Air Quality Effects Analysis (AQEA)
for
Mara-NGON Joint Venture LLC
Engine Fleet

Portable
Various Counties in North Dakota

Associated with Permit No.:

ACP-18364 v1.0

North Dakota Department of Environmental Quality

Division of Air Quality

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1. Project Description

Mara-NGON Joint Venture LLC (Mara-NGON) submitted a Permit to Construct (PTC) application to the North Dakota Department of Environmental Quality – Division of Air Quality (Department) on September 2, 2026. The application was for the operation of their Engine Fleet (facility) of natural gas-fired generator engines in various counties in North Dakota.

The engines will be located at an oil and gas well site and will operate on natural gas to generate power. The oil and gas well and associated equipment and the compressor and associated equipment have different owner / operators and are not under common control with the natural gas-fired generator engines on this permit.

The Project emission units are found in ACP-18364 v1.0 Table 1-1.

2. Permit Description

Mara-NGON is adopting emission limits on NO_X, CO, and VOC for the generator engines to remain below Title V major source thresholds, making the facility classified as a synthetic minor source of air pollution. There is also a limit of 34 generator engines allowed at a single location, unless additional monitoring is conducted (See ACP-18364 v1.0 Condition 2.D). The facility is an area source of HAP.

After a complete review of the proposed Project (see Section 1) indicating that the facility is expected to comply with applicable federal and state air pollution rules and regulations, the Department will make a recommendation on PTC issuance for the Engine Fleet following the completion of a 30-day public comment period.

3. Facility Emission Profile

For all emission units associated with the Project, Table 1 lists the potential to emit (PTE) for all criteria air pollutants and selected HAP at a single location. Table 1 abbreviations are as follows: carbon monoxide (CO), oxides of nitrogen (NO_X), sulfur dioxide (SO_2), volatile organic compounds (VOC), filterable and condensable particulate matter (PM), and hazardous air pollutants (HAP) as defined in Section 112(b) of the Clean Air Act.

Table 1 – Project PTE Summary. All units are in tons per year (tpy).

Emission Unit Description	Emission Unit (EU)	CO	NO_X	SO_2	VOC	PM	Total HAP	Formaldehyde (Largest HAP)
Mesa engine	GEN-#	2.92	1.30	0.01	1.94	0.22	0.37	0.10
Total (34 Engines)		**99.1**	**44.1**	**0.5**	**66.1**	**7.6**	**12.5**	**3.3**

1. Rules Analysis

This section details the potential applicability and expected compliance status of each rule under the North Dakota Administrative Code (NDAC) 33.1-15—Air Pollution Control Rules.

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A. NDAC 33.1-15-01 – General Provisions:

This chapter covers the following topics: entry onto premises - authority, variances, circumvention, severability, land use plans and zoning regulations (only to provide air quality information), measurement of air contaminants, shutdown and malfunction of an installation - requirements for notification, time schedule for compliance, prohibition of air pollution, confidentiality of records, enforcement, and compliance certifications.

Applicability and Expected Compliance

Based on the review of the information provided, the facility will comply with all applicable sections of this rule.

B. NDAC 33.1-15-02 – Ambient Air Quality Standards:

This chapter requires that the facility complies with the North Dakota and Federal Ambient Air Quality Standards (AAQS).

Applicability and Expected Compliance

The facility is not subject to PSD nor does the facility's PTE trigger the modeling thresholds[1]; therefore, preconstruction modeling for this facility was not required. Based on the facility PTE and proposed stack heights, compliance with AAQS is expected to be maintained without additional controls.

C. NDAC 33.1-15-03 – Restriction of Emission of Visible Air Contaminants:

This chapter requires all non-flare emission sources at new facilities to comply with an opacity limit of 20% except for one six-minute period per hour when 40% opacity is permissible. For all flare emission sources, the limits are 20% and 60% respectively. Fugitive emissions must not exceed 40% for more than one six-minute period per hour. The chapter establishes exceptions to opacity requirements and that compliance shall be determined using EPA Reference Method 9 or 22.

Applicability and Expected Compliance

Based on Department experience with similar emission units, the facility is expected to comply with the 20%/40% opacity limit without additional controls.

D. NDAC 33.1-15-04 – Open Burning:

No person may cause, conduct, or permit open burning of refuse, trade waste, or other combustible material—as part of a salvage operation or otherwise—except as provided under NDAC 33.1-15-04-02 or 33.1-15-10-02.

[1] See October 6, 2014, Criteria Pollutant Modeling Requirements for a Permit to Construct. Available at: https://www.deq.nd.gov/publications/aq/policy/Modeling/Modeling_Memo.pdf

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Applicability and Expected Compliance

No open burning operations are permitted unless approved in advance by the Department.

E. NDAC 33.1-15-05 – Emissions of Particulate Matter Restricted:

This chapter establishes particulate matter emission limits, restrictions, and measurement methods for industrial processes, fuel burning equipment used for indirect heating (where emissions do not interact with process materials), waste incinerators, and crematoriums.

Applicability and Expected Compliance

Since there is no industrial process equipment that emits PM the limits in this chapter do not apply. It should be noted that emissions due to the combustion of gaseous fuels are not expected to exceed the allowable levels established by this chapter.

F. NDAC 33.1-15-06 – Emissions of Sulfur Compounds Restricted:

This chapter applies to any installation in which SO_2 emissions are substantially due to the sulfur content of burned fuel used primarily to produce heat. This chapter establishes requirements for measurement methods, continuous emission monitoring, reporting, and recordkeeping. This chapter is not applicable to installations which are subject to an SO_2 emission limit under NDAC 33.1-15-12 (NSPS, see Section 1.L) or which burn pipeline quality natural gas.

Applicability and Expected Compliance

The generator engines (EU GEN-#) associated with the Project will burn cleaned natural gas which will have a sulfur content below the limits established in this chapter (below 2 grains per 100 standard cubic feet of SO_2); therefore, the generator engines are exempt from this chapter.

G. NDAC 33.1-15-07 – Control of Organic Compounds Emissions:

This chapter establishes requirements for the construction of organic compound facilities related to closed-vent systems, control devices, and seals. This chapter requires organic compound vapors to be controlled by a continuously burning pilot flare or other equally effective control device. This chapter also requires hydrogen sulfide (H_2S) to be controlled effectively.

Applicability and Expected Compliance

The facility took a synthetic minor VOC limit of 0.3 g/hp-hr per engine. The facility will also comply with the higher NSPS Subpart JJJJ VOC regulation of 0.7 g/hp-hr per engine. As shown in the Table 1, total potential VOC emissions from the facility are approximately 66.13 tpy. The facility is subject to this chapter and is expected to comply with all applicable requirements.

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H. NDAC 33.1-15-08 – Control of Air Pollution from Vehicles and Other Internal Combustion Engines:

This chapter restricts the operation of internal combustion engines which emit, from any source, unreasonable and excessive smoke, obnoxious or noxious gas, fumes or vapor. This chapter also prohibits the removal or disabling of motor vehicle pollution control devices.

Applicability and Expected Compliance

The facility is subject to this chapter and is expected to comply with all applicable requirements should vehicles or other internal combustion engines be used. Based on the Department's experience with normal engine operations, the engines are not expected to emit any unreasonable and excessive smoke, obnoxious or noxious gases, fumes, or vapor.

I. NDAC 33.1-15-09 – [repealed]

J. NDAC 33.1-15-10 – Control of Pesticides:

This chapter provides restrictions on pesticide use, disposal, and the proper handling of empty pesticide containers.

Applicability and Expected Compliance

The facility is subject to this chapter and is expected to comply with all applicable requirements should pesticides be used.

K. NDAC 33.1-15-11 – Prevention of Air Pollution Emergency Episodes:

This chapter requires facilities to develop abatement strategy plans for use during an air pollution episode—as determined by the Department—to prevent emergencies and adverse effects to human health.

Applicability and Expected Compliance

When an air pollution episode is declared by the Department, the facility shall comply with the requirements in this chapter.

L. NDAC 33.1-15-12 – Standards of Performance for New Stationary Sources (40 CFR 60):

This chapter adopts most of the New Source Performance Standards (NSPS) and appendices under 40 CFR 60 as of July 1, 2019, to which the facility is subject:

1) NSPS A – General Provisions

This subpart is applicable to any facility in which an NSPS applies and contains general requirements for control devices and work practices, notification, performance tests, monitoring, reporting and recordkeeping.

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Applicability and Expected Compliance

The facility will comply with all requirements of this subpart. In addition, any physical or operational changes to the facility after it is built will be evaluated with respect to this subpart and others.

2) NSPS JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

This subpart applies to stationary spark ignition internal combustion engines that commence construction after July 1, 2007. Engines are categorized based on usage, size, and fuel type. This chapter establishes emission standards and requirements for compliance, testing, monitoring, reporting, and recordkeeping.

Applicability and Expected Compliance

The generator engines (EU GEN-#) are subject to the requirements of this subpart. The facility engines are rated at 671 horsepower, with a continuous operation horsepower of 617. The engines will be equipped with non-selective catalytic reduction (NSCR) controls and were constructed in 2024 and 2025.

To keep emissions below Title V major thresholds, the facility requested a restriction of lower emission limits than required by this subpart, which are listed in parentheses below:

- NO_X less than or equal to 0.2 g/hp-hr (1.0 g/hp-hr)

- CO less than or equal to 0.45 g/hp-hr (2.0 g/hp-hr)

- VOC less than or equal to 0.3 g/hp-hr (0.7 g/hp-hr)

The engines at this facility have been certified by the manufacturer and are not required to be tested for NOx, CO, and VOC by the permittee per NSPS Subpart JJJJ § 60.4243(b)(1). In order to demonstrate compliance with the above restrictions on NO_x, CO, and VOC, the Department is requiring initial compliance testing for NO_x, CO, and VOC emissions for at least ten percent of the engines (EU GEN-#) at a single location (example: a location with 30 engines would test at least 3 engines). The results of this testing will be considered representative of all like-kind engines at the facility.

The facility is also expected to comply with Subpart JJJJ requirements by properly maintaining and operating an air-to-fuel ratio controller and keeping a maintenance plan and records of conducted maintenance and, to the extent practicable, will maintain and operate the engines in a manner consistent with good air pollution control for minimizing emissions. If the engines are not operated and maintained according to the manufacturer's emission-related written instructions, the facility will demonstrate compliance by conducting emission testing every 8,760 hours of operations or every three years, whichever comes first.

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M. NDAC 33.1-15-13 – Emission Standards for Hazardous Air Pollutants (40 CFR 61):

This chapter adopts most of the National Emission Standards for Hazardous Air Pollutants (NESHAP) and appendices under 40 CFR 61 as of July 2, 2010.

Applicability and Expected Compliance

The facility does not appear to have any applicable requirements under this chapter.

N. NDAC 33.1-15-14 – Designated Air Contaminant Sources, Permit to Construct, Minor Source Permit to Operate, Title V Permit to Operate:

This chapter designates air contaminant sources that are required to obtain a PTC and a Permit to Operate (PTO) and the requirements for permits of various types, including public comment.

Applicability and Expected Compliance

The facility submitted an application and has met all requirements necessary to obtain a PTC. The facility will be considered a synthetic minor source via federally enforceable restrictions limiting PTE below 100 tpy at any single location. The restriction is placed on NO_X, CO, and VOC emission from the generator engines (EU GEN-#).

The permit must undergo public comment per NDAC 33.1-15-14-6. Once the facility completes construction and meets the PTC requirements, a facility inspection will be performed by the Department. Pending a satisfactory facility inspection and application, the facility will be issued a PTO by the Department.

O. NDAC 33.1-15-15 – Prevention of Significant Deterioration of Air Quality (40 CFR 52.21):

This chapter adopts the federal provisions of the PSD program (40 CFR 52.21) as of January 1, 2019. A facility is subject to PSD review if it is classified as a “major stationary source” or undergoes a “major modification” as defined by 40 CFR 52.21(b)(1-2). Major stationary sources are either: (1) facilities which fall under one of the specified source categories and the PTE exceeds 100 tpy of any NSR pollutant or, (2) facilities that do not fall under a specified category and the PTE exceeds 250 tpy of any NSR pollutant.

Applicability and Expected Compliance

The facility does not fall under one of the specified "major stationary source" categories under 40 CFR 52.21(b)(1)(i)(A), making it subject to a PSD threshold of 250 tpy. Since the Project is not considered a major modification and the PTE is below 250 tpy for all NSR pollutants as shown in Table 1 (excluding fugitive emissions), the facility is not subject to PSD review.

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P. NDAC 33.1-15-16 – Restriction of Odorous Air Contaminants:

This chapter restricts the discharge of objectionable odorous air contaminants which measure seven odor concentration units or greater outside the property boundary. This chapter addresses emissions of H_2S. This chapter also establishes the method of measurement using certified inspectors, scentometers, and other approved instruments.

Applicability and Expected Compliance

Based on Department experience with sources having similar emission units, processes, and low H_2S concentrations, the facility is expected to comply with this chapter without additional controls. Any odor-related complaints received by the Department will be investigated and resolved in accordance with this chapter.

Q. NDAC 33.1-15-17 – Restriction of Fugitive Emissions:

This chapter restricts PM and gaseous fugitive emissions that would violate Chapters 2 (AAQS), 3 (visible emissions), 15 (PSD), 16 (odor), or 19 (visibility), providing suggested abatement measures.

Applicability and Expected Compliance

The facility is required to take reasonable precautions to limit fugitive emissions in compliance with the aforementioned NDAC chapters.

R. NDAC 33.1-15-18 – Stack Heights:

This chapter restricts the use of stack heights above good engineering practices (GEP) and dispersion techniques to affect pollutant concentrations in the ambient air as defined by 40 CFR 51.100(hh-kk). Stack heights in exceedance of GEP are permissible if they undergo a demonstration study which is made available for review by the Department and the public.

Applicability and Expected Compliance

The facility is a portable unit, with no building structures. The units are skid mounted and will be operated as a portable source. The source will be reducing overall local area emissions that are the result of oil field flaring (which is a permitted activity). Based on the portable nature of the facility, there are no stack height requirements for this source.

S. NDAC 33.1-15-19 – Visibility Protection:

This chapter requires new major stationary sources or major modifications[2] to demonstrate the emissions will not cause or contribute to adverse impact on visibility in federal Class I areas. This chapter establishes requirements for visibility impact analysis, visibility

[2] Chapter 19 applies to a "new major stationary source" or "major modification" as defined in NDAC 33.1-15-15-01.

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models, notification, review by federal land managers, public participation, and visibility monitoring.

Applicability and Expected Compliance

The facility is not a new major stationary source and therefore is not subject to the requirements of this chapter. Given the minor source levels of the visibility impairing air pollutants, such as NO_X, SO_2, and PM, it is expected that the facility will not adversely contribute to visibility impairment within the three nearest Class I areas (units of the Theodore Roosevelt National Park and the Lostwood National Wildlife Refuge).

T. NDAC 33.1-15-20 – Control of Emissions from Oil and Gas Well Production Facilities:

This chapter regulates emissions from oil and gas well production facilities, requiring operators to register new wells and report gas composition changes. It establishes PSD applicability for major sources and mandates compliance with air quality standards for pollutants like sulfur dioxide and hydrogen sulfide.

Applicability and Expected Compliance

The facility is not an oil or gas well facility and is therefore not subject to the requirements of this chapter.

U. NDAC 33.1-15-21 – Acid Rain Program:

This chapter adopts the acid rain provisions under 40 CFR 72, 75, & 76 and appendices as of January 1, 2012.

Applicability and Expected Compliance

The facility is not subject to the acid rain provision since it is not an electric utility.

V. NDAC 33.1-15-22 – Emissions Standards for Hazardous Air Pollutants for Source Categories [40 CFR 63 a.k.a. MACT (Maximum Achievable Control Technology)]:

This chapter adopts most of the MACT standards and appendices under 40 CFR 63 as of July 1, 2019.

1) MACT A – General Provisions

This subpart is applicable to any facility to which a MACT standard applies and contains general requirements for control devices and work practices, notification, performance tests, monitoring, reporting and recordkeeping.

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Applicability and Expected Compliance

The facility's potential HAP emissions (see Table 1) are less than 10 tpy of any single HAP and less than 25 tpy for combined HAP, so the facility is an area (minor) source of HAP.[3] The facility will comply with all requirements of this subpart.

2) MACT ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

This subpart applies to stationary reciprocating internal combustion engines (RICE) at major and area sources of HAP, establishing HAP emission and operating limits and requirements for compliance, testing, reporting, and recordkeeping.

Applicability and Expected Compliance

The generator engines (EU GEN-#) are subject to the requirements under this subpart. The requirements of this subpart are met by complying with the requirements NSPS JJJJ. The Department has not adopted the area source provisions of this subpart per NDAC 33.1-15-22-03. All documentation shall be sent to EPA Region 8.

W. NDAC 33.1-15-23 – Fees:

This chapter establishes a filing fee of $325 for PTC applications, plus any additional fees based on actual processing costs assessed upon issuance of the draft PTC. This chapter also requires an annual PTO fee for Title V major and minor sources and well registrations.

Applicability and Expected Compliance

The applicant has paid the $325 filing fee, and there are no additional fees associated with this permit process.

X. NDAC 33.1-15-24 – Standards for Lead-Based Paint Activities:

This chapter establishes standards and requirements for the accreditation, notification, and fees of procedures, training programs, certification, and licensing for individuals and firms engaged in lead-based paint activities.

Applicability and Expected Compliance

The facility will not perform any lead-based paint activities and is therefore not subject to this chapter.

Y. NDAC 33.1-15-25 – Regional Haze Requirements (40 CFR 51.308):

This chapter establishes requirements for stationary sources (which were in existence between 1962 and 1977) which have the potential to "contribute to visibility impairment"

[3] 40 CFR 63.2 "Major Source"

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in Class I Federal areas, as defined by 40 CFR 51.301, to implement best available retrofit technology. In addition, existing stationary sources or groups of sources are required to implement emission reduction measures to make reasonable progress toward North Dakota's reasonable progress goals established in accordance with 40 CFR 51.308 at the discretion of the Department.

Applicability and Expected Compliance

The facility is a new source and based on low PTE of visibility impairment pollutants is not expected to contribute to visibility impairment. Therefore, the facility is not subject to the requirements of this chapter. See Section 4.S for discussion on visibility.

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