DEPARTMENT OF ENVIRONMENTAL CONSERVATION

AIR QUALITY CONTROL MINOR PERMIT

Minor Permit: **AQ0911MSS06** **Preliminary Date – November 3, 2022**
Rescinds Permit: AQ0911MSS05 Revision 1
Revises Permit: AQ0911MSS04 Revision 2

The Alaska Department of Environmental Conservation (Department), under the authority of AS 46.14 and 18 AAC 50, issues Air Quality Control Minor Permit AQ0911MSS06 to the Permittee listed below.

Permittee: **Eni US Operating Co. Inc. (ENI)**
3700 Centerpoint Drive, Suite 500
Anchorage, Alaska 99503

Stationary Source: **Oooguruk Development Project (ODP)**

Location: 70º 29´43.52" North; 150º 15´ 12.48" West
East Harrison Bay, Alaska

Project: Removal of EU IDs S-1d, S-1e, and S-7 - Synthetic Minor Source Reclassification

Permit Contact: Larry Burgess
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(907) 865-3300
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This permit is issued under 18 AAC 50.508(5) for Owner Requested Limits (ORLs) to avoid classification as a Prevention of Significant Deterioration (PSD) major stationary source, and under 18 AAC 50.508(6) in order to revise the terms and conditions of a Title I permit.

This permit satisfies the obligation of the Permittee to obtain a minor permit under 18 AAC 50. As required by AS 46.14.120(c), the Permittee shall comply with the terms and conditions of this permit.

The Permittee may not operate under the provisions of this minor permit until the Department incorporates the terms and conditions of this minor permit into the operating permit issued to the source under AS 46.14.130(b) and 18 AAC 50.

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James R. Plosay, Manager
Air Permits Program

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Abbreviations and Acronyms

AAAQS .....Alaska Ambient Air Quality Standards
AAC.....Alaska Administrative Code
ADEC .....Alaska Department of Environmental Conservation
AOS .....Air Online Services
AS .....Alaska Statutes
ASTM .....American Society for Testing and Materials
BACT .....best available control technology
bHp .....brake horsepower
CDX.....Central Data Exchange
CEDRI .....Compliance and Emissions Data Reporting Interface
C.F.R. .....Code of Federal Regulations
CAA.....Clean Air Act
CO .....carbon monoxide
CO_2 .....carbon dioxide
CO_2e .....CO_2-equivalent
Department .....Alaska Department of Environmental Conservation
dscf .....dry standard cubic foot
EPA .....US Environmental Protection Agency
EU.....emissions unit
gr/dscf.....grain per dry standard cubic foot (1 pound = 7000 grains)
gph.....gallons per hour
hp.....horsepower
ID.....emissions unit identification number
kW .....kilowatt
kWe .....kilowatt, electrical output
MMscf/hr.....million standard cubic foot per hour
MMBtu/hr.....million British thermal units per hour
MR&R .....monitoring, recordkeeping, and reporting
MW.....Megawatt
NA .....Not applicable
NO_x.....nitrogen oxides
NO_2.....nitrogen dioxide
NRE.....nonroad engine
NSPS .....New Source Performance Standards [as contained in 40 C.F.R. 60]
NTE .....Not to exceed
O_2.....oxygen
PM_{10} .....particulate matter less than or equal to a nominal 10 microns in diameter
$PM_{2.5}$.....particulate matter less than or equal to a nominal 2.5 microns in diameter
ppm .....parts per million
ppmv, ppmvd.....parts per million by volume on a dry basis
psia .....pounds per square inch (absolute)
PSD .....prevention of significant deterioration
PTE.....potential to emit
scf .....standard cubic feet
SIC.....Standard Industrial Classification
SIP .....State Implementation Plan
SN.....Serial Number
SPC.....Standard Permit Condition or Standard Operating Permit Condition
SO_2 .....sulfur dioxide
The Act.....Clean Air Act
TPY .....tons per year
ULSD .....Ultra Low Sulfur Diesel fuel
VOC .....volatile organic compound [as defined in 40 C.F.R. 51.100(s)]
vol% .....volume percent
wt% .....weight percent
wt%S_{fuel} .....weight percent of sulfur in fuel
WHRU.....Waste Heat Recovery Unit

Section 1 Emissions Unit Inventory

Emissions Unit (EU) Authorization. The Permittee is authorized to operate the EUs listed in Table 1 in accordance with the terms and conditions of this permit. The information in Table 1 is for identification purposes only, unless otherwise noted in the permit. The specific EU descriptions do not restrict the Permittee from replacing an EU identified in Table 1. For purposes of this permit, the emission units listed in Table 1 are collectively referred to as "Permanent Emission Units."

Table 1 – Permanent Emissions Units

EU ID	Emissions Unit Name	Emissions Unit Description	Rating/Size	Fuel	Installation or Construction Date
Offshore Pad[1]					
I-1	Diesel Generator	Caterpillar 3516B DITA; SN PBR00167	3,285 hp (2.45 MWe)	Diesel	Constructed Jan 2006
NR-9a[2]	Escape Vehicle	Escape Vehicle, SN unknown	260 hp	Diesel	NA
NR-9b[2]	Escape Vehicle	Escape Vehicle, SN unknown	260 hp	Diesel	NA
I-9	Diesel Generator	Caterpillar 3456 DITA; SN 7WG04627	764 hp (500 kWe)	Diesel	Installed 2007
I-10	Diesel Generator	Caterpillar 3456 DITA; SN 7WG04626	764 hp (500 kWe)	Diesel	Installed 2007
I-11	Diesel Firewater Pump Engine	John Deere JW6H-UF60; SN RG6081H178379	375 hp	Diesel	Installed 2007
Onshore Pad[4, 5]					
S-1a[3]	Gas-Fired Turbine	Solar Taurus 60-7800S	6.83 MW	Natural Gas	2007
S-1b[3]	Gas-Fired Turbine	Solar Taurus 60-7800S	6.83 MW	Natural Gas	2007
S-1c[3]	Gas-Fired Turbine	Solar Taurus 60-7800S	6.83 MW	Natural Gas	2007
S-2	Diesel Generator	Caterpillar C32 DITA; SN SYC00373	1,500 hp	Diesel	2007

Notes:

1. The incinerator, EU ID I-5, has been removed from the table; the EU has been permanently shutdown and no longer in operation.
2. Nonroad engines (NRE) with applicable limits are listed in this table.
3. Waste Heat Recovery Unit (WHRU) may be installed on EU IDs S-1a through S-1c to provide process and space heat. WHRU uses turbine exhaust as the heat source and is unfired.
4. EUs on the onshore pad are accessible by the Federal Aid Highway System (FAHS).

Table 2 – Drilling Rig Emission Units (Nabors 19E)[1]

EU ID	Emission Unit Name	Emission Unit Description	Rating/Size	Fuel	Construction Date
NR-1a	Primary Generator	Cummins DFHD	1,111 kW	Diesel	NA
NR-1b	Primary Generator	Cummins DFHD	1,111 kW	Diesel	NA
NR-1c	Primary Generator	Cummins DFHD	1,111 kW	Diesel	NA
NR-7	Mud Module Standby Generator	Unknown	277 bHp	Diesel	NA
NR-8	Casing Standby Generator	Unknown	74 bHp	Diesel	NA
I-2a	Rig Steam Boilers	Unknown	5.75 MMBtu/hr	Diesel	2007
I-2b	Rig Steam Boilers	Unknown	5.75 MMBtu/hr	Diesel	2007
I-3	Pipe Barn Heater	Unknown	4.38 MMBtu/hr	Diesel	2007
I-4	Substructure Heater	Unknown	4.38 MMBtu/hr	Diesel	2007
I-7	Three Rig Support Process Heaters	Unknown	1 MMBtu/hr, each	Diesel	2007
I-12[2]	Cement Storage and Blending Equipment	Unknown	Unknown	NA	NA

Notes:

1. The actual cumulative rated capacity of the Drilling Rig may be similar or smaller than the cumulative rated capacity of Nabors 19E rig shown in the table.
2. EU ID I-12 (Cement Storage and Blending Equipment) is identified as part of the drilling rig EUs, but has no associated EU-specific limits nor requirements.

Table 3 - Construction Equipment[1, 2]

EU ID	Emissions Unit Name	Emissions Unit Description	Rating/Size	Fuel	Construction or Installation Date
Offshore Pad					
NR-2	Front End Loader 1	Caterpillar 966GII	260 hp	Diesel	NA
NR-3	Front End Loader 2	Volvo 180E	300 hp	Diesel	NA
NR-4	Crane	Caterpillar 966GII	260 hp	Diesel	NA
NR-5	Forklift	Caterpillar TH330B	120 hp	Diesel	NA
NR-6	6 Light Plants	Unknown	25 kW, each	Diesel	NA
I-8	7 Portable Heaters	Unknown	1.2 MMBtu/hr each	Diesel	2007
Onshore Pad					
S-3	3 Portable Heaters	Unknown	1.2 MMBtu/hr each	Diesel	2007

Notes:

1. Nonroad engines (NRE) with applicable limits are listed in this table.

2. EU IDs S-5 (Propane Heaters) and S-6 (Incinerator) were permanently removed from the stationary source (as stated in AQ0911TVP02 application, July 17, 2015).

1. The Permittee shall comply with all applicable provisions of AS 46.14 and 18 AAC 50 when installing a replacement EU, including any applicable minor or construction permit requirements**.**

2. Table 1, Table 2, and Table 3 of Minor Permit AQ0911MSS04 Revision 2 are replaced by Table 1, Table 2, and Table 3, respectively, of this Minor Permit AQ0911MSS06.

Section 2 Fee Requirements

3. Assessable Emissions. Condition 7.1 in Permit AQ0911MSS04 Revision 2 is rescinded and replaced by Condition 3.1.

3.1 the stationary source's assessable potential to emit of 632 TPY; or

Section 3 ORLs to Avoid PSD Major Classification

4. Operational Hour Limits for EU ID I-1, I-9, I-10, and S-2. To avoid PSD Major Classification, the Permittee shall limit the operational hours of the stationary diesel engines, EU IDs I-1, I-9, I-10, and S-2, listed in Table 1, as follows:

4.1 For EU IDs I-1, I-9, and I-10, limit operations of each of the EUs to no more than 500 hours per consecutive 12-month period.

4.2 For EU ID S-2, limit the operations to no more than 1,200 hours per consecutive 12-month period.

4.3 Monitor, record, and report as described in the operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.

Section 4 Ambient Air Quality Protection Requirements

5. General Ambient Air Quality Provisions. Comply with the following provisions to protect the annually averaged nitrogen dioxide (NO_2), annually averaged, 24-hour, three-hour, and one-hour SO_2, and 24-hour PM_{10} Alaska Ambient Air Quality Standards (AAAQS):

5.1 Operate EU IDs I-9 and I-10 listed in Table 1 only at the Oooguruk Drill Site facility while within the Oooguruk Development Project.

a. Report as excess emissions or a permit deviation as described in the operating permit issued for the stationary source under AS 46.14.130(b) and 18 AAC 50 if EU ID I-9 or EU ID I-10 is operated at the Oooguruk Development Project outside the Oooguruk Drill Site.

5.2 Condition 18.2 of AQ0911MSS04 Revision 2 is rescinded and replaced with Conditions 5.3 and 7.3.

5.3 Restrict the sulfur content of diesel fuel burned in EU IDs NR-9a, NR-9b, I-9, I-10, I-11, and S-2 listed in Table 1, EU IDs NR-7, NR-8, and I-7 listed in Table 2, EU IDs NR-2 through NR-6 and S-3 listed in Table 3, to no more than 15 parts per million by weight (ppmw).

a. Monitor, record, and report compliance with Condition 5.3 as described in the operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.

6. NO_2 and SO_2 Ambient Air Quality Protection. Protect the annually averaged NO_2 and annually averaged SO_2 AAAQS as follows.

6.1 Condition 17.1 of AQ0911MSS04 Revision 2 is rescinded and replaced with Condition 6.2.

6.2 Limit the diesel fuel consumption of EU IDs NR-1a, NR-1b, and NR-1c listed in Table 2 to a combined total of 1,365,903 gallons per calendar year.

a. Monitor, record, and report as described in the operating permit issued for the stationary source under AS 46.14.130(b) and 18 AAC 50.

6.3 Condition 17.2 of AQ0911MSS04 Revision 2 is rescinded and replaced with Condition 6.4.

6.4 Limit the operation of each of EU IDs I-1, I-9, I-10, and I-11 listed in Table 1, and EU IDs NR-7 and NR-8 listed in Table 2 to no more than 500 hours per calendar year.

a. Monitor, record, and report as described in the operating permit issued for the stationary source under AS 46.14.130(b) and 18 AAC 50.

6.5 Limit the operation of EU ID S-2 listed in Table 1 to no more than 3,500 hours per calendar year[1].

[1] Note that EU ID S-2 has a more restrictive 1,200 hr/yr limit in Condition 4.2.

a. To ensure compliance with the limit in Condition 6.5 the Permittee shall comply with the operational hour limit for EU ID S-2 in Condition 4.2 and the associated MR&R requirements in Condition 4.3.

7. SO_2 Ambient Air Quality Protection. Protect the annually averaged, 24-hour, three-hour, and one-hour SO_2 AAAQS as follows:

7.1 Condition 18.1 of AQ0911MSS04 Revision 2 is rescinded and replaced with Condition 7.2.

7.2 For EU IDs S-1a, S-1b,S-1c listed in Table 1 burn only natural gas with a hydrogen sulfide content that does not exceed 316 ppmv on an instantaneous basis at standard conditions.

7.3 For EU IDs I-1 listed in Table 1, EU IDs NR-1a, NR-1b, NR-1c, I-2a, I-2b, I-3, and I-4 listed in Table 2, and EU ID I-8 listed in Table 3, burn only diesel fuel with a sulfur content that does not exceed 0.1 percent by weight (1,000 ppmw).

7.4 Monitor, record, and report compliance with Conditions 7.2 and 7.3 as described in the operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.

Section 5 Standard Permit Conditions

8. The Permittee must comply with each permit term and condition. Noncompliance with a permit term or condition constitutes a violation of AS 46.14, 18 AAC 50, and, except for those terms or conditions designated in the permit as not federally enforceable, the Clean Air Act, and is grounds for

8.1 an enforcement action; or

8.2 permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280.

9. It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.

10. Each permit term and condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of the permit.

11. The permit may be modified, reopened, revoked and reissued, or terminated for cause. A request by the Permittee for modification, revocation and reissuance, or termination or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

12. The permit does not convey any property rights of any sort, nor any exclusive privilege.

13. The Permittee shall allow the Department, or an inspector authorized by the Department, upon presentation of credentials and at reasonable times with the consent of the owner or operator to

13.1 enter upon the premises where an emissions unit subject to this permit is located or where records required by the permit are kept;

13.2 have access to and copy any records required by this permit;

13.3 inspect any stationary source, equipment, practices, or operations regulated by or referenced in the permit; and

13.4 sample or monitor substances or parameters to assure compliance with the permit or other applicable requirements.

Section 6 Permit Documentation

Date	Document Details
July 12, 2022	Received minor permit application dated July 8, 2022
July 27, 2022	ADEC sent an email to Eni US Operating Co. Inc. re need to request for an integrated review with TV permit renewal AQ0911TVP03 to avoid conflicting terms and conditions in the permits.
August 9, 2022	Received by email an application addendum from Eni US Operating Co. Inc. requesting for an integrated review with the Title V operating permit renewal AQ911TVP03.

Alaska Department of Environmental Conservation
Air Permits Program

TECHNICAL ANALYSIS REPORT

For the terms and conditions of
Minor Permit AQ0911MSS06

Issued to Eni US Operating Co. Inc.
For the Oooguruk Development Project

Preliminary – November 3, 2022

Prepared by Grace M. Germain
ADEC AQ/APP (Office location)

1. INTRODUCTION

This Technical Analysis Report (TAR) provides the Alaska Department of Environmental Conservation's (Department's) basis for issuing Minor Permit AQ0911MSS06 to Eni US Operating Co. Inc. for the Oooguruk Development Project. This permit is issued under 18 AAC 50.508(5) for Owner Requested Limits (ORLs) to avoid classification as a Prevention of Significant Deterioration (PSD) major stationary source, and under 18 AAC 50.508(6) in order to rescind Minor Permit No. AQ0911MSS05 Revision 1 and revise the terms and conditions of Minor Permit No. AQ0911MSS04 Revision 2 that were previously addressed in Minor Permit AQ0911MSS05 Revision 1. The ORLs and requested revisions enable the stationary source to continue to avoid classification as a PSD major stationary source.

2. STATIONARY SOURCE DESCRIPTION

The Oooguruk Development Project (ODP) is an existing stationary source owned and operated by Eni US Operating Co. Inc. ODP consists of an offshore production drill site (Oooguruk Drill Site or ODS) in East Harrison Bay, an onshore production pad adjacent to the Kuparuk River Unit Drill Site 3H (Oooguruk Tie-in Pad or OTP), and an eight-mile flow line. The two sites are currently considered a single stationary source under Title I and Title V of the Act as amended through 1990.

The stationary source contains permanent and temporary onshore and offshore equipment (see Table 1 of the permit). The permanent onshore equipment includes three natural gas-fired turbines and a diesel-fired backup generator. The permanent offshore equipment includes diesel generators, a firewater pump, and escape vehicles. Temporary equipment used onshore and offshore includes construction equipment, drilling rigs, boilers, and heaters (see Table 2 and Table 3 of the permit).

Eni US Operating Co. Inc. currently operates under Operating Permit No. AQ0911TVP02 Revision 1 and Minor Permit Nos. AQ0911MSS04 Revision 2 and AQ0911MSS05 Revision 1.

3. PERMIT HISTORY RELEVANT TO PROJECT

Minor Permit No. AQ0911MSS01 authorized the establishment of Oooguruk as a portable gas and oil operating PSD-minor stationary source. This permit authorized three gas turbines (EU IDs S-1a, b, and c), an emergency generator (EU ID S-2), and storage tanks at the onshore facility, as well as, authorized an emergency generator (EU ID I-1), incinerator (EU ID I-5), and storage tanks at the offshore drill site. The onshore and offshore facilities constituted a single stationary source.

Minor Permit No. AQ0911MSS02 authorized two new 500 kilowatt electrical output (kWe) diesel-fired generators (EU IDs I-9 and I-10), a 375 horsepower (Hp) emergency firewater pump (EU ID I-11), a camp incinerator (EU ID S-6), and limited the stationary source-wide emissions to below PSD thresholds for NOx and CO emissions. The Department issued Minor Permit No. AQ0911MSS02 Revision 1 to correct material mistakes in AQ911MSS02 and issued AQ0911MSS02 Revision 2 to increase the CO emission factors for the Solar Taurus turbines. The revision did not change the technical bases of the permit conditions.

Minor Permit No. AQ0911MSS03 increased CO emission limits, revised the ratings of the incinerators, re-characterized EU IDs I-1 and S-2 as backup generators (instead of emergency generators) and included their fuel consumption in an existing 1,365,903 gallons per year limit for EU IDs NR-1a, NR-1b, NR-1c, I-9, and I-10. The permit limited stationary source-wide emissions to below PSD thresholds for NO_x and CO emissions.

The Department issued Minor Permit No. AQ0911MSS04 to consolidate all previous active minor permits issued for Oooguruk. On June 14, 2014, Revision 1 to AQ0911MSS04 was issued to transfer ownership from Pioneer Natural Resources Alaska to Caelus. On August 1, 2019, the Department issued Revision 2 as an administrative revision to transfer ownership from Caelus Natural Resources Alaska, Inc. to Eni US Operating Co. Inc. This permit rescinded Minor Permit No. AQ0911MSS04 Revision 1.

On January 8, 2015, the Department issued Minor Permit AQ0911MSS05 for the Oooguruk Tie-in Pad Expansion Project (OTP) to authorize the installation of two Solar turbines (EU IDs S-1d, S-1e), a new backup generator (EU ID S-7), and a new waste heat recovery unit (WHRU) at the OTP. This permit revised ORLs in Permit AQ0911MSS04 and established ORLs to avoid PSD review for NO_x and CO and for ambient air quality protection for NO_2, SO_2 and PM_{10}. The stationary source was then classified as a PSD major stationary source because the modification caused an increase in the potential to emit (PTE) to amounts greater than the 250-TPY threshold of one or more criteria pollutants for a major source. On August 1, 2019, the Department issued Minor Permit AQ0911MSS05 Revision 1 as an administrative revision to transfer ownership from Caelus Natural Resources Alaska, Inc. to Eni US Operating Co. Inc. Minor Permit AQ0911MSS05 Revision 1 rescinded Minor Permit AQ0911MSS05.

4. APPLICATION DESCRIPTION

On July 12, 2022, Eni US Operating Co. Inc. submitted a minor permit application requesting to revise or rescind terms and conditions of Title I Minor Permit AQ0911MSS05 Revision 1 for the Oooguruk Development Project (ODP). The requested changes are as follows:

- Remove EU IDs S-1d, S-1e, and S-7 which were authorized for installation and operation under Minor Permit AQ0911MSS05 Revision 1 but were never materialized;
- Remove all conditions associated with EU IDs S-1d, S-1e, and S-7, update the Emissions inventory tables and the stationary source's potential-to-emit, as shown in the redline version of AQ0911MSS05, Rev. 1 provided in Attachment E of the application; and
- Request to change classification of the stationary source from a major to a minor stationary source.

On August 9, 2022, Eni US Operating Co. Inc. additionally requested that the terms and conditions of Minor Permit AQ0911MSS06 be included in the Title V operating permit renewal, Permit AQ0911TVP03, using the integrated review procedures described in 18 AAC 50.326(c)(1).

5. CLASSIFICATION FINDINGS

Based on the review of the application, the Department finds that:

1. Minor Permit AQ0911MSS06 is classified under 18 AAC 50.508(5) for establishing ORLs to avoid classification as a PSD major stationary source.

2. Minor Permit AQ0911MSS06 is classified under 18 AAC 50.508(6) for revising and/or rescinding terms and conditions of a Title I permit.

6. APPLICATION REVIEW FINDINGS

Based on the review of the application, the Department finds that:

1. Eni US Operating Co. Inc.'s minor permit application for the Oooguruk Development Project (ODP) contains the elements listed in 18 AAC 50.540.
2. Although Eni US Operating Co. Inc. has classified its application as a minor permit under 18 AAC 50.508(6) for revising and/or rescinding terms and conditions of a Title I permit, the Department asserts that it is also classified under 18 AAC 50.508(5) for establishing ORLs to avoid classification as a PSD major stationary source.

   Eni US Operating Co. Inc. is requesting removal of EU IDs S-1d, S-1e, and S-7 and their associated terms and conditions. Minor Permit AQ0911MSS05 Revision 1 was issued specifically to authorize installation and operation of the EUs. Therefore, the Department is rescinding Minor Permit AQ0911MSS05 Revision 1. Because Minor Permit AQ0911MSS05 Revision 1 contains revisions to specific conditions from Minor Permit AQ0911MSS04 Revision 2 that are still in effect, this Minor Permit AQ0911MSS06 carries over the same revisions to Minor Permit AQ0911MSS04 Revision 2; hence, the classification under 18 AAC 50.508(6).

   Minor Permit AQ0911MSS05 Revision 1 established ORLs to avoid the requirement to obtain a PSD major stationary source permit for Nitrogen Oxide (NO_x) and carbon monoxide (CO). Because Minor Permit AQ0911MSS05 Revision 1 is being rescinded, the same ORLs need to be re-established under this minor permit (see Condition 4) to retain the PSD minor classification; hence, the classification under 18 AAC 50.508(5).
3. As requested in the application, the Department has updated the emissions unit inventory in Table 1, Table 2, and Table 3, consistent with the emissions unit inventory updates provided in the Title V operating permit renewal AQ0911TVP03 application, except that EU IDs S-1d, S-1e, and S-7 are no longer included. These EU inventory tables also replaces Table 1, Table 2, and Table 3 of Minor Permit AQ0911MSS04 Revision 2.
4. The revisions requested in this minor permit will make the stationary source qualify as a PSD minor stationary source because removal of EU IDs S-1d, S-1e, and S-7 reduces the stationary source's PTE for each of the regulated air pollutants to amounts below the major source threshold of 250 TPY, as specified in 40 C.F.R. 52.21(b)(1)(i)(b). The Department has verified the PTE calculations submitted with the application and has updated the assessable PTE as shown in Condition 3.1 and Table A-1. Table A-1 shows details of the PTEs for each criteria pollutant, which confirms none exceeds the PSD major threshold of 250 TPY.

   However, ODP is still a Title V major source, as defined in 40 C.F.R. 71.2 adopted under 18 AAC 50.326(b), since it has the potential to emit 100 TPY or more of any air pollutant subject to regulation.

5. For clarity and consistency, the Department has changed the unit for operational hour limit for PSD major classification avoidance in Conditions 4.1 and 4.2 from "hr/yr" to "hours per consecutive 12-month period."
6. For consistency and accuracy, the Department added "SO_2" in Condition 5.2 subtitle "NO_2 and SO_2 Ambient Air Quality Protection." Condition 5.2 addresses both the annual average AAAQS for NO_2 and SO_2.
7. As determined in the ambient air quality modeling report conducted for the stationary source (see Attachment B to the TAR for Minor Permit AQ0911MSS05), EU IDs S-2 and S-7 are each limited to an operational limit of 3,500 hours per calendar year to protect the annually averaged NO_2 and annually averaged SO_2 AAAQS. This ORL is being carried over in this minor permit for EU ID S-2, as shown in Condition 6.5. However, since EU ID S-2 is already subject to an operational hour limit of 1,200 hours per consecutive 12-month period for avoidance of PSD major source classification (see Condition 4.2), the Department has streamlined compliance requirements by referencing the more stringent PSD major avoidance to ensure compliance with the AAAQS protection limit.
8. This minor permit no longer needs to include the conditions associated with the *State Emissions Standards*, since those provisions are part of the pending Title V operating permit renewal AQ0911TVP03 that is concurrently processed using the integrated review under 18 AAC 50.326(c)(1). The minor permit likewise does not need to include the *General Recordkeeping, Reporting, and Certification* conditions, or the *Standard Conditions*, except as required under 18 AAC 50.544(a)(5) (see Section 5).
9. As requested by Eni US Operating Co. Inc., the Department is processing this minor permit and the Title V operating permit renewal AQ0911TVP03 using the integrated review process under 18 AAC 50.326(c)(1) to capture the changes requested in both permits. Because the applicable requirements in Minor Permit AQ0911MSS06 contradict the requirements in the current Title V operating permit AQ0911TVP02 Revision 1, Eni US Operating Co. Inc. may not operate under Minor Permit AQ0911MSS06 until the EPA review period for the Title V operating permit renewal AQ0911TVP03 is complete.

7. EMISSIONS SUMMARY AND PERMIT APPLICABLITY

Table 4 shows the emissions summary and permit applicability with assessable emissions from the stationary source. Emission factors and detailed calculations are provided in APPENDIX A.

Table 4 – Emissions Summary and Permit Applicability, tons per year (TPY)[1]

Parameter	NO_x	CO	VOC[5]	$PM_{2.5}$	PM_{10}	SO_2
PTE before Modification[2]	357.6	473.3	79.2	15.2	15.2	108.2
PTE after Modification[3]	243.3	237.8	65.9	11.1	11.1	73.7
Change in PTE	-114.3	-235.5	-13.3	-4.1	-4.1	-34.5
Minor Permit Thresholds 18 AAC 50.502(c)(3)[4]	10	N/A	N/A	10	10	10
502(c)(3) Applicable?	No	No	No	No	No	No
PSD Major Threshold [40 CFR 52.21(b)(1)(i)(b)]	250	250	250	250	250	250

Parameter	NO_x	CO	VOC[5]	$PM_{2.5}$	PM_{10}	SO_2
PSD Major triggered?	No	No	No	No	No	No
Title V Permit Thresholds 40 C.F.R. 71.2	100	100	100	100	100	100
Title V Permit Required?	Yes	Yes	No	No	No	Yes
Assessable Emissions[6]	243	238	66	11[6]		74
Total Assessable[7]	632					

Table Notes:

1. Emissions from nonroad engines are not included because they do not count towards permit applicability or assessable emissions, per 18 AAC 50.100.
2. PTE before modification is from the application amendment for Permit AQ0911TVP03 dated March 2, 2022.
3. PTE after modification is from the application for Permit AQ0911MSS06 dated July 8, 2022, taking into account the removal of EU IDs S-1d, S-1e, and S-7.
4. The thresholds in 18 AAC 50.502(c)(3) applies if existing stationary source PTE for a criteria pollutant is currently greater than an amount listed in 18 AAC 50.502(c)(1) threshold for that pollutant.
5. VOC emissions include VOCs emitted from cold vents (EU IDs 1-6 and S-4), storage tanks, and fuel-burning EUs.
6. Assessable emissions include any pollutant greater than or equal to 10 TPY.
7. PM_{10} emissions include $PM_{2.5}$ emissions. Therefore, $PM_{2.5}$ is not counted in total assessable emissions.

8. REVISIONS TO PERMIT CONDITIONS

Table 5 below lists the conditions from Minor Permit AQ0911MSS04 Revision 2 that are revised in Minor Permit AQ0911MSS06.

Table 5 – Comparison of AQ0911MSS04 Rev. 2 to AQ0911MSS06 Conditions[2]

Permit AQ0911MSS04 Rev. 2 Cond. No.	Description of Requirement	Permit AQ0911MSS06 Condition No.	How Condition was Revised
Table 1	EU Inventory, Permanent EUs	Table 1	Updated the table. Added diesel generators ratings in Hp, SNs, and Installation or Construction Dates. List no longer includes EU ID I-5 (incinerator), as explained in note 1.
Table 2	EU Inventory, Drilling Rig EUs	Table 2	Same list, added note 2 to Table 2 to clarify no associated EU-specific limits nor requirements for EU ID I-12. Added Fuel Type and Installation or Construction Date columns. Table 2 note a not carried over, Table 2 provides Fuel Type column. List no longer includes EU IDs S-5 (Propane Heaters) and S-6 (Incinerator), as explained in note 2.
Table 3	EU Inventory, Construction Equipment	Table 3	Updated the table, list no longer include EU IDs S-5 and S-6, as explained in table note 2.

[2] This table includes only the conditions from Minor Permit AQ0911MSS04 Revision 2 that were replaced and revised in Minor Permit AQ0911MSS06.

7.1	the stationary source's assessable potential to emit of 648 tpy	3.1	Updated PTE, now 632 TPY.
None	General Ambient Air Quality Provisions Operate, EU IDs I-9 and I-10 only at the Oooguruk Drill Site facility.	5.1	Added Condition 5.1, as was required in AQ0911MSS05.
17	Subtitle "NO_2 Ambient Air Quality Protection"	5.2	Added "and SO_2" in the subtitle. Condition 6 addresses both the annual average AAAQS for NO_2 and SO_2.
17.1	Diesel fuel consumption of EU IDs NR-1a, NR-1b, NR-1c, I-1, I-9, I-10, and S-2 to a combined total of 1,365,903 gallons per consecutive 12-month period.	6.2	Same combined fuel limit but removed EU IDs I-1, I-9, I-10, and S-2 and replaced "per consecutive 12-month period" with "per calendar year" as revised in Condition 12.2 of AQ0911MSS05 Rev 1. Referenced MR&R requirements as provided in the Title V permit.
17.2	NO_2 Ambient Air Quality Protection – Operational hour limit of 500 hours per consecutive 12 month period for Ancillary Engines and MR&R	6.4	Replaced "Ancillary Engine" with EU IDs I-1, I-9, I-10, I-11, NR-7 and NR-8, and "consecutive 12 month period" with "calendar year" as revised in Condition 12.3 of AQ0911MSS05 Rev 1. Referenced MR&R requirements as provided in the Title V permit.
18.1	SO_2 Ambient Air Quality Protection - Natural gas hydrogen sulfide content limit of 500 ppmv for EU IDs S-1a, S-1b, and S-1c	7.2	Changed limit to 316 ppmv.
18.2	SO_2 Ambient Air Quality Protection – diesel fuel sulfur content limit of 0.10 percent by weight (1,000 ppmw) for liquid fuel-fired EUs	5.3 and 7.3	Changed limit to 15 ppmw for EU IDs I-7, I-9 through I-11, S-2, S-3, NR-2 through NR-8, NR-9a, and NR-9b. Retained 1,000 ppmw limit for EU IDs I-1, NR-1a, NR-1b, NR-1c, I-2a, I-2b, I-3, and I-4, and EU ID I-8.
18.3 and 18.4	M&R requirements for Conditions 18.1 and 18.2	5.3a and 7.4	Referenced MR&R requirements as provided in the Title V permit.

9. PERMIT ADMINISTRATION

As requested by Eni US Operating Co. Inc., the Department intends to incorporate the requirements of Minor Permit AQ0911MSS06 into the Title V operating permit renewal AQ0911TVP03, which is concurrently being processed by the Department, using the integrated review procedures described in 18 AAC 50.326(c)(1). Minor Permit AQ0911MSS06 contains terms and conditions that contradict some conditions in the Oooguruk Development Project's current Title V operating permit AQ0911TVP02 Revision 1. Therefore, Eni US Operating Co. Inc. may not operate under Minor Permit No. AQ0911MSS06 until the Department issues the Title V operating permit renewal.

10. PERMIT CONDITIONS

The bases for the standard and general conditions imposed in Minor Permit AQ0911MSS06 are described below.

Cover Page

18 AAC 50.544(a)(1) requires the Department to identify the stationary source, Permittee, and contact information. The Department provided this information on the cover page of the permit.

Section 1: Emissions Unit Inventory

The EUs authorized and/or restricted by this permit are listed in Table 1 of the permit. Unless otherwise noted in the permit, the information in Table 1 is for identification purposes only.

Condition 1 is a general requirement to comply with AS 46.14 and 18 AAC 50 when installing a replacement EU. Condition 2 states the emissions unit inventory tables in Minor Permit AQ0911MSS04 Revision 2 that are being updated/replaced in this permit.

Section 2: Fee Requirements

18 AAC 50.544(a)(2) requires the Department to include a requirement to pay fees in accordance with 18 AAC 50.400 – 18 AAC 50.499 in each minor permit issued under 18 AAC 50.542. Since this minor permit is revising Minor Permit AQ0911MSS04 Revision 2, the Department is replacing only the portion of the Standard Permit Condition (SPC) I language for Assessable Emissions that specifies the option for assessable potential to emit, which needs to be updated due to revisions made under this permit.

Section 3: Owner Requested Limits (ORLs) to Avoid PSD Major Classification

18 AAC 50.544(h) describes the requirements for a permit classified under 18 AAC 50.508(5). This permit describes the ORL, including specific testing, monitoring, recordkeeping, and reporting requirements; it lists all equipment covered by the ORL; and describes the classification that the limit allows the applicant to avoid.

Condition 4, Operating Hour Limits

The Permittee requested re-establishing the ORL for operational hour limits for EU IDs I-1, I-9, I-10, and S-2 that were originally established in Minor Permit AQ0911MSS05 to keep the stationary source's PTEs below the PSD major stationary source threshold of 250 TPY.

Minor Permit AQ0911MSS01 authorized EU ID S-2 as an emergency generator assumed to operate 500 hours/year. In the application for Title V Permit AQ0911TVP01, the Permittee requested a 500 hr/yr limit for EU ID S-2 to enable the stationary source to avoid classification as a PSD major source. The 500-hour-per-year limit for EU IDs I-1, I-9, I-10, and S-2 was included in the initial Title V Permit AQ0911TVP01 (Condition 14). The Permittee requested re-characterization of EU ID S-2 as a backup generator in Minor Permit AQ0911MSS03. Increasing the operating hours for this unit from 500 hr/yr to 1,200 hr/yr preserves the PSD avoidance limits for existing units to less than 250 tpy for NO_x and CO and allows the stationary source to remain a PSD minor source. As provided in Minor Permit AQ0911MSS05, this permit is re-establishing the limits in Conditions 4.1 and 4.2 to properly provide a basis for the limits.

Section 4: Ambient Air Quality Protection Requirements

18 AAC 50.544(a)(3) and 18 AAC 50.544(a)(6) require the Department to include conditions to protect air quality, when warranted. The Department determined that conditions are warranted to protect the annually averaged NO_2, annually averaged, 24-hour, three-hour, and one-hour SO_2, and 24-hour PM_{10} AAAQS. The latest ambient air quality modeling analysis was conducted as part of the Minor Permit AQ0911MSS05 processing.

Conditions 5 - 7, AAAQS Provisions for NO_2, SO_2, and PM_{10}

These conditions are carried over from Minor Permit AQ0911MSS05 Revision 1 because they are still in effect. The requirements from these conditions involves only the EUs that were authorized under Minor Permit AQ911MSS04 Revision 2.

Section 5: Standard Permit Conditions

Conditions 8 – 13, Standard Permit Conditions

18 AAC 50.544(a)(5) requires each minor permit issued under 18 AAC 50.542 to contain the standard permit conditions in 18 AAC 50.345, as applicable. 18 AAC 50.345(a) clarifies that subparts (c)(1) and (2), and (d) through (h), may be applicable for a minor permit.

The Department included all of the minor permit-related standard conditions of 18 AAC 50.345 in Minor Permit AQ0911MSS06. The Department incorporated these standard conditions as follows:

- 18 AAC 50.345(c)(1) and (2) is incorporated as Condition 8 of Section 5 (Standard Permit Conditions); and
- 18 AAC 50.345(d) through (h) is incorporated as Conditions 9 through 13, respectively, of Section 5 (Standard Permit Conditions).

APPENDIX A: EMISSIONS CALCULATIONS

Table A-1 presents details of the EUs, their characteristics, and emissions. Potential emissions, as provided in the application, are estimated using maximum annual operation for all fuel burning equipment as defined in 18 AAC 50.990(39) subject to any operating limits.

Table A-1: Potential Emissions of Permanent Existing Stationary EUs, in Tons Per Year (TPY)[1]

EU ID	Description	Rating	Hours/ year Limit[2]	Emission Factors						Potential Emissions per Year (TPY)					
				NOx	CO	PM	SO_2[5]	VOC	Reference	NOx	CO	PM_{10}/ $PM_{2.5}$	SO_2	VOC	CO_2e[6]
Offshore Pad															
I-1	Backup Gen	3,285 Hp	500	49.98 lb/hr	5.05 lb/hr	0.62 lb/hr	0.01 lb/gal (Mass Bal. – 0.1 % S)	0.2 lb/hr	Vendor Data[3]	12.5	1.26	0.16	0.60	0.05	940.6
I-6	Cold Vent	1 MMscf/hr	8,760	NA	NA	NA	NA	variable	Gas Composition	NA	NA	NA	NA	42.8	3,755
I-9	Generator	764 Hp	500	11.45 lb/hr	0.78 lb/hr	0.09 lb/hr	0.0002 lb/gal (Mass Bal. – 15 ppmw S limit)	0.1 lb/hr	Vendor Data[3]	2.86	0.20	0.02	0.002	0.03	218.8
I-10	Generator	764 kW	500	11.45 lb/hr	0.78 lb/hr	0.09 lb/hr		0.1 lb/hr		2.86	0.20	0.02	0.002	0.03	218.8
I-11	Firewater Pump	375 bhp	500	5.8 g/hp-hr	0.3 g/hp-hr	0.24 g/hp-hr		0.6 g/hp-hr		1.20	0.05	0.06	0.002	0.12	107.4
									Subtotal	**19.4**	**1.71**	**0.25**	**0.60**	**43.0**	**5,240.6**
Onshore Pad															
S-1a	Gas-fired Turbine	6.83 MW	8,760	37.1 lb/hr	28.2 lb/hr	0.0066 lb/MMBtu	53.2 lb/MMscf (Mass Bal. - 316 ppmv H_2S limit)	0.020 lb/MMBtu	PM: AP-42 Table 3.1-2a NOx, CO, VOC: Vendor data	190[4]	230[4]	2.33	20.0	7.06	41,325
S-1b		6.83 MW	8,760	37.1 lb/hr	28.2 lb/hr							2.33	20.0	7.06	41,325
S-1c		6.83 MW	8,760	37.1 lb/hr	28.2 lb/hr							2.33	20.0	7.06	41,325
S-2	Backup Gen	1,500 bhp	1,200	18.83 lb/hr	0.68 lb/hr	0.2 lb/hr	0.0002 lb/gal (Mass Bal. – 15 ppmw S limit)	0.3 lb/hr	Vendor Data[3]	11.3	0.41	0.12	0.01	0.18	1,031
S-4	Cold Vent	1.0 Mscf/hr	8,760	NA	NA	NA	NA	variable	Gas composition	NA	NA	NA	NA	0.20	17.7
									Subtotal	**201.3**	**230.4**	**7.11**	**60.0**	**21.6**	**125,024**
Drilling Rig															
I-2a	Rig Boiler	5.75 MMBtu/hr	8,760	0.02 lb/gal	0.005 lb/gal	0.0033 lb/gal	0.014 lb/gal (Mass Bal. – 1,000 ppmw S limit)	0.00034 lb/gal	AP-42 Tables 1.3-1 & 2, 1.3-2, and 1.3-3	3.68	0.92	0.61	2.61	0.06	4,121
I-2b	Rig Boiler	5.75 MMBtu/hr	8,760							3.68	0.92	0.61	2.61	0.06	4,121
I-3	Heater	4.38 MMBtu/hr	8,760							2.80	0.70	0.46	1.99	0.05	3,139
I-4	Heater	4.38 MMBtu/hr	8,760							2.80	0.70	0.46	1.99	0.05	3,139
I-7	3 Boilers	1 MMBtu/hr	8,760							1.92	0.48	0.32	0.02	0.03	2,150
I-12	Cement Storage	NA	8,760	NA	NA	0.0036 lb/hr	NA	NA	Vendor Data	NA	NA	0.02	NA	NA	NA
									Subtotal	**14.9**	**3.72**	**2.48**	**9.22**	**0.25**	**16,670**
Offshore Construction															
I-8	7 Heaters	1.2 MMBtu/h each	8,760	0.02 lb/gal	0.005 lb/gal	0.0033 lb/gal	0.014 lb/gal (Mass Bal. – 1,000 ppmw S limit)	0.00034 lb/gal	AP-42 Tables 1.3-1 & 2, 1.3-2, and 1.3-3	5.37	1.34	0.89	3.81	0.09	6,020
Onshore Construction															
S-3	3 Heaters	1.2 mmbtu/hr each	8,760	0.02 lb/gal	0.005 lb/gal	0.0033 lb/gal	0.014 lb/gal (Mass Bal. – 1,000 ppmw S limit)	0.00034 lb/gal	AP-42 Table 1.3-1	2.30	0.58	0.38	0.02	0.04	2,580
									Subtotal	**7.67**	**1.92**	**1.27**	**3.83**	**0.13**	**8,600**

Storage Tanks														
4 Diesel Storage Tanks (TO-1, 2, 16, 17)	600 barrels each	8,760	NA	NA	NA	NA	14.6 lb/yr	AP-42, Chapter 7	NA	NA	NA	NA	0.029	NA
7 Mineral Oil Storage Tanks (TO-3, 5, 6, 7, 18, 19, 20)	600 barrels each	8,760	NA	NA	NA	NA	135.3 lb/yr	AP-42, Chapter 7	NA	NA	NA	NA	0.474	NA
1 Onshore Line Blowdown Storage Tank (TO-4)	600 barrels	8,760	NA	NA	NA	NA	135.3 lb/yr	AP-42, Chapter 7	NA	NA	NA	NA	0.068	NA
3 Offshore Well Flowback Fluids Storage Tank (TO-1, 2, 15)	600 barrels each	8,760	NA	NA	NA	NA	135.3 lb/yr	AP-42, Chapter 7	NA	NA	NA	NA	0.203	NA
1 Offshore Fluid Swap Storage Tank	600 barrels	8,760	NA	NA	NA	NA	135.3 lb/yr	AP-42, Chapter 7	NA	NA	NA	NA	0.068	NA
1 Offshore Lube Oil Storage Tank	600 barrels	8,760	NA	NA	NA	NA	135.3 lb/yr	AP-42, Chapter 7	NA	NA	NA	NA	0.068	NA
								Subtotal	**NA**	**NA**	**NA**	**NA**	**0.910**	**NA**
								Total Existing Stationary Emission Units	**243.3**	**237.8**	**11.1**	**73.7**	**65.9**	**155,535**

Table Notes:
1. Emissions from nonroad engines are not included because they do not count towards permit applicability or assessable emissions, per 18 AAC 50.100.
2. Maximum annual operation for all units based on full-time operation, or permit operating limits, if applicable.
3. EFs used to calculate the NOx, CO, VOC, and PM PTEs for the diesel-fired engines are based on vendor-provided Not To Exceed (NTE) emission factors for EU IDs I-1, I-9, I-10, and S-2. For EU ID I-11, it is unclear if the EFs were NTE or nominal, therefore, the Department applied a 1.25 factor to convert them to NTE, as required under 40 CFR 60.4205(e) and 60.4212(c) & (d).
4. EU IDs S-1a, S-1b, and S-1c are currently subject to a combined NOx and CO limits of 190 TPY and 230 TPY, respectively.
5. SO_2 EFs for all EUs are based on mass balance, using each EU's respective fuel sulfur content limit (as shown in the table) and the following assumptions:
   Density of diesel fuel: 7.1 lb/gal (from AP-42 Table 3.4-1); Diesel fuel heating value: 0.137 MMBtu/gal; Engine brake-specific fuel consumption (BSFC): 7,000 Btu/hp-hr (from AP-42 Table 3.3-1)
   S-1a, S-1b and S-1c heat rate: 11,797 Btu/kW-hr; S-1a, S-1b, and S-1c fuel gas lower heat value (LHV) is assumed to equal: 939.2 Btu/scf; Standard molar volume: 379.9 scf/lb-mol; 1 lb-mole SO_2 = 64 lb SO_2
6. GHG (expressed in CO_2e) emission factors are obtained from 40 CFR 98, Table A-1 to Subpart A, and Tables C-1, and C-2 to Subpart C

Table A-2: Potential Emissions of EUs Removed, in Tons Per Year (TPY)

EU ID	Description	Rating	Hours/ year Limit[1]	Emission Factors						Potential Emissions per Year (TPY)					
				NOx	CO	PM	SO_2	VOC	Reference	NOx	CO	PM_{10}/ $PM_{2.5}$	SO_2	VOC	CO_2e
Onshore Pad															
S-1d	Gas-Fired Turbine	6.33 MW	500 Out of SoLoNOx	Variable[2]	Variable[2]	0.0066 lb/MMBtu	53.24 lb/MMscf (Mass Bal. - 316 ppmv H_2S)	0.02 lb/MMBtu	Vendor Data for NO_x, CO, and VOC AP-42 Table 3.1-2a for PM	52.8	116.9	2.01	17.28	6.10	35,696
S-1e	Gas-Fired Turbine	6.33 MW	8,210 In SoLoNOx	Variable[2]	Variable[2]	0.0066 lb/MMBtu		0.02 lb/MMBtu		52.8	116.9	2.01	17.28	6.10	35,696
S-7	Diesel Generator	800 kW	2,500	4.7 g/kW-hr	0.8 lb/hr	0.06 g/kW-hr	0.0002 lb/gal (Mass Bal. – 15 ppmw S)	0.1 g/kW-hr	Vendor data * 1.25/1.5 NTE[3]	10.4	1.8	0.08	0.01	0.27	1,536
									Total PTE for Removed EUs	**116.0**	**235.6**	**4.10**	**34.56**	**12.47**	**72,928**

Table Notes:
1. Operational hour limits are based on the limits established in Minor Permit AQ0911MSS05 Revision 1.
2. NO_x and CO Emission Factors for EU IDs S-1d and S-1e are based on those listed in the TAR for Minor Permit No. AQ0911MSS05.
3. EFs used for EU ID S-7 to calculate the NOx, CO, VOC, and PM PTEs are based on vendor-provided emission factors and applying the appropriate NTE multipliers (1.5 for NOx, VOC, and PM and 1.25 for CO) as required in 40 CFR 60.4204(d) & 60.4212(b) and 40 C.F.R. 1039.102(g)(1) & 1039.101(e)(3).