Technical Support Document
Air Quality Construction Permit Reopening
Permit No. SYN-SM-27139R0001-2012-02

This document sets forth the legal and factual basis for permit conditions, with references to applicable statutory and regulatory provisions, including provisions under the federal tribal New Source Review program, 40 C.F.R. §§ 49.151 - 49.161.

1.0 GENERAL INFORMATION

(A) Applicant and Stationary Source Information

Owner	Facility (SIC Codes: 4911)
Shakopee Mdewakanton Sioux Community of Minnesota 2330 Sioux Trail NW Prior Lake, MN 55372	Mystic Lake Casino Hotel 2400 Mystic Lake Boulevard Prior Lake, MN 55372 Scott County

(B) Contact Information

Responsible Official: Charlie Vig, Tribal Chairman
2330 Sioux Trail NW
Prior Lake, MN 55372
Phone: (952) 496-6109

Permit Contact: Stanley Ellison, Director
Phone: (952) 496-6158
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(C) Background and Facility Description

Shakopee Mdewakanton Sioux Community of Minnesota (SMSC) is a federally recognized Indian tribe. SMSC's reservation is located in Prior Lake, Minnesota and is comprised of approximately 3,300 acres. SMSC operates several businesses within the boundaries of its reservation, including two casinos, a fire department and a public works department. The Mystic Lake Casino Hotel is located on reservation lands held by the United States government in trust for the SMSC. The EPA retains responsibility for implementing the Clean Air Act within Indian country in Minnesota, including within the SMSC reservation.

The SMSC originally constructed the Mystic Lake Casino Hotel, 2400 Mystic Lake Boulevard, Prior Lake, Minnesota, in 1992. At that time, SMSC installed several diesel-fired engines, which

they operated as emergency generators. Emissions units 101, 102, 107 and 108 have been removed and were replaced by emissions units 116, 117 and 118. Emission unit 103 replaced an existing unit in 2004 and emission unit 104 replaced an existing unit in 2008. The SMSC added additional generators in 2006 (EU 111) and 2009 (EU 113, 114, and 115).

On April 9, 2012, EPA issued a synthetic minor construction permit, permit number SYN-SM-27139R0001-2012-01, to SMSC. The permit authorized the construction and operation of EU 116, EU 117, and EU 118. The permit established a synthetic minor limit for EU 116, EU 117, and EU118 intended to limit NOx emissions to below 250 tons per year, the prevention of significant deterioration (PSD) major source threshold. The permit established annual fuel usage limits equivalent to 700 hours of operation per year per engine at maximum load to ensure that the NOx synthetic minor limit is enforceable as a practical matter. EPA is proposing to reopen permit SYN-SM-27139R0001-2012-01 in this permitting action, renaming it SYN-SM-27139R0001-2012-02.

On June 23, 2014, EPA issued the after-the-fact Air Quality Construction Permit, permit number MIN-SM-27139R0001-2013-02, to SMSC. The permit established annual NOx synthetic minor emission limits for EU 103, EU 104, EU 109, EU 110, EU 111, and EU 112 intended to limit NOx emissions to below 250 tons per year, the PSD major source threshold. The permit established annual fuel usage limits equivalent to 700 hours of operation per year per engine at maximum load to ensure that the NOx synthetic minor limit is enforceable as a practical matter. EPA is proposing to reopen permit MIN-SM-27139R0001-2013-02 in a separate permitting action.

Facility Emissions:

Table 1. Total Facility Potential to Emit Summary

	PM Tpy	PM_{10} tpy	$PM_{2.5}$ tpy	SO_x tpy	NOx tpy	CO tpy	VOC tpy	Lead tpy	Single HAP tpy	All HAPs tpy
Total Facility Potential Emissions	23.8	23.8	23.8	1.7	2,140.8	232.3	50.7	0.0003	0.7	1.4
Total Facility Actual Emissions	0.3	0.3	0.3	0.01	26.1	2.9	0.6	0	0.007	0.01

(D) Area Classification

The facility is located in Scott County, which is designated attainment with National Ambient Air Quality Standards for all criteria pollutants. There are no Prevention of Significant Deterioration Class I areas within 100 kilometers of Mystic Lake Casino Hotel or the SMSC reservation.

2.0 PROCESS DESCRIPTION

(A) Description of Permit Action

This proposed permit action is a reopening of a construction permit number SYN-SM-27139R0001-2012-01 issued to SMSC on April 9, 2012. EPA issued the April 9, 2012, permit to authorize the construction and operation of EU 116, EU 117, and EU 118, three diesel-fired generators used for backup power and peak load management for Mystic Lake Casino Hotel. The permit established NOx emission limits and annual fuel restrictions for each of the engines.

In the December 18, 2014, letter, SMSC requested that EPA reopen the permit to remove the annual testing requirement; add additional monitoring equipment, including a fuel usage meter and a runtime hour meter on each of the three engines; and specify the methods to calculate NOx emissions from each of the three engines. SMSC requested these revisions as an administrative permit revision pursuant to 40 C.F.R. § 49.159(f). In a phone call on January 13, 2015, Michael Langman of EPA Region 5's Air Permit Section contacted Simeon Matthews of SMSC, informing him that could not process the request as an administrative permit revision since the requested revisions were not revisions listed at 40 C.F.R. § 49.159(f)(1). On January 23, 2015, SMSC resubmitted its request for a permit revision that would be subject to the permit issuance and public participation requirements of 40 C.F.R. § 49.151.

In the December 18, 2014, letter, SMSC also requested that EPA remove the requirement to conduct annual testing using the portable electrochemical analyzer procedure, test method CTM-034. In the January 23, 2015, letter, SMSC further requested that EPA revise the Method 7E periodic performance testing interval from one of the three generators tested every three years so that each engine is tested at least once every nine years to each engine being tested every five years. EPA is approving SMSC's requested revision to the testing interval and will include the revised testing requirements in the revised permit.

Finally, SMSC requested an administrative permit revision pursuant to 40 C.F.R. § 49.159(f) to add monitoring and NOx calculation methods to the permit in its December 18, 2014, letter. SMSC requested that EPA include a requirement to equip each engine with both a fuel meter and a runtime hour meter. SMSC also requested the calculation methods to determine NOx emissions from each engine using the fuel meter under normal circumstances and the runtime hour meter in the event of a fuel meter failure. Currently, the permit requires SMSC to determine NOx emissions based on fuel usage. The requirement to add a fuel meter to each engine will ensure that fuel flow to each generator is accurately measured. During periods of fuel meter failure, the runtime hour meter will help to provide a conservative estimate of NOx emissions from each engine since maximum fuel flow is assumed during those periods. Requirements specifying the NOx emission calculation methods ensures consistency in the method used to determine compliance with the NOx emission limits. Further, the requested additional monitoring and calculation methods are consistent with other permits issued to SMSC. Since the requested revisions strengthen the ability to demonstrate compliance with the NOx emission limit, EPA is approving SMSC's requested monitoring and calculation revisions and

will include these requirements in the revised permit. However, for the reasons given in the next paragraph, these revisions will not be processed as an administrative permit revision.

40 C.F.R. § 49.159(f)(1) provides several instances where an administrative permit revision may be appropriate. The new monitoring conditions do not require SMSC to conduct more frequent monitoring for any of the emission units at the facility. Instead, the requirements explicitly identify the monitoring and calculation methods already being used to demonstrate compliance with the NOx emission limits. Further, the requirement to use the runtime hour meter applies only when the fuel meter has failed. Use of the runtime hour meter in lieu of the fuel meter when the fuel meter fails ensures that SMSC is complying with the NOx emission limits established in the permit at all times. These revisions do not increase any emission unit's allowable emissions limit for NOx or any other regulated NSR pollutant. However, they are subject to review pursuant to the requirements of the tribal minor NSR program since the new monitoring requirement is used to show compliance with a NOx limit established pursuant to the federal tribal minor NSR program. This revision does not correct typographical errors, is not a minor administrative change at the source, and does not change the name of the owner or operator of the source. For these reasons, the revisions requested in the December 18, 2014, letter will be subject to all permitting requirements given in the federal tribal minor NSR program at 40 C.F.R. §§ 49.151-161, including permit issuance and public participation requirements.

While incorporating SMSC's requested revisions, EPA discovered that several general permit requirements did not closely track the language of the 40 C.F.R. Part 49. EPA is revising the permit requirements as part of this proposed permit reopening.

SMSC's requested revisions and EPA's proposed revisions will not affect the NOx emission limits and annual fuel usage limits established in permit number SYN-SM-27139R0001-2012-01. If finalized, permit number SYN-SM-27139R0001-2012-01 will be reissued as permit number SYN-SM-27139R0001-2012-02.

(B) Table 2. Emission Unit Summary:

Emission Unit	EU116	EU117	EU118
Unit Type	Engine/generator	Engine/generator	Engine/generator
Manufacturer/Model	Caterpillar Model 3516C	Caterpillar Model 3516C	Caterpillar Model 3516C
Power Rating	2,230 kW	2,230 kW	2,230 kW
Exhaust Height	15.75 feet	15.75 feet	15.75 feet
Exhaust Diameter	12 in	12 inches	12 inches
Exhaust Flow	7,647.4 ACFM	7,647.4 ACFM	7,647.4 ACFM
Exhaust Temperature	752.2 F	752.2 F	752.2 F
Fuel Type	Ultra low (0.0015%) sulfur diesel fuel only	Ultra low (0.0015%) sulfur diesel fuel only	Ultra low (0.0015%) sulfur diesel fuel only

(C) Table 3. Project Potential to Emit Summary

	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	CO	VOC	Lead	Single HAP	All HAPs	CO_{2e}
Potential hourly emissions per engine (lb/hr)	0.2	0.2	0.2	0.03	35.9	2.0	0.7	0	0.02	0.03	3,264.7
Potential hourly emissions for 3 engines (lb/hr)	0.6	0.6	0.6	0.09	107.7	6.0	2.1	0	0.05	0.09	9,794.1
Potential emissions for 3 engines (tpy)	2.6	2.6	2.6	0.4	471.6	26.3	9.2	0	0.2	0.4	42,897
Project Potential to Emit (Limited to 99,610 gal/yr)	0.3	0.3	0.3	0.03	37.8	2.1	0.9	0	0.02	0.03	3,428

(D) Enforcement Issues

EPA and SMSC have resolved in principle the alleged failure by SMSC to obtain a construction permit prior to commencing construction of the three generators that are the subject of this permitting action, through an administrative consent order.

(E) Pollution Control Equipment

The proposed generators will be required to be certified to meet New Source Performance Standards (NSPS) Subpart IIII, EPA Tier 2 emissions standards. To meet the emission standards the engines use a catalytic converter to reduce carbon monoxide (CO), nitrogen oxides (NOx), and volatile organic compounds (VOC). The catalytic converter is an inherent part of the process and is not identified as add-on pollution control equipment.

3.0 APPLICABLE REQUIREMENTS

(A) Prevention of Significant Deterioration (PSD)

This source is currently subject to the requirements of 40 C.F.R. § 52.21 based on its potential to emit and the definition of "major source" in 40 C.F.R. § 52.21. The three new generators constitute major modifications to a major stationary source, based upon their uncontrolled potential to emit. SMSC has requested that operating conditions be placed into the permit to avoid PSD applicability for the project. Minor source limitations are possible under EPA's minor source program for Indian country, codified at 40 C.F.R. § 49.151, *et. seq.*

(B) Restrictions on Potential to Emit

Potential to emit is defined in 40 C.F.R. § 52.21 as the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation, or the effect it would have on emissions, is federally enforceable.

Although SMSC is subject to the requirements of the PSD permitting program based on its potential to emit, it has relatively low actual emissions. SMSC has requested that limits on its potential to emit for generators 116, 117 and 118 be set in its construction permit to avoid major source modification regulatory requirements. Limits have been set to restrict fuel usage to below 99,610 gallons per year per unit, based on a 12 month rolling sum. The type of fuel is also restricted to ultra low diesel fuel with a maximum sulfur content of 0.0015 percent. Restrictions on potential to emit will be monitored using fuel meters, runtime hour meters, and monthly recordkeeping requirements. SMSC will also be required to conduct Method 7E NOx performance tests at each generator once every five years, which is consistent with similar permits issued to SMSC.

(C) New Source Performance Standards (NSPS)

The proposed engines are required to be certified to meet NSPS Subpart IIII, EPA Tier 2 emissions standards. To meet the emission standards the engines use a catalytic converter to reduce carbon monoxide, nitrogen oxides, and volatile organic compounds. The catalytic converter is considered an inherent part of the process, not add-on pollution control equipment.

(D) National Emissions Standards for Hazardous Air Pollutants (NESHAP)

The proposed engines are an area source of hazardous air pollutants (HAP) because they have a potential to emit any single HAP at a rate lower than 10 tons per year or any combination of HAPs at a rate lower than 25 tons per year. They are new stationary reciprocal internal combustion engine (RICE) units because they will be installed after June 12, 2006. 40 C.F.R. Part 63, Subpart ZZZZ allows affected sources to meet the requirements of the subpart by

meeting the requirements of 40 C.F.R. Part 60, Subpart IIII. There are no additional control requirements under Subpart ZZZZ.

(E) Endangered Species Act

Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) requires all Federal agencies, including EPA, to insure that any action authorized, including the issuance of a federal permit, does not jeopardize the continued existence of an endangered or threatened species or designated or proposed critical habitat. As part of this process, Section 7(a)(2) requires a consultation with the Fish and Wildlife Service if the project may have an effect on a listed species.

According to the December 2014 *County Distribution of Federally-Listed Threatened, Endangered, Proposed and Candidate Species* list (distribution list), the northern long-eared bat may be present in Scott County.

This permit does not authorize the additional construction of emission units. This permit is being issued to revise monitoring and testing requirements established in a previously-issued construction permit. For this reason, EPA has determined that the issuance of this permit will have no effect on the northern long-eared bat. Further ESA consultation is not necessary for this permit action.

(G) National Historic Preservation Act

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires federal agencies, EPA included, to take into account the effects of undertaking on historic properties. The implementing regulations of the NHPA can be found at 36 C.F.R. Part 800.

An undertaking, as defined at 36 C.F.R §800.16(y), includes projects requiring a federal permit. Therefore, the issuance of this permit constitutes an undertaking.

Since this permit does not authorize additional construction, and since this permit action only revises monitoring and testing requirements, this action will have no potential to cause effects on historic properties, assuming such historic properties were present. Pursuant to 36 C.F.R. § 800.3(a)(1), since the issuance of this permit will have no potential to cause effects on historic properties, EPA has no further obligations under section 106 of the NHPA or 36 C.F.R. Part 800.

(H) Tribal Consultation

According to EPA's 2011 Policy on Consultation and Coordination with Indian Tribes, EPA is to consult on a government-to-government basis with federally-recognized tribal governments when EPA actions and decisions may affect tribal interests. Since EPA is the permitting authority for Mystic Lake Casino Hotel, EPA's final permit decisions may affect tribal interests, requiring consultation with the tribe.

Since Mystic Lake Casino Hotel is owned by SMSC, and since this permitting action is the result of December 18, 2014, and January 23, 2015, requests by SMSC, further consultation is not necessary.

4.0 REVISIONS TO THE PERMIT

Based on the application and supporting information provided by SMSC, EPA is proposing to reopen permit number SYN-SM-27139R0001-2012-01 to revise testing requirements, add additional monitoring requirements, add calculation method requirements, and add 40 C.F.R. Part 49 permit requirements to the permit. This permit will be reissued as SYN-SM-27139R0001-2012-02.

EPA is proposing to revise the following conditions based on the information provided by SMSC. Additions are indicated in **BOLD** typeface while deletions are indicated by ~~strikethrough~~ font.

1.) Condition 2.0(B)(1) is being revised to require EU 116, EU 117, and EU 118 to be equipped with both a fuel meter and a runtime hour meter. Condition 2.0(B)(1) of the permit is also being revised to specify the NOx emission calculation methodology used to demonstrate compliance with the NOx emission limits. The revised condition now reads as follows:

1. Monitoring

i. The Permittee shall make calculations to comply with rolling monthly averages by the 15th day of the next month and shall add the monthly total to the previous 11 months of data.

ii. EU 116, EU 117, and EU 118 shall each be equipped with a fuel meter and a runtime hour meter.

iii. The Permittee shall calculate NOx emissions using fuel usage data and the NOx emission factor determined from the most recent performance test.

iv. Monthly NOx emissions shall be calculated using the following equation:

$$NOx = F \times EF_{gal} \times 0.137 / 2000$$

Where: NOx is the NOx emissions, in tons.
F is the engine's monthly fuel usage, in gallons.
EF_{gal} is the NOx emission factor in pounds/MMBTU.

v. If a fuel meter fails on any individual generator, monthly NOx emissions shall be calculated using the following equation:

$$NOx = H \times EF_{hour} / 2000$$

Where: NOx is the NOx emissions, in tons.

H is the engine's monthly operating hours, in hours.
EF_{hour} is the NOx emission factor in pounds/hour.

2. […]

2.) Condition 2.0(B)(2)(ii) is being revised to change the Method 7E periodic performance testing interval from one generator tested every three years so that each generator is tested on a revolving basis once every nine years to each generator is tested once every five years. The revised condition now reads as follows:

ii. Periodic Performance Tests. The Permittee shall conduct a **NOx** performance test on ~~one of the three emission units~~ **EU 116, EU 117, and EU 118** once every ~~three~~ **five** years, starting ~~three~~ **five** years after the initial compliance test (on or before the anniversary of the initial compliance test)~~., testing the emissions units on a revolving basis so that each unit is tested once every nine years.~~ The Permittee shall conduct the tests to determine compliance with the applicable NO_x emissions limits. ~~Within 45 days of the performance test(s), the Permittee shall furnish the EPA a written report of the results of such performance test(s).~~ **Each test shall be conducted using the Reference Test Method specified in Condition 2.0 B.2.iii of this permit.**

3.) Condition 2.0(B)(2)(viii) is being removed from the permit. This condition required annual testing using method CTM-034. Subsequent permit conditions have been renumbered. The permit now reads as follows:

~~viii. Annual Testing. The Permittee shall measure NOx emissions from each emissions unit annually (on or before the anniversary of the initial compliance test) using a portable emissions analyzer to determine compliance with the applicable emissions limits, and shall furnish the EPA with a written report of the results of such measurements no later than 45 days after the tests are completed. The portable emissions analyzer shall be used according to the Portable Electrochemical Analyzer Procedure in Attachment 1 of the permit. This requirement does not apply during the calendar years in which a performance test is required, only during years between the periodic performance tests.~~

~~ix.~~**vii.** […]

4.) Condition 2.0(C)(1) has been revised to include an additional requirement to record the number of hours of operation that an engine affected by a fuel meter failure operated. The revised condition now reads as follows:

1. Recordkeeping

i. The Permittee shall maintain at the Tribal Government office […]

[…]
g. […]**; and**
h. **Number of hours of operation for EU 116, 117, or 118 during periods of fuel meter failure.**

5.) Condition 2.0(C)(2) has been revised to remove the requirement to submit annual NOx emission measurements using method CTM-034. The revised condition now reads as follows:

2. Reporting

~~Test Reports. Within 45 days after completion of a set of annual NOx emission measurements under Section B.3, above, the Permittee shall submit a copy of the results to the EPA.~~
[…]

In addition to the requested permit revisions, EPA is proposing to revise certain permit conditions required to be in the permit by 40 C.F.R. § 49.155 to more closely follow the language of the regulations. The following permit conditions are being revised or added to the reopened permit:

1.) Condition 4.0(I) is being revised to ensure that entry and inspection requirements are properly included in the permit. 40 C.F.R. § 49.155(a)(7)(vii) requires the permit to contain provisions related to entry and inspection. These provisions include the ability to inspect emission units during normal business hours or while the source is in operation, the ability to record any inspection through various means, and to sample or monitor substances or parameters to ensure compliance with the permit or other applicable requirements. In permit number SYN-SM-27139R0001-2012-01, these provisions were mistakenly omitted from the permit and are being added to the reopened permit. The revised condition now reads as follows:

I. Entry and Inspection

The Permittee shall allow an EPA authorized representative, upon presentation of credentials, to:

1. Have a right of entry to, upon, or through any premises where a source subject to this permit is located or where records required by this permit are kept;

2. At reasonable times, have access to any records required by this permit and to make copies of any records;

3. Inspect**, during normal business hours or while the source is in operation,** the generators that are the subject of this permit and

any monitoring equipment and method required by or referenced in this permit;

4. Record any inspection by use of written, electronic, magnetic, and photographic media; and

5. Sample **or monitor, at reasonable times,** ~~any emissions~~ **substances or parameters** ~~to assure compliance with this permit or other applicable requirements~~ **for the purpose of assuring compliance with the permit or other applicable requirements.**

2.) Condition 4.0(L) is being added to the permit to include provisions related to permit revisions, reopenings, revocation and reissuance, and termination. 40 C.F.R. § 49.155(a)(7)(iv) requires the permit to include a condition that allows for EPA to reopen, revoke and reissue, or terminate a permit for cause. 40 C.F.R. § 49.155(a)(7)(iv) also requires that an application by the Permittee for a permit revision, reopening, revocation and reissuance, or termination or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. 40 C.F.R. § 49.155(a)(7)(vi) requires the permit to contain a condition requiring the submission of any information required to make a determination whether cause exists for revising, revoking and reissuing or terminating the permit or to determine compliance with the permit. In permit number SYN-SM-27139R0001-2012-01, these provisions were mistakenly omitted from the permit and are being added to the reopened permit. The new condition reads as follows:

L. Permit Revision, Reopening, Revocation and Reissuance, or Termination

1. EPA may revise, reopen, revoke and reissue, or terminate this permit for cause. The filing of a request by the Permittee for a permit revision, revocation and re-issuance or termination or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. [40 C.F.R. § 49.155]

2. The Permittee shall furnish, within a reasonable time, any information that EPA may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit or to determine compliance with the permit. For any such information claimed to be confidential, the Permittee must also submit a claim of confidentiality in accordance with 40 C.F.R. Part 2, Subpart B. [40 C.F.R. § 49.155]

In addition to the previously identified permit revisions, the following formatting revisions are being made to the permit:

1.) The formatting of the Table of Contents has been revised. This revision does not revise any permit condition.

2.) An Abbreviations and Acronyms page has been added to the permit. This revision does not revise any permit condition.

3.) Condition 2.0(B) has been revised to correct the numbering of each permit condition. This revision ensures that the numbering in this condition is consistent with other conditions in the permit. This revision does not affect any permit requirement.

4.) Condition 2.0(C)(1) has been revised to correct the numbering of each permit condition. This revision ensures that the numbering in this condition is consistent with other conditions in the permit. This revision does not affect any permit requirement.

5.) Condition 4.0(E) has been revised to correct the numbering of each permit condition. This revision ensures that the numbering in this condition is consistent with other conditions in the permit. This revision does not affect any permit requirement.

6.) Permit Sections 1.0, 2.0, 3.0, and 4.0 have been revised to ensure that each section begins on its own page. This provides a better layout and enhanced readability for the permit. This revision does not affect any permit requirement.

7.) The previous revisions may have affected page numbering. Page numbering has been revised. This does not affect any permit requirement.