notice to EPA for projects that were new major stationary sources or major modifications.

Permit Specific Applicable Requirements:

<b>SDAPCD Permit No.</b>	<b>Permit Description</b>	<b>Applicable Rules</b>
APCD2013-PTO-001620	Landfill Gas Energy Recovery System consisting of: Gas Turbine 1, Solar, Model Saturn 10, 1.2 MW, landfill gas fired with propane pilot, S/N TL-19-52754-10/15; with a gas compressor, and process control equipment including a landfill gas flow meter and an in-line oxygen analyzer.	10 19.3 20.1 20.3 50 51 53 59.1 60 69.3.1 1200 1210 1401 NSPS KKKK
APCD2013-PTO-001621	Landfill Gas Energy Recovery System consisting of: Gas Turbine 2, Solar, Model Saturn 10, 1.2 MW, landfill gas fired with propane pilot, S/N UF-19-52902-6/3; with a gas compressor, and process control equipment including a landfill gas flow meter and an in-line oxygen analyzer.	10 19.3 20.1 20.3 50 51 53 59.1 60 69.3.1 1200 1210 1401 NSPS KKKK
APCD2005-PTO-980112	Gas Turbine #3: Solar, Centaur 40 Series 4701, landfill gas fired, 3.7 MW, 47.7 MMBtu/hr heat input, S/N OHF11-C1790.	10 19.3 20.1 20.3 50 51 53 59.1 60

	69.3.1 1200 1210 1401 NSPS KKKK
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Note that these are not new determinations but based on applications which have already been approved according to the appropriate provisions, including notice to EPA for projects that were new major stationary sources or major modifications.

Emission Limitations

<b>Combustion Turbines</b>	
<b>Pollutant</b>	<b>Primary Limiting Regulations*</b>
NOx	Rule 20.3 (NSR) 40 CFR Part 60 – Subpart KKKK
SO2	Rule 20.3 (NSR) 40 CFR Part 60 – Subpart KKKK
VOC	Rule 20.3 (NSR) Title 17 CCR – 95460-74
CO	Rule 20.3 (NSR)
PM10	Rule 20.3 (NSR) Rule 51
Toxic Pollutants	Rule 1200

**9.0 Permit Shield**

This applicant did not request permit shields.

**10.0 Multiple Applicable Requirement Streamlining**

The applicant does not request any multiple applicable requirements streamlining for this renewal application.

However, permit conditions do include some streamlining because similar requirements apply to the emission limits, monitoring, recordkeeping, and source testing of the turbines.

NOx emission limits in the permits are streamlined in that the NSPS KKKK emission limit (74 ppmvd at 15 % O2) is less stringent than the Rule 20.3 and Rule 69.3.1 NOx limit and there are no startup/shutdown exemptions from the NSR/Rule 69.3.1 limits. Additionally, the associated monitoring, testing, and recordkeeping requirements for NSPS KKKK consist only of source testing and are streamlined into annual source testing requirements to determine compliance with the NSR/Rule 69.3.1 limit.



Similarly, SO<sub>x</sub> annual emission limit on the permits are streamlined because NSPS KKKK and NSR imposed limits are equal and limit the sulfur content of the fuel to the equivalent of 0.15 lb SO<sub>2</sub>/MMBtu. Conditions require that this is monitored on an annual basis which is consistent with NSPS KKKK provided that the testing either demonstrates compliance with the exemption criteria in 40 CFR 60.4365(b) or the custom schedule in 40 CFR 60.4370(c). Review of test data indicates that historical sulfur emissions have not exceeded 0.06 lb SO<sub>2</sub>/MMBtu during any recent years. The District considers this to be an equivalent demonstration to that required in NSPS KKKK to qualify for either/both of these exemptions and therefore is acceptable streamlining and demonstrates compliance with NSPS KKKK without the need for daily fuel sulfur recordkeeping.

### **11.0 Updates to the Title V Permit Incorporated into this Action**

The following changes are being made to the emission unit specific permits as indicated below.

In response to letter dated April 22, 2020, the Air Pollution Control District (District) revised conditions for the landfill gas fired turbines under permit numbers APCD2013-PTO-001620, APCD2013-PTO-001621, and APCD2005-PTO-980112. The changes include two (2) new conditions:

Condition 4 was replaced on all three permits with a higher SO<sub>2</sub> limit in accordance with NSPS KKKK §60.4330(a)(3) instead of §60.4330(a)(1). The District agreed that §60.4330(a)(3) was applicable because it was for turbines burning at least 50% biogas (LFG), therefore the conditions were updated to limit discharge to less than 0.15 lb SO<sub>2</sub>/MMBtu heat input and remove a condition limiting concentration of H<sub>2</sub>S.

Additionally, because the above change impacted a BACT determination, a second condition limiting total annual SO<sub>x</sub> emissions was added to the permit. This limit was based on the need to ensure that controls were not cost effective.

Finally, an additional non-federally enforceable condition was added to the permit to require annual reporting under the CARB methane rule.

These changes have been included in appendix A of the Title V permit.

### **12.0 Permit Process-Public Notification and Notice to EPA and Affected States**

Before issuing the final permit, The District will provide the opportunity for review by EPA and affected states and a public notice period. Notice will be provided to the EPA electronically through the EPS and will be sent electronically to affected states and tribes. The public notice and associated documents will be provided on our website and the public notice will be published in a newspaper. The District will incorporate any suggested changes made by the EPA, public comments, or Sycamore Energy LLC upon review.

### **13.0 Recommendations**

The facility is expected to comply with all applicable requirements including those cited in the current District permit as well as those under District Rule 1401 and 40 CFR Part 70. Therefore, the recommendation of this report is for the subject renewal Title V permit to be issued following public notice, EPA review, and response to any comments.

## **14.0 Attachments**

The following are attached:

- Application Package
- Draft Permit
- Public Notice