apcd air pollution control district
SANTA BARBARA COUNTY

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Board Agenda Item

TO: Air Pollution Control District Board

FROM: Aeron Arlin Genet, Air Pollution Control Officer

CONTACT: Timothy Mitro, Air Quality Engineer, Planning Division (805) 979-8329

SUBJECT: Determine that a new District Rule for Gas Turbines and Associated Duct Burners is No Longer Necessary to Satisfy Assembly Bill 617 Requirements

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RECOMMENDATION:

Consider recommendations as follows:

1. Receive and file a report regarding Best Available Retrofit Control Technology (BARCT) for Gas Turbines and Associated Duct Burners at Assembly Bill 617 Industrial Facilities;

2. Adopt a resolution determining that adopting a new District Rule is no longer necessary to implement BARCT for Gas Turbines and Associated Duct Burners because the affected Assembly Bill 617 Industrial Facility has requested changes to their District Permit to Operate to directly implement BARCT.

BACKGROUND:

Assembly Bill (AB) 617, enacted in July 2017, has many requirements to address the disproportionate impacts of air pollution in environmental justice communities. One of the key components of AB 617 is to reduce air pollutant emissions from facilities that participate in the California Greenhouse Gas (GHG) Cap-and-Trade system. Emissions of criteria pollutants and toxic air contaminants are often associated with GHG-emitting sources, and these pollutants may impact local communities that are already experiencing a disproportionate burden from air pollution.

In December 2018, as required by AB 617, your Board adopted a Best Available Retrofit Control Technology (BARCT) Rule Development Schedule that included a commitment to evaluate BARCT for six emission source categories. BARCT is an emission limitation that is based on the

maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts. To meet the BARCT emission limits, a facility may need to install new air pollution controls on their existing unit(s) or replace the unit(s) in part or in whole. The BARCT requirements only affect the following six industrial facilities in Santa Barbara County:

1) Exxon Mobil – Las Flores Canyon,
2) Exxon Mobil – Pacific Offshore Pipeline Company (POPCO),
3) Pacific Coast Energy Company (PCEC) – Orcutt Hill,
4) Cat Canyon Resources, LLC – Cat Canyon West[1],
5) Imerys Filtrations Minerals, Inc., and
6) Windset Farms.

Since Santa Barbara County is nonattainment-transitional for the state ozone standard and nonattainment for the state PM_{10} standard (particulate matter with a diameter of 10 microns or less), these industrial facilities must implement BARCT. To date, District staff has completed five of the six BARCT assessments, as shown in Table 1 below.

Table 1: Status Update on BARCT Rule Development Schedule

#	Equipment Category	Status	Method
1)	Boilers, Steam Generators, and Process Heaters (5 MMBtu/hr and greater)	*Completed June 2019*	Amended Rule 342
2)	Boilers, Steam Generators, and Process Heaters (2 - 5 MMBtu/hr)	*Completed June 2019*	Amended Rule 361
3)	Particulate Matter Control Devices	*Completed June 2022*	Incorporated into Permit
4)	Reciprocating Internal Combustion Engines	*Completed March 2023*	Incorporated into Permit
5)	Miscellaneous Combustion Units	*Completed October 2023*	Incorporated into Permit
6)	**Stationary Gas Turbines and Associated Duct Burners**	***Focus of Board Item Discussion***	

This final assessment consists of evaluating BARCT for stationary gas turbines and associated duct burners. Out of the six AB 617 industrial facilities in Santa Barbara County, ExxonMobil's Las Flores Canyon is the only facility that currently has a gas turbine permitted. The Las Flores Canyon Oil and Gas Plant is located approximately 20 miles west of Santa Barbara, and it was originally permitted in 1987 to process crude oil and natural gas from Platforms Hondo, Harmony, and Heritage. The facility historically received produced crude oil/water/gas emulsion from the offshore platforms via pipeline, processed the emulsion, and transported the oil out of the facility through the Plains All American Pipeline. However, due to the 2015 rupture of the Plains All American Pipeline, the facility has been shut-in and maintained in a preserved state

[1] Facility was previously operated by ERG Operating Company.

until a permitted means of transporting the oil is identified. The air quality operating permit for the facility remains current and active.

The equipment covered by this analysis is used in a 49 megawatt (MW) combined-cycle, cogeneration power plant, which consists of a gas turbine with a rated output of 39.35 MW and a steam turbine rated at 9.8 MW. Heat from the gas turbine exhaust is recovered in a Heat Recovery Steam Generator (HRSG) to generate steam for the steam turbine and various on-site process heat requirements. The HRSG includes a Low-NOx Duct Burner that is used for supplemental heat to increase steam generation for facility operations.

DISCUSSION:

District staff completed the BARCT analysis for Gas Turbines and Associated Duct Burners, as shown in Attachment A, that demonstrates that it is technologically feasible for the combined-cycle, cogeneration power plant at Las Flores Canyon to comply with lower NOx limits. The lower NOx limits are based on the requirements included in South Coast Air Quality Management District Rule 1134 and Ventura County Air Pollution Control District Rule 74.23, and they're identified as BARCT in the California Air Resources Board's Technology Clearinghouse.[2]

ExxonMobil has proactively decided to incorporate the BARCT standards directly into their operating permit. ExxonMobil's commitment to perform this work is documented in two separate permit applications. The Authority to Construct (ATC) permit will allow modifications to the turbine system to implement the BARCT requirements, and the Permit to Operate (PTO) Modification will incorporate the BARCT emission standards into the Part 70 operating permit for the Las Flores Canyon facility. These permits are included as Attachment B to this letter.

Due to the non-operational status of the Las Flores Canyon facility, the BARCT permit conditions were incorporated into these two permits, but the necessary equipment and process changes to fully comply with the BARCT standards can be installed at a later date, prior to the facility recommencing operations. The District's engineering evaluation for ExxonMobil's permits also documents the rationale for including the BARCT standards, thereby preventing the permit conditions from being removed in the future.

The proposed District Board Resolution, included as Attachment C to this letter, concludes that adopting a new rule is no longer necessary to implement BARCT for gas turbines and associated duct burners. This is because the BARCT requirements are incorporated directly into ExxonMobil's operating permits and no other AB 617 facilities in the County use this type of equipment. This BARCT analysis will continue to apply to ExxonMobil's existing gas turbine as well as any new units installed in the future at the site to guarantee that the NOx emissions are effectively controlled. In addition, the BARCT analysis will be forwarded to the California Air Resources Board for inclusion into their AB 617 BARCT webpage (ww2.arb.ca.gov/expedited-barct). Staff worked with District Counsel and concluded that this approach effectively satisfies the AB 617 mandate because it accomplishes the emission reduction goals of the legislation.

[2] https://ww2.arb.ca.gov/current-air-district-rules

IMPACTS TO THE REGULATED COMMUNITY:

The implementation of BARCT will affect the combined-cycle, cogeneration power plant at ExxonMobil's Las Flores Canyon oil and gas plant. The facility is anticipated to retrofit the existing Selective Catalytic Reduction (SCR) control system to achieve higher NOx control efficiencies to comply with state legislation. The capital costs are estimated to be approximately $3.6 million while the ongoing operation and maintenance costs are estimated to be $250,000 per year. The facility may also need to increase their steam injection usage, which could result in an additional $500,000 per year to pump, treat, and heat additional water. By modifying the existing emission control system, the facility would reduce their NOx emissions by approximately 19 tons per year if the facility was operating near its operational baseline. This results in a cost-effectiveness range between $30,000 to $56,000 per ton of NOx reduced, which is considered cost-effective based on prior rule development proceedings and BARCT analyses.

The remaining five AB 617 industrial facilities (Exxon Mobil – POPCO, PCEC – Orcutt Hill, Cat Canyon Resources, LLC – Cat Canyon West, Imerys Filtrations Minerals, Inc., and Windset Farms) do not currently use gas turbines, but this BARCT analysis would apply to any new units installed at these facilities. This is because BARCT is an emission standard that is not limited to just "retrofits." However, new turbine systems would be evaluated for Best Available Control Technology (BACT), which is equal to or more stringent than the requirements in this BARCT analysis. Hence, this BARCT analysis is not anticipated to have an effect on the remaining AB 617 industrial facilities.

DISTRICT BUDGET IMPACTS:

The costs for the permitting and compliance activities by District staff are included in the budget approved by your Board. There are no additional fiscal impacts.

PUBLIC REVIEW:

A Community Advisory Council (CAC) special meeting was held on November 2, 2023 to present, discuss, and hear comments on the draft BARCT analysis. To inform the public about the meeting, District staff e-mailed a notice to everyone who subscribed to the District's electronic noticing subscription list. Staff also directly notified the six AB 617 Industrial Facilities about the meeting.

At the CAC special meeting, District staff delivered a 15-minute presentation on the key points of the analysis, and a representative from ExxonMobil commented on their experience with the BARCT project. Staff then answered the questions from CAC members regarding the use of the control technologies, the implementation timeline, and the estimated costs for the project. After all questions were answered, the CAC received and filed the draft BARCT analysis.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA):

The proposed action for the Board of Directors is to determine that a rule development proceeding for gas turbines and associated duct burners is no longer necessary to satisfy the AB 617 BARCT requirements. Staff has concluded that this action is not a project subject to CEQA because it will not cause either a direct physical change in the environment, or a

reasonably foreseeable indirect physical change in the environment [Public Resources Code §21065 and State CEQA Guidelines §15378(b)(5)].

ATTACHMENTS:

A. Assembly Bill 617 BARCT Analysis for Gas Turbines and Associated Duct Burners.
B. ExxonMobil Authority to Construct #16170 & Permit to Operate Modification #05651-11.
C. District Board Resolution for Assembly Bill 617 – Gas Turbines and Associated Duct Burners.

ATTACHMENT A

Assembly Bill 617 BARCT Analysis for Gas Turbines and Associated Duct Burners

January 18, 2024

Santa Barbara County Air Pollution Control District
Board of Directors

260 San Antonio Road, Suite A
Santa Barbara, California 93110

air pollution control district
SANTA BARBARA COUNTY

Assembly Bill 617 – BARCT Analysis for Gas Turbines and Associated Duct Burners

Date: January 18, 2024

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Our Mission

Our mission is to protect the people and the environment of Santa Barbara County from the effects of air pollution.

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1. BACKGROUND

1.1 Ozone and Health

Ground level ozone is a secondary pollutant formed from photochemical reactions of the precursor pollutants oxides of nitrogen (NOx) and reactive organic compounds (ROC) in the presence of heat and sunlight. Both short-term and long-term exposure to ozone can cause a number of health effects in broad segments of the population. Ozone can damage the respiratory system, causing inflammation and irritation, or symptoms such as coughing and wheezing. High levels of ozone are especially harmful for children, the elderly, and people with asthma or other respiratory problems. Ground-level ozone also impacts the economy by increasing hospital visits and medical expenses, loss of work time due to illness, and by damaging agricultural crops. Santa Barbara County is currently designated as nonattainment-transitional for the state ozone standards.

1.2 The AB 617 BARCT Rule Development Schedule

Assembly Bill (AB) 617, enacted in July 2017, has many requirements to address the disproportionate impacts of air pollution in disadvantaged communities. One of the key components of AB 617 is to reduce air pollutant emissions from facilities that participate in the California Greenhouse Gas (GHG) Cap-and-Trade system. Cap-and-Trade is designed to limit GHG emissions and allows facilities to comply by either reducing GHG emissions at the source or by purchasing GHG emission allowances. Emissions of criteria pollutants and toxic air contaminants are often associated with large GHG-emitting sources, and these pollutants may impact local communities that are already experiencing a disproportionate burden from air pollution.

AB 617 helps alleviate the pollution burden near these communities by requiring each air district to adopt an expedited rule development schedule for Best Available Retrofit Control Technology (BARCT) by January 1, 2019. The District's AB 617 BARCT schedule was adopted at the December 2018 Board Hearing, and gas turbines were included on the list of equipment that needed to be evaluated for BARCT.[1] BARCT is an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts. To meet the BARCT emission limits, a facility may need to install new air pollution controls on their existing unit(s) or replace the unit(s) in part or in whole. The BARCT requirements apply to the following six facilities within the District boundaries since they were subject to the California Cap-and-Trade requirements on January 1, 2017:

1) ExxonMobil – Las Flores Canyon,
2) ExxonMobil – Pacific Offshore Pipeline Company (POPCO),
3) Pacific Coast Energy Company (PCEC) – Orcutt Hill,
4) Cat Canyon Resources, LLC – Cat Canyon West [2],
5) Imerys Filtrations Minerals, Inc., and
6) Windset Farms.

[1] Additional information on the AB 617 BARCT Rule Development Schedule is available on the District's website at www.ourair.org/community-air.
[2] Facility was previously operated by ERG Operating Company.

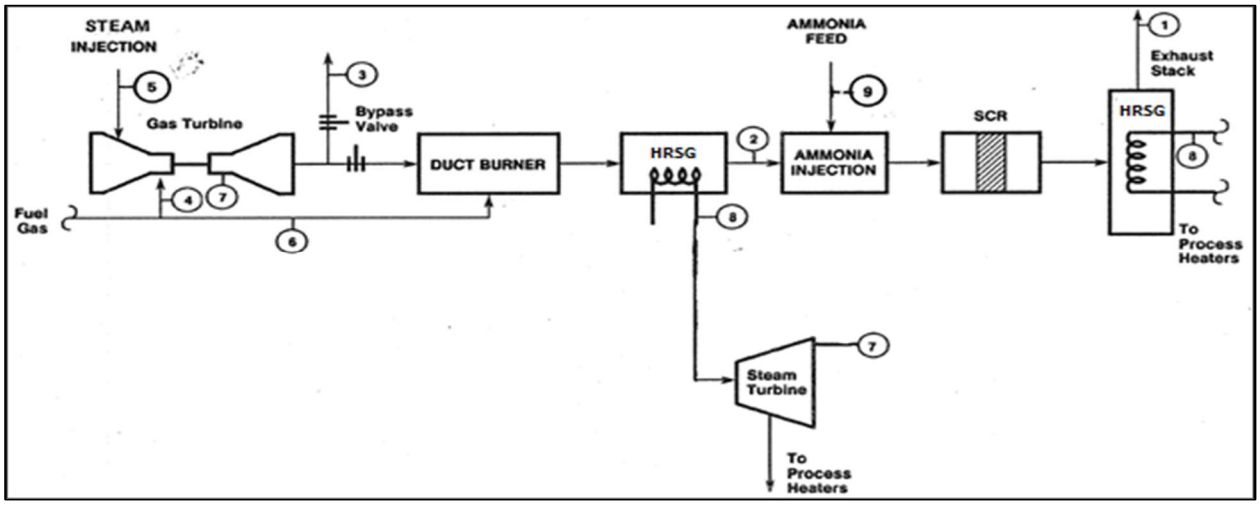
The initial BARCT assessment in 2018 showed that it may be feasible and cost-effective to establish new BARCT standards for gas turbines. Out of the six facilities listed above, ExxonMobil's Las Flores Canyon is the only facility that currently has a gas turbine permitted, and so this assessment is focused on the existing gas turbine. However, the BARCT assessment would also apply to any new gas turbine that is installed at the six industrial sources within Santa Barbara County.

1.3 ExxonMobil – Las Flores Canyon

The Las Flores Canyon Oil and Gas Plant (Las Flores Canyon) is a facility that is located approximately 20 miles west of Santa Barbara on the north side of Highway 101. The facility was originally permitted in 1987 to process crude oil and natural gas from Platforms Hondo, Harmony, and Heritage, which are located in federal waters off the California coast in the Santa Barbara Channel. The adjacent Pacific Offshore Pipeline Company (POPCO) Gas Plant processes the majority of the natural gas from the platforms while the Las Flores Canyon facility processes the crude oil/water/gas emulsion. Historically, Las Flores Canyon received the emulsion from the offshore platforms via a 20-inch pipeline, processed the emulsion, and transported the oil out of the facility through the Plains All American Pipeline. However, due to the 2015 rupture of the Plains All American Pipeline, the facility has been shut-in and maintained in a preserved state until a permitted means of transporting the oil is identified. The air quality operating permit for the facility remains current and active.

The equipment covered by this analysis is used in a 49 megawatt (MW) combined-cycle, cogeneration power plant, which consists of a General Electric gas turbine with a rated output of 39.35 MW and a steam turbine rated at 9.8 MW. The power plant generates electric power to supply both the onshore facilities and the offshore platforms. Heat from the gas turbine exhaust is recovered in a Heat Recovery Steam Generator (HRSG) to generate steam for the steam turbine and various on-site process heat requirements. The HRSG includes a Low-NOx Duct Burner that is used for supplemental heat to increase steam generation. The duct burner may also operate independent of the gas turbine to provide heat for facility operations. A flow diagram for these units is shown below in Figure 1.1.

Figure 1.1 – Combined-Cycle, Cogeneration Power Plant



The maximum heat input to the gas turbine is 465 MMBtu/hr and the maximum heat input of the duct burner is 345 MMBtu/hr. The units are fueled with natural gas from the facility's Stripping Gas Treating Plant (SGTP) or from the local utility. When permitted in 1987, the gas turbine and duct burner were required to install Best Available Control Technology (BACT) and meet BACT emission standards for NOx, Carbon Monoxide (CO), and ROC emissions. NOx emissions are controlled through the use of steam injection in the gas turbine and Selective Catalytic Reduction (SCR) on the combined gas turbine and duct burner exhaust. The steam injection system is designed to achieve approximately 60 percent control for NOx and the SCR reactor achieves upward of 80 percent control for NOx. At the time of installation, BACT for CO and ROC was determined to be the use of pipeline quality gas and proper combustion techniques. The current permitted emission limits for the various operating modes, given in units of parts per million by volume (ppmv) and corrected to a 15% reference oxygen content[1], are shown below in Table 1.1.

Table 1.1. Permitted Emission Limits for the Combined-Cycle, Cogeneration Power Plant

Operating Mode	**Maximum Heat Input** (MMBtu/hr)	**NOx Limit** (ppmv at 15% O_2)	**CO Limit** (ppmv at 15% O_2)
Tandem Mode (Turbine + Duct Burner)	605	7.4	11.6
Turbine Only Mode	465	8.1	9.6
Duct Burner Only Mode	345	8.1	132.4

[1] Throughout this document, all ppmv limits are referenced to a 15% oxygen content, unless otherwise stated.

2. BARCT ANALYSIS FOR GAS TURBINES AND ASSOCIATED DUCT BURNERS

2.1 Overview of Proposed Analysis

Although there are a variety of turbine configurations and fuel types, this BARCT analysis is focused on combined-cycle, cogeneration power plants using natural gas since this is the only turbine configuration currently being used at the AB 617 industrial sources within Santa Barbara County. This BARCT analysis does not address simple-cycle turbines or turbines fired on other fuels such as digester gas or landfill gas. District Staff reviewed the measures identified as BARCT in the California Air Resources Board's Technology Clearinghouse[1], and the following emission limits were identified as a means of reducing emissions in support of the BARCT provisions for AB 617:

- Combined-cycle turbines and associated duct burners shall meet the 2 ppmv NOx standard; and
- The equipment shall not exceed an ammonia slip limit of 10 ppmv NH_3.

These standards are based on the recent BARCT determinations adopted by the South Coast Air Quality Management District (SCAQMD) under Rule 1134 and Ventura County Air Pollution Control District under Rule 74.23. All of the requirements to meet BARCT are described in further detail in their corresponding sections below, and an evaluation of the impacts of the new requirements are listed in Section 3 of this report.

2.2 Analysis Applicability Determination

As described in Section 1.2, the gas turbine and the duct burner are two separate combustion devices that can either work alone or in tandem to meet the facility's electrical and heating needs. At the time of initial permitting, the duct burner was considered a steam generator that was subject to District Rule 342 - *Boilers, Steam Generators, and Process Heaters rated at 5 MMBtu/hr and greater*. However, recent determinations from the United States Environmental Protection Agency (USEPA) group gas turbines and duct burners together since they often share the same SCR system and exhaust stack. Hence, District Rule 342 was amended in 2019 to exclude the duct burner, and all of the requirements listed in Section 2 will apply to both the gas turbine and the associated duct burner.

2.3 Requirement – NOx Emission Limit

Based on our review of the California Air Resources Board (CARB) Technology Clearinghouse, the current BARCT standard for a combined-cycle power plant, which includes both the gas turbine and the duct burner, is 2.0 ppmv NOx at 15% O_2. This BARCT standard is based on SCAQMD Rule 1134, as amended in 2019. The emission standard would apply to all three main operating modes for the Las Flores Canyon power plant [Tandem Mode, Turbine Only Mode, and Duct Burner Only Mode]. The emission standard would not apply to startup, shutdown, and maintenance operations.[2]

[1] https://ww2.arb.ca.gov/current-air-district-rules

[2] Maintenance and testing, as defined in the facility's permit, occur at loads no greater than 4 MW electrical output. At these low loads, the exhaust temperature will not be high enough for the SCR system to be effective.

The facility currently uses a steam injection system on the gas turbine to achieve NOx emission concentrations in the 40 to 60 ppmv range, and the SCR system reduces the emissions even further so that the final outlet concentration is in the 4 to 5 ppmv range. To achieve sub-2 ppmv NOx levels, the facility may need to perform one or more control strategies to reduce the equipment's NOx emissions. District staff identified three separate control strategies, and information on these strategies is given below:

1) Increase the steam injection rate into the gas turbine,
2) Retrofit the turbine system with a Dry-Low NOx combustor, and/or
3) Upgrade the existing SCR ammonia injection grid and reactor.

1) Steam Injection - Increase:

Steam injection has been used since the 1970s as a means of controlling NOx emissions from combustion turbines. Injecting steam into the flame area of the combustor provides a heat sink that lowers the combustion zone temperature and reduces thermal NOx formation. Steam injection can reduce NOx from the turbine by 60 percent or higher, with typical outlet concentrations in the 40 to 60 ppmv range. Steam injection is usually accompanied by an efficiency penalty (typically 2 to 3 percent) to generate the steam, but there is the benefit of increasing the electrical power output (typically 5 to 6 percent) due to the increased mass flowing through the turbine. Water used for steam injection must be demineralized to prevent deposits and corrosion from occurring in the turbine.

The gas turbine at Las Flores Canyon normally achieves NOx concentrations in the 40 to 60 ppmv range by using steam injection, but additional steam could be used to reduce the emissions even further. By increasing the steam injection rate, the gas turbine may achieve NOx concentrations near 25 ppmv, which is the lowest practical NOx level achievable with steam injection.[1] This strategy would lower the NOx emissions entering the SCR system.

2) Dry-Low NOx (DLN) Combustor - Retrofit:

DLN combustors are a newer technology that became commercially available for new installations and for retrofitted applications in the late 1990s. These units can achieve lower NOx levels in the gas turbine by minimizing localized hot spots that produce elevated combustion temperatures. They do this by pre-mixing the fuel with air prior to the combustion chamber, and then directing the fuel mixture to different zones under a staged combustion process. Using a DLN combustor reduces the gas turbine's NOx emissions by 80-95% percent, with typical concentrations in the 5 to 25 ppmv range. Hence, the DLN combustor has a higher control efficiency and a lower outlet NOx concentration compared to using steam injection.

If this control strategy is used, the existing combustor on the gas turbine would be replaced with a DLN combustor and the existing steam injection system would need to be removed. This strategy would lower the NOx emissions entering the SCR system.

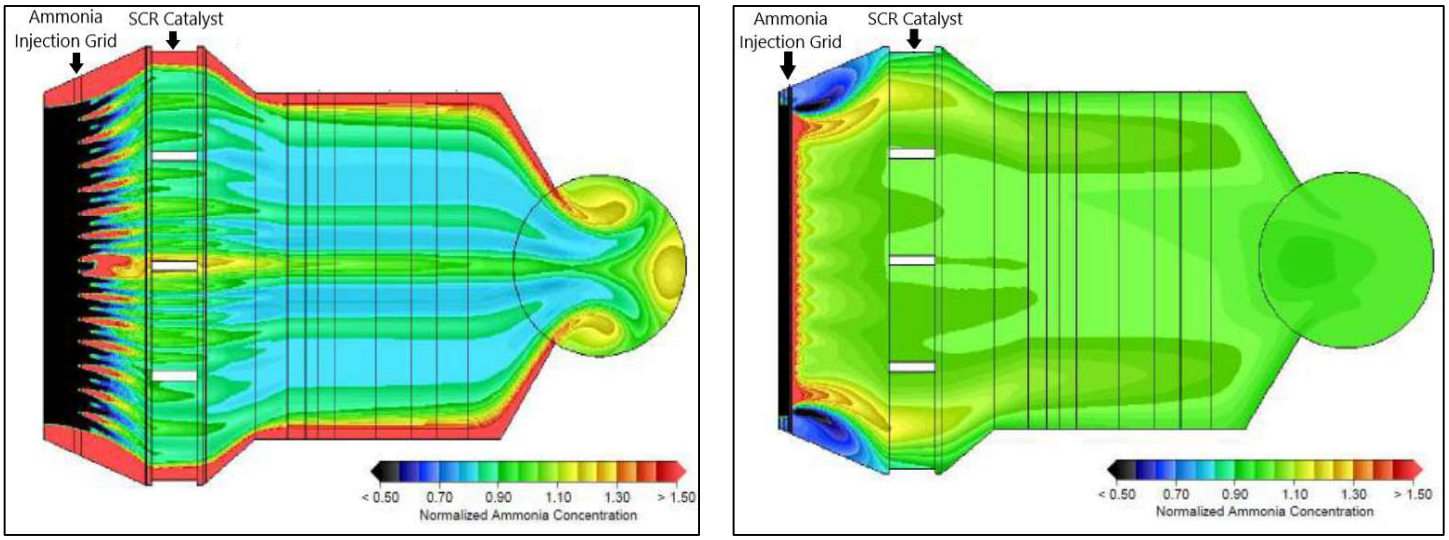
[1] Per the 1992 CARB BARCT analysis and a 2022 Combustion Turbine NOx Control analysis performed for the EPA.

3) Existing SCR Reactor - Upgrade:

There are many parameters that affect SCR performance, such as the inlet NOx values, the Ammonia Injection Grid (AIG) design, and the SCR catalyst type and volume. The current SCR system on the power plant achieves around 84-95% NOx control, but additional improvements can be made to consistently achieve NOx control efficiencies of 95% or greater.

One possible method to improve the existing SCR system is through the use of computer models to simulate the turbine exhaust gas flow with ammonia injection. SCR modeling can help determine if changes to the AIG are needed, such as resizing the AIG orifices or moving the AIG to a different location. AIG modifications can allow for a more uniform mixture of the exhaust gases and the ammonia, thereby enhancing the NOx control efficiency and reducing the ammonia slip. An example of SCR modeling with poor ammonia distribution vs good ammonia distribution is shown below in Figure 2.1.

Figure 2.1 – SCR Modeling Examples



Poor Ammonia Distribution **Good Ammonia Distribution**

Another option to improve the efficiency of the SCR system is by adding more catalyst modules or by replacing the existing modules with catalysts that have a higher pore density. A 50% increase in the catalyst volume can help increase the NOx control efficiency to 95% or greater. However, the additional catalyst volume may result in the need to install more structural supports to accommodate the reactor size and new air handling equipment to overcome the additional pressure drop. Physical constraints and space limitations at the facility could prevent the installation of additional catalyst volume.

Overall though, by upgrading one or more of the components of the existing SCR reactor, it is technically feasible that the combined-cycle power plant can achieve the 2 ppmv NOx BARCT standard without any changes to the gas turbine or duct burner. It is anticipated that this control strategy will be used since it effectively controls the emissions from both combustion devices.

2.4 Requirement – Ammonia Slip Limit

Ammonia slip is an industry term for ammonia passing through the SCR unreacted. Ammonia slip occurs if excess ammonia is injected into the reactor, if temperatures are too low for the ammonia to react, or if the catalyst has degraded or is past its useful life. ExxonMobil's combined-cycle power plant has an ammonia slip permit limit of 20 ppmv at stack conditions, and the system was designed to not exceed 10 ppmv. Compliance with this condition is verified through annual sources tests using Bay Area Air Quality Management District's Test Method ST-1B, Ammonia Integrated Sampling (Adopted January 20, 1982).

Based on our review of the CARB Technology Clearinghouse, the current BARCT standard for ammonia slip is 10 ppmv NH_3 at 15% O_2. Although the ammonia injection rate may be increased to meet the NOx BARCT requirement, the ammonia slip will be more tightly regulated with the 10 ppmv limit. The facility will need to ensure that the SCR system is optimally calibrated and that excess unreacted ammonia is not released into the atmosphere.

2.5 Requirement – CO and ROC Emission Limits

For turbine systems, high levels of CO and ROC emissions are typically a result of incomplete combustion. When gas turbines are operated at reduced loads, they do not achieve peak flame temperatures, yielding lower thermal efficiencies and higher CO and ROC emission rates. Also, excessive use of steam injection to control NOx may in turn increase the CO and ROC emissions. For these situations, oxidation catalysts can be used on turbines to achieve upward of 80-90% control of the CO emissions and 40-50% control of the ROC emissions.

Based on our review of the CARB Technology Clearinghouse, the current BARCT standard for CO is 132.4 ppmv at 15% O_2 and no emission standard was identified for ROC. The CO standard[1] is used as a backstop because CO emissions above this threshold are indicative of improper combustion parameters (i.e., low-excess oxygen). The CO standard is also used as a surrogate for ROC emissions since both pollutants are caused by incomplete combustion.

During Tandem Mode, the Las Flores Canyon power plant is permitted to emit CO at sub-12 ppmv levels and ROC at sub-5 ppmv levels. These low CO and ROC levels are achieved through the use of proper combustion techniques and making sure that the equipment operates at a high load. Any adjustments made to the power plant to comply with the NOx emission standards are not anticipated to increase the CO or ROC emission rate beyond the permitted emission levels. Furthermore, if the permitted CO or ROC emission levels are proposed to be increased, the power plant would be subject to BACT for those pollutants pursuant to Regulation VIII, New Source Review. Hence, the facility's existing permit limits for CO and ROC satisfy BARCT, and no additional equipment modifications are needed for these two pollutants.

[1] The CO standard of 132.4 ppmv at 15% O_2 is equivalent to 400 ppm CO at 3% O_2.

2.6 Requirement – Monitoring Conditions and Averaging Times

NOx and CO CEMS:

Continuous Emission Monitoring System (CEMS) are often installed on larger equipment units to provide accurate emission data and to ensure permit compliance. The Las Flores Canyon power plant is equipped with a CEMS to verify the continued compliance with the NOx and CO emission limits. The facility's permit specifies that the gas turbine and duct burner emission readings need to be based on 15-minute average data points. However, after reviewing the rules and technical assessments from other air districts, staff identified that many gas turbines need an averaging time of 3 hours to demonstrate compliance with the lower NOx limits. Since a 3-hour averaging time is longer than the facility's current 15-minute averaging time, a discussion on averaging times is given below.

Averaging times have a direct impact on the complexity, the cost, and the overall feasibility of an emission control system. To meet a NOx target of 2.0 ppmv, the emission control system for a gas turbine will generally have a targeted design rate around 1.8 ppmv NOx. This design rate incorporates a margin of safety so that if a fluctuation occurs and the NOx emissions increase for a short duration, there is a period of time for the operator to diagnose the problem and take the necessary corrective action(s) to return the system back to the 1.8 ppmv target. For turbine systems that are trying to meet the extremely low NOx emission target of 2 ppmv, a 15-minute window to rectify the issue and maintain average emissions below the standard is infeasible since the operating margin is so narrow (0.2 ppmv NOx).

Hence, to feasibly meet the 2 ppmv NOx limit, a 3-hour averaging time is needed. A longer averaging time does not increase the permitted emissions for the unit. Instead, the proposed averaging time minimizes short-term excursions and deviation reporting, especially if the operator can implement a solution within a short period of time. Furthermore, the CO averaging time may be increased up to the 3-hour mark to maintain consistent reporting parameters from the CEMS. These determinations are consistent with the CARB Guidance for the Permitting of Electrical Generation Technologies, as published in 2002.

Ammonia CEMS:

A newer technology that was investigated as part of this BARCT assessment is the use of an ammonia CEMS to verify continuous compliance with the ammonia slip limits. An ammonia CEMS uses a Tunable Diode Laser (TDL) to continuously measure the in-stack ammonia values. These units cost approximately $60,000, but they can lead to better control of the ammonia injection rate and NOx emissions, as well as provide additional data on the SCR catalyst performance. Ammonia CEMS are expected to see more widespread use after additional protocols and certifications are adopted by other air districts, such as the South Coast AQMD or Bay Area AQMD.

For this BARCT assessment, an ammonia CEMS is not required due to the lack of approved protocols and certifications. If an acceptable protocol is reviewed and approved by the District in the future, the facility may elect to use an ammonia CEMS due to the benefits stated above. The ammonia CEMS would then be used for compliance in lieu of the annual ammonia source tests using Bay Area AQMD Test Method ST-1B.

3. IMPACTS OF THE BARCT ANALYSIS

3.1 Emission Impacts

The Las Flores Canyon power plant is not currently operating due to the rupture of the Plains All American Pipeline in 2015. However, if a new pipeline project or alternative product transportation method is approved, the facility would likely return to its normal production rates and resume operations for both the turbine and duct burner. For the purpose of this BARCT analysis, the representative conditions prior to the pipeline rupture are used to assess the potential emission impacts of the additional NOx control strategies. The estimated emission reduction amount is shown below in Table 3.1.

Table 3.1: Estimated Emission Reductions

Equipment	**Representative NOx Emissions** (tons/year)	**Representative NOx Concentration** (ppmv)	**Final NOx Concentration** (ppmv)	**Actual NOx Reductions** (tons/yr)
Cogeneration Power Plant (Turbine + Duct Burner)	32	4.5	1.8	19

Where:

- NOx Reductions = Representative NOx Emissions * $\left[1 - \frac{\text{Final NOx Conc.}}{\text{Representative NOx Conc.}}\right]$
- 19 tons/yr = 32 tons/yr * $\left[1 - \frac{1.8 \text{ ppmv NOx}}{4.5 \text{ ppmv NOx}}\right]$
- Representative NOx Emissions and Representative NOx Concentration are based on the CEMS data for the unit from 2011 to 2014.
- Final NOx Concentration is the anticipated operating target to consistently comply with the 2 ppmv NOx standard.

District staff acknowledges that alternative methodologies could be used to estimate the emission reductions. However, the method prescribed above is used in this analysis because the CEMS data captures the historical and representative operating profile of the cogeneration power plant. Based on the equation above, the implementation of BARCT may reduce approximately 19 tons of NOx per year compared to the operational baseline.

3.2 Cost-Effectiveness

For cost-effectiveness calculations, the District uses the Levelized Cash Flow (LCF) method. In the LCF method, a capital recovery factor (CRF) is used to transform any capital costs into an equivalent annual cost. The CRF is necessary because the one-time capital expenditures reduce emissions over the entire duration of the project life. Hence, the CRF is a function of the real interest rate and equipment life.

District staff compiled the estimated costs for two separate scenarios based on data from both the South Coast AQMD and from ExxonMobil. These scenarios are: #1 - Upgrade the SCR reactor

and increase steam injection in the gas turbine, and #2 – Upgrade the SCR reactor and retrofit to a dry, low-NOx combustor. These two scenarios are anticipated to meet the 2 ppmv NOx standard for all three main operating modes [Tandem Mode, Turbine Only Mode, and Duct Burner Only Mode]. The estimated cost-effectiveness values for these scenarios are shown below in Table 3.2.

Table 3.2: Estimated Cost-Effectiveness for BARCT Analysis

		Costs			Cost-Effectiveness	
BARCT Scenario	**Description**	**Capital Costs** (million $)	**Annual O&M Cost** (million $/yr)	**Annual Utility Cost** (million $/yr)	**Annualized Cost** (million $)	**Cost-Effectiveness** ($/ton)
#1	SCR upgrades + Increase Steam	$3.6	$0.25	$0 to $0.50	$0.56 to $1.06	**$30,000 to $56,000**
#2	SCR upgrades + DLN Retrofit	$24.0	$1.00	$1.25	$4.34	**$229,000**

Where:

- Cost-Effectiveness = (Annualized Cost) / (Emission Reductions)
- Annualized Cost = (Capital Costs * CRF) + (Operation & Maintenance + Utility Costs)
- $$\text{CRF} = \frac{i * (1 + i)^n}{(1 + i)^n - 1} = \frac{0.06 * (1 + 0.06)^{20}}{(1 + 0.06)^{20} - 1} = 0.087$$

  i = Real Interest Rate (6%)
  n = Project Life (20 years)

Scenario #1 is the preferred scenario since the South Coast AQMD assessment showed that most turbine systems can achieve the 2 ppmv limit with just SCR modifications. If the turbine at Las Flores Canyon is having difficulty reaching 2 ppmv after the SCR changes, ExxonMobil could increase their steam injection usage in the gas turbine, which would have additional utility costs to pump, treat, and heat additional water for the steam injection. Scenario #1 presents a range in utility costs up to account for the increased steam injection rate.

Scenario #2 is an alternative scenario that incorporates the SCR upgrades as well as a Dry Low NOx combustor retrofit. Scenario #2 has a significant capital cost for the DLN retrofit and higher utility costs since the facility would lose out on the additional power output by removing the steam injection system, thereby requiring the facility to purchase additional electrical power from the utility. Scenario #2 is not expected to be chosen, but the costs are shown for informational purposes.

Overall, Scenario #1 shows that the project is considered cost-effective if the facility is operating similar to its operational baseline.

3.3 Implementation Timeline

ExxonMobil submitted two permit applications to comply with the BARCT analysis by incorporating new, enforceable conditions into its Permit to Operate (PTO). The Authority to Construct (ATC) permit allows for modifications to the turbine system to implement the BARCT requirements, and the PTO-Modification/Part 70 Minor Modification incorporates the BARCT emission standards into the Part 70 operating permit for the Las Flores Canyon facility. These two permits result in enforceable conditions that require the facility to comply with the BARCT conditions prior to the facility recommencing operations. Staff concludes that the enforceable permit conditions effectively implement and satisfy the AB 617 mandate.

4. REFERENCES

1) South Coast Air Quality Management District – *Rule 1134, Emissions of Oxides of Nitrogen from Stationary Gas Turbines,* Amended April 5, 2019.
2) South Coast Air Quality Management District – *Rule 1109.1, Emissions of Oxides of Nitrogen from Petroleum Refineries and Related Operations,* Amended November 5, 2021.
3) Fossil Energy Research Corporation – *South Coast Air Quality Management District Rule 1109.1 Study Final Report*, November 2020.
4) Norton Engineering – *Proposed Rule 1109.1 NOx BARCT Review*, December 2020.
5) Ventura County Air Pollution Control District – *Rule 74.23, Stationary Gas Turbines,* Amended November 12, 2019.
6) Bay Area Air Quality Management District – *Regulation 9-9, Nitrogen Oxides from Stationary Gas Turbines,* Amended December 6, 2006.
7) San Joaquin Valley Air Pollution Control District – *Rule 4703, Stationary Gas Turbines,* Amended April 25, 2002.
8) California Air Resources Board – *Guidance For the Permitting of Electrical Generation Technologies,* July 2002.
9) California Air Resources Board – *Determination of Reasonably Available Control Technology and Best Available Retrofit Control Technology for the Control of Oxides of Nitrogen from Stationary Gas Turbines,* May 1992.
10) Sargent & Lundy – *Combustion Turbine NOx Control Technologies Memo*, Project No. 13527-002 (January 2022).
11) U.S. Environmental Protection Agency – *Standards of Performance for Stationary Gas Turbines – Proposed Rule*, 70 Fed. Reg. 8314 (February 18, 2005).
12) U.S. Environmental Protection Agency – *Standards of Performance for Stationary Gas Turbines – Final Rule*, 71 Fed. Reg. 38482 (July 6, 2006).
13) U.S. Environmental Protection Agency – *Standards of Performance for Stationary Gas Turbines – Proposed Rule*, 77 Fed. Reg. 52554 (August 29, 2012).
14) U.S. Environmental Protection Agency – *Alternative Control Techniques Document - NOx Emissions from Stationary Gas Turbines*, EPA-453/R-93-007 (January 1993).
15) Santa Barbara County Air Pollution Control District – *Assembly Bill 617 Best Available Retrofit Control Technology Rule Development Schedule,* Adopted December 20, 2018.

ATTACHMENT B

ExxonMobil Authority to Construct #16170
& Permit to Operate Modification #05651-11

January 18, 2024

Santa Barbara County Air Pollution Control District
Board of Directors

260 San Antonio Road, Suite A
Santa Barbara, California 93110

apcd air pollution control district
SANTA BARBARA COUNTY

January 10, 2024

Certified Mail
Return Receipt Requested 9171 9690 0935 0315 1482 03

Patrice Surmeier
ExxonMobil Upstream Company
12000 Calle Real
Goleta, CA 93117

FID: 01482
Permit: A 16170
SSID: 01482

Re: Notice of Final Authority to Construct 16170 Issuance

Dear Patrice Surmeier:

Enclosed is the final Authority to Construct (ATC) No. 16170 for BARCT retrofits to the Cogeneration Power Plant at 12000 Calle Real in Goleta.

THIS IS NOT YOUR PERMIT TO OPERATE. PLEASE READ ALL PERMIT CONDITIONS CAREFULLY.

Please carefully review the enclosed documents to ensure that they accurately describe your facility and that the conditions are acceptable to you.

You should become familiar with all District rules pertaining to your facility. This permit does not relieve you of any requirements to obtain authority or permits from other governmental agencies.

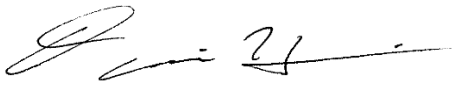
This permit requires you to:

- Follow the conditions listed on your permit. Pay careful attention to the recordkeeping and reporting requirements.
- Mail us the enclosed Start-up Notification postcard once you have completed construction of the permitted equipment and are ready to operate it.
- Apply for and obtain a Permit to Operate prior to commencing routine equipment operation.
- Ensure that a copy of the enclosed permit is posted or kept readily available near the permitted equipment.
- Promptly report changes in ownership, operator, or your mailing address to the District.

If you are not satisfied with the conditions of this permit, **you have thirty (30) calendar days from the date of this permit issuance notice to appeal this permit to the Air Pollution Control District Hearing Board** (ref: California Health and Safety Code, §42302.1). Any contact, discussions, or meetings with District staff regarding the terms of this permit during or after permit issuance do not constitute an appeal under Rule 209 or the California H&SC and will not stop or alter the 30-day appeal period. Only a formal application to the Hearing Board can initiate an appeal. You may contact the Clerk of the Hearing Board for specific information concerning appeal initiation and procedures. If you accept the permit by commencing construction or operation of the newly permitted equipment, you forfeit any right to pursue an appeal of this permit action.

Please include the facility identification (FID) and permit numbers as shown at the top of this letter on all correspondence regarding this permit. If you have any questions, please contact William Sarraf of my staff at (805) 979-8312.

Sincerely,



David Harris, Division Manager
Engineering Division

enc: Final ATC 16170
Final Permit Evaluation
Start-up Notification Postcard

cc: Las Flores Canyon 01482 Project File
Engr Chron File
William Sarraf (Cover letter only)

\\Nt\shares\Groups\ENGR\WP\Oil&Gas\Major Sources\SSID 01482 Exxon - SYU Project\Permits - LFC\ATCs\ATC 16170\ATC 16170 - Final Letter - 1-9-2024.docx

air pollution control district
SANTA BARBARA COUNTY

Authority to Construct 16170

EQUIPMENT OWNER:

ExxonMobil Upstream Company

EQUIPMENT OPERATOR:

ExxonMobil Upstream Company

EQUIPMENT LOCATION:

12000 Calle Real, Goleta

STATIONARY SOURCE/FACILITY:

ExxonMobil - SYU Project
Las Flores Canyon

SSID: 01482
FID: 01482

AUTHORIZED MODIFICATION:

This permit authorizes modifications to the existing Cogeneration Power Plant in order to comply with the Best Available Retrofit Control Technology (BARCT) NOx emission control requirements of Assembly Bill 617.

EQUIPMENT DESCRIPTION:

The equipment subject to this permit is listed in the table at the end of this permit.

PROJECT/PROCESS DESCRIPTION:

The Santa Ynez Unit (SYU) project develops production from three platforms (Platforms Hondo, Harmony, and Heritage) located offshore in the Santa Barbara Channel. The production is transported to shore through a subsea pipeline and treated in the Las Flores Canyon Oil & Gas Plant (LFC) and the POPCO Gas Plant.

ExxonMobil is permitted to operate a 49.15 megawatt (MW) combined-cycle, cogeneration power plant, which consists of a General Electric (GE) Frame 6 Gas Turbine with a rated output of 39.35 MW and a steam turbine rated at 9.8 MW. The power plant generates electric power to supply both the onshore facilities and the offshore platforms. Heat from the gas turbine exhaust is recovered in a

Heat Recovery Steam Generator (HRSG) to generate steam for the steam turbine and various on-site process heat requirements. A duct burner section located upstream of the HRSG may be supplementally fired with fuel gas to provide additional heat.

The District has developed regulatory standards that will govern emissions from gas turbines and associated duct burners, under the requirements of Assembly Bill 617 (AB617). The best available retrofit control technology (BARCT) requirements will apply to the Las Flores Canyon facility.

CONDITIONS:

1. **Emission Limitations.** Except as noted below, mass emissions from the Cogeneration Power Plant (CPP) shall not exceed the limits listed in Tables 5.3 and 5.4. The *Normal Operation Mode/Heat Recovery Steam Generator* line item in Tables 5.3 and 5.4 shall not be enforced. Compliance shall be based on the use of process monitors (e.g., fuel use meters) and CEMS; and the monitoring, recordkeeping and reporting conditions of this permit. For pollutants without CEMS monitors, the permitted emission factors in Table 5.2 shall be used for determining compliance with the mass emission rates. In addition, the following specific emission limits apply:

   (i) *BACT/BARCT Limits* – Except during the Planned Bypass Mode, the emissions, after control from the CPP shall not exceed the BACT and BARCT limits listed in Tables 4.2 (*BACT/BARCT Performance Standards*). Compliance shall be based on annual source testing for all pollutants. In addition, CEMs shall be used to determine compliance with the BARCT NO_X and CO, emission concentrations limits in Table 9.1 below (parts per million volume dry at 15 percent oxygen). Compliance for all constituents except NO_X and CO shall be based on 15-minute clock average values. Compliance for NO_X and CO shall be based on 3-hour rolling average values.

   (ii) The BARCT concentration limits in Table 9.1 apply only during Normal Operations and the HRSG Only modes as defined in PT-70 PTO 5651-R7. Further, in addition to the concentration limits, CO mass emissions shall not exceed 17.0 lb/hr.

Table 9.1 BARCT Concentration Limits (at 15% O_2)

Operating Mode	NO_X (as NO_2)	CO
Gas Turbine Only Operations	2.0	9.6
Gas Turbine/HRSG Tandem Operations	2.0	11.6
HRSG Only Operations	2.0	132.4

   (iii) *Ammonia Slip* – Except during the Planned Bypass Mode, the concentration of ammonia from the CPP stack shall not exceed 10 ppmv at 15% O_2. Compliance shall be based on source testing and during inspections using absorbent tubes or bag samples.

2. **Operational Restrictions.** The following operational limits apply to the CPP:

(i) *Operating Mode Limits* – ExxonMobil may only operate the CPP in one of the three modes (Normal Operations Mode, HRSG Mode and Planned Bypass Mode) as defined in Section 4.2.2 of PT-70 PTO 5651-R7. Compliance shall be based on the monitoring, recordkeeping and reporting requirements of this permit.

(ii) *Usage Limits – Normal Operations Mode* – ExxonMobil shall comply with the following usage limits:

(1) Combined Gas Turbine and HRSG Heat Input: 605.140 MMBtu/hr; 14,523 MMBtu/day; 1,321,626 MMBtu/quarter; 5,290,134 MMBtu/year

(2) Bypass Stack Flow Rate: The exhaust flow rate from the gas turbine bypass stack shall not exceed 386 dscfm.

(3) Compliance shall be based on the monitoring, recordkeeping and reporting requirements of this permit.

(iii) *Usage Limits – HRSG Mode* – ExxonMobil shall comply with the following usage limits:

(1) Gas Turbine Heat Input: no fuel input is allowed to the gas turbine.

(2) HRSG Heat Input: 345.000 MMBtu/hr; 8,280 MMBtu/day; 753,480 MMBtu/quarter; 3,015,990 MMBtu/year.

(3) Compliance shall be based on the monitoring, recordkeeping and reporting requirements of this permit.

(iv) *Usage Limits – Planned Bypass Mode* – ExxonMobil shall comply with the following usage limits:

(1) Gas Turbine/HRSG Heat Input– Startup and Shutdown: 309 MMBtu/hr; 618 MMBtu/day; 1,853 MMBtu/quarter; 5,559 MMBtu/year

(2) Operating Hours– Startup and Shutdown: 2 hours/day; 6 hours/quarter; 18 hours/year

(3) Gas Turbine/HRSG Heat Input – Maintenance and Testing: 175 MMBtu/hr; 700 MMBtu/day; 962 MMBtu/quarter; 3850 MMBtu/year

(4) Operating Hours – Maintenance and Testing: 4 hours/day; 5.5 hours/quarter; 22 hours/year

(5) Compliance shall be based on the monitoring, recordkeeping and reporting requirements of this permit.

(v) *Emission Controls.* ExxonMobil shall establish the minimum steam injection ratios, minimum Ammonia injection ratios, SCR operating temperature range and the temperature range of the flue gas entering the SCR (during Normal Operations Mode and HRSG Only Mode) in order to meet the BARCT limits in Table 9.1 prior to the start of SCDP as part of the *AB617 Compliance Plan.*

3. **Monitoring:** ExxonMobil shall monitor the emission and process parameters listed in Table 10.1 of PT-70 PTO 5651-R7 for the life of the project. ExxonMobil shall perform annual source testing of the CPP consistent with the requirements listed in Table 4.5 and the source testing condition of this permit. In addition, ExxonMobil shall monitor all requirements listed in Condition 9.C.1(c) of PT-70 PTO 5651-R7.

4. **Recordkeeping:** ExxonMobil shall record the emission and process parameters listed in Table 10.1 of PT-70 PTO 5651-R7. Further, except where noted, ExxonMobil shall maintain hardcopy records of all the recordkeeping requirements listed in Condition 9.C.1(d) of PT-70 PTO 5651-R7.

5. **Reporting**: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all data required by the *Compliance Verification Reports* condition of PT-70 PTO 5651-R7.

6. **Source Compliance Demonstration Period.** Equipment permitted herein is allowed to operate temporarily during a 180-day SCDP. Initial operations of the permitted equipment (defined as the combustion of gas in the CPP) define the start of the SCDP.

Prior to the start of SCDP, the permittee shall:

(i) At least 90 days in advance of making any retrofits to the CPP in order to comply with the BARCT requirements of this permit, ExxonMobil shall submit to the District for review and approval a detailed *AB617 Compliance Plan* which includes description of the proposed changes to the CPP, vendor information, and the anticipated schedule for making such changes. The plan shall also detail the minimum steam injection rate to the CPP, minimum ammonia injection rate to the SCR, SCR operating temperature ranges and the temperature range of the flue gas entering the SCR (during Normal Operations Mode and HRSG Only Mode). The District will make all efforts to expeditiously review the plan within 30 days of receipt.

(ii) Upon review and approval of the *AB617 Compliance Plan*, ExxonMobil shall be authorized to upgrade the CPP in accordance with the *AB617 Compliance Plan* including the installation of any new equipment and modifications to existing equipment outlined in the plan.

During the SCDP, the permittee shall:

(iii) Begin recordkeeping as specified in the *Recordkeeping* condition of this permit.

(iv) Within 14 of days of the start of the SCDP, the permittee shall provide the District written notification of the SCDP start date using the attached yellow SCDP notification card or by e-mail to enfr@sbcapcd.org.

(v) Arrange for District inspection not more than thirty (30) calendar days (or other mutually agreed to time period) after the SCDP begins. An inspection can be arranged via e-mail to enfr@sbcapcd.org or by calling the District Compliance Division at (805) 979-8050. A minimum of three calendar days advance notice shall be given to the District. The Compliance Division may waive this inspection requirement if an initial inspection is deemed unnecessary to verify that the modifications authorized by this permit are in compliance with District rules and permit conditions.

(vi) *Source Test Plan:* Submit and obtain District approval of a source test plan prior to the start of testing. This source test plan shall be prepared consistent with the District's *Source Test Procedures Manual* (revised May 1990 and any subsequent revisions).

(vii) *Emission Source Testing*: Conduct stack emission source testing consistent with Table 4 and the Source Testing condition of this permit within 90 days of the start of SCDP. Source test results shall be submitted to the District within 45 calendar days after completion of the source test and shall be consistent with the requirements of the approved source test plan.

(viii) Submit a Permit to Operate (PTO) application and the appropriate filing fee not more than 120 calendar days after the SCDP begins pursuant to District Rule 201.E.2. Upon the District's determination that the permit application is "complete", the permittee may continue temporary operations under the SCDP until such time the PTO is issued final or one year from the date of PTO application completeness, whichever occurs earlier. Failure to submit the PTO application within the specified time period shall constitute a violation of this permit.

SCDP extensions may be granted by the District for good cause. Such extensions may be subject to conditions. When good cause cannot be demonstrated, no administrative extension is available and the permittee shall cease operations. Alternatively, the permittee may submit an application to revise the ATC permit and upon the District finding the application complete the SCDP can be extended. A written request to extend the SCDP shall be made by the permittee at least seven days prior to the SCDP expiration date.

7. **Source Testing.** The following source testing provisions shall apply:

(i) ExxonMobil shall conduct source testing of air emissions and process parameters listed Tables 4.5. More frequent source testing may be required if the equipment does not comply with permitted limitations or if other compliance problems, as determined by the District, occur. Source testing shall be performed during SCDP and on an annual schedule thereafter using the date of the SCDP source test as the anniversary date.

(ii) ExxonMobil shall submit a written source test plan to the District for approval at least thirty (30) days prior to initiation of each source test. Source test plans shall be in a format approved by the District, and shall be submitted in both hardcopy and electronic (PDF) format. The hardcopy submittal may be waived by the District with prior written approval. The source test plan shall be prepared consistent with the District's Source Test Procedures Manual (revised May 1990 and any subsequent revisions). ExxonMobil shall obtain written District approval of the source test plan prior to commencement of source testing. If the source testing procedure is identical to the previous source test, and the equipment to be source tested has not been modified since the previous source test, the most recent District approved source test plan can be used to conduct the source test. ExxonMobil shall submit a letter at least 10 days before the source test (Attn: Engineering Supervisor) stating that the existing source test plan will be used for the planned source test. The District shall be notified at least ten (10) calendar days prior to the start of source testing activity to arrange for a mutually agreeable source test date when District personnel may observe the test.

(iii) Source test results shall be submitted to the District within forty-five (45) calendar days following the date of source test completion and shall be consistent with the requirements approved within the source test plan. Source test results shall be in a format approved by the District, and shall be submitted in both hardcopy and electronic (PDF) format. The hardcopy submittal may be waived by the District with prior written approval. Source test results shall document ExxonMobil's compliance status with BACT and BARCT requirements, mass emission rates and applicable permit conditions, rules and NSPS (if applicable). All District costs associated with the review and approval of all plans and reports and the witnessing of tests shall be paid by ExxonMobil as provided for by District Rule 210.

(iv) A source test for an item of equipment shall be performed on the scheduled day of testing (the test day mutually agreed to) unless circumstances beyond the control of the operator prevent completion of the test on the scheduled day. Such circumstances include mechanical malfunction of the equipment to be tested, malfunction of the source test equipment, delays in source test contractor arrival and/or set-up, or unsafe conditions on site. Except in cases of an emergency, the operator shall seek and obtain District approval before deferring or discontinuing a scheduled test, or performing maintenance on the equipment item on the scheduled test day. If the test cannot be completed on the scheduled day, then the test shall be rescheduled for another time with prior authorization

by the District. Once the sample probe has been inserted into the exhaust stream of the equipment unit to be tested (or extraction of the sample has begun), the test shall proceed in accordance with the approved source test plan. In no case shall a test run be aborted except in the case of an emergency or unless approval is first obtained from the District. Failing to perform the source test of an equipment item on the scheduled test day without a valid reason and without District's authorization shall constitute a violation of this permit. If a test is postponed due to an emergency, written documentation of the emergency event shall be submitted to the District by the close of the business day following the scheduled test day.

The timelines in (i), (ii), and (iii) above may be extended for good cause provided a written request is submitted to the District at least three (3) days in advance of the deadline, and approval for the extension is granted by the District. [*Re: ATC 5651, PTO 5651*]

7. **Consistency with Analysis.** Operation under this permit shall be conducted consistent with all data, specifications and assumptions included with the application and supplements thereof (as documented in the District's project file) and the District's analyses under which this permit is issued as documented in the Permit Analyses prepared for and issued with the permit.

8. **Equipment Maintenance.** The equipment listed in this permit shall be properly maintained and kept in good condition at all times. The equipment manufacturer's maintenance manual, maintenance procedures and/or maintenance checklists (if any) shall be kept on site.

9. **Compliance.** Nothing contained within this permit shall be construed as allowing the violation of any local, state or federal rules, regulations, air quality standards or increments.

10. **Severability.** In the event that any condition herein is determined to be invalid, all other conditions shall remain in force.

11. **Conflict Between Permits.** The requirements or limits that are more protective of air quality shall apply if any conflict arises between the requirements and limits of this permit and any other permitting actions associated with the equipment permitted herein.

12. **Access to Records and Facilities.** As to any condition that requires for its effective enforcement the inspection of records or facilities by the District or its agents, the permittee shall make such records available or provide access to such facilities upon notice from the District. Access shall mean access consistent with California Health and Safety Code Section 41510 and Clean Air Act Section 114A.

13. **Equipment Identification.** Identifying tag(s) or name plate(s) shall be displayed on the equipment to show manufacturer, model number, and serial number. The tag(s) or plate(s) shall be affixed to the equipment in a permanent and conspicuous position.

14. **Emission Factor Revisions.** The District may update the emission factors for any calculation based on USEPA AP-42 or District emission factors at the next permit modification or permit reevaluation to account for USEPA and/or District revisions to the underlying emission factors.
15. **Nuisance.** Except as otherwise provided in Section 41705 of the California H&SC, no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

16. **Grounds for Revocation.** Failure to abide by and faithfully comply with this permit or any Rule, Order, or Regulation may constitute grounds for revocation pursuant to California Health & Safety Code Section 42307 *et seq*.

17. **Transfer of Owner/Operator.** This permit is only valid for the owner and operator listed on this permit unless a *Transfer of Owner/Operator* application has been applied for and received by the District. Any transfer of ownership or change in operator shall be done in a manner as specified in District Rule 203. District Form –01T and the appropriate filing fee shall be submitted to the District within 30 days of the transfer.

18. **Documents Incorporated by Reference.** The documents listed below, including any District-approved updates thereof, are incorporated herein and shall have the full force and effect of a permit condition. These documents shall be implemented for the life of the project:

    - *AB 617 Compliance Plan (TBD)*

AIR POLLUTION CONTROL OFFICER

January 10, 2024

DATE

Attachments:

- Table 4.2 – BACT/BARCT Performance Standards for CPP
- Table 4.5 – CPP Source Test Requirements
- Table 5.1 – Operating Equipment Description for CPP
- Table 5.2 – Equipment Emission Factors for CPP
- Table 5.3 – Short Term Emissions for CPP
- Table 5.4 – Long Term Emissions for CPP
- Permit Equipment List(s)
- Permit Evaluation for Authority to Construct 16170

Table 4.2 BACT/BARCT Performance Standards for CPP

Source	**ROC**	**NO_x (as NO_2)** [5]	**SO_x (as SO_2)**	**CO**	**PM**	**PM_{10}**
CPP Gas Turbine [1, 2]	0.0026 lb/MMBtu	2.0 ppmv NOx @ 15% O_2.	0.0034 lb/MMBtu	0.0216 lb/MMBtu at loads between 75% and 100%. 17 lb/hr at all loads	0.0198 lb/MMBtu	0.0158 lb/MMBtu
CPP Gas Turbine and HRSG Operating in Tandem [3, 4]	0.0055 lb/MMBtu	2.0 ppmv NOx @ 15% O_2.	0.0034 lb/MMBtu	0.0260 lb/MMBtu at loads between 75% and 100%. 17 lb/hr at all loads	0.0163 lb/MMBtu	0.0130 lb/MMBtu
CPP HRSG Only [3, 4]	0.0095 lb/MMBtu	2.0 ppmv NOx @ 15% O_2.	0.0034 lb/MMBtu	0.297 lb/MMBtu at all loads. 17 lb/hr at all loads	0.0050 lb/MMBtu	0.0040 lb/MMBtu

Table 4.5 Source Testing Requirements for the Cogeneration Facility

Location Number	Test Location	Parameter Monitored	Test Method [1]
1	Exhaust Stack [3]	NO_X; O_2	CARB Method 100
		CO; CO_2	CARB Method 100; EPA Method 3
		NH_3	BAAQMD St-1B [2]

[1] In addition to source testing, compliance with NO_x and CO BARCT Performance Standards shall be demonstrated through use of CEMS and process flow monitoring data as required by the applicable Permit Condition in Section 9.C.
[2] "lb/MMBtu" standards are based on contribution of heating value from the fuel gas on a HHV basis.
[3] "lb/MMBtu" standards are based on contribution of heating value from the fuel gas and the waste gas on a HHV basis.
[4] In addition to source testing, compliance with SO_x BACT Performance Standards shall be demonstrated through use of CEMS and process flow monitoring data as required by the applicable Permit Condition in Section 9.C of PT-70 PTO 5651-R7.
[5] NOx ppmv performance standards listed in Table 4.2 represent BARCT standards. All other limits in Table 4.2 represent BACT standards.

		ROC; THC	EPA Method 18
		PM; PM_{10} [5]	EPA Methods 1, 2, 5
		Flow Rate	EPA Method 2
		Moisture	EPA Method 4
2	SCR Inlet	NO_X; O_2	CARB 100
		Flow Rate	EPA Method 2
		Temperature	EPA Method 2
3	Bypass Stack [6]	NO_X; O_2	CARB 100
		Temperature	EPA Method 2
		Flow Rate, Moisture, CO	EPA Method 2
4	Turbine Fuel Feed	Flow Rate	Process Flow Meter
5	Turbine Steam Injection	Flow Rate	Process Flow Meter
6	HRSG Fuel Feed	Flow Rate	Process Flow Meter
7	Cogeneration Plant Turbines	Electrical Output	Plant Meters
8	Waste Heat Recovery Unit	Steam Production Rate	Process Flow Meter
9	Ammonia Injection Point	NH_3 Feed Rate	Process Flow Meter
--	Facility	Ambient Temperature	n/a
		Barometric Pressure	n/a
		Relative Humidity	n/a

NOTES:

1. Equivalent source test methods may be used if approved by the District.
2. EPA or CARB methods are not available. The method used is subject to District approval.
3. Source testing shall be performed annually, except for particulate matter (PM and PM_{10}), for which testing is required on a triennial basis.
4. Source testing shall be performed at or near maximum load conditions unless otherwise directed by the District.
5. For compliance purposes, ExxonMobil may choose to assume that all PM is equal to PM_{10}.
6. Bypass stack testing to be performed when requested by the District.

Table 5.1: Operating Equipment Description
ExxonMobil Las Flores Canyon Oil and Gas Plant
ATC 16170

Equipment Item	Description			Device Specifications					Usage Data			Maximum Operating Schedule			
		Exxon ID #	District Device No	Fuel	HHV	%S	Size	Units	Capacity	Units	Load	hr	day	qtr	year
Combustion - Cogen Power Plant: Normal Operations Mode															
	Gas Turbine 38.63 MW	ZAN-2501	6585	NG	24	ppmv S	465.000	MMBtu/hr	460.35	MMBtu/hr	0.99	1	24	2,184	8,742
	Heat Recovery Steam Generator	EAL-2601	7865	NG	24	ppmv S	345.000	MMBtu/hr	140.14	MMBtu/hr	0.41	1	24	2,184	8,742
	Turbine Bypass Stack	ZAN-2501	7864	NG	24	ppmv S	1.0%	of Turb Exh	4.65	MMBtu/hr	0.01	1	24	2,184	8,742
Combustion - Cogen Power Plant: HRSG Only Mode															
	Heat Recovery Steam Generator	EAL-2601	7865	NG	24	ppmv S	345.000	MMBtu/hr	345.00	MMBtu/hr	1.000	1	24	2,184	8,742
Combustion - Cogen Power Plant: Planned Bypass Mode															
	Startup and Shutdown 22 MW	ZAN-2501/ EAL-2601	7866	NG	24	ppmv S	100%	of Turb Exh	308.82	MMBtu/hr	0.66	1	2	6	18
	Maintenance and Testing 4 MW	ZAN-2501	7864	NG	24	ppmv S	100%	of Turb Exh	175.00	MMBtu/hr	0.38	1	4	5.5	22

Table 5.2: Equipment Emission Factors
ExxonMobil Las Flores Canyon Oil and Gas Plant
ATC 16170

Equipment Item	Description			Emission Factors								
		Exxon ID #	District Device No	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG	Units
Combustion - Cogen Power Plant: Normal Operations Mode												
	Gas Turbine 38.63 MW	CPP/ZAN-2501	6585	0.0074	0.0055	0.0260	0.0034	0.0158	0.0126	0.0126	117.0000	lb/MMBtu
	Heat Recovery Steam Generator	CPP/EAL-2601	7865	0.0074	0.0055	0.0260	0.0034	0.0158	0.0126	0.0126	117.0000	lb/MMBtu
	Turbine Bypass Stack	CPP/ZAN-2501	7864	0.0074	0.0055	0.0260	0.0034	0.0158	0.0126	0.0126	117.0000	lb/MMBtu
Combustion - Cogen Power Plant: HRSG Only Mode												
	Heat Recovery Steam Generator	CPP/EAL-2601	7865	0.0074	0.0095	0.2970	0.0034	0.0050	0.0040	0.0040	117.0000	lb/MMBtu
Combustion - Cogen Power Plant: Planned Bypass Mode												
	Startup and Shutdown 22 MW	CPP/ZAN-2501/EAL-2601	7866	0.2910	0.0953	0.5920	0.0034	0.0279	0.0223	0.0223	117.0000	lb/MMBtu
	Maintenance and Testing 4 MW	CPP/ZAN-2501	7864	0.2511	0.0953	0.6010	0.0034	0.0279	0.0223	0.0223	117.0000	lb/MMBtu

Table 5.3: Short-Term Emissions
ExxonMobil Las Flores Canyon Oil and Gas Plant
ATC 16170

Equipment Item	Description			NO_x		ROC		CO		SO_x		PM		PM_{10}		$PM_{2.5}$		GHG		Federal
		Exxon ID #	District Device No	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	Enforceability
Combustion - Cogen Power Plant: Normal Operations Mode																				
	Gas Turbine 38.63 MW	CPP/ZAN-2501	6585	3.41	81.76	2.53	60.77	11.97	287.26	1.56	37.34	7.27	174.56	5.82	139.65	5.82	139.65	53,860.95	1,292,662.80	FE
	Heat Recovery Steam Generator	CPP/EAL-2601	7865	1.04	24.89	0.77	18.50	3.64	87.45	0.47	11.37	2.21	53.14	1.77	42.51	1.77	42.51	16,396.38	393,513.12	NE
	Turbine Bypass Stack	CPP/ZAN-2501	7864	0.03	0.83	0.03	0.61	0.12	2.90	0.02	0.38	0.07	1.76	0.06	1.41	0.06	1.41	544.05	13,057.20	FE
	sub-total =			**4.48**	**107.47**	**3.33**	**79.88**	**15.73**	**377.61**	**2.05**	**49.09**	**9.56**	**229.47**	**7.65**	**183.58**	**7.65**	**183.58**	**70,801.38**	**1,699,233.12**	
Combustion - Cogen Power Plant: HRSG Only Mode																				
	Heat Recovery Steam Generator	CPP/EAL-2601	7865	2.55	61.27	3.28	78.66	17.00	408.00	1.17	27.99	1.73	41.40	1.38	33.12	1.38	33.12	40,365.00	968,760.00	FE
	sub-total =			**2.55**	**61.27**	**3.28**	**78.66**	**17.00**	**408.00**	**1.17**	**27.99**	**1.73**	**41.40**	**1.38**	**33.12**	**1.38**	**33.12**	**40365.00**	**968760.00**	
Combustion - Cogen Power Plant: Planned Bypass Mode																				
	Startup and Shutdown 22 MW	CPP/ZAN-2501/EAL-2601	7866	89.87	179.73	29.43	58.86	182.82	365.64	1.04	2.09	8.62	17.23	6.89	13.79	6.89	13.79	36,132.06	72,264.11	FE
	Maintenance and Testing 4 MW	CPP/ZAN-2501	7864	43.94	175.77	16.68	66.71	105.18	420.70	0.60	2.38	4.88	19.53	3.90	15.61	3.90	15.61	20,475.00	81,900.00	FE
	sub-total =			**133.81**	**355.50**	**46.11**	**125.57**	**288.00**	**786.34**	**1.64**	**4.47**	**13.50**	**36.76**	**10.80**	**29.40**	**10.80**	**29.40**	**56607.06**	**154164.11**	
Combustion-Cogen Power Plant: Totals																				
	Normal + SU/SD + M&T			89.87	436.11	29.43	185.48	182.82	1069.55	2.05	41.28	9.56	208.86	7.65	167.08	7.65	167.08	70,801.38	1,428,588.95	FE
	sub-total =			**89.87**	**436.11**	**29.43**	**185.48**	**182.82**	**1069.55**	**2.05**	**41.28**	**9.56**	**208.86**	**7.65**	**167.08**	**7.65**	**167.08**	**70801.38**	**1428588.95**	

Table 5.4: Long-Term Emissions
ExxonMobil Las Flores Canyon Oil and Gas Plant
ATC 16170

Equipment Item	Description	Exxon ID #	District Device No	NO_X		ROC		CO		SO_X		PM		PM_{10}		$PM_{2.5}$		GHG		Federal
				TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	Enforceability
Combustion - Cogen Power Plant: Normal Operations Mode																				
	Gas Turbine 38.63 MW	CPP/ZAN-2501	6585	3.72	14.89	2.76	11.07	13.07	52.32	1.70	6.80	7.94	31.79	6.35	25.43	6.35	25.43	58,816.16	235,426.21	FE
	Heat Recovery Steam Generator	CPP/EAL-2601	7865	1.13	4.53	0.84	3.37	3.98	15.93	0.52	2.07	2.42	9.68	1.93	7.74	1.93	7.74	17,904.85	71,668.58	NE
	Turbine Bypass Stack	CPP/ZAN-2501	7864	0.04	0.15	0.03	0.11	0.13	0.53	0.02	0.07	0.08	0.32	0.06	0.26	0.06	0.26	594.10	2,378.04	FE
	sub-total =			**4.89**	**19.57**	**3.63**	**14.55**	**17.18**	**68.77**	**2.23**	**8.94**	**10.44**	**41.79**	**8.35**	**33.43**	**8.35**	**33.43**	**77,315.11**	**309,472.83**	FE
Combustion - Cogen Power Plant: HRSG Only Mode																				
	Heat Recovery Steam Generator	CPP/EAL-2601	7865	2.79	11.16	3.58	14.33	17.18	68.77	1.27	5.10	1.88	7.54	1.51	6.03	1.51	6.03	44,078.58	176,435.42	FE
	sub-total =			**2.79**	**11.16**	**3.58**	**14.33**	**17.18**	**68.77**	**1.27**	**5.10**	**1.88**	**7.54**	**1.51**	**6.03**	**1.51**	**6.03**	**44078.58**	**176435.42**	
Combustion - Cogen Power Plant: Planned Bypass Mode																				
	Startup and Shutdown 22 MW	CPP/ZAN-2501/EAL-2601	7866	0.270	0.809	0.088	0.265	0.548	1.645	0.003	0.009	0.026	0.078	0.021	0.062	0.021	0.062	108.40	325.19	FE
	Maintenance and Testing 4 MW	CPP/ZAN-2501	7864	0.121	0.483	0.046	0.183	0.289	1.157	0.002	0.007	0.013	0.054	0.011	0.043	0.01	0.04	56.31	225.23	FE
	sub-total =			**0.39**	**1.29**	**0.13**	**0.45**	**0.84**	**2.80**	**0.00**	**0.02**	**0.04**	**0.13**	**0.03**	**0.10**	**0.03**	**0.10**	**164.70**	**550.41**	
Combustion-Cogen Power Plant: Totals																				
	Normal + SU/SD + M&T			5.263	20.816	3.755	14.960	17.956	71.401	2.230	8.934	10.442	41.818	8.353	33.454	8.353	33.454	77,196.60	309,244.43	FE
	sub-total =			**5.26**	**20.82**	**3.76**	**14.96**	**17.96**	**71.40**	**2.23**	**8.93**	**10.44**	**41.82**	**8.35**	**33.45**	**8.35**	**33.45**	**77196.60**	**309244.43**	

Equipment List for Authority to Construct 16170

ATC 16170 / FID: 01482 Las Flores Canyon / SSID: 01482

A PERMITTED EQUIPMENT

1 Cogeneration Power Plant (CPP)

1.1 Combined CPP and Bypass Stacks

Device ID #	**007866**	***Device Name***	**Combined CPP and Bypass Stacks**
Rated Heat Input	308.820 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	ZAN-2501 EAL-2601
Model		*Serial Number*	
Location Note	Las Flores Canyon Oil & Gas Plant		
Device Description	Planned Startup/Shutdown Mode		

1.2 Gas Turbine Only Mode

Device ID #	**006585**	***Device Name***	**Gas Turbine Only Mode**
Rated Heat Input	465.000 MMBtu/Hour	*Physical Size*	38.60 Megawatts
Manufacturer	General Electric	*Operator ID*	ZAN-2501
Model	Frame 6B	*Serial Number*	
Location Note	Cogeneration Power Plant (CPP), Las Flores Canyon Oil & Gas Plant		
Device Description	Normal Operations Mode		

1.3 Turbine Bypass Stack

Device ID #	**007864**	***Device Name***	**Turbine Bypass Stack**
Rated Heat Input	4.630 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	ZAN-2501
Model		*Serial Number*	
Location Note	Cogeneration Power Plant, Las Flores Canyon Oil & Gas Plant		
Device Description	Normal Operations Mode. 1% of gas turbine exhaust.		

1.4 Tandem Mode (GTG & HRSG)

Device ID #	**007862**	***Device Name***	**Tandem Mode (GTG & HRSG)**
Rated Heat Input	600.510 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	ZAN-2501 EAL-2601
Model		*Serial Number*	
Location Note	Las Flores Canyon Oil & Gas Plant		
Device Description	Normal Operations Mode defined by 99% load of rated heat input from gas turbine and 41% load from heat recovery steam generator.		

1.5 Heat Recovery Steam Generator

Device ID #	**007865**	***Device Name***	**Heat Recovery Steam Generator**
Rated Heat Input	345.000 MMBtu/Hour	*Physical Size*	140.14 MMBtu/Hour
Manufacturer	Entec	*Operator ID*	EAL-2601
Model		*Serial Number*	
Location Note	Cogeneration Power Plant, Las Flores Canyon Oil & Gas Plant		
Device Description	John Zink Low NOx burners. Operates in Normal Operations Mode at 41% load of rated heat input and at 100% load in HRSG Only Mode.		

air pollution control district
SANTA BARBARA COUNTY

PERMIT EVALUATION FOR PERMIT TO OPERATE 5651-11 AND PART 70 MINOR MODIFICATION

1.0 BACKGROUND

1.1 General: The application for ATC 16170 was submitted on October 16, 2023 and deemed complete on October 18, 2023. This permit implements District approved BARCT NOx emissions standards for gas turbines and associated duct burner. The permit also authorizes ExxonMobil to implement retrofits to the CPP in accordance with a District approved *AB617 Compliance Plan (to be submitted)* in order to comply with the BARCT standards.

1.2 Project Description: California Assembly Bill 617 (AB 617), enacted in July 2017, has a multitude of requirements to address the disproportionate impacts of air pollution in environmental justice communities. One of the key components of AB 617 is to reduce air pollutant emissions from large facilities that participate in the California Greenhouse Gas (GHG) Cap-and-Trade system such as ExxonMobil's Las Flores Canyon facility. The Gas Turbine and Heat Recovery Steam Generator (HRSG) are subject to the Best Available Retrofit Control Technology (BARCT) requirements of AB 617. The District determined that BARCT for the gas turbine and HRSG included the following:

- The gas turbine and HRSG at the CPP shall meet a NOx emission limit of 2 ppmv @ 15% O2 during all operations except Planned Bypass Mode. ExxonMobil shall retrofit the CPP to meet the BARCT emission limits per the *AB617 Compliance Plan (to be submitted)*.

- The equipment shall not exceed an ammonia slip limit of 10 ppmv NH_3

- The existing CO and ROC permit limits for the CPP satisfy BARCT, and no additional equipment modifications are needed for these two pollutants.

1.3 Compliance History: According to recent District inspections, no violations of District rules and the permit have been found in the last 3 years.

2.0 ENGINEERING ANALYSIS

2.1 Equipment/Processes: The primary stationary combustion sources in LFC are located in the Cogeneration Power Plant (CPP). The CPP consists of a 39.35 MW (ISO) General Electric Model PG 6531B gas-fired turbine driving a generator and a 9.8 MW Shin Nippon steam turbine. The CPP generators produce electrical power at 13,800 volts to serve the power needs of the LFC facility, the POPCO Gas Plant, as well as ExxonMobil's three offshore platforms (Harmony,

Heritage, and Hondo). ExxonMobil also provides additional power to the local grid. The maximum heat input to the gas turbine is 465 MMBtu/hr.

Also part of the CPP is a 345 MMBtu/hr Entec Heat Recovery Steam Generator (HRSG) that is equipped with John Zink Co. Low-NO_X burners. The HRSG recovers waste heat from the gas turbine as well as its own burners' heat to supply up to 250,000 lbs/hr of steam to satisfy the needs of ExxonMobil's LFC facility.

Operations of the CPP are separated into three modes:

- *Normal Operations Mode*. Normal Operations Mode represents the majority of CPP operations. Normal operations are defined as operations with a gas turbine load greater than 57 percent of the ISO rating of 39.0 MW (i.e., greater than 22 MW). CPP operations outside this mode can only occur during the other two modes described below. During this mode, the gas turbine and the HRSG are limited to a combined maximum heat input of 605.140 MMBtu/hr. Emissions from the gas turbine bypass stack are based on a leakage rate not exceeding 1 percent of the gas turbine exhaust.

- *HRSG Only Mode*. During this mode, the HRSG operates alone in order to supply steam to the LFC facility. The SCR unit is operational. The gas turbine does not operate in HRSG Only Mode.

- *Planned Bypass Mode*. This mode covers: warm startups, cold startups, shutdowns, and maintenance and testing operations.

  Warm startups occur when the gas turbine goes down, with the HRSG still online, and the SCR unit still "warm". In this case, the gas turbine can be brought back online rather quickly.

  During a cold startup, more time, up to 2 hours, is needed to bring the SCR unit up to temperature. It takes 1 hour at a turbine power output of up to 20-22 MW to heat the SCR up to a temperature of 570 ºF, and another hour at the same power output in order to produce a sufficient quantity and quality of steam for steam injection for NO_X control. Once the SCR reaches operating temperature, ExxonMobil is required to initiate ammonia injection, and the CPP is ramped up to Normal Operations Mode.

  During startups, the combined gas turbine/HRSG is limited to a maximum heat input of 308.821 MMBtu/hr and power output of 22 MW. During startups, gas turbine exhaust will be emitted directly to atmosphere via the bypass stack at the initial phase of startup and then through the main CPP stack for the remainder of the startup process.

  Shutdown is defined as the one-hour operating period immediately preceding gas turbine and/or HRSG burner flame out.

Maintenance and testing operations occur at loads no greater than 4 MW electrical output. During these periods exhaust will primarily be routed through the bypass stack, although exhaust may also be directed through the HRSG. At these low loads, the exhaust temperature will not be high enough for the SCR system to be effective.

Maintenance and testing operations include, but are not limited to, the following activities:

- Major Overhaul – Inspect and replace combustion cans, fuel nozzles, turbine blades, etc. as necessary.
- Hot Gas Path Inspection – Inspect and replace combustion cans and fuel nozzles as necessary.
- Timing adjustment of circuit breakers connecting GTG to SCE grid.
- Adjustment and troubleshooting of excitation equipment troubleshooting.
- GTG control system troubleshooting.
- GTG excitation system upgrade.
- GTG control system upgrade.
- Mechanical and electrical over-speed shutdown test.

2.2 Emission Controls: NO_X emissions are controlled through the use of steam injection in the gas turbine and Selective Catalytic Reduction (ammonia injection) on the combined gas turbine/HRSG exhaust stream. The primary fuel source for the CPP is treated natural gas from the Stripping Gas Treating Plant. Secondary fuel is purchased from the gas company. The gas turbine is equipped with a bypass stack that is used when the SCR unit is not operational.

2.3 Emission Factors: NOx emission factors for normal operations and HRSG only mode are based on the District established AB 617 NOx emission limit of 2 ppmv @ 15% O_2 and Ammonia slip limits are based on 10 ppmv. All other emission factors remain unchanged from the emission factors listed in PT-70 PTO 5651-R7.

2.4 Reasonable Worst Case Emission Scenario: See PT-70 PTO 5651-R7 for details regarding the reasonable worst case emission scenario for the CPP.

2.5 Emission Calculations: Tables 5.3 and 5.4 define the worst-case short term and long-term emissions for the CPP.

2.6 Special Calculations: There are no special calculations.

2.7 BACT Analyses: The CPP is subject to BACT for NOx, ROC, CO, SOx, PM and PM_{10}. This permit implements BARCT requirements for NOx which are more stringent than the NOx BACT limits established when the CPP was first permitted.

2.8 Enforceable Operational Limits: The permit has enforceable operating conditions that ensure the equipment is operated properly.

2.9 Monitoring Requirements: Monitoring of the equipment's operational limits are required to ensure that these are enforceable. The CPP is equipped with CEMS. See PT-70 PTO 5651-R7 for more details regarding the CEMS monitoring requirements.

2.10 Recordkeeping and Reporting Requirements: The permit requires that the data which is monitored be recorded and reported to the District.

3.0 REEVALUATION REVIEW (not applicable)

4.0 REGULATORY REVIEW

4.1 Partial List of Applicable Rules:

Rule 201.	Permits Required
Rule 202.	Exemptions to Rule 201
Rule 205.	Standards for Granting Permits
Rule 301.	Circumvention
Rule 302.	Visible Emissions
Rule 303.	Nuisance
Rule 360.	Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers
Rule 361.	Small Boilers, Steam Generators, and Process Heaters
Rule 801.	New Source Review- Definitions and General Requirements
Rule 802.	New Source Review
Rule 809.	Federal Minor Source New Source Review
Rule 810.	Federal Prevention of Significant Deterioration

4.2 Rules Requiring Review: None.

5.0 AQIA

The project is not subject to the Air Quality Impact Analysis requirements of Regulation VIII.

6.0 OFFSETS/ERCs

6.1 Offsets: District Rule 802, *New Source Review*, was updated on August 25, 2016, to go from a net emissions increase (NEI) to a potential to emit (PTE) calculation methodology for determining offsets. The emissions from ExxonMobil-Santa Ynez Unit (SYU) Project stationary source triggers offset requirements for NO_X, ROC, SO_X, PM and PM_{10} based on the stationary source PTE for those pollutants.

In accordance with Rule 802.B.3 and the requirements of Health and Safety Code sections 42301.2, a District shall not require emission offsets for any emission increase at a source that results from

the installation, operation, or other implementation of any emission control device or technique used to comply with a district, state, or federal emission control requirement, including, but not limited to, requirements for the use of reasonably available control technology or best available retrofit control technology, unless there is a modification that results in an increase in capacity of the unit being controlled. This permit authorizes modifications to the CPP in order to comply with the more stringent NOx BARCT emission limits under AB 617 and does not authorize an increase to the operating capacity of the gas turbine or the HRSG, as a result the project is exempt from offsets.

6.2 ERCs: See Section 7.4 of PT-70 PTO 5651-R7 for more details regarding ERCs generated at the SYU Stationary Source.

7.0 AIR TOXICS

An air toxics health risk assessment was not performed for this permitting action.

8.0 CEQA / LEAD AGENCY

This project is exempt from CEQA pursuant to the Environmental Review Guidelines for the Santa Barbara County Air Pollution Control District (revised April 30, 2015). Appendix A (*District Projects Exempt from CEQA* and *Equipment or Operations Exempt from CEQA*} provides an exemption specifically for projects undertaken for the sole purpose of bringing an existing source into compliance with newly adopted regulatory requirements of the APCD or any other local, state or federal agency. No further action is necessary.

9.0 SCHOOL NOTIFICATION

A school notice pursuant to the requirements of Health and Safety Code Section 42301.6 was not required.

10.0 PUBLIC and AGENCY NOTFICATION PROCESS/COMMENTS ON DRAFT PERMIT

10.1 This project was not subject to public notice.

11.0 FEE DETERMINATION

Fees for this permit are assessed under the cost reimbursement provisions of Rule 210.

12.0 RECOMMENDATION

It is recommended that this permit be granted with the conditions as specified in the permit.

William Sarraf	1/9/2024		1/9/2024
AQ Engineer/Technician	Date	Supervisor	Date

13.0 ATTACHMENTS

A. Draft Comments and District Responses

ExxonMobil had the following comments on draft ATC 16170.

1. **Lb/MMBtu Factor:** Table 4.2 lists 0.0074 lb/MMBtu as a BARCT performance standard. This limitation is not a BARCT standard and has not been identified in the SBCAPCD BARCT evaluation and staff report. Further, it has not been identified in other counties as a BARCT standard. EM requests that the BARCT NOx limit be expressed as a ppmv limit only, consistent with the BARCT evaluation. Consistent with this change, Footnote 5 and Table 10.6 should be amended to delete reference to the lb/MMBtu BARCT standard.

   District Response: The requested changes have been made. Lb/MMBtu emission factors remain listed as enforceable emission standards in Table 5.2 but are not identified as BARCT standards to be consistent with the District's BARCT analysis.

2. **SCDP Initial Operations:** Please amend the definition of initial operations to more accurately reflect when the CPP would be operational by indicating SCDP initial operations is defined as the combustion of gas in the CPP.

   District Response: The requested changes has been made.

3. *AB617 Compliance Plan Review:* Condition 6 (i) Please add the following sentences to clarify required actions on both parties to ensure timely submittals and approval of the plan: Within 30 days of submittal, the District shall approve the compliance plan or request specific revisions to the plan. Upon receipt of the revised plan and/or additional information, the District shall have 30 days to review and approve the revised compliance plan. If no comments are received from the District within this period, the plan is deemed approved. Plan approval shall not be unreasonably withheld.

   District Response: The requested changes have not been made. While the District intends to make effort to expeditiously review and approve the AB617 plan after receipt, the District will not incorporate language that will automatically approve the plan or sets review timelines. In order to convey the District's intent to expeditiously review the plan, the following language has been added to the end of Condition 6(i): "The District will make all efforts to expeditiously review the plan within 30 days of receipt."

apcd air pollution control district
SANTA BARBARA COUNTY

January 10, 2024

Certified Mail
Return Receipt Requested 9171 9690 0935 0315 1482 03

Patrice Surmeier
ExxonMobil Upstream Company
12000 Calle Real
Goleta, CA 93117

FID: 01482
Permit: PM 05651 - 11
SSID: 01482

Re: Notice of Final Permit to Operate 05651 - 11 Issuance

Dear Patrice Surmeier:

Enclosed is the final Permit to Operate (PTO) No. 05651 - 11 for modifications to the Las Flores Canyon Pt-70 permit in order to incorporate BARCT limits for the CPP.

Please carefully review the enclosed documents to ensure that they accurately describe your facility and that the conditions are acceptable to you.

You should become familiar with all District rules pertaining to your facility. This permit does not relieve you of any requirements to obtain authority or permits from other governmental agencies.

This permit requires you to:

- Follow the conditions listed on your permit. Pay careful attention to the recordkeeping and reporting requirements.
- Ensure that a copy of the enclosed permit is posted or kept readily available near the permitted equipment.
- Promptly report changes in ownership, operator, or your mailing address to the District.

If you are not satisfied with the conditions of this permit, **you have thirty (30) calendar days from the date of this permit issuance notice to appeal this permit to the Air Pollution Control District Hearing Board** (ref: California Health and Safety Code, §42302.1). Any contact, discussions, or meetings with District staff regarding the terms of this permit during or after permit issuance do not constitute an appeal under Rule 209 or the California H&SC and will not stop or alter the 30-day appeal period. Only a formal application to the Hearing Board can initiate an appeal. You may contact the Clerk of the Hearing Board for specific information concerning appeal initiation and procedures.

Please include the facility identification (FID) and permit numbers as shown at the top of this letter on all correspondence regarding this permit. If you have any questions, please contact William Sarraf of my staff at (805) 979-8312.

Sincerely,

David Harris, Division Manager
Engineering Division

enc: Final PTO 05651 - 11
Final Permit Evaluation

cc: Las Flores Canyon 01482 Project File
Engr Chron File
William Sarraf (Cover letter only)

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air pollution control district
SANTA BARBARA COUNTY

Permit to Operate 05651 - 11
AND
PART 70 MINOR MODIFICATION 05651 - 11

EQUIPMENT OWNER:

ExxonMobil Upstream Company

EQUIPMENT OPERATOR:

ExxonMobil Upstream Company

EQUIPMENT LOCATION:

12000 Calle Real, Goleta

STATIONARY SOURCE/FACILITY:

ExxonMobil - SYU Project
Las Flores Canyon

SSID: 01482
FID: 01482

EQUIPMENT DESCRIPTION:

The equipment subject to this permit is listed in the table at the end of this permit.

AUTHORIZED MODIFICATION:

This permit authorizes revisions to the following sections of Pt-70 PTO 5651-R7 in order to implement the more stringent Assembly Bill 617 (AB617) NOx BARCT emission limits for the gas turbine and heat recovery steam generator (HRSG) at the cogeneration powerplant (CPP): Section 4.11, Table 4.2, Table 5.2 – 5.6, Condition 9.C.1, Table 10.4 of Attachment 10.1 and Table 10.6 of Attachment 10.2.

PROJECT/PROCESS DESCRIPTION:

The Las Flores Canyon (LFC) facility is comprised of an oil plant, a stripping gas plant, an NGL/LPG loading facility, a cogeneration power plant and a pipeline transportation terminal. The facility treats produced oil and natural gas from the Santa Ynez Unit platforms on the OCS. A complete facility description is provided in PT-70/Reeval 5651-R7.

The sections of PT-70/Reeval 5651-R7 specified below are replaced with the following language. All other sections of the permit remain unchanged:

4.11 BACT / BARCT / NSPS / NESHAP / MACT

4.11.1 BACT/BARCT: Best Available Control Technology is required for all emission units for NO_X, ROC, CO, SO_X, PM and PM_{10}. Best Available Retrofit Control Technology is required for the CPP gas turbine and HRSC for NOx and CO when operating in Normal Mode and HRSG Only Mode. The applicable BACT control technologies of this permit are listed in Table 4.1 and the corresponding BACT/BARCT performance standards are listed in Table 4.2. Tables 4.3 and 4.4 list the BACT requirements for the inspection and maintenance FHC Program. In addition, chemical tote tanks containing ROCs where the fluid vapor pressure is greater than 0.5 psia must be closed at all times and must be equipped with a functional PSV valve. Figure 4.1 identifies the location of analyzers used in determining compliance with BACT and Subpart LLL requirements for the SRU.

Pursuant to District Policy and Procedure 6100.064, once an emission unit is subject to BACT requirements, then any subsequent modifications to that emissions unit or process is subject to BACT. This applies to both *de minimis* changes and equivalent replacements, regardless of whether or not such changes or replacements require a permit.

4.11.2 Rule 331 BACT Determinations: Pursuant to Sections D.4 and E.1.b of Rule 331, components are required to be replaced with BACT in accordance with the District's NSR rule. These BACT determinations are based on a case-by-case basis following the District's guidance document for determining BACT due to Rule 331. Rule 331 BACT determinations are documented in Table 4.4.

4.11.3 NSPS: Discussion of applicability and compliance with New Source Performance Standards is presented in Section 3 of this permit. An engineering analysis for the affected equipment is found in the sections above.

4.11.4 NESHAP: The emergency standby IC engines are subject to NESHAP ZZZZ. They must meet the operational requirements of the NESHAP beginning May 3, 2013.

4.11.5 MACT: On June 17, 1999, EPA promulgated Subpart HH, a National Emission Standards for Hazardous Air Pollutants (NESHAP) for Oil and Natural Gas Production and Natural Gas Transmission and Storage. ExxonMobil submitted an Initial Notification of Applicability by June 17, 1999. Based on that submittal, and subsequent correspondence from ExxonMobil (2/15/02 and 5/14/02), the District determined that the NGL storage vessels are subject to MACT standards (40 CFR 63.776 (b) (2)). Revisions to 40 CFR 63 Subpart HH on August 16, 2012 by the EPA removed the exemption to 40 CFR 63.769 Equipment Leak Standards for ancillary equipment and compressors in VHAP service. The NGL storage vessels as well as ancillary equipment and compressors in VHAP service are subject to 40 CFR 63 Subpart HH MACT standards.

NGL Storage Vessels

(i) ExxonMobil achieves compliance with 40 CFR 63.776 (b) (2) Storage Vessel Standards by operating the NGL storage vessel as a closed system with no detectable emissions.

Ancillary Equipment and Compressors in VHAP Service

(i) Ancillary equipment and compressors in VHAP service for 300 hours a year or more at LFC are subject to compliance with inspection, maintenance, recordkeeping and reporting requirements of the Equipment Leak Standards under subpart HH (40 CFR 63.769).

General MACT requirements applicable to this facility are contained in Condition 9.B.16.

Table 4.2 BACT/BARCT Performance Standards

Source	ROC	NO_x (as NO_2) [5]	SO_x (as SO_2)	CO	PM	PM_{10}
CPP Gas Turbine [1, 2]	0.0026 lb/MMBtu	2.0 ppmv NOx @ 15% O_2.	0.0034 lb/MMBtu	0.0216 lb/MMBtu at loads between 75% and 100%. 17 lb/hr at all loads	0.0198 lb/MMBtu	0.0158 lb/MMBtu
CPP Gas Turbine and HRSG Operating in Tandem [3,4]	0.0055 lb/MMBtu	2.0 ppmv NOx @ 15% O_2.	0.0034 lb/MMBtu	0.0260 lb/MMBtu at loads between 75% and 100%. 17 lb/hr at all loads	0.0163 lb/MMBtu	0.0130 lb/MMBtu
CPP HRSG Only [3,4]	0.0095 lb/MMBtu	2.0 ppmv NOx @ 15% O_2.	0.0034 lb/MMBtu	0.297 lb/MMBtu at all loads. 17 lb/hr at all loads	0.0050 lb/MMBtu	0.0040 lb/MMBtu
SGTP – Sulfur Recovery Unit (Claus and Tail Gas Unit)			99.9 percent (mass basis) H_2S sulfur removal efficiency at design throughput rate or 100 ppmv H_2S in feed to incinerator (whichever is more stringent)			
SGTP – TGCU Incinerator (w/Merox Vent) [3,4]	0.0040 lb/MMBtu	0.12 lb/MMBtu and 38 ppmvd at 2% O_2	0.37 lb/MMBtu and 87 ppmvd at 2% O_2	0.092 lb/MMBtu	0.078 lb/MMBtu	0.0624 lb/MMBtu

Table Notes

[1] In addition to source testing, compliance with NO_x and CO BARCT Performance Standards shall be demonstrated through use of CEMS and process flow monitoring data as required by the applicable Permit Condition in Section 9.C.

[2] "lb/MMBtu" standards are based on contribution of heating value from the fuel gas on a HHV basis.

[3] "lb/MMBtu" standards are based on contribution of heating value from the fuel gas and the waste gas on a HHV basis.

[4] In addition to source testing, compliance with NO_x and SO_x BACT Performance Standards shall be demonstrated through use of CEMS and process flow monitoring data as required by the applicable Permit Condition in Section 9.C.

[5] NOx ppmv performance standards for the CPP Gas Turbine, CPP Gas Turbine and HRSG Operating in Tandem, and CPP HRSG Only sources listed in Table 4.2 represent BARCT standards rather than BACT standards. All other performance standards in Table 4.2 represent BACT standards.

Table 5.1 Equipment Emission Factors

Table 2: Equipment Emission Factors
ExxonMobil Las Flores Canyon Oil and Gas Plant
PT-70 PTO 5651-R7

Equipment Item	Description			Emission Factors								
		Exxon ID #	District Device No	NO_x	ROC	CO	SO_x	PM	PM_{10}	$PM_{2.5}$	GHG	Units
Combustion - Cogen Power Plant: Normal Operations Mode												
	Gas Turbine 38.63 MW	CPP/ZAN-2501	6585	0.0074	0.0055	0.0260	0.0034	0.0158	0.0126	0.0126	117.0000	lb/MMBtu
	Heat Recovery Steam Generator	CPP/EAL-2601	7865	0.0074	0.0055	0.0260	0.0034	0.0158	0.0126	0.0126	117.0000	lb/MMBtu
	Turbine Bypass Stack	CPP/ZAN-2501	7864	0.0074	0.0055	0.0260	0.0034	0.0158	0.0126	0.0126	117.0000	lb/MMBtu
Combustion - Cogen Power Plant: HRSG Only Mode												
	Heat Recovery Steam Generator	CPP/EAL-2601	7865	0.0074	0.0095	0.2970	0.0034	0.0050	0.0040	0.0040	117.0000	lb/MMBtu
Combustion - Cogen Power Plant: Planned Bypass Mode												
	Startup and Shutdown 22 MW	CPP/ZAN-2501/EAL-2601	7866	0.2910	0.0953	0.5920	0.0034	0.0279	0.0223	0.0223	117.0000	lb/MMBtu
	Maintenance and Testing 4 MW	CPP/ZAN-2501	7864	0.2511	0.0953	0.6010	0.0034	0.0279	0.0223	0.0223	117.0000	lb/MMBtu
SGTP - Incinerator												
	TGCU/Merox Vent Incinerator	SGTP/EAL-4603	7867	0.114	0.0038	0.092	See	0.078	0.0624	0.0624	117.0000	lb/MMBtu
	TGCU Incinerator (wout Merox vent)	SGTP/EAL-4603	7868	0.114	0.0038	0.092	Table	0.078	0.0624	0.0624	117.0000	lb/MMBtu
	Planned Startup/Shutdown/Maintenanc	SGTP/EAL-4603	7869	0.114	0.0038	0.092	10.14	0.078	0.0624	0.0624	117.0000	lb/MMBtu
Combustion - Thermal Oxidizer												
	Purge and Pilot	OTP/EAW-1601	102738	See Table 10.9								
	Planned - Continuous LP	OTP/EAW-1601	102739									
	Planned - Continuous AG	OTP/EAW-1601	102740									
	Planned - Other	OTP/EAW-1601	102741									
	Unplanned - Other	OTP/EAW-1601	102742									
Combustion - Internal Combustion Engines												
	Floodwater Pump		393540	0.300	0.140	2.600	0.006	0.010	0.010	0.010	556.580	g/bhp-hr
	Firewater Pump A	PBE-1396 A	1085	14.061	1.120	3.030	0.006	1.000	1.000	1.000	556.580	g/bhp-hr
	Firewater Pump B	PBE-1396 B	1086	14.061	1.120	3.030	0.006	1.000	1.000	1.000	556.580	g/bhp-hr
	Emergency Backup Generator #1		390274	0.300	0.140	2.600	0.006	0.150	0.150	0.150	556.580	g/bhp-hr
	Emergency Backup Generator #2		390275	0.300	0.140	2.600	0.006	0.150	0.150	0.150	556.580	g/bhp-hr
CrewBoat - Harmony/Heritage												
	Main Engine - DPV	Offshore (w/in 3-miles)	6515	337.00	17.10	80.90	0.21	33.00	31.68	31.68	22,309.60	lb/1000 gal
	Main Engine - DPV Broadbill	Offshore (w/in 3-miles)	107946	218.98	17.10	80.90	0.21	5.93	5.93	5.93	22,309.60	lb/1000 gal
	Main Engine - Spot Charter	Offshore (w/in 3-miles)	006564	561.00	17.10	80.90	0.21	33.00	31.68	31.68	22,309.60	lb/1000 gal
	Auxiliary Engine - DPV	Offshore (w/in 3-miles)	6516	600.00	49.00	129.30	0.21	42.20	40.51	40.51	22,309.60	lb/1000 gal
	Auxiliary Engine - DPV Broadbill	Offshore (w/in 3-miles)	107947	217.87	48.98	129.26	0.21	5.93	5.93	5.93	22,309.60	lb/1000 gal

Equipment Item	Description			Emission Factors								
		Exxon ID #	District Device No	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG	Units
Supply Boat - Harmony/Heritage												
	Main Engine - DPV	Offshore (w/in 3-miles)	006513	337.00	16.80	78.30	0.21	33.00	31.68	31.68	22,309.60	lb/1000 gal
	Main Engine - Spot Charter	Offshore (w/in 3-miles)	007883	561.00	16.80	78.30	0.21	33.00	31.68	31.68	22,309.60	lb/1000 gal
	Generator Engine - DPV	Offshore (w/in 3-miles)	006514	600.00	49.00	129.30	0.21	42.20	40.51	40.51	22,309.60	lb/1000 gal
	Bow Thruster - DPV	Offshore (w/in 3-miles)	007884	600.00	49.00	129.30	0.21	42.20	40.51	40.51	22,309.60	lb/1000 gal
	Winch - DPV	Offshore (w/in 3-miles)	103247	600.00	49.00	129.30	0.21	42.20	40.51	40.51	22,309.60	lb/1000 gal
Compressor Vent												
	SOV Distance Piece Vent	OTP/CZZ-1301	007881	-	0.10	-	-	-	-	-	-	lb/hr
	VRU Distance Piece Vent	OTP/CZZ-1302/1303	007882	-	0.10	-	-	-	-	-	-	lb/hr
Pigging Equipment												
	Emulsion Pig Receiver	TT	006565	-	0.0076	-	-	-	-	-	-	lb/acf-event
Tanks/Sumps/Separators												
	Oil Storage Tank A (vrs1)	TT/ABJ-3401A	006566	See Table 10.17								
	Oil Storage Tank B (vrs1)	TT/ABJ-3401B	006567									
	Area Drain Oil/Water Separator (cc)	TT/ABH-3402	006572	-	0.0015	-	-	-	-	-	-	lb/ft^{2}day
	Area Drain Sump	TT/ABH-3403	006580	-	0.0058	-	-	-	-	-	-	lb/ft^{2}day
	Rerun Tank A (vrs)	OTP/ABJ-1401A	006570	See Table 10.15								
	Rerun Tank B (vrs)	OTP/ABJ-1401B	006571									
	Equalization Tank 1424 (vent scbr/cc)	OTP/ABJ-1424	006573	-	0.0015	-	-	-	-	-	-	lb/ft^{2}day
	Demulsifier Tank	OTP/ABJ-1402	006583	See Table 10.16								
	Oily Sludge Thickener (vrs)	OTP/ABJ-1423	006574	-	0.0003	-	-	-	-	-	-	
	Backwash Sump (vrs)	OTP/ABH-1442	006575	-	0.0003	-	-	-	-	-	-	lb/ft^{2}day
	Backwash Collection Tank (vrs)	OTP/ABH-1421	007885	-	0.0003	-	-	-	-	-	-	lb/ft^{2}day
	Open Drain Sump (cc)	OTP/ABH-1413	006576	-	0.0015	-	-	-	-	-	-	lb/ft^{2}day
	Area Drain Sump	OTP/ABH-1414	006581	-	0.0058	-	-	-	-	-	-	lb/ft^{2}day
	Area Drain Oil/Water Separator (cc)	OTP/ABH-1415	006577	-	0.0015	-	-	-	-	-	-	lb/ft^{2}day
	Area Drain Sump	SGTP/ABH-4405	006582	-	0.0058	-	-	-	-	-	-	lb/ft^{2}day
	Area Drain Oil/Water Separator (cc)	SGTP/ABH-4406	006578	-	0.0015	-	-	-	-	-	-	lb/ft^{2}day
	Open Drain Sump (cc)	SGTP/ABH-4407	006579	-	0.0015	-	-	-	-	-	-	lb/ft^{2}day
	Chemical Storage Tote Tanks	Various	007886	-	0.1000	-	-	-	-	-	-	tons/year

Equipment Item	Description			Emission Factors								
		Exxon ID #	District Device No	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG	Units
Fugitive Components - Gas												
Valve	Accessible	OTP/CPP/SGTP/TT	001097	--	0.0804	--	--	--	--	--	--	lb/day-clp
Valve	Inaccessible	OTP/CPP/SGTP/TT	001098	--	0.0804	--	--	--	--	--	--	lb/day-clp
Valve	Unsafe	OTP/CPP/SGTP/TT	007870	--	0.4020	--	--	--	--	--	--	lb/day-clp
Valve	Bellows / Background ppmv	OTP/CPP/SGTP/TT	006551	--	0.0000	--	--	--	--	--	--	lb/day-clp
Valve	Category A	OTP/CPP/SGTP/TT	006474	--	0.0643	--	--	--	--	--	--	lb/day-clp
Valve	Category B	OTP/CPP/SGTP/TT	007872	--	0.0603	--	--	--	--	--	--	lb/day-clp
Valve	Category C	OTP/CPP/SGTP/TT	104929	--	0.0523	--	--	--	--	--	--	lb/day-clp
Valve	Category E	OTP/CPP/SGTP/TT	104926	--	0.0482	--	--	--	--	--	--	lb/day-clp
Valve	Category F	OTP/CPP/SGTP/TT	009710	--	0.0402	--	--	--	--	--	--	lb/day-clp
Valve	Category H	OTP/CPP/SGTP/TT	001099	--	0.0402	--	--	--	--	--	--	lb/day-clp
Valve	Category H (Inaccessible)	OTP/CPP/SGTP/TT	001100	--	0.0402	--	--	--	--	--	--	lb/day-clp
Valve	Category I	OTP/CPP/SGTP/TT	006475	--	0.0322	--	--	--	--	--	--	lb/day-clp
Connection	Accessible/Inaccessible	OTP/CPP/SGTP/TT	001101	--	0.0050	--	--	--	--	--	--	lb/day-clp
Connection	Unsafe	OTP/CPP/SGTP/TT	006568	--	0.0249	--	--	--	--	--	--	lb/day-clp
Connection	Category B	OTP/CPP/SGTP/TT	007874	--	0.0037	--	--	--	--	--	--	lb/day-clp
Connection	Category C	OTP/CPP/SGTP/TT	104928	--	0.0032	--	--	--	--	--	--	lb/day-clp
Connection	Category E	OTP/CPP/SGTP/TT	104925	--	0.0030	--	--	--	--	--	--	lb/day-clp
Connection	Category F	OTP/CPP/SGTP/TT	009709	--	0.0025	--	--	--	--	--	--	lb/day-clp
Compressor Seal	To VRS	OTP/CPP/SGTP/TT	006555	--	0.0000	--	--	--	--	--	--	lb/day-clp
	Exempt	OTP/CPP/SGTP/TT	006557	--	0.0000	--	--	--	--	--	--	lb/day-clp
Fugitive Components - Oil												
Valve	Accessible	OTP/CPP/SGTP/TT	001092	--	0.0020	--	--	--	--	--	--	lb/day-clp
Valve	Inaccessible	OTP/CPP/SGTP/TT	001093	--	0.0020	--	--	--	--	--	--	lb/day-clp
Valve	Bellows / Background ppmv	OTP/CPP/SGTP/TT	006558	--	0.0000	--	--	--	--	--	--	lb/day-clp
Valve	Category B	OTP/CPP/SGTP/TT	007877	--	0.0213	--	--	--	--	--	--	lb/day-clp
Valve	Category H	OTP/CPP/SGTP/TT	001094	--	0.0142	--	--	--	--	--	--	lb/day-clp
Valve	Category H (Inaccessible)	OTP/CPP/SGTP/TT	005967	--	0.0142	--	--	--	--	--	--	lb/day-clp
Connection	Accessible/Inaccessible	OTP/CPP/SGTP/TT	001095	--	0.0008	--	--	--	--	--	--	lb/day-clp
Connection	Unsafe	OTP/CPP/SGTP/TT	007880	--	0.0042	--	--	--	--	--	--	lb/day-clp
Connection	Category B	OTP/CPP/SGTP/TT	001096	--	0.0006	--	--	--	--	--	--	lb/day-clp
Connection	Category F	OTP/CPP/SGTP/TT	009711	--	0.0004	--	--	--	--	--	--	lb/day-clp
Pump Seal	Single	OTP/CPP/SGTP/TT	007879	--	0.1862	--	--	--	--	--	--	lb/day-clp
Pump Seal	Dual/Tandem	OTP/CPP/SGTP/TT	006561	--	0.0279	--	--	--	--	--	--	lb/day-clp
	Exempt	OTP/CPP/SGTP/TT	006563	--	0.0000	--	--	--	--	--	--	lb/day-clp
Solvent Usage												
	Cleaning/Degreasing	OTP/CPP/SGTP/TT	005740		- mass bala	--	--	--	--	--	--	lbs

Table 5.2 Short-Term Emissions

Table 3: Short-Term Emissions
ExxonMobil Las Flores Canyon Oil and Gas Plant
PT-70 PTO 5651-R7

Equipment Item	Description	Exxon ID #	District Device No	NO_x		ROC		CO		SO_x		PM		PM_{10}		$PM_{2.5}$		GHG		Federal
				lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	Enforceability
Combustion - Cogen Power Plant: Normal Operations Mode																				
	Gas Turbine 38.63 MW	CPP/ZAN-2501	6585	3.41	81.76	2.53	60.77	11.97	287.26	1.56	37.34	7.27	174.56	5.82	139.65	5.82	139.65	53,860.95	1,292,662.80	FE
	Heat Recovery Steam Generator	CPP/EAL-2601	7865	1.04	24.89	0.77	18.50	3.64	87.45	0.47	11.37	2.21	53.14	1.77	42.51	1.77	42.51	16,396.38	393,513.12	NE
	Turbine Bypass Stack	CPP/ZAN-2501	7864	0.03	0.83	0.03	0.61	0.12	2.90	0.02	0.38	0.07	1.76	0.06	1.41	0.06	1.41	544.05	13,057.20	FE
	sub-total =			**4.48**	**107.47**	**3.33**	**79.88**	**15.73**	**377.61**	**2.05**	**49.09**	**9.56**	**229.47**	**7.65**	**183.58**	**7.65**	**183.58**	**70,801.38**	**1,699,233.12**	
Combustion - Cogen Power Plant: HRSG Only Mode																				
	Heat Recovery Steam Generator	CPP/EAL-2601	7865	2.55	61.27	3.28	78.66	17.00	408.00	1.17	27.99	1.73	41.40	1.38	33.12	1.38	33.12	40,365.00	968,760.00	FE
	sub-total =			**2.55**	**61.27**	**3.28**	**78.66**	**17.00**	**408.00**	**1.17**	**27.99**	**1.73**	**41.40**	**1.38**	**33.12**	**1.38**	**33.12**	**40365.00**	**968760.00**	
Combustion - Cogen Power Plant: Planned Bypass Mode																				
	Startup and Shutdown 22 MW	CPP/ZAN-2501/EAL-2601	7866	89.87	179.73	29.43	58.86	182.82	365.64	1.04	2.09	8.62	17.23	6.89	13.79	6.89	13.79	36,132.06	72,264.11	FE
	Maintenance and Testing 4 MW	CPP/ZAN-2501	7864	43.94	175.77	16.68	66.71	105.18	420.70	0.60	2.38	4.88	19.53	3.90	15.61	3.90	15.61	20,475.00	81,900.00	FE
	sub-total =			**133.81**	**355.50**	**46.11**	**125.57**	**288.00**	**786.34**	**1.64**	**4.47**	**13.50**	**36.76**	**10.80**	**29.40**	**10.80**	**29.40**	**56607.06**	**154164.11**	
Combustion-Cogen Power Plant: Totals																				
	Normal + SU/SD + M&T			89.87	436.11	29.43	185.48	182.82	1069.55	2.05	41.28	9.56	208.86	7.65	167.08	7.65	167.08	70,801.38	1,428,588.95	FE
	sub-total =			**89.87**	**436.11**	**29.43**	**185.48**	**182.82**	**1069.55**	**2.05**	**41.28**	**9.56**	**208.86**	**7.65**	**167.08**	**7.65**	**167.08**	**70801.38**	**1428588.95**	
SGTP - Incinerator																				
	TGCU/Merox Vent Incinerator	SGTP/EAL-4603	7867	1.40	33.71	0.05	1.12	1.13	27.20	4.50	107.93	0.96	23.06	0.77	18.45	0.77	18.45	1,441.44	34,594.56	FE
	TGCU Incinerator (w/out Merox vent)	SGTP/EAL-4603	7868	1.37	32.89	0.05	1.10	1.11	26.54	4.12	98.83	0.94	22.50	0.75	18.00	0.75	18.00	1,406.34	33,752.16	FE
	Planned Startup/Shutdown/Maintenanc	SGTP/EAL-4603	7869	1.40	33.71	0.05	1.12	1.13	27.20	6.20	148.80	0.96	23.06	0.77	18.45	0.77	18.45	1,441.44	34,594.56	FE
	sub-total =			**4.18**	**100.30**	**0.14**	**3.34**	**3.37**	**80.95**	**14.82**	**355.56**	**2.86**	**68.63**	**2.29**	**54.90**	**2.29**	**54.90**	**4289.22**	**102941.28**	
Combustion - Thermal Oxidizer																				
	Purge and Pilot	OTP/EAW-1601	102738	0.47	11.29	0.03	0.62	0.40	9.49	0.02	0.39	0.04	0.86	0.04	0.86	0.04	0.86	561.60	13,478.40	FE
	Planned - Continuous LP	OTP/EAW-1601	102739	0.17	3.99	0.01	0.22	0.14	3.36	0.12	2.87	0.01	0.31	0.01	0.31	0.01	0.31	198.53	4,764.61	FE
	Planned - Continuous AG	OTP/EAW-1601	102740	0.03	0.66	0.00	0.04	0.02	0.56	0.01	0.24	0.00	0.05	0.00	0.05	0.00	0.05	33.05	793.22	FE
	Planned - Other	OTP/EAW-1601	102741	33.18	111.39	1.83	6.14	27.90	93.66	175.64	190.28	2.54	8.52	2.54	8.52	2.54	8.52	39,611.75	132,989.45	FE
	Unplanned - Other	OTP/EAW-1601	102742	300.15	300.15	14.16	14.16	216.02	216.02	4,976.97	4,976.97	19.66	19.66	19.66	19.66	19.66	19.66	306,731.99	306,731.99	FE
	sub-total =			**0.66**	**15.94**	**0.04**	**0.88**	**0.56**	**13.41**	**0.15**	**3.49**	**0.05**	**1.22**	**0.05**	**1.22**	**0.05**	**1.22**	**793.18**	**19036.23**	
Combustion - Internal Combustion Engines																				
	Floodwater Pump		393540	0.22	0.66	0.10	0.31	1.92	5.76	0.00	0.01	0.01	0.02	0.01	0.02	0.01	0.02	411.06	1,233.19	A
	Firewater Pump A	PBE-1396 A	1085	3.69	3.69	0.29	0.29	0.79	0.79	0.00	0.00	0.26	0.26	0.26	0.26	0.26	0.26	146.02	146.02	A
	Firewater Pump B	PBE-1396 B	1086	3.69	3.69	0.29	0.29	0.79	0.79	0.00	0.00	0.26	0.26	0.26	0.26	0.26	0.26	146.02	146.02	A
	Emergency Backup Generator #1		390274	0.16	0.32	0.07	0.15	1.38	2.75	0.00	0.01	0.08	0.16	0.08	0.16	0.08	0.16	294.49	588.99	
	Emergency Backup Generator #2		390275	0.29	0.58	0.14	0.27	2.52	5.04	0.01	0.01	0.15	0.29	0.15	0.29	0.15	0.29	539.90	1,079.81	
	sub-total =			**8.05**	**8.94**	**0.90**	**1.32**	**7.41**	**15.15**	**0.02**	**0.03**	**0.76**	**1.00**	**0.76**	**1.00**	**0.76**	**1.00**	**1537.50**	**3194.02**	
Crew Boat - Harmony/Heritage																				
	Main Engine - DPV	Offshore (w/in 3-miles)	6515	60.81	364.88	3.09	18.51	14.60	87.59	0.04	0.23	5.96	35.73	5.72	34.30	5.72	34.30	4,025.88	24,155.28	FE
	Main Engine - DPV Broadbill	Offshore (w/in 3-miles)	107946	24.57	147.42	1.92	11.51	9.08	54.46	0.02	0.14	0.67	3.99	0.67	3.99	0.67	3.99	2,503.14	15,018.83	FE
	Main Engine - Spot Charter	Offshore (w/in 3-miles)	006564	101.24	607.41	3.09	18.51	14.60	87.59	0.04	0.23	5.96	35.73	5.72	34.30	5.72	34.30	4,025.88	24,155.28	
	Auxiliary Engine - DPV	Offshore (w/in 3-miles)	6516	4.32	25.94	0.35	2.12	0.93	5.59	0.00	0.01	0.30	1.82	0.29	1.75	0.29	1.75	160.74	964.44	FE
	Auxiliary Engine - DPV Broadbill	Offshore (w/in 3-miles)	107947	0.74	4.46	0.17	1.00	0.44	2.64	0.00	0.00	0.02	0.12	0.02	0.12	0.02	0.12	76.08	456.45	FE
	sub-total =			**105.56**	**633.35**	**3.44**	**20.63**	**15.53**	**93.18**	**0.04**	**0.24**	**6.26**	**37.55**	**6.01**	**36.05**	**6.01**	**36.05**	**4186.62**	**25119.72**	

Equipment Item	Description			NO_X		ROC		CO		SO_X		PM		PM_{10}		$PM_{2.5}$		GHG		Federal
		Exxon ID #	District Device No	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	Enforceability
Supply Boat - Harmony/Heritage																				
	Main Engine - DPV	Offshore (w/in 3-miles)	6513	48.19	48.19	2.40	2.40	11.20	11.20	0.03	0.03	4.72	4.72	4.53	4.53	4.53	4.53	3,190.27	3,190.27	FE
	Main Engine - Spot Charter	Offshore (w/in 3-miles)	7883	80.22	160.45	2.40	4.80	11.20	22.39	0.03	0.06	4.72	9.44	4.53	9.06	4.53	9.06	3,190.27	6,380.55	FE
	Generator Engine - DPV	Offshore (w/in 3-miles)	6514	6.60	158.40	0.54	12.94	1.42	34.14	0.00	0.06	0.46	11.14	0.45	10.70	0.45	10.70	245.41	5,889.74	FE
	Bow Thruster - DPV	Offshore (w/in 3-miles)	7884	16.50	33.00	1.35	2.70	3.56	7.11	0.01	0.01	1.16	2.32	1.11	2.23	1.11	2.23	613.51	1,227.03	FE
	Winch - DPV	Offshore (w/in 3-miles)	103247	13.50	26.99	1.10	2.20	2.91	5.82	0.00	0.01	0.95	1.90	0.91	1.82	0.91	1.82	501.85	1,003.71	FE
	sub-total =			**116.82**	**378.84**	**5.39**	**22.64**	**19.08**	**69.46**	**0.04**	**0.14**	**7.29**	**24.80**	**7.00**	**23.81**	**7.00**	**23.81**	**4551.05**	**14501.02**	
Compressor Vent																				
	SOV Distance Piece Vent	OTP/CZZ-1301	007881	-	-	0.10	2.40	-	-	-	-	-	-	-	-	-	-	-	-	FE
	VRU Distance Piece Vent	OTP/CZZ-1302/1303	007882	-	-	0.10	2.40	-	-	-	-	-	-	-	-	-	-	-	-	FE
	sub-total =					**0.20**	**4.80**													
Pigging Equipment																				
	Emulsion Pig Receiver	TT	006565	-	-	0.59	2.38	-	-	-	-	-	-	-	-	-	-	-	-	FE
	sub-total =					**0.59**	**2.38**													
Tanks/Sumps/Separators																				
	Oil Storage Tank A (vrs1)	TT/ABJ-3401A	006566	-	-	18.62	446.89	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Oil Storage Tank B (vrs1)	TT/ABJ-3401B	006567	-	-	18.62	446.89	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Area Drain Oil/Water Separator (cc)	TT/ABH-3402	006572	-	-	0.004	0.09	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Area Drain Sump	TT/ABH-3403	006580	-	-	0.039	0.94	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Rerun Tank A (vrs)	OTP/ABJ-1401A	006570	-	-	1.610	38.63	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Rerun Tank B (vrs)	OTP/ABJ-1401B	006571	-	-	1.610	38.63	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Equalization Tank 1424 (vent scbr/cc)	OTP/ABJ-1424	006573	-	-	0.232	5.58	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Demulsifier Tank	OTP/ABJ-1402	006583	-	-	0.010	0.30	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Oily Sludge Thickener (vrs)	OTP/ABJ-1423	006574	-	-	0.022	0.52	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Backwash Sump (vrs)	OTP/ABH-1442	006575	-	-	0.004	0.09	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Backwash Collection Tank (vrs)	OTP/ABH-1421	007885	-	-	0.001	0.03	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Open Drain Sump (cc)	OTP/ABH-1413	006576	-	-	0.004	0.09	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Area Drain Sump	OTP/ABH-1414	006581	-	-	0.255	6.12	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Area Drain Oil/Water Separator (cc)	OTP/ABH-1415	006577	-	-	0.007	0.16	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Area Drain Sump	SGTP/ABH-4405	006582	-	-	0.025	0.59	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Area Drain Oil/Water Separator (cc)	SGTP/ABH-4406	006578	-	-	0.004	0.09	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Open Drain Sump (cc)	SGTP/ABH-4407	006579	-	-	0.000	0.01	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Chemical Storage Tote Tanks	Various	007886	-	-	0.023	0.55	-	-	-	-	-	-	-	-	-	-	-	-	FE
	sub-total =					**20.860**	**500.693**													

Equipment Item	Description			NO_x		ROC		CO		SO_x		PM		PM_{10}		$PM_{2.5}$		GHG		Federal
		Exxon ID #	District Device No	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	Enforceability
Fugitive Components - Gas																				
Valve	Accessible	OTP/CPP/SGTP/TT	001097	-	-	0.06	1.53	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Inaccessible	OTP/CPP/SGTP/TT	001098	-	-	0.10	2.33	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Unsafe	OTP/CPP/SGTP/TT	007870	-	-	0.80	19.30	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Bellows / Background ppmv	OTP/CPP/SGTP/TT	006551	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category A	OTP/CPP/SGTP/TT	006474	-	-	0.13	3.22	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category B	OTP/CPP/SGTP/TT	007872	-	-	0.47	11.28	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category C	OTP/CPP/SGTP/TT	104929	-	-	0.17	4.02	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category E	OTP/CPP/SGTP/TT	104926	-	-	1.14	27.35	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category F	OTP/CPP/SGTP/TT	009710	-	-	0.02	0.52	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category H	OTP/CPP/SGTP/TT	001099	-	-	0.89	21.39	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category H (Inaccessible)	OTP/CPP/SGTP/TT	001100	-	-	0.06	1.49	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category I	OTP/CPP/SGTP/TT	006475	-	-	0.58	13.99	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Accessible/Inaccessible	OTP/CPP/SGTP/TT	001101	-	-	2.01	48.27	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Unsafe	OTP/CPP/SGTP/TT	006568	-	-	0.48	11.55	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Category B	OTP/CPP/SGTP/TT	007874	-	-	1.73	41.53	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Category C	OTP/CPP/SGTP/TT	104928	-	-	0.02	0.60	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Category E	OTP/CPP/SGTP/TT	104925	-	-	0.21	5.14	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Category F	OTP/CPP/SGTP/TT	009709	-	-	0.01	0.14	-	-	-	-	-	-	-	-	-	-	-	-	NE
Compressor Seal	To VRS	OTP/CPP/SGTP/TT	006555	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	NE
	Exempt	OTP/CPP/SGTP/TT	006557	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	NE
	Sub-Total:					**8.90**	**213.65**													FE
Fugitive Components - Oil																				
Valve	Accessible	OTP/CPP/SGTP/TT	001092	-	-	0.03	0.61	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Inaccessible	OTP/CPP/SGTP/TT	001093	-	-	0.00	0.01	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Bellows / Background ppmv	OTP/CPP/SGTP/TT	006558	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category B	OTP/CPP/SGTP/TT	007877	-	-	0.00	0.04	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category H	OTP/CPP/SGTP/TT	001094	-	-	0.28	6.79	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category H (Inaccessible)	OTP/CPP/SGTP/TT	005967	-	-	0.01	0.26	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Accessible/Inaccessible	OTP/CPP/SGTP/TT	001095	-	-	0.24	5.85	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Unsafe	OTP/CPP/SGTP/TT	007880	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Category B	OTP/CPP/SGTP/TT	001096	-	-	0.00	0.07	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Category F	OTP/CPP/SGTP/TT	009711	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	NE
Pump Seal	Single	OTP/CPP/SGTP/TT	007879	-	-	0.03	0.74	-	-	-	-	-	-	-	-	-	-	-	-	NE
Pump Seal	Dual/Tandem	OTP/CPP/SGTP/TT	006561	-	-	0.05	1.26	-	-	-	-	-	-	-	-	-	-	-	-	NE
	Exempt	OTP/CPP/SGTP/TT	006563	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	NE
	Sub-Total:					**0.65**	**15.63**													FE
Solvent Usage																				
	Cleaning/Degreasing	OTP/CPP/SGTP/TT	005740	-	-	0.69	5.52	-	-	-	-	-	-	-	-			-	-	FE

Note: GHG emission totals are not NSR emission limits. They are PTE calculations for the purpose of determining the source's major source status.

Table 5.3 Long-Term Emissions

Table 4: Long-Term Emissions
ExxonMobil Las Flores Canyon Oil and Gas Plant
PT-70 PTO 5651-R7

Equipment Item	Description			NO_x		ROC		CO		SO_x		PM		PM_{10}		$PM_{2.5}$		GHG		Federal
		Exxon ID #	District Device No	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	Enforceability
Combustion - Cogen Power Plant: Normal Operations Mode																				
	Gas Turbine 38.63 MW	CPP/ZAN-2501	6585	3.72	14.89	2.76	11.07	13.07	52.32	1.70	6.80	7.94	31.79	6.35	25.43	6.35	25.43	58,816.16	235,426.21	FE
	Heat Recovery Steam Generator	CPP/EAL-2601	7865	1.13	4.53	0.84	3.37	3.98	15.93	0.52	2.07	2.42	9.68	1.93	7.74	1.93	7.74	17,904.85	71,668.58	NE
	Turbine Bypass Stack	CPP/ZAN-2501	7864	0.04	0.15	0.03	0.11	0.13	0.53	0.02	0.07	0.08	0.32	0.06	0.26	0.06	0.26	594.10	2,378.04	FE
	sub-total =			**4.89**	**19.57**	**3.63**	**14.55**	**17.18**	**68.77**	**2.23**	**8.94**	**10.44**	**41.79**	**8.35**	**33.43**	**8.35**	**33.43**	**77,315.11**	**309,472.83**	FE
Combustion - Cogen Power Plant: HRSG Only Mode																				
	Heat Recovery Steam Generator	CPP/EAL-2601	7865	2.79	11.16	3.58	14.33	17.18	68.77	1.27	5.10	1.88	7.54	1.51	6.03	1.51	6.03	44,078.58	176,435.42	FE
	sub-total =			**2.79**	**11.16**	**3.58**	**14.33**	**17.18**	**68.77**	**1.27**	**5.10**	**1.88**	**7.54**	**1.51**	**6.03**	**1.51**	**6.03**	**44078.58**	**176435.42**	
Combustion - Cogen Power Plant: Planned Bypass Mode																				
	Startup and Shutdown 22 MW	CPP/ZAN-2501/EAL-2601	7866	0.270	0.809	0.088	0.265	0.548	1.645	0.003	0.009	0.026	0.078	0.021	0.062	0.021	0.062	108.40	325.19	FE
	Maintenance and Testing 4 MW	CPP/ZAN-2501	7864	0.121	0.483	0.046	0.183	0.289	1.157	0.002	0.007	0.013	0.054	0.011	0.043	0.01	0.04	56.31	225.23	FE
	sub-total =			**0.39**	**1.29**	**0.13**	**0.45**	**0.84**	**2.80**	**0.00**	**0.02**	**0.04**	**0.13**	**0.03**	**0.10**	**0.03**	**0.10**	**164.70**	**550.41**	
Combustion-Cogen Power Plant: Totals																				
	Normal + SU/SD + M&T			5.263	20.816	3.755	14.960	17.956	71.401	2.230	8.934	10.442	41.818	8.353	33.454	8.353	33.454	77,196.60	309,244.43	FE
	sub-total =			**5.26**	**20.82**	**3.76**	**14.96**	**17.96**	**71.40**	**2.23**	**8.93**	**10.44**	**41.82**	**8.35**	**33.45**	**8.35**	**33.45**	**77196.60**	**309244.43**	
SGTP - Incinerator																				
	TGCU/Merox Vent Incinerator	SGTP/EAL-4603	7867	1.54	6.15	0.05	0.21	1.24	4.96	4.92	19.70	1.05	4.21	0.84	3.37	0.84	3.37	1,578.38	6,313.51	FE
	TGCU Incinerator (w/out Merox vent)	SGTP/EAL-4603	7868	1.50	6.00	0.05	0.20	1.21	4.84	4.51	18.04	1.03	4.11	0.82	3.29	0.82	3.29	1,539.94	6,159.77	FE
	Planned Startup/Shutdown/Maintenance	SGTP/EAL-4603	7869	0.06	0.06	0.00	0.00	0.05	0.05	0.26	1.04	0.04	0.04	0.03	0.03	0.03	0.03	60.54	60.54	FE
	sub-total =			**3.10**	**12.21**	**0.10**	**0.41**	**2.50**	**9.86**	**9.69**	**38.78**	**2.12**	**8.36**	**1.70**	**6.68**	**1.70**	**6.68**	**3178.86**	**12533.82**	
Combustion - Thermal Oxidizer																				
	Purge and Pilot	OTP/EAW-1601	102738	0.52	2.06	0.03	0.11	0.43	1.73	0.02	0.07	0.04	0.16	0.04	0.16	0.04	0.16	614.95	2,459.81	FE
	Planned - Continuous LP	OTP/EAW-1601	102739	0.18	0.73	0.01	0.04	0.15	0.61	0.13	0.52	0.01	0.06	0.01	0.06	0.01	0.06	0.00	0.00	FE
	Planned - Continuous AG	OTP/EAW-1601	102740	0.03	0.12	0.00	0.01	0.03	0.10	0.01	0.04	0.00	0.01	0.00	0.01	0.00	0.01	217.39	869.54	FE
	Planned - Other	OTP/EAW-1601	102741	0.70	1.47	0.04	0.08	0.59	1.24	0.97	1.89	0.05	0.11	0.05	0.11	0.05	0.11	36.19	144.76	FE
	Unplanned - Other	OTP/EAW-1601	102742	0.31	0.86	0.02	0.05	0.24	0.70	2.99	8.33	0.02	0.06	0.02	0.06	0.02	0.06	0.00	0.00	FE
	sub-total =			**1.73**	**5.24**	**0.09**	**0.29**	**1.44**	**4.39**	**4.13**	**10.85**	**0.13**	**0.40**	**0.13**	**0.40**	**0.13**	**0.40**	**868.53**	**3,474.11**	
Combustion - Internal Combustion Engines																				
	Floodwater Pump		393540	0.006	0.006	0.003	0.003	0.048	0.048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.277	10.277	A
	Firewater Pump A	PBE-1396 A	1085	0.024	0.096	0.002	0.008	0.005	0.021	0.000	0.000	0.002	0.007	0.002	0.007	0.002	0.007	0.949	3.797	A
	Firewater Pump B	PBE-1396 B	1086	0.024	0.096	0.002	0.008	0.005	0.021	0.000	0.000	0.002	0.007	0.002	0.007	0.002	0.007	0.949	3.797	A
	Emergency Backup Generator #1		390274	0.004	0.004	0.002	0.002	0.034	0.034	0.000	0.000	0.002	0.002	0.002	0.002	0.002	0.002	7.362	7.362	FE
	Emergency Backup Generator #2		390275	0.007	0.007	0.003	0.003	0.063	0.063	0.000	0.000	0.004	0.004	0.004	0.004	0.004	0.004	13.498	13.498	FE
	sub-total =			**0.065**	**0.209**	**0.012**	**0.023**	**0.156**	**0.187**	**0.000**	**0.000**	**0.009**	**0.019**	**0.009**	**0.019**	**0.009**	**0.019**	**33.035**	**38.730**	
Crew Boat - Harmony/Heritage																				
	Main Engine - DPV	Offshore (w/in 3-miles)	6515	1.34	5.37	0.07	0.27	0.32	1.29	0.00	0.00	0.13	0.53	0.13	0.51	0.13	0.51	88.92	355.69	FE
	Main Engine - DPV Broadbill	Offshore (w/in 3-miles)	107946	0.58	2.33	0.05	0.18	0.21	0.86	0.00	0.00	0.02	0.06	0.02	0.06	0.02	0.06	59.28	237.12	FE
	Main Engine - Spot Charter	Offshore (w/in 3-miles)	006564	0.37	1.49	0.01	0.05	0.05	0.21	0.00	0.00	0.02	0.09	0.02	0.08	0.02	0.08	14.82	59.28	FE
	Auxiliary Engine - DPV	Offshore (w/in 3-miles)	6516	0.45	1.80	0.04	0.15	0.10	0.39	0.00	0.00	0.03	0.13	0.03	0.12	0.03	0.12	16.74	66.97	FE
	Auxiliary Engine - DPV Broadbill	Offshore (w/in 3-miles)	107947	0.11	0.44	0.02	0.10	0.06	0.26	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	11.16	44.65	FE
	sub-total =			**2.86**	**11.43**	**0.19**	**0.74**	**0.75**	**3.01**	**0.00**	**0.01**	**0.20**	**0.82**	**0.20**	**0.79**	**0.20**	**0.79**	**190.93**	**763.71**	FE

Equipment Item	Description			NO_X		ROC		CO		SO_X		PM		PM_{10}		$PM_{2.5}$		GHG		Federal
		Exxon ID #	District Device No	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	Enforceability
Supply Boat - Harmony/Heritage																				
	Main Engine - DPV	Offshore (w/in 3-miles)	006513	1.01	1.01	0.05	0.05	0.24	0.24	0.00	0.00	0.10	0.10	0.10	0.10	0.10	0.10	67.00	67.00	FE
	Main Engine - Spot Charter	Offshore (w/in 3-miles)	007883	0.17	0.17	0.01	0.01	0.02	0.02	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	6.70	6.70	FE
	Generator Engine - DPV	Offshore (w/in 3-miles)	006514	0.40	0.40	0.03	0.03	0.09	0.09	0.00	0.00	0.03	0.03	0.03	0.03	0.03	0.03	14.72	14.72	FE
	Bow Thruster - DPV	Offshore (w/in 3-miles)	007884	0.12	0.12	0.01	0.01	0.02	0.02	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	4.29	4.29	FE
	Winch - DPV	Offshore (w/in 3-miles)	103247	0.09	0.09	0.01	0.01	0.02	0.02	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	3.51	3.51	FE
	sub-total =			**1.79**	**1.79**	**0.10**	**0.10**	**0.39**	**0.39**	**0.00**	**0.00**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**96.23**	**96.23**	
Compressor Vent																				
	SOV Distance Piece Vent	OTP/CZZ-1301	007881	-	-	0.11	0.44	-	-	-	-	-	-	-	-	-	-	-	-	FE
	VRU Distance Piece Vent	OTP/CZZ-1302/1303	007882	-	-	0.11	0.44	-	-	-	-	-	-	-	-	-	-	-	-	FE
	sub-total =					**0.22**	**0.88**													
Pigging Equipment																				
	Emulsion Pig Receiver	TT	006565	-	-	0.01	0.03	-	-	-	-	-	-	-	-	-	-	-	-	FE
	sub-total =					**0.01**	**0.03**													
Tanks/Sumps/Separators																				
	Oil Storage Tank A (vrs1)	TT/ABJ-3401A	006566	-	-	0.82	3.26	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Oil Storage Tank B (vrs1)	TT/ABJ-3401B	006567	-	-	0.82	3.26	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Area Drain Oil/Water Separator (cc)	TT/ABH-3402	006572	-	-	0.004	0.02	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Area Drain Sump	TT/ABH-3403	006580	-	-	0.04	0.17	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Rerun Tank A (vrs)	OTP/ABJ-1401A	006570	-	-	0.07	0.28	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Rerun Tank B (vrs)	OTP/ABJ-1401B	006571	-	-	0.07	0.28	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Equalization Tank 1424 (vent scbr/cc)	OTP/ABJ-1424	006573	-	-	0.25	1.02	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Demulsifier Tank	OTP/ABJ-1402	006583	-	-	0.01	0.05	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Oily Sludge Thickener (vrs)	OTP/ABJ-1423	006574	-	-	0.02	0.10	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Backwash Sump (vrs)	OTP/ABH-1442	006575	-	-	0.004	0.02	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Backwash Collection Tank (vrs)	OTP/ABH-1421	007885	-	-	0.001	0.01	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Open Drain Sump (cc)	OTP/ABH-1413	006576	-	-	0.004	0.02	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Area Drain Sump	OTP/ABH-1414	006581	-	-	0.28	1.12	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Area Drain Oil/Water Separator (cc)	OTP/ABH-1415	006577	-	-	0.01	0.03	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Area Drain Sump	SGTP/ABH-4405	006582	-	-	0.03	0.11	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Area Drain Oil/Water Separator (cc)	SGTP/ABH-4406	006578	-	-	0.004	0.02	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Open Drain Sump (cc)	SGTP/ABH-4407	006579	-	-	0.0005	0.002	-	-	-	-	-	-	-	-	-	-	-	-	FE
	Chemical Storage Tote Tanks	Various	007886	-	-	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	FE
	sub-total =					**1.65**	**6.30**													

Equipment Item	Description			NO_X		ROC		CO		SO_X		PM		PM_{10}		$PM_{2.5}$		GHG		Federal
		Exxon ID #	District Device No	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	Enforceability
Fugitive Components - Gas																				
Valve	Accessible	OTP/CPP/SGTP/TT	001097	-	-	0.07	0.28	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Inaccessible	OTP/CPP/SGTP/TT	001098	-	-	0.11	0.43	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Unsafe	OTP/CPP/SGTP/TT	007870	-	-	0.88	3.52	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Bellows / Background ppmv	OTP/CPP/SGTP/TT	006551	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category A	OTP/CPP/SGTP/TT	006474	-	-	0.15	0.59	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category B	OTP/CPP/SGTP/TT	007872	-	-	0.51	2.06	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category C	OTP/CPP/SGTP/TT	104929	-	-	0.18	0.73	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category E	OTP/CPP/SGTP/TT	104926	-	-	1.25	4.99	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category F	OTP/CPP/SGTP/TT	009710	-	-	0.02	0.10	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category H	OTP/CPP/SGTP/TT	001099	-	-	0.98	3.90	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category H (Inaccessible)	OTP/CPP/SGTP/TT	001100	-	-	0.07	0.27	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category I	OTP/CPP/SGTP/TT	006475	-	-	0.64	2.55	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Accessible/Inaccessible	OTP/CPP/SGTP/TT	001101	-	-	2.20	8.81	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Unsafe	OTP/CPP/SGTP/TT	006568	-	-	0.53	2.11	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Category B	OTP/CPP/SGTP/TT	007874	-	-	1.89	7.58	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Category C	OTP/CPP/SGTP/TT	104928	-	-	0.03	0.11	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Category E	OTP/CPP/SGTP/TT	104925	-	-	0.23	0.94	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Category F	OTP/CPP/SGTP/TT	009709	-	-	0.01	0.03	-	-	-	-	-	-	-	-	-	-	-	-	NE
Compressor Seal	To VRS	OTP/CPP/SGTP/TT	006555	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	NE
	Exempt	OTP/CPP/SGTP/TT	006557	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	NE
	Sub-Total:					**9.75**	**38.99**													FE
Fugitive Components - Oil																				
Valve	Accessible	OTP/CPP/SGTP/TT	001092	-	-	0.03	0.11	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Inaccessible	OTP/CPP/SGTP/TT	001093	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Bellows / Background ppmv	OTP/CPP/SGTP/TT	006558	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category B	OTP/CPP/SGTP/TT	007877	-	-	0.00	0.01	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category H	OTP/CPP/SGTP/TT	001094	-	-	0.31	1.24	-	-	-	-	-	-	-	-	-	-	-	-	NE
Valve	Category H (Inaccessible)	OTP/CPP/SGTP/TT	005967	-	-	0.01	0.05	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Accessible/Inaccessible	OTP/CPP/SGTP/TT	001095	-	-	0.27	1.07	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Unsafe	OTP/CPP/SGTP/TT	007880	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Category B	OTP/CPP/SGTP/TT	001096	-	-	0.00	0.01	-	-	-	-	-	-	-	-	-	-	-	-	NE
Connection	Category F	OTP/CPP/SGTP/TT	009711	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	NE
Pump Seal	Single	OTP/CPP/SGTP/TT	007879	-	-	0.03	0.14	-	-	-	-	-	-	-	-	-	-	-	-	NE
Pump Seal	Dual/Tandem	OTP/CPP/SGTP/TT	006561	-	-	0.06	0.23	-	-	-	-	-	-	-	-	-	-	-	-	NE
	Exempt	OTP/CPP/SGTP/TT	006563	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	NE
	Sub-Total:					**0.71**	**2.85**													FE
Solvent Usage																				
	Cleaning/Degreasing	OTP/CPP/SGTP/TT	005740	-	-	0.25	1.00	-	-	-	-	-	-	-	-	-	-	-	-	FE

Note: GHG emission totals are not NSR emission limits. They are PTE calculations for the purpose of determining the source's major source status.

Table 5.3 Total Permitted Facility Emissions

A. Hourly

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG
Cogeneration Power Plant	89.87	29.43	182.82	2.05	9.56	7.65	7.65	70,801.38
SGTP - Incinerator	1.40	0.05	1.13	6.20	0.96	0.77	0.77	1,441.44
Thermal Oxidizer	0.66	0.04	0.56	0.15	0.05	0.05	0.05	793.18
Internal Combustion Engines	8.05	0.90	7.41	0.02	0.76	0.76	0.76	1,537.50
Crew Boats	105.56	3.44	15.53	0.04	6.26	6.01	6.01	4,186.62
Supply Boats	116.82	5.39	19.08	0.04	7.29	7.00	7.00	4,551.05
Pigging Equipment/Compressor Vents	-	0.59	-	-	-	-	-	-
Tanks/Sumps/Separators	-	20.86	-	-	-	-	-	-
Fugitive Components	-	9.55	-	-	-	-	-	-
Solvent Usage	-	0.69	-	-	-	-	-	-
Totals (lb/hr)	**322.36**	**70.94**	**226.54**	**8.49**	**24.88**	**22.24**	**22.24**	**83,311.2**

B. Daily

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG
Cogeneration Power Plant	436.11	185.48	1,069.55	49.09	229.47	183.58	183.58	1,699,233.12
SGTP - Incinerator	33.71	1.12	27.20	148.80	23.06	18.45	18.45	34,594.56
Thermal Oxidizer	15.94	0.88	13.41	3.49	1.22	1.22	1.22	19,036.23
Internal Combustion Engines	8.94	1.32	15.15	0.03	1.00	1.00	1.00	3,194.02
Crew Boats	633.35	20.63	93.18	0.24	37.55	36.05	36.05	25,119.72
Supply Boats	378.84	22.64	69.46	0.14	24.80	23.81	23.81	14,501.02
Pigging Equipment/Compressor Vents	-	2.38	-	-	-	-	-	-
Tanks/Sumps/Separators	-	500.69	-	-	-	-	-	-
Fugitive Components	-	229.28	-	-	-	-	-	-
Solvent Usage	-	5.52	-	-	-	-	-	-
Totals (lb/day)	**1,506.89**	**969.94**	**1,287.95**	**201.79**	**317.10**	**264.10**	**264.10**	**1,795,678.7**

C. Quarterly

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG
Cogeneration Power Plant	5.26	3.76	17.96	2.24	10.47	8.37	8.37	77,423.50
SGTP - Incinerator	1.54	0.05	1.24	4.92	1.05	0.84	0.84	1,578.38
Thermal Oxidizer	1.73	0.09	1.44	4.13	0.13	0.13	0.13	868.53
Internal Combustion Engines	0.06	0.01	0.16	0.00	0.01	0.01	0.01	33.03
Crew Boats	2.86	0.19	0.75	0.00	0.20	0.20	0.20	190.93
Supply Boats	1.79	0.10	0.39	0.00	0.15	0.15	0.15	96.23
Pigging Equipment/Compressor Vents	-	0.01	-	-	-	-	-	-
Tanks/Sumps/Separators	-	1.65	-	-	-	-	-	-
Fugitive Components	-	10.46	-	-	-	-	-	-
Solvent Usage	-	0.25	-	-	-	-	-	-
Totals (TPQ)	**13.24**	**16.57**	**21.94**	**11.29**	**12.01**	**9.69**	**9.69**	**80,190.6**

D. Annual

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG
Cogeneration Power Plant	20.82	14.96	71.40	8.95	41.87	33.50	33.50	309,798.02
SGTP - Incinerator	6.15	0.21	4.96	19.70	4.21	3.37	3.37	6,313.51
Thermal Oxidizer	5.24	0.29	4.39	10.85	0.40	0.40	0.40	3,474.11
Internal Combustion Engines	0.21	0.02	0.19	0.00	0.02	0.02	0.02	38.73
Crew Boats	11.43	0.74	3.01	0.01	0.82	0.79	0.79	763.71
Supply Boats	1.79	0.10	0.39	0.00	0.15	0.15	0.15	96.23
Pigging Equipment/Compressor Vents	-	0.03	-	-	-	-	-	-
Tanks/Sumps/Separators	-	6.30	-	-	-	-	-	-
Fugitive Components	-	41.84	-	-	-	-	-	-
Solvent Usage	-	1.00	-	-	-	-	-	-
Totals (TPY)	**45.63**	**65.50**	**84.34**	**39.51**	**47.46**	**38.21**	**38.21**	**320,484.3**

Table 5.5 Federal Potential to Emit

A. Hourly

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG
Cogeneration Power Plant	89.87	29.43	182.82	2.05	9.56	7.65	7.65	70,801.38
SGTP - Incinerator	1.40	0.05	1.13	6.20	0.96	0.77	0.77	1,441.44
Thermal Oxidizer	0.66	0.04	0.56	0.15	0.05	0.05	0.05	793.18
Internal Combustion Engines	8.05	0.90	7.41	0.02	0.76	0.76	0.76	1,537.50
Crew Boats	105.56	3.44	15.53	0.04	6.26	6.01	6.01	4,186.62
Supply Boats	116.82	5.39	19.08	0.04	7.29	7.00	7.00	4,551.05
Pigging Equipment/Compressor Vents	-	0.59	-	-	-	-	-	-
Tanks/Sumps/Separators	-	20.86	-	-	-	-	-	-
Fugitive Components	-	9.55	-	-	-	-	-	-
Solvent Usage	-	0.69	-	-	-	-	-	-
Totals (lb/hr)	**322.36**	**70.94**	**226.54**	**8.49**	**24.88**	**22.24**	**22.24**	**83,311.2**

B. Daily

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG
Cogeneration Power Plant	436.11	185.48	1,069.55	49.09	229.47	183.58	183.58	1,699,233.12
SGTP - Incinerator	33.71	1.12	27.20	148.80	23.06	18.45	18.45	34,594.56
Thermal Oxidizer	15.94	0.88	13.41	3.49	1.22	1.22	1.22	19,036.23
Internal Combustion Engines	8.94	1.32	15.15	0.03	1.00	1.00	1.00	3,194.02
Crew Boats	633.35	20.63	93.18	0.24	37.55	36.05	36.05	25,119.72
Supply Boats	378.84	22.64	69.46	0.14	24.80	23.81	23.81	14,501.02
Pigging Equipment/Compressor Vents	-	2.38	-	-	-	-	-	-
Tanks/Sumps/Separators	-	500.69	-	-	-	-	-	-
Fugitive Components	-	229.28	-	-	-	-	-	-
Solvent Usage	-	5.52	-	-	-	-	-	-
Totals (lb/day)	**1,506.89**	**969.94**	**1,287.95**	**201.79**	**317.10**	**264.10**	**264.10**	**1,795,678.7**

C. Quarterly

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG
Cogeneration Power Plant	5.26	3.76	17.96	2.24	10.47	8.37	8.37	77,423.50
SGTP - Incinerator	1.54	0.05	1.24	4.92	1.05	0.84	0.84	1,578.38
Thermal Oxidizer	1.73	0.09	1.44	4.13	0.13	0.13	0.13	868.53
Internal Combustion Engines	0.06	0.01	0.16	0.00	0.01	0.01	0.01	33.03
Crew Boats	2.86	0.19	0.75	0.00	0.20	0.20	0.20	190.93
Supply Boats	1.79	0.10	0.39	0.00	0.15	0.15	0.15	96.23
Pigging Equipment/Compressor Vents	-	0.01	-	-	-	-	-	-
Tanks/Sumps/Separators	-	1.65	-	-	-	-	-	-
Fugitive Components	-	10.46	-	-	-	-	-	-
Solvent Usage	-	0.25	-	-	-	-	-	-
Totals (TPQ)	**13.24**	**16.57**	**21.94**	**11.29**	**12.01**	**9.69**	**9.69**	**80,190.6**

D. Annual

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG
Cogeneration Power Plant	20.82	14.96	71.40	8.95	41.87	33.50	33.50	309,798.02
SGTP - Incinerator	6.15	0.21	4.96	19.70	4.21	3.37	3.37	6,313.51
Thermal Oxidizer	5.24	0.29	4.39	10.85	0.40	0.40	0.40	3,474.11
Internal Combustion Engines	0.21	0.02	0.19	0.00	0.02	0.02	0.02	38.73
Crew Boats	11.43	0.74	3.01	0.01	0.82	0.79	0.79	763.71
Supply Boats	1.79	0.10	0.39	0.00	0.15	0.15	0.15	96.23
Pigging Equipment/Compressor Vents	-	0.03	-	-	-	-	-	-
Tanks/Sumps/Separators	-	6.30	-	-	-	-	-	-
Fugitive Components	-	41.84	-	-	-	-	-	-
Solvent Usage	-	1.00	-	-	-	-	-	-
Totals (TPY)	**45.63**	**65.50**	**84.34**	**39.51**	**47.46**	**38.21**	**38.21**	**320,484.3**

9.0 Permit Conditions

This section lists the applicable permit conditions for the Las Flores Canyon (LFC) Oil Treating Plant, Stripping Gas Treating Plant, Cogeneration Power Plant, Transportation Terminal facilities and Marine Support Vessels that comprise the Santa Ynez Expansion Project. Section 9 contains the permit's enforceable requirements.

Section 9.A lists the standard administrative conditions. Section 9.B lists 'generic' permit conditions, including emission standards, for all equipment in this permit. Section 9.C lists conditions affecting specific equipment. Section 9.D lists non-federally enforceable (i.e., District only) permit conditions. Conditions listed in Sections A, B and C are enforceable by the USEPA, the District, the State of California and the public. Conditions listed in Section D are enforceable only by the District and the State of California. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, that part of the permit referred to is federally enforceable.

9.A Standard Administrative Conditions

A.1 **Condition Acceptance**. Acceptance of this operating permit by ExxonMobil shall be considered as acceptance of all terms, conditions, and limits of this permit. [*Re: ATC 5651, PTO 5651*]

A.2 **Grounds for Revocation.** Failure to abide by and faithfully comply with this permit or any Rule, Order, or Regulation may constitute grounds for revocation pursuant to California Health & Safety Code Section 42307 *et seq*. [*Re: ATC 5651, PTO 5651*]

A.3 **Defense of Permit**. ExxonMobil agrees, as a condition of the issuance and use of this permit, to defend at its sole expense any action brought against the District because of issuance of this permit. ExxonMobil shall reimburse the District for any and all costs including, but not limited to, court costs and attorney's fees which the District may be required by a court to pay as a result of such action. The District may, at its sole discretion, participate in the defense of any such action, but such participation shall not relieve ExxonMobil of its obligation under this condition. The District shall bear its own expenses for its participation in the action. [*Re: ATC 5651, PTO 5651*]

A.4 **Reimbursement of Costs.** All reasonable expenses, as defined in District Rule 210, incurred by the District, District contractors, and legal counsel for all activities that follow the issuance of this permit, including but not limited to permit condition implementation, compliance verification and emergency response, directly and necessarily related to enforcement of the permit shall be reimbursed by ExxonMobil as required by Rule 210. [*Re: ATC 5651, PTO 5651*]

A.5 **Access to Records and Facilities.** As to any condition that requires for its effective enforcement the inspection of records or facilities by the District or its agents, ExxonMobil shall make such records available or provide access to such facilities upon notice from the District. Access shall

mean access consistent with California Health and Safety Code Section 41510 and Clean Air Act Section 114A. [*Re: ATC 5651, PTO 5651*]

A.6 **Conflicts Between Conditions.** In the event that any condition herein is determined to be in conflict with any other condition contained herein, then, if principles of law do not provide to the contrary, the condition most protective of air quality and public health and safety shall prevail to the extent feasible. [*Re: ATC 5651, PTO 5651*]

A.7 **Compliance.** Nothing contained within this permit shall be construed to allow the violation of any local, State or Federal rule, regulation, ambient air quality standard or air quality increment. [*Re: ATC 5651, PTO 5651*]

A.8 **Consistency with Analysis.** Operation under this permit shall be conducted consistent with all data, specifications and assumptions included with the application and supplements thereof (as documented in the District's project file) and the District's analyses under which this permit is issued as documented in the Permit Analyses prepared for and issued with the permit. [*Re: ATC 5651, PTO 5651*]

A.9 **Consistency with State and Local Permits.** Nothing in this permit shall relax any air pollution control requirement imposed on the Santa Ynez Unit Project by:

(a) The County of Santa Barbara Final Development Plan Permit 87-DP-32cz and any subsequent modifications; and,

(b) The California Coastal Commission in the consistency determination for the Project with the California Coastal Act.

[*Re: ATC 5651, PTO 5651*]

A.10 **Compliance with Permit Conditions.**

(a) The permittee shall comply with all permit conditions in Sections 9.A, 9.B and 9.C.

(b) This permit does not convey property rights or exclusive privilege of any sort.

(c) Any permit noncompliance with sections 9.A, 9.B, or 9.C constitutes a violation of the Clean Air Act and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application.

(d) 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 the conditions of this permit.

(e) A pending permit action or notification of anticipated noncompliance does not stay any permit condition.

(f) Within a reasonable time period, the permittee shall furnish any information requested by the Control Officer, in writing, for the purpose of determining:

(i) compliance with the permit, or

(ii) whether or not cause exists to modify, revoke and reissue, or terminate a permit or for an enforcement action.

(g) In the event that any condition herein is determined to be in conflict with any other condition contained herein, then, if principles of law do not provide to the contrary, the condition most protective of air quality and public health and safety shall prevail to the extent feasible. [*Re: 40 CFR Part 70.6.(a)(6), District Rules 1303.D.1*]

A.11 **Emergency Provisions.** The permittee shall comply with the requirements of the District, Rule 505 (Upset/Breakdown rule) and/or District Rule 1303.F, whichever is applicable to the emergency situation. In order to maintain an affirmative defense under Rule 1303.F, the permittee shall provide the District, in writing, a "notice of emergency" within two (2) working days of the emergency. The "notice of emergency" shall contain the information/documentation listed in Sections (1) through (5) of Rule 1303.F. [*Re: 40 CFR 70.6(g), District Rule 1303.F*]

A.12 **Compliance Plans.**

(a) The permittee shall comply with all federally enforceable requirements that become applicable during the permit term in a timely manner.

(b) For all applicable equipment, the permittee shall implement and comply with any specific compliance plan required under any federally-enforceable rules or standards.

[*Re: District Rule 1302.D.2*]

A.13 **Severability.** In the event that any condition herein is determined to be invalid, all other conditions shall remain in force. [Ref: Rule 1303]

A.14 **Right of Entry.** The Regional Administrator of USEPA, the Control Officer, or their authorized representatives, upon the presentation of credentials, shall be permitted to enter upon the premises where a Part 70 Source is located or where records must be kept:

(a) To inspect the stationary source, including monitoring and control equipment, work practices, operations, and emission-related activity;

(b) To inspect and duplicate, at reasonable times, records required by this Permit to Operate;

(c) To sample substances or monitor emissions from the source or assess other parameters to assure compliance with the permit or applicable requirements, at reasonable times. Monitoring of emissions can include source testing.

[*Re: District Rule 1303.D.2*]

A.15 **Permit Life.** The Part 70 permit shall become invalid three years from the date of issuance unless a timely and complete renewal application is submitted to the District. Any operation of the source to which this Part 70 permit is issued beyond the expiration date of this Part 70 permit and without a valid Part 70 operating permit (or a complete Part 70 permit renewal application) shall be a violation of the CAAA, § 502(a) and 503(d) and of the District rules. The permittee shall apply for renewal of the Part 70 permit no later than 6 months before the date of the permit expiration. Upon submittal of a timely and complete renewal application, the Part 70 permit shall remain in effect until the Control Officer issues or denies the renewal application. [*Re: District Rule 1304.D.1*]

A.16 **Payment of Fees.** The permittee shall reimburse the District for all its Part 70 permit processing and compliance expenses for the stationary source on a timely basis. Failure to reimburse on a timely basis shall be a violation of this permit and of applicable requirements and can result in forfeiture of the Part 70 permit. Operation without a Part 70 permit subjects the source to potential enforcement action by the District and the USEPA pursuant to section 502(a) of the Clean Air Act. [*Re: District Rules 1303.D.1 and 1304.D.11, 40 CFR 70.6(a)(7*)]

A.17 **Prompt Reporting of Deviations.** The permittee shall submit a written report to the District documenting each and every deviation from the requirements of this permit or any applicable federal requirements within seven (7) days after discovery of the violation, but not later than 6 months after the date of occurrence. The report shall clearly document 1) the probable cause and extent of the deviation 2) equipment involved, 3) the quantity of excess pollutant emissions, if any, and 4) actions taken to correct the deviation. The requirements of this condition shall not apply to deviations reported to District in accordance with Rule 505. Breakdown Conditions, or Rule 1303.F Emergency Provisions. [*District Rule 1303.D.1, 40 CFR 70.6(a) (3)*]

A.18 **Reporting Requirements/Compliance Certification.** The permittee shall submit compliance certification reports to the USEPA and the Control Officer every six months. These reports shall be submitted on District approved forms and shall identify each applicable requirement/condition of the permit, the compliance status with each requirement/condition, the monitoring methods used to determine compliance, whether the compliance was continuous or intermittent, and include detailed information on the occurrence and correction of any deviations from permit requirement. The reporting periods shall be each half of the calendar year, e.g., January through June for the first half of the year. These reports shall be submitted by September 1st and March 1st, respectively, each year. Supporting monitoring data shall be submitted in accordance with the "Semi-Annual Compliance Verification Report" condition in Section 9.C. The permittee shall

include a written statement from the responsible official, which certifies the truth, accuracy, and completeness of the reports. [*Re: District Rules 1303.D.1, 1302.D.3, 1303.2.c*]

A.19 **Federally Enforceable Conditions.** Each federally enforceable condition in this permit shall be enforceable by the USEPA and members of the public. None of the conditions in the District-only enforceable section of this permit are federally enforceable or subject to the public/USEPA review. [*Re: CAAA § 502(b)(6), 40 CFR 70.6(b*)]

A.20 **Recordkeeping Requirements.** The permittee shall maintain records of required monitoring information that include the following:

(a) The date, place as defined in the permit, and time of sampling or measurements;

(b) The date(s) analyses were performed;

(c) The company or entity that performed the analyses;

(d) The analytical techniques or methods used;

(e) The results of such analyses; and

(f) The operating conditions as existing at the time of sampling or measurement;

The records (electronic or hard copy), as well as all supporting information including calibration and maintenance records, shall be maintained for a minimum of five (5) years from date of initial entry by the permittee and shall be made available to the District upon request. [*Re: District Rule 1303.D.1.f, 40 CFR 70.6(a)(3)*]

A.21 **Conditions for Permit Reopening.** The permit shall be reopened and revised for cause under any of the following circumstances:

(a) Additional Requirements: If additional applicable requirements (e.g., NSPS or MACT) become applicable to the source which has an unexpired permit term of three (3) or more years, the permit shall be reopened. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement. However, no such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended. All such re-openings shall be initiated only after a 30 day notice of intent to reopen the permit has been provided to the permittee, except that a shorter notice may be given in case of an emergency.

(b) Inaccurate Permit Provisions: If the District or the USEPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

(c) Applicable Requirement: If the District or the USEPA determines that the permit must be revised or revoked to assure compliance with any applicable requirement including a

federally enforceable requirement, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

Administrative procedures to reopen a permit shall follow the same procedures as apply to initial permit issuance. Re-openings shall affect only those parts of the permit for which cause to reopen exists.

If a permit is reopened, the expiration date does not change. Thus, if the permit is reopened, and revised, then it will be reissued with the expiration date applicable to the re-opened permit. [*Re: 40 CFR 70.7(f), 40 CFR 70.6(a)*]

A.22 **Permit Shield.** The rules and regulations listed in Table 1.1 of this permit have been specifically identified as non-applicable to the Las Flores Canyon facility. This shield shall remain in effect until expiration of this permit or re-opening and re-issuance of this permit. [*Re: 40 CFR 70.6(f), District Rule 1303.E.4*]

A.23 **Credible Evidence.** Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defenses otherwise available to the permittee, including but not limited to, any challenge to the Credible Evidence Rule (see 62 Fed. Reg. 8314, Feb. 24, 1997), in the context of any future proceeding. [*Re: 40 CFR 52.12(c)*]

A.24 **Risk Management Plan – Section 112r.** ExxonMobil shall comply with the requirements of 40 CFR 68 on chemical accident prevention provisions. The annual compliance certification must include a statement regarding compliance with this part, including the registration and submission of the risk management plan (RMP). [*Re: 40 CFR 68*]

A.25 **Emission Factor Revisions**. The District may update the emission factors for any calculation based on USEPA AP-42 or District P&P emission factors at the next permit modification or permit reevaluation to account for USEPA and/or District revisions to the underlying emission factors. Further, ExxonMobil shall modify its permit via an ATC application if compliance data shows that an emission factor used to develop the permit's potential to emit is lower than that documented in the field. The ATC permit shall, at a minimum, adjust the emission factor to that documented by the compliance data consistent with applicable rules, regulations and requirements. [*Re: ATC 5651, PTO 5651*]

9.B Generic Conditions

The generic conditions listed below apply to all emission units, regardless of their category or emission rates. These conditions are federally enforceable. These rules apply to the equipment and operations at the Las Flores Canyon facility as they currently exist. Compliance with these requirements is discussed in Section 3.4.2. In the case of a discrepancy between the wording of a condition and the applicable District rule, the wording of the rule shall control.

B.1 **Circumvention (Rule 301).** A person shall not build, erect, install, or use any article, machine, equipment or other contrivance, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Division 26 (Air Resources) of the Health and Safety Code of the State of California or of these Rules and Regulations. This Rule shall not apply to cases in which the only violation involved is of Section 41700 of the Health and Safety Code of the State of California, or of District Rule 303. [*Re: District Rule 301*]

B.2 **Visible Emissions (Rule 302).** ExxonMobil shall not discharge into the atmosphere from any single source of emission any air contaminants for a period or periods aggregating more than three minutes in any one hour which is:

(a) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or
(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection B.2.(a) above.
(c) ExxonMobil shall determine compliance with the requirements of this Condition/Rule and Condition C.43. [*Re: District Rule 302*]

B.3 **Nuisance (Rule 303).** No pollutant emissions from any source at ExxonMobil shall create nuisance conditions. No operations shall endanger health, safety or comfort, nor shall they damage any property or business. [*Re: District Rule 303*]

B.4 **PM Concentration - South Zone (Rule 305).** ExxonMobil shall not discharge into the atmosphere, from any source, particulate matter in excess of the concentrations listed in Table 305(a) of Rule 305. [*Re: District Rule 305*]

B.5 **Specific Contaminants (Rule 309).** ExxonMobil shall not discharge into the atmosphere from any single source sulfur compounds, hydrogen sulfide, combustion contaminants and carbon monoxide in excess of the standards listed in Sections A, B and G of Rule 309. ExxonMobil shall not discharge into the atmosphere from any fuel burning equipment unit, sulfur compounds, nitrogen oxides or combustion contaminants in excess of the standards listed in Section E and F of Rule 309. [*Re: District Rule 309*

B.6 **Sulfur Content of Fuels (Rule 311).** ExxonMobil shall not burn fuels with a sulfur content in excess of 0.5% (by weight) for liquid fuels and 239 ppmvd or 15 gr/100scf (calculated as H_2S) for gaseous fuels. Compliance with this condition shall be based on continuous monitoring of the fuel gas with H_2S and HHV analyzers, quarterly total sulfur content measurements of the fuel gas using ASTM or other District-approved methods and diesel fuel billing records or other data showing the certified sulfur content for each shipment. [*Re: District Rule 311*]

B.7 **Organic Solvents (Rule 317).** ExxonMobil shall comply with the emission standards listed in Section B of Rule 317. Compliance with this condition shall be based on ExxonMobil's compliance with Condition C.7 (*Solvent Usage*) of this permit. [*Re: District Rule 317*]

B.8 **Solvent Cleaning Operations (Rule 321).** ExxonMobil shall comply with the operating requirement, equipment requirements and emission control requirements for all solvent cleaners subject to this Rule. Compliance shall be based on District inspection of the existing cold solvent cleaner and a thorough ATC application review for future solvent cleaners (if any). [*Re: District Rule 321*]

B.9 **Metal Surface Coating Thinner and Reducer (Rule 322).** The use of photochemically reactive solvents as thinners or reducers in metal surface coatings is prohibited. Compliance with this condition shall be based on ExxonMobil's compliance with Condition C.7 (*Solvent Usage*) of this permit, and facility inspections. [*Re: District Rule 322*]

B.10 **Architectural Coatings (Rule 323.1):** ExxonMobil shall comply with the rule requirements for any architectural coating that is supplied, sold, offered for sale, or manufactured for use within the District

B.11 **Disposal and Evaporation of Solvents (Rule 324).** ExxonMobil shall not dispose through atmospheric evaporation more than one and a half gallons of any photochemically reactive solvent per day. Compliance with this condition shall be based on ExxonMobil's compliance with Condition C.7 (*Solvent Usage*) of this permit, and facility inspections. [*Re: District Rule 324*]

B.12 **Continuous Emissions Monitoring (Rule 328).** ExxonMobil shall comply with the requirements of Section C, F, G, H and I of Rule 328. Compliance shall be based on the monitoring, recordkeeping and reporting requirements of this permit as well as on-site inspections. [*Re: District Rule 328*]

B.13 **Adhesives and Sealants (Rule 353).** The permittee shall not use adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, or any other primers, unless the permittee complies with the following:

(a) Such materials used are purchased or supplied by the manufacturer or suppliers in containers of 16 fluid ounces or less; or alternately

(b) When the permittee uses such materials from containers larger than 16 fluid ounces and the materials are not exempt by Rule 353, Section B.1, the total reactive organic compound emissions from the use of such material shall not exceed 200 pounds per year unless the substances used and the operational methods comply with Sections D, E, F, G, and H of Rule 353. Compliance shall be demonstrated by recordkeeping in accordance with Section B.2 and/or Section O of Rule 353. *[Re: District Rule 353*]

B.14 **Boilers, Water Heaters, and Process Heaters (0.075 – 2 MMBtu/hr) (Rule 360).** Any boiler, water heater, steam generator, or process heater rated greater than or equal to 75,000 Btu/hr and less than or equal to 2.000 MMBtu/hr and manufactured after October 17, 2003 shall be certified per the provisions of Rule 360. An ATC/PTO permit shall be obtained prior to installation of any grouping of boilers, water heaters, steam generators, or process heaters subject to Rule 360 whose combined system design heat input rating exceeds 2.000 MMBtu/hr.

B.15 **Breakdowns (Rule 505).** ExxonMobil shall promptly report: (a) breakdowns that result in violations of emission limitations or restrictions prescribed by District Rules or by this permit, or (b) any in-stack, continuous monitoring equipment breakdowns; such reporting shall be made in conformance with the requirements of Rule 505, Sections A, B.1 and D.

B.16 **Emergency Episode Plan (Rule 603).** During emergency episodes, ExxonMobil shall implement the District approved *Emergency Episode Plan* for the Las Flores Canyon facility. The content of the plan shall be in accordance with the provisions of Rule 603. [*Re: District Rule 1303, 40 CFR 70.6*]

B.17 **CARB Registered Portable Equipment.** State registered portable equipment shall comply with State registration requirements. A copy of the State registration shall be readily available whenever the equipment is at the facility. [*Re: District Rule 202*]

B.18 **Oil and Natural Gas Production MACT.** ExxonMobil shall comply with the following MACT requirements:

(a) NGL Storage Vessels

(i) *Operational Limits (40 CFR 63.766(b)(2))*:

(1) ExxonMobil shall operate the storage tanks with no detectable emissions at all times that material is in the storage vessel. No detectable emissions is defined as emissions less than 500 ppmv (40 CFR 63.772(c)(8)).

(2) One or more safety devices that vent directly to the atmosphere may be used on the storage tanks.

(ii) *Inspection and Monitoring Requirements*:

(1) ExxonMobil shall perform inspection and monitoring per District Rule 331 to maintain fugitive emission components on the storage tanks at no detectable emissions. Inspection results shall be submitted with the Notification of Compliance Status Report.

(iii) *Recordkeeping Requirements (40 CFR 63.774(b))*:

(1) ExxonMobil shall retain at least five (5) years of information as required in this section. The most recent twelve (12) months of records shall be kept in a readily accessible location; the previous four (4) years may be retained offsite. Records may be maintained in hard copy or computer-readable form.

(2) ExxonMobil shall maintain records identifying ancillary equipment and compressors controlled under 40 CFR part 60, subpart HH (40 CFR 63.774(b)(9)).

(iv) *Reporting Requirements (40 CFR 63.775)*:

(1) ExxonMobil shall submit the Periodic Report semiannually beginning August 17, 2003.

(2) ExxonMobil shall submit a report within one hundred eighty (180) days of a change to the process or information submitted in the Notification of Compliance Status Report per 40 CFR 63.775(f)

(b) Ancillary Equipment and Compressors in VHAP Service

(i) For ancillary equipment (as defined in 40 CFR 63.761) and compressors at LFC subject to 40 CFR 63 subpart HH, ExxonMobil shall comply with the requirements for equipment leaks specified in 40 CFR 63.769.

(ii) *Recordkeeping requirements (40 CFR 63.774(b))*:

(1) All applicable recordkeeping requirements from 40 CFR 63.774 shall be maintained. ExxonMobil shall retain at least five (5) years of information as required in this section. The most recent twelve (12) months of records shall be kept in a readily accessible location; the previous four (4) years may be retained offsite. Records may be maintained in hard copy or computer-readable form (40 CFR 63.774(b)(1)).

(iii) *Reporting Requirements (40 CFR 63.775)*:

(1) LFC shall submit the Periodic Report semiannually beginning August 17, 2003. All applicable recordkeeping requirements from 40 CFR 63.774 shall be included in the Periodic Report.

(2) LFC shall submit a report within one hundred eighty (180) days of a change to the process or information submitted in the Notification of Compliance Status Report per 40 CFR 63.775(f).

(c) General Recordkeeping (40 CFR 63.10(b)(2))

(i) ExxonMobil shall maintain records of the occurrence and duration of each startup, shutdown, or malfunction of operation;

(ii) Actions taken during periods of startup, shutdown, and malfunction when different from the procedures specified in ExxonMobil's startup, shutdown, and malfunction plan (SSMP);

(iii) All information necessary to demonstrate conformance with ExxonMobil's SSMP when all actions taken during periods of startup, shutdown, and malfunction are consistent with the procedures specified in such plan;

(iv) All required measurements needed to demonstrate compliance with a relevant standard, including all records with respect to applicability determination, and black oil documentation per 40 CFR 63.760;

(v) Any information demonstrating whether a source is meeting the requirements for a waiver of record-keeping or reporting requirements under this condition.

(vi) ExxonMobil shall maintain records of SSM events indicating whether or not the SSMP was followed;

(vii) ExxonMobil shall submit a semi-annual startup, shutdown, and malfunction report as specified in 40 CFR 63.10.d.5. The report shall be due by July 30th and January 30th. *[Re:* 40 CFR 63, Subpart HH*]*

9.C Requirements and Equipment Specific Conditions

Federally-enforceable conditions, including emissions and operations limits, monitoring, recordkeeping and reporting are included in this section. This section may also contain other non-generic conditions. The following conditions amend the Part 70 Operating Permit for this facility. The remaining conditions of the Part 70 Operating Permit remain in full force and effect.

C.1 **Cogeneration Power Plant.** The following equipment are included in this emissions unit category:

Device Name	ExxonMobil ID	District Device No
Cogeneration Power Plant		*102766*
Gas Turbine	CPP/ZAN-2501	006585
Heat Recovery Steam Generator	CPP/EAL-2601	007865
Turbine Bypass Stack	CPP/ZAN-2501	007864
Combustion - Cogen Power Plant: Planned Bypass Mode		
Startup and Shutdown 22 MW	ZAN-2501/ EAL-2601	07866
Maintenance and Testing 4 MW	ZAN-2501	007864

(a) Emission Limits: Except as noted below, mass emissions from the Cogeneration Power Plant (CPP) shall not exceed the limits listed in Tables 5.3 and 5.4. The *Normal Operation Mode/Heat Recovery Steam Generator* line item in Tables 5.3 and 5.4 shall not be enforced. With the exception of NOx and CO, compliance shall be based on sliding one-hour average values comprised of 15-minute average data points through the use of process monitors (e.g., fuel use meters) and CEMS; and the monitoring, recordkeeping and reporting conditions of this permit. Compliance for NOx and CO shall be based on 3-hour rolling average values through the use of process monitors (e.g. fuel use meters) and CEMS; and the monitoring, recordkeeping and reporting conditions of this permit. For pollutants without CEMS monitors, the permitted emission factors in Table 5.2 shall be used for determining compliance with the mass emission rates. In addition, the following specific emission limits apply:

(i) *BACT/BARCT Limits* – Except during the Planned Bypass Mode, the emissions, after control from the CPP shall not exceed the BACT and BARCT limits listed in Tables 4.2 (*BACT/BARCT Performance Standards*). Compliance shall be based on annual source testing for all pollutants. In addition, CEMs shall be used to determine compliance with the BARCT NO_X and CO, emission concentrations limits in Table 9.1 below (parts per million volume dry at 15 percent oxygen). Compliance for all constituents except NO_X and CO shall be based on 15-minute clock average values. Compliance for NO_X and CO shall be based on 3-hour rolling average values.

(ii) The BARCT concentration limits in Table 9.1 apply only during Normal Operations and the HRSG Only modes as defined in Section 4.2.2 of this permit. Further, in addition to the concentration limits, CO mass emissions shall not exceed 17.0 lb/hr.

Table 9.1 BARCT Concentration Limits (at 15% O_2)

Operating Mode	NO_X (as NO_2)	CO
Gas Turbine Only Operations	2.0	9.6
Gas Turbine/HRSG Tandem Operations	2.0	11.6
HRSG Only Operations	2.0	132.4

(iii) *Ammonia Slip* – Except during the Planned Bypass Mode, the concentration of ammonia from the CPP stack shall not exceed 10 ppmv at 15% O_2. Compliance shall be based on source testing and during inspections using absorbent tubes or bag samples.

(iv) *NSPS Subpart GG* – Per 40 CFR 60.333, ExxonMobil shall comply with the following sulfur dioxide standards:

(1) 0.015 percent by volume (at 15% O_2);

(2) Fuel gas must not have a sulfur content in excess of 0.8 percent by weight.

(b) Operational Limits: The following operational limits apply to the CPP:

(i) *Fuel Gas Sulfur Limit* – ExxonMobil shall only use pipeline quality natural gas as fuel for the CPP. The natural gas shall contain total sulfur in concentrations not to exceed 24 ppmvd. Compliance with this condition shall be based on monitoring, recordkeeping and reporting requirements of this permit.

(ii) *Operating Mode Limits* – ExxonMobil may only operate the CPP in one of the three modes (Normal Operations Mode, HRSG Mode and Planned Bypass Mode) as defined in Section 4.2.2 of this permit. Compliance shall be based on the monitoring, recordkeeping and reporting requirements of this permit.

(iii) *Usage Limits – Normal Operations Mode* – ExxonMobil shall comply with the following usage limits:

(1) Combined Gas Turbine and HRSG Heat Input: 605.140 MMBtu/hr; 14,523 MMBtu/day; 1,321,626 MMBtu/quarter; 5,290,134 MMBtu/year

(2) Bypass Stack Flow Rate: The exhaust flow rate from the gas turbine bypass stack shall not exceed 386 dscfm.

(3) Compliance shall be based on the monitoring, recordkeeping and reporting requirements of this permit.

(iv) *Usage Limits – HRSG Mode* – ExxonMobil shall comply with the following usage limits:

(1) Gas Turbine Heat Input: no fuel input is allowed to the gas turbine.

(2) HRSG Heat Input: 345.000 MMBtu/hr; 8,280 MMBtu/day; 753,480 MMBtu/quarter; 3,015,990 MMBtu/year.

(3) Compliance shall be based on the monitoring, recordkeeping and reporting requirements of this permit.

(v) *Usage Limits – Planned Bypass Mode* – ExxonMobil shall comply with the following usage limits:

(1) Gas Turbine/HRSG Heat Input– Startup and Shutdown: 309 MMBtu/hr; 618 MMBtu/day; 1,853 MMBtu/quarter; 5,559 MMBtu/year

(2) Operating Hours– Startup and Shutdown: 2 hours/day; 6 hours/quarter; 18 hours/year

(3) Gas Turbine/HRSG Heat Input – Maintenance and Testing: 175 MMBtu/hr; 700 MMBtu/day; 962 MMBtu/quarter; 3850 MMBtu/year

(4) Operating Hours – Maintenance and Testing: 4 hours/day; 5.5 hours/quarter; 22 hours/year

(5) Compliance shall be based on the monitoring, recordkeeping and reporting requirements of this permit.

(vi) *Emission Controls – Gas Turbine* - ExxonMobil shall use steam injection and selective catalytic reduction (SCR) emission controls at all times when operating the gas turbine during the Normal Operations Mode and shall achieve a minimum of 90 percent (by mass) overall reduction and a minimum of 80 percent (by mass) NO_X reduction across the SCR. Except during planned bypass operations, the steam-to-fuel injection ratio to the gas turbine shall be maintained at a minimum ratio of 0.6 lb H_2O/1.0 lb fuel and the ammonia injection ratio to the SCR reactor shall be maintained at a minimum ratio of 1.0 lb-mole NH_3/1.0 lb-mole NO_X (inlet). The steam and ammonia injection ratios shall be based on a 15-minute clock average (or less). Compliance shall be based on the monitoring and recordkeeping requirements of this permit.

(vii) *Emission Controls – HRSG* - ExxonMobil shall use low-NO_X burners and selective catalytic reduction (SCR) emission controls at all times when operating the HRSG during the Normal Operations Mode and HRSG Only Mode and shall achieve a minimum of 80 percent (by mass) NO_X reduction across the SCR. Except during planned bypass operations, the ammonia injection ratio to the SCR reactor shall be maintained at a minimum ratio of 1.0 lb-mole NH_3/1.0 lb-mole NO_X (inlet). The ammonia injection ratio shall be based on a 15-minute clock average (or less). Compliance shall be based on the monitoring and recordkeeping requirements of this permit.

(viii) *Emission Controls – SCR Unit* - ExxonMobil shall operate and maintain the SCR unit according to the manufacturer's instructions and operations manuals. These instructions and manuals shall be kept onsite. The flue gas entering the SCR unit shall be maintained (during Normal Operations Mode and HRSG Only Mode) between 500 ºF and 750 ºF. Compliance shall be based on the monitoring and recordkeeping requirements of this permit. ExxonMobil shall use grid power during periods when the SCR catalyst is no longer capable of achieving the NO_X BACT standards and during catalyst replacements.

(ix) *Planned Bypass Operations* – ExxonMobil shall minimize pollutant emissions during all CPP planned bypass operating periods. During gas turbine shutdown, ExxonMobil shall operate the steam injection system until the point of flame instability. During gas turbine startup, ExxonMobil shall initiate steam injection once a stable flame can be maintained and shall inject ammonia at a minimum ratio of 1.0 lb-mole NH_3/1.0 lb-mole NO_X (inlet) to the SCR once a minimum operating temperature of 500 ºF is reached (this requirement does not limit ExxonMobil from introducing ammonia at temperatures lower than 500 ºF). The ammonia injection ratio shall be based on a 15-minute clock average (or less). Compliance shall be based on the monitoring and recordkeeping requirements of this permit and District inspections. To eliminate projected 1-hr NO_x ambient air quality standard violation due to planned bypass operations, ExxonMobil shall not initiate CPP startup or shutdown operations or maintenance and testing operations while the POPCO facility thermal oxidizer is flaring during a gas plant startup. ExxonMobil shall implement District-approved procedures to ensure that this restriction is met.

(x) *SCR Replacement* - With prior written notification to the District, ExxonMobil may replace the existing catalyst with a new unit consistent with the requirements of this permit and as long as no emission or permit exceedances occur.

(xi) *Bypass Stack* - The damper on the gas turbine bypass stack shall remain in a fully closed position except during the startup and shutdown of the turbine. During start-up, the damper on the bypass stack shall remain open only for the period from when the turbine is down to when it reaches 4 MW. In no case shall the damper on the bypass stack remain open for more than 120 minutes during any startup or

shutdown period. If testing or maintenance is performed, the bypass damper may remain open if the load on the turbine does not exceed 4 MW, and the maintenance and testing period does not exceed 240 minutes. Leakage exhaust rate from the bypass stack during the Normal Operations Mode shall be assumed to be 1 percent of the exhaust flow rate from the turbine at all times. ExxonMobil shall implement an operations and maintenance program to ensure that the bypass damper is properly functioning at all times. Compliance shall be based on the monitoring, recordkeeping and reporting requirements of this permit.

(c) Monitoring: ExxonMobil shall monitor the emission and process parameters listed in Table 10.1 for the life of the project. ExxonMobil shall perform annual source testing of the CPP consistent with the requirements listed in Table 4.5 and the source testing condition of this permit. In addition, ExxonMobil shall:

(i) Monitor the dates and times of Startup and Shutdown operations and Maintenance and Testing operations.

(ii) Continuously monitor the fuel gas using H_2S and HHV analyzers.

(iii) Perform quarterly total sulfur content measurements of the fuel gas using ASTM or other District-approved methods. ExxonMobil shall utilize District-approved sampling and analysis procedures.

(d) Recordkeeping: ExxonMobil shall record the emission and process parameters listed in Table 10.1. Further, except where noted, ExxonMobil shall maintain hardcopy records of the following:

(i) For each operating mode, the daily, quarterly and annual heat input in units of million Btu for the gas turbine and HRSG. In addition, the five highest hourly heat input rates per month in units of MMBtu/hr.

(ii) *CPP Planned Bypass Mode* - Daily, quarterly and annual records identifying the time and duration the CPP is in the *Planned Bypass Mode*.

(iii) Documentation (log) of actions taken by ExxonMobil to minimize emissions during each CPP startup and shutdown event shall be maintained. This documentation shall include a timeline of each event showing: when the bypass stack is opened/closed (including the duration), the turbine and HRSG heat inputs, the exhaust temperature to the SCR, when steam injection is turned on/off, when ammonia injection is turned on/off, exhaust flow rates from the bypass and main stacks, MW produced by the gas turbine generator, and the concentration and mass emissions of NO_x and CO. The log shall also indicate all times when testing and maintenance operations occur as well as the nature of the testing and maintenance.

(iv) On a continuous basis, the rate of steam injection to the gas turbine in units of pounds steam per pound fuel, the rate of ammonia injection to the SCR in units of

lb-moles ammonia to lb-moles inlet NO_X, and the temperature of the flue gas entering the SCR. These records may be maintained in an electronic format.

(e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all data required by the *Compliance Verification Reports* condition of this permit. [*Re: ATC 5651, PTO 5651, ATC/PTO 5651-01, ATC/PTO 10172, ATC/PTO 11459*]

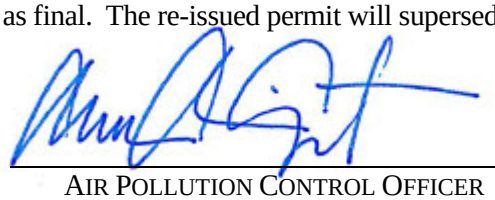
9.D District-Only Conditions

The following section lists permit conditions that are not enforceable by the USEPA or the public. However, these conditions are enforceable by the District and the State of California. These conditions are issued pursuant to District Rule 206 (*Conditional Approval of Authority to Construct or Permit to Operate*), which states that the Control Officer may issue an operating permit subject to specified conditions. Permit conditions have been determined as being necessary for this permit to ensure that operation of the facility complies with all applicable local and state air quality rules, regulations and laws. Failure to comply with any condition specified pursuant to the provisions of Rule 206 shall be a violation of that rule, this permit, as well as any applicable section of the California Health & Safety Code.

D.1 **Permit Activation.** All aspects of this permit are enforceable by the District and the State of California upon the issuance date stamped below. The Part 70 aspects of this permit are not final until:

(a) The USEPA has provided written comments to the District and these comments require no modification to this permit. The District will issue a letter stating that this permit is a final Part 70 permit. The effective date that this permit will be considered a final Part 70 permit will be the date stamped on the District's letter.

(b) After the USEPA has provided the District written comments that require a modification to this permit, the District will modify this permit to address the USEPA's comments and issue the Part 70 permit as final. The re-issued permit will supersede this permit in its entirety.



AIR POLLUTION CONTROL OFFICER

January 10, 2024

DATE

Attachments:

- 10.1 - CEMS Requirements
- 10.2 - Emission Calculation Documentation
- Permit Evaluation for Permit to Operate/PT-70 Minor Modification 05651 - 11

Notes:

- Reevaluation Due Date: 04/01/2024
- Stationary sources are subject to an annual emission fee (see Fee Schedule B-3 of Rule 210).
- Annual reports are due by March 1st of each year.

Attachment 10.1

10.1 CEMS Requirements

Table 10.4 Specific CEMs Parameters to be Telemetered to the Data Acquisition System (DAS)

Plant	Location	Parameter Monitored	Items Telemetered
CPP	Exhaust Stack	NO_x [1]	lb/hr; ppmvd at 15% oxygen
	Exhaust Stack	CO	lb/hr; ppmvd at 15% oxygen
	Exhaust Stack	Temperature	°F
	Exhaust Stack	Flow Rate	million scfh
	SCR Inlet	Temperature	°F
	n/a	Mode	Operating Mode (GT Only, HRSG Only, Tandem, Startup/Shutdown)
SGTP	WGI Exhaust Stack	NO_x [1]	lb/hr; ppmvd at 2% oxygen
	WGI Exhaust Stack	SO_x [2]	lb/hr; ppmvd at 2% oxygen
	WGI Exhaust Stack	Temperature	°F
	WGI Exhaust Stack	Flow Rate	thousand scfh

Notes:

1 NO_X as NO_2

2 SO_X as SO_2

Attachment 10.2

Table 10.6 CPP Concentration Calculations

ppmvd at 15% O2 = $\frac{EF * v * 10^6}{MW * f\text{-factor}}$ ===> $\frac{\text{dscf of pollutant}}{\text{million dscf exhaust}}$ $\frac{(lb/MMBtu) * (dscf/lb\text{-}mole) * 10^6}{(lb/lb\text{-}mole) * (dscf/MMBtu) * MM}$

Variable	Value	Units	Reference
MW	46	lb/lb-mole for NOx	
	28	lb/lb-mole for CO	
v	379	dscf/lb-mole	
EF		Btu/gal	BACT emission factors from Table 4.2
f-factor	8,740	dscf/MMBtu	(at 0% O_2, 1 atm, 68°F) Re: 40 CFR Part 60, NSPS D
	10,050	dscf/MMBtu	(at 3% O_2, 1 atm, 60°F) Re: corrected to SBCAPCD standard conditions and 3% O_2
	30,377	dscf/MMBtu	(at 15% O_2, 1 atm, 60°F) Re: corrected to SBCAPCD standard conditions and 15% O_2
NOx (as NO2)	820 * EF	Btu/gal	
CO	1,347 * EF	Btu/gal	

	NOx		CO	
	lb/MMBtu	ppmvd at 15% O_2	lb/MMBtu	ppmvd at 15% O_2
CPP Normal Operations Mode - Gas Turbine Only	0.0074	2.0	0.0216	9.6
CPP Normal Operations Mode - Gas Turbine/HRSG in Tandem	0.0074	2.0	0.0260	11.6
HRSG Only Mode	0.0074	2.0	0.2970	132.4

air pollution control district
SANTA BARBARA COUNTY

PERMIT EVALUATION FOR PERMIT TO OPERATE 5651-11 AND PART 70 MINOR MODIFICATION

1.0 BACKGROUND

1.1 General: The application for Permit to Operate Modification 5651-11 was submitted by ExxonMobil on October 16, 2023 and deemed complete on October 18, 2023. This permit revises the NOx and Ammonia Slip limits for the CPP gas turbine and HRSG in order to incorporate the more stringent BARCT requirements per the District's BARCT analysis under AB 617.

Specifically, the District determined that BARCT for the gas turbine and HRSG is 2 ppmv NOx @ 15% O_2 for all operating modes except Planned Bypass Mode. Ammonia slip limits were also decreased from 20 ppm to 10 ppmv.

1.2 Permit History:

PERMIT	FINAL ISSUED	PERMIT DESCRIPTION
PTO 14991	01/04/2018	Installation of a vapor scrubber system to be used in case of vessel depressurization during temporary preservation period.
PT-70/Reeval 05651 R6	06/08/2018	Triennial reevaluation.
PTO 14978	09/19/2018	Two 2016 Caterpillar diesel fired prime air compressors.
PTO Mod 05651 04	03/15/2019	Modify ambient air monitoring network.
PTO Mod 05651 05	09/06/2019	Add permit conditions to address pipeline shutdown compliance issues.
Exempt 15441	10/17/2019	Rule 202.D.5 exemption for two bins for removal of residual materials accumulated in MBD 1135B and MBD 1135C.
ATC 15362	10/17/2019	Replacement of the floodwater pump (Dev #008122) with a new unit. 2018 Deutz Model TCD 708 L6 rated at 335 bhp.
PT-70 ADM 15562	07/22/2020	Change of Responsible Official from Jing Wan to Bryan S. Anderson.

1.3 Compliance History: There is no permitted equipment associated with this administrative permit.

2.0 ENGINEERING ANALYSIS

2.1 Equipment/Processes: The primary stationary combustion sources in LFC are located in the Cogeneration Power Plant (CPP). The CPP consists of a 39.35 MW (ISO) General Electric Model PG 6531B gas-fired turbine driving a generator and a 9.8 MW Shin Nippon steam turbine. The CPP generators produce electrical power at 13,800 volts to serve the power needs of the LFC

facility, the POPCO Gas Plant, as well as ExxonMobil's three offshore platforms (Harmony, Heritage, and Hondo). ExxonMobil also provides additional power to the local grid. The maximum heat input to the gas turbine is 465 MMBtu/hr.

Also part of the CPP is a 345 MMBtu/hr Entec Heat Recovery Steam Generator (HRSG) that is equipped with John Zink Co. Low-NO_X burners. The HRSG recovers waste heat from the gas turbine as well as its own burners' heat to supply up to 250,000 lbs/hr of steam to satisfy the needs of ExxonMobil's LFC facility.

Operations of the CPP are separated into three modes:

- Normal Operations Mode. Normal Operations Mode represents the majority of CPP operations. Normal operations are defined as operations with a gas turbine load greater than 57 percent of the ISO rating of 39.0 MW (i.e., greater than 22 MW). CPP operations outside this mode can only occur during the other two modes described below. During this mode, the gas turbine and the HRSG are limited to a combined maximum heat input of 605.140 MMBtu/hr. Emissions from the gas turbine bypass stack are based on a leakage rate not exceeding 1 percent of the gas turbine exhaust.

- *HRSG Only Mode*. During this mode, the HRSG operates alone in order to supply steam to the LFC facility. The SCR unit is operational. The gas turbine does not operate in HRSG Only Mode.

- *Planned Bypass Mode*. This mode covers: warm startups, cold startups, shutdowns, and maintenance and testing operations.

  Warm startups occur when the gas turbine goes down, with the HRSG still online, and the SCR unit still "warm". In this case, the gas turbine can be brought back online rather quickly.

  During a cold startup, more time, up to 2 hours, is needed to bring the SCR unit up to temperature. It takes 1 hour at a turbine power output of up to 20-22 MW to heat the SCR up to a temperature of 570 ºF, and another hour at the same power output in order to produce a sufficient quantity and quality of steam for steam injection for NO_X control. Once the SCR reaches operating temperature, ExxonMobil is required to initiate ammonia injection, and the CPP is ramped up to Normal Operations Mode.

  During startups, the combined gas turbine/HRSG is limited to a maximum heat input of 308.821 MMBtu/hr and power output of 22 MW. During startups, gas turbine exhaust will be emitted directly to atmosphere via the bypass stack at the initial phase of startup and then through the main CPP stack for the remainder of the startup process.

  Shutdown is defined as the one-hour operating period immediately preceding gas turbine and/or HRSG burner flame out.

Maintenance and testing operations occur at loads no greater than 4 MW electrical output. During these periods exhaust will primarily be routed through the bypass stack, although exhaust may also be directed through the HRSG. At these low loads, the exhaust temperature will not be high enough for the SCR system to be effective.

Maintenance and testing operations include, but are not limited to, the following activities:

- Major Overhaul – Inspect and replace combustion cans, fuel nozzles, turbine blades, etc. as necessary.
- Hot Gas Path Inspection – Inspect and replace combustion cans and fuel nozzles as necessary.
- Timing adjustment of circuit breakers connecting GTG to SCE grid.
- Adjustment and troubleshooting of excitation equipment troubleshooting.
- GTG control system troubleshooting.
- GTG excitation system upgrade.
- GTG control system upgrade.
- Mechanical and electrical over-speed shutdown test.

2.2 Emission Controls: NO_X emissions are controlled through the use of steam injection in the gas turbine and Selective Catalytic Reduction (ammonia injection) on the combined gas turbine/HRSG exhaust stream. The primary fuel source for the CPP is treated natural gas from the Stripping Gas Treating Plant. Secondary fuel is purchased from the gas company. The gas turbine is equipped with a bypass stack that is used when the SCR unit is not operational

2.3 Emission Factors: NOx emission factors for normal operations and HRSG only mode are based on the District established AB 617 NOx emission limit of 2 ppmv @ 15% O2 and Ammonia slip limits are based on 10 ppmv. All other emission factors remain unchanged from the emission factors listed in PT-70 PTO 5651-R7.

2.4 Reasonable Worst Case Emission Scenario: See PT-70 PTO 5651-R7 for details regarding the reasonable worst case emission scenario for the CPP.

2.5 Emission Calculations: Tables 5.3 and 5.4 define the worst-case short term and long-term emissions for the CPP.

2.6 Special Calculations: There are no special calculations.

2.7 BACT Analyses: The CPP is subject to BACT for NOx, ROC, CO, SOx, PM and PM_{10}. This permit implements BARCT requirements for NOx which are more stringent than the NOx BACT limits established when the CPP was first permitted.

2.8 Enforceable Operational Limits: There are no operational limits for the amendments associated with this permit.

2.9 Monitoring Requirements: Monitoring of the equipment's operational limits are required to ensure that these are enforceable. The CPP is equipped with CEMS. See PT-70 PTO 5651-R7 for more details regarding the CEMS monitoring requirements.

2.10 Recordkeeping and Reporting Requirements: The permit requires that the data which is monitored by the ambient air monitoring stations operated by ExxonMobil be telemetered to the District.

3.0 REEVALUATION REVIEW (not applicable)

4.0 REGULATORY REVIEW

4.1 Partial List of Applicable Rules:

Rule 201.	Permits Required
Rule 202.	Exemptions to Rule 201
Rule 205.	Standards for Granting Permits
Rule 301.	Circumvention
Rule 302.	Visible Emissions
Rule 303.	Nuisance
Rule 505.	Breakdown Conditions
Rule 801.	New Source Review- Definitions and General Requirements
Rule 802.	New Source Review
Rule 809.	Federal Minor Source New Source Review
Rule 810.	Federal Prevention of Significant Deterioration

4.2 Rules Requiring Review: None.

5.0 AQIA

The project is not subject to the Air Quality Impact Analysis requirements of Regulation VIII.

6.0 OFFSETS/ERCs

6.1 Offsets: District Rule 802, *New Source Review*, was updated on August 25, 2016, to go from a net emissions increase (NEI) to a potential to emit (PTE) calculation methodology for determining offsets. The emissions from ExxonMobil-Santa Ynez Unit (SYU) Project stationary source triggers offset requirements for NO_X, ROC, SO_X, PM and PM_{10} based on the stationary source PTE for those pollutants. All new projects subject to New Source Review are subject to offset requirements unless exempt per Rule 802.

6.2 ERCs: See Section 7.4 of PT-70 PTO 5651-R7 for more details regarding ERCs generated at the SYU Stationary Source.

7.0 AIR TOXICS

An air toxics health risk assessment was not performed for this permitting action.

8.0 CEQA / LEAD AGENCY

This project is exempt from CEQA pursuant to the Environmental Review Guidelines for the Santa Barbara County APCD (revised April 30, 2015). Appendix A.1.f (*APCD Projects Exempt from CEQA* and *Equipment or Operations Exempt from CEQA*} provides an exemption specifically for permits to operate and reevaluations thereof. No further action is necessary.

9.0 SCHOOL NOTIFICATION

A school notice pursuant to the requirements of Health and Safety Code Section 42301.6 was not required.

10.0 PUBLIC and AGENCY NOTFICATION PROCESS/COMMENTS ON DRAFT PERMIT

10.1 This project was not subject to public notice.

10.2 Draft comments, if any, may be found in the final permit.

11.0 FEE DETERMINATION

Fees for this permit are assessed under the cost reimbursement provisions of Rule 210.

12.0 RECOMMENDATION

It is recommended that this permit be granted with the conditions as specified in the permit.

William Sarraf	1/9/2024		1/9/2024
AQ Engineer/Technician	Date	Supervisor	Date

13.0 ATTACHMENTS

A. Draft Comments and District Responses

PERMIT EVALUATION FOR
PERMIT TO OPERATE 5651-11 AND PART 70 MINOR MODIFICATION

ATTACHMENT A

ExxonMobil had the following comments on draft PTO/PT-70 Minor Modification 5651-11.

1. **Condition 9.C.1(a):** In order to be consistent with agreed BARCT limitations, Condition 9.C.1 (a) should be modified to read "With the exception of NOx and CO, compliance shall be based on sliding one-hour values comprised of 15-minute average data points through the use of process monitors (e.g., fuel use meters) and CEMS; and the monitoring, recordkeeping and reporting conditions of this permit. Compliance for NOx and CO shall be based on 3-hour rolling average values through the use of process monitors (e.g., fuel use meters) and CEMS; and the monitoring, recordkeeping and reporting conditions of this permit.

   District Response: The requested change has been made.

2. **Lb/MMBtu Factor:** Table 4.2 and Table 10.6 list 0.0074 lb/MMBtu as a BARCT performance standard. This limitation is not a BARCT standard and has not been identified in the SBCAPCD BARCT evaluation and staff report. Further, it has not been identified in other counties as a BARCT standard. EM requests that the BARCT NOx limit be expressed as a ppmv limit only, consistent with the BARCT evaluation. Consistent with this change, Footnote 5 and Table 10.6 should be amended to delete reference to the lb/MMBtu BARCT standard.

   District Response: The requested changes have been made. Lb/MMBtu emission factors remain listed as enforceable emission limits in Table 5.2 but are not identified as BARCT standards to be consistent with the District's BARCT analysis.

3. **Typographical Error:** Table 5.3 and Table 5.5 are labeled incorrectly (typographical error).

   District Response: The requested change has been made.

ATTACHMENT C

District Board Resolution for Assembly Bill 617 – Gas Turbines and Associated Duct Burners

January 18, 2024

Santa Barbara County Air Pollution Control District
Board of Directors

260 San Antonio Road, Suite A
Santa Barbara, California 93110

IN THE MATTER OF ASSEMBLY BILL 617 – GAS TURBINES AND ASSOCIATED DUCT BURNERS	APCD RESOLUTION NO. _____

RECITALS

WHEREAS, Santa Barbara County is designated nonattainment-transitional for the state ozone standard and nonattainment for the state standard for particulate matter less than 10 microns in diameter (PM_{10}).

WHEREAS, California Health and Safety Code Section 40920.6, as amended by California Assembly Bill 617 (2017), requires each California air district that is nonattainment for one or more air pollutants to adopt an expedited schedule for the implementation of Best Available Retrofit Control Technology (BARCT) on or before January 1, 2019, and the schedule must provide for the implementation of BARCT by the earliest feasible date; and

WHEREAS, the Assembly Bill 617 BARCT Rule Development Schedule, as adopted by the Board on December 20, 2018, included a commitment to conduct rulemaking procedures in order to evaluate and implement BARCT at the six industrial facilities in Santa Barbara County that were subject to the California Greenhouse Gas Cap-and-Trade Regulation as of January 1, 2017.

WHEREAS, a new rule for Gas Turbines and Associated Duct Burners was included as a measure to be evaluated on the Assembly Bill 617 BARCT Rule Development Schedule.

WHEREAS, only one facility within the District's jurisdiction currently has equipment that would be subject to the new rule for Gas Turbines and Associated Duct Burners.

WHEREAS, District staff performed a detailed analysis of available gas turbine and duct burner control technologies and the expected costs to fully meet all BARCT requirements being evaluated under the new rule.

WHEREAS, the affected Assembly Bill 617 Industrial Facility that would be subject to the new rule has voluntarily submitted permit applications to incorporate all BARCT standards for Gas Turbines and Associated Duct Burners into its Permit to Operate for the applicable existing equipment, resulting in enforceable conditions that implement BARCT.

NOW, THEREFORE, IT IS HEREBY RESOLVED, as follows:

1. Based on the information recited above, adopting a new rule for Gas Turbines and Associated Duct Burners is no longer necessary to satisfy the AB 617 BARCT requirements.
2. This action is exempt from the California Environmental Quality Act (CEQA) because it is not a project pursuant to CEQA Guidelines section 15378(b)(5).

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PASSED, APPROVED AND ADOPTED by the Air Pollution Control District Board of the Santa Barbara County, State of California, this ___ day of _____, _____, by the following vote:

Ayes:

Noes:

Abstain:

Absent:

SANTA BARBARA COUNTY
AIR POLLUTION CONTROL DISTRICT

By _____
Chair

Date _____

ATTEST:

AERON ARLIN GENET
Clerk of the Board

By _____
Deputy

APPROVED AS TO FORM:

RACHEL VAN MULLEM
Santa Barbara County Counsel

By _____
Jennifer Richardson (Dec 20, 2023 14:39 PST)
District Counsel