Technical Support Document
for
Draft Air Emission Permit No. 04900030-101

This technical support document (TSD) is intended for all parties interested in the draft permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the preliminary determination to issue the draft permit.

1. General information

1.1 Applicant and stationary source location

Table 1. Applicant and source address

Applicant/Address	**Stationary source/Address** (SIC Code: 4911 – Electric Services)
Northern States Power a MN Corp dba Xcel 414 Nicollet Mall Minneapolis, Minnesota 55401-1927	Xcel Energy - Prairie Island Nuclear Plant 1717 Wakonade Dr E Welch, MN 55089-9642
Contact: Hannah Mathers Phone: 763-647-4338	

1.2 Facility description

This air emission facility is the Xcel Energy Prairie Island Nuclear Plant, a facility that generates 1076 MW of electricity in the city of Welch, Goodhue County, Minnesota. The air emission facility is composed of one distillate oil-fired heating boiler and 19 emergency internal combustion engines used to generate power, pump cooling water, and pump water for firefighting, and potentially used in flood response. The generators and water pumps are required by the U.S. Nuclear Regulatory Commission. The criteria pollutants of concern are Carbon Monoxide (CO) and Nitrogen Oxides (NO_x).

1.3 Description of the activities allowed by this permit action

This permit action is a Part 70 Reissuance. This permit action includes a minor amendment authorizing replacement of EQUI 28 with a new emergency generator (EQUI 85) at the communications tower and addition of a gasoline tank (EQUI 87) used to dispense gasoline to vehicles and equipment at the facility. This permit action also includes a minor amendment authorizing the addition of a new emergency generator (EQUI 86) at the substation. Additionally, an administrative amendment is included to extend the performance testing deadline for the D3 and D4 engines (EQUIs 5 & 6) due to the engines being offline for maintenance/repairs. However, the engines are still offline as of permit issuance, so the performance testing requirements were modified to require testing within 90 days of resuming operation of either engine.

1.4 Description of notifications and applications included in this action

Table 2. Notifications and applications included in this action

Date received	**Application/Notification type and description**
05/06/2025	Administrative Amendment (IND20250001)
06/13/2014	Minor Amendment (IND20140002)
08/04/2017	Minor Amendment (IND20160001)
01/31/2018	Part 70 Reissuance (IND20180001), with supplemental information received on 6/12/2026

1.5 Facility emissions

Table 3. 2014 Minor Amendment (IND20140002) Title I emissions summary

Pollutant	**Unlimited potential emissions from the modification** (tpy)	**Limited potential emissions from the modification** (tpy)	**NSR/112(g) threshold for new major source** (tpy)	**NSR/112(g) review required?** (yes/no)
PM	0.0025	0.0025	250	no
PM_{10}	0.0025	0.0025	250	no
$PM_{2.5}$	0.0025	0.0025	250	no
NO_X	0.28	0.28	250	no
SO_2	0.000075	0.000075	250	no
CO	0.47	0.47	250	no
Ozone (VOC)	0.13	0.13	250	no
Lead	0.00	0.00	250	no
CO_2e*	14	14	100,000	no
Total HAPs	0.0041	0.0041	25	no

*Carbon dioxide equivalents as defined in Minn. R. 7007.0100.

Table 3a. 2014 Minor Amendment (IND20140002) Non-Title I emissions increase summary

Pollutant	**After change** (lb/hr)	**Before change** (lb/hr)	**Net change*** (lb/hr)	**Insignificant modification thresholds** (lb/hr <)	**Minor and moderate amendment thresholds** (lb/hr < or ≥)	**Type of amendment** (minor or moderate)
PM_{10}	0.010	0.010	0	0.855	3.42	minor**
NO_x	1.13	0.46	0.67	2.28	9.13	minor**
SO_2	0.0003	8.62E-05	2.14E-04	2.28	9.13	minor**
CO	1.90	0.06	1.84	5.70	22.80	minor**
VOC	0.062	0.020	0.042	2.28	9.13	minor**
Lead	0	0	0	0.025	0.11	minor**

*The term 'Net Change' is not equivalent to 'Net Emissions Increase' as defined at 40 CFR § 52.21(b)(3).

**Emission increases did not exceed the insignificant modification thresholds to require a minor amendment, however a minor amendment was required for the addition of NSPS Subpart JJJJ and NESHAP Subpart ZZZZ requirements.

Table 4. 2016 Minor Amendment (IND20160001) Title I emissions summary

Pollutant	**Unlimited potential emissions from the modification** (tpy)	**Limited potential emissions from the modification** (tpy)	**NSR/112(g) threshold for new major source** (tpy)	**NSR/112(g) review required?** (yes/no)
PM	0.0075	0.0075	250	no
PM_{10}	0.0075	0.0075	250	no
$PM_{2.5}$	0.0075	0.0075	250	no
NO_X	1.12	1.12	250	no
SO_2	0.0012	0.0012	250	no
CO	0.12	0.12	250	no
Ozone (VOC)	0.0015	0.0015	250	no

Pollutant	Unlimited potential emissions from the modification (tpy)	Limited potential emissions from the modification (tpy)	NSR/112(g) threshold for new major source (tpy)	NSR/112(g) review required? (yes/no)
Lead	0	0	250	no
CO_2e*	128	128	100,000	no
Total HAPs	0.053	0	25	no

*Carbon dioxide equivalents as defined in Minn. R. 7007.0100.

Table 4a. 2016 Minor Amendment (IND20160001) Non-Title I emissions increase summary

Pollutant	After change (lb/hr)	Before change (lb/hr)	Net change* (lb/hr)	Insignificant modification thresholds (lb/hr <)	Minor and moderate amendment thresholds (lb/hr < or ≥)	Type of amendment (minor or moderate)
PM_{10}	0.030	0	0.030	0.855	3.42	minor
NO_x	4.48	0	4.48	2.28	9.13	minor
SO_2	0.0047	0	0.0047	2.28	9.13	minor
CO	0.47	0	0.47	5.70	22.80	minor
VOC	0.060	0	0.060	2.28	9.13	minor
Lead	0	0	0	0.025	0.11	minor

*The term 'Net Change' is not equivalent to 'Net Emissions Increase' as defined at 40 CFR § 52.21(b)(3).

Table 5. Total facility potential to emit summary

	PM tpy	PM_{10} tpy	$PM_{2.5}$ tpy	SO_2*** tpy	NO_x tpy	CO tpy	CO_2e tpy	VOC tpy	Single HAP** tpy	All HAPs tpy
Total facility limited potential emissions	17.42	17.24	17.11	0.119	225	53.17	9,088	19.98	0.070	0.221
Total facility actual emissions (2024)	0.287	0.162	0.118	0.251	5.11	1.58	*	0.176	*	

*Not reported in Minnesota emission inventory.
**The highest single HAP is Formaldehyde
*** 2024 actual SO_2 emissions are higher than potential emissions due to inclusion of emission units that were removed from the permit in this permit action.

Table 6. Facility classification

Classification	Major	Synthetic minor/area	Minor/Area
New Source Review		X	
Part 70	X		
Part 63			X

1.6 Changes to permit

The permit does not authorize any specific modifications, however, the MPCA has a combined operating and construction permitting program under Minnesota Rules Chapter 7007, and under Minn. R. 7007.0800, the

MPCA has authority to include additional requirements in an operating permit. The following changes to the permit are made through this permit action:

- The permit has been updated to reflect current MPCA templates and standard citation formatting;
- Completed requirements and the requirements for equipment that has been removed have been deleted;
- Subject item details have been updated based on the equipment that was actually installed;
- Some requirements have been reordered or moved to help with clarity (i.e., similar requirements are grouped);
- Performance test requirements for COMG 2 were updated to require testing when the engines operate for more than 100 hours 12-month rolling average instead of calendar year to align with current guidance;
- Performance test requirements for COMG 3 were updated to require testing within 90 days of resuming operations of these engines since they have been taken offline;
- The insignificant activities for the facility have been updated to reflect the current activities on site as well as to reflect changes to these rules since the last permit was issued; and
- Nonroad engines were removed from the permit and nonroad engine permit language was updated to be consistent with other facilities.

2. Regulatory and/or statutory basis

2.1 New source review (NSR)

The permit carries forward limits on the facility such that it is a minor source under New Source Review regulations. The permit action does not change this status but does authorize two minor modifications under New Source Review.

2.2 Part 70 permit program

The facility is a major source under the Part 70 permit program.

2.3 New source performance standards (NSPS)

40 CFR pt. 60, subp. IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE):
Pursuant to 40 CFR § 60.4200(a)(2)(i) and 40 CFR § 60.4200(e), the requirements are applicable to COMG 8 because all of these diesel- fired emergency generators were manufactured after April 1, 2006.

40 CFR pt. 60, subp. JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (SI ICE):
Pursuant to 40 CFR § 60.4230(a)(4)(iv), the requirements are applicable to EQUI 85 because this propane-fired emergency generator was manufactured after June 12, 2006.

2.4 National emission standards for hazardous air pollutants (NESHAP)

The facility is an existing area source for NESHAPs and is subject to the NESHAPs below.

40 CFR pt. 63, subp. ZZZZ- National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines:
COMG 5 is subject to the requirements of 40 CFR pt. 63, subp. ZZZZ pursuant to 40 CFR 63.6585, because the Permittee owns or operates stationary compression ignition (IC) internal combustion engines (ICE) (COMG 5) at an area source of HAPs. Non-road engines are not an affected source subject to the requirements of 40 CFR pt. 63, subp. ZZZZ, as long as these engines qualify pursuant to 40 CFR § 63.6585(a) and 40 CFR § 63.6590(a). A portable non-road engine becomes stationary if it stays in one location for more than 12 months (a shorter time period if a seasonal source).

40 CFR pt. 63, subp. JJJJJJ - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources:
Pursuant to 40 CFR § 63.11193, EQUI 26 is subject to the requirements of 40 CFR pt. 63, subp. JJJJJJ because it is an industrial boiler at an area source of HAPs.

40 CFR pt. 63, subp. CCCCCC - National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities:
Pursuant to 40 CFR § 63.11111 EQUI 87 is subject to the requirements of 40 CFR pt. 63, subp. CCCCCC because the facility is an existing area source of HAPs and the EQUIs are gasoline cargo tanks with a monthly throughput under 10,000 gallons.

2.6 Regulatory Overview

Table 7. Regulatory overview of facility

Subject item*	Applicable regulations	Rationale
TFAC 1 - Air Quality Total Facility	Title I Condition: Avoid major source and modification under 40 CFR 52.21(b)(2) and Minn. R. 7007.3000	Prevention of Significant Deterioration (PSD). Limits taken to avoid major source and modification classification under PSD. The Facility cannot make a change that would make the source a major source under New Source Review until a permit amendment has been issued.
	40 CFR 1068.30	General Compliance Provisions for Highway, Stationary, and Nonroad Programs. The facility includes engines that qualify as nonroad engines. Nonroad engines are engines that are not stationary (e.g. trailer-mounted or self-propelled equipment). The nonroad engine permit requirements include recordkeeping that demonstrates that these engines are not stationary (i.e., that the engines do not remain in one location for more than 12 consecutive months).
COMG 2 (EQUIs 3 & 4 Performance Testing)	Title I Condition: Avoid major source under 40 CFR 52.21(b)(2) and Minn. R. 7007.3000	Prevention of Significant Deterioration (PSD). Performance testing is triggered if either engine is operated for over 100 hours in a 12-month period.
COMG 5 (Internal Combustion Engines)	Title I Condition: Avoid major source under 40 CFR 52.21(b)(2) and Minn. R. 7007.3000	Prevention of Significant Deterioration (PSD). Limits set on fuel usage, NO_x emissions, and fuel sulfur content to avoid classification as major source under PSD for all internal combustion engines at the facility, including existing or new.
	Minn. R. 7011.2300	Standards of Performance for Stationary Internal Combustion Engines. Fuel limited to distillate fuel oil only. Sulfur content of fuel limited to 0.0015 percent by weight.

Subject item*	Applicable regulations	Rationale
COMG 6 (NO_x Limit)	Title I Condition: Avoid major source and modification under 40 CFR 52.21(b)(2) and Minn. R. 7007.3000	Prevention of Significant Deterioration (PSD). The NO_x limit is at 225 tpy and includes all the combustion engines and the boilers as listed in COMG 6. This type of limit is referred to as "PreCap" limit and was developed by the MPCA in mid-2002 in order to give flexibility to facilities to make changes without automatically triggering a major amendment. The limit is written to cover the emissions/usage of all units covered by the group (in this case COMG 6) or at the Facility (if the limit is located at the total facility level of the permit), regardless of whether or not they exist, have been modified or new. Therefore, if the Permittee wishes to make changes to any of the units (or add new ones), the modified or new equipment would be subject to the emission limit. However, an amendment may still be needed to make changes based on the hourly emissions increase and/or the non-emissions increase amendment triggers (e.g., change to monitoring, recordkeeping, etc.).
COMG 7 (Emergency Internal Combustion Engines)	40 CFR pt. 63, subp. ZZZZ; Minn. R. 7011.8150	NESHAP for Stationary Reciprocating Internal Combustion Engines. Applicability criteria include: • Area source; • CI Engine; • Emergency/Black start; • No oxidation catalyst; and • Construction commenced before 6/12/2006.
	40 CFR pt. 63, subp. A	NESHAP Subpart A – General Provisions Provisions applicable as provided in NESHAP ZZZZ.
	Minn. R. 7007.0800, subps. 2, 4, 5 & 11; Minn. R. 7005.0100, subp. 35a	The Permittee shall maintain documentation on-site that the unit is an emergency generator by design that qualifies under the EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995, limiting operation to 500 hours per year.
COMG 8 (Emergency Compression Ignition Internal Combustion Engines)	40 CFR pt. 60, subp. IIII, Minn. R. 7011.2305	NSPS for Stationary Compression Ignition Internal Combustion Engines. Applicability criteria include: • emergency engine (not a fire pump); • commenced construction date after July 11, 2005; • manufacture date after April 1, 2006; and • displacement less than 30 liters per cylinder.
	40 CFR pt. 60, subp. A	NSPS Subpart A – General Provisions Provisions applicable as provided in NSPS IIII.
	40 CFR pt. 63, subp. ZZZZ, Minn. R. 7011.8150	NESHAP for Stationary Reciprocating Internal Combustion Engines. EQUIs 18 and 86 are new affected source subject to 40 CFR pt. 63, subp. ZZZZ. Under 40 CFR § 63.6590(c) the engine complies with the requirements 40 CFR pt. 63, subp. ZZZZ by complying with the requirements of 40 CFR pt. 60, subp. IIII and no further requirements apply under 40 CFR pt. 63, subp. ZZZZ.
EQUI 26 (Boiler)	Title I Condition: Avoid major source under 40 CFR 52.21(b)(2) and Minn. R. 7007.3000	Title I Condition to avoid classification as major source under PSD. The monthly fuel usage limit was accepted by the source to limit NO_x.

Subject item*	Applicable regulations	Rationale
	40 CFR pt. 63, subp. JJJJJJ, Minn. R. 7011.7050	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources. Determination of applicable limits from rule: • boiler constructed before June 4, 2010; • the boiler's heat input >10MMBtu/hr; and • the boiler burns only distillate fuel oil.
	40 CFR pt. 63, subp. A	NESHAP Subpart A – General Provisions Provisions applicable as provided in NESHAP JJJJJJ.
	Minn. R. 7005.0100, subp. 35a	Fuel type is limited to distillate fuel oil with a maximum sulfur content of 0.49 percent by weight only.
EQUI 85	40 CFR pt. 60, subp. JJJJ, Minn. R. 7011.2310	NSPS for Stationary Spark Ignition Internal Combustion Engines. Applicability criteria include: • Engines manufactured on or after January 1, 2009 and constructed after June 12, 2006; • Certified engines; and • Emergency, natural gas engine with maximum engine power greater than or equal to 25 hp and less than 130 hp.
	40 CFR pt. 60, subp. A	NSPS Subpart A – General Provisions Provisions applicable as provided in NSPS JJJJ.
	40 CFR pt. 63, subp. ZZZZ, Minn. R. 7011.8150	NESHAP for Stationary Reciprocating Internal Combustion Engines. EQUI 85 is a new affected source subject to 40 CFR pt. 63, subp. ZZZZ. Under 40 CFR § 63.6590(c) the engine complies with the requirements 40 CFR pt. 63, subp. ZZZZ by complying with the requirements of 40 CFR pt. 60, subp. JJJJ and no further requirements apply under 40 CFR pt. 63, subp. ZZZZ.
EQUI 87 (Gasoline Tank)	40 CFR pt. 63, subp. CCCCCC Minn. R. 7011.7185	National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities This facility dispenses gasoline. • The facility is an area source of HAPs; • The facility has one storage tank and a fueling station; • The facility has a gasoline throughput of <10,000 gal/month.
	40 CFR pt. 63, subp. A	NESHAP Subpart A – General Provisions Provisions applicable as provided in NESHAP CCCCCC.

*Location of the requirement in the permit (e.g., EQUI 1, STRU 2, etc.).

3. Technical information

3.1 Calculations of potential to emit (PTE)

Attachment 1 to this TSD contains a summary of the PTE of the Facility as well as detailed spreadsheets and supporting information prepared by the MPCA and the Permittee.

All emissions from sources are based on the maximum capacity of the units, fuels used, maximum sulfur content allowable, performance stack testing, and the following EPA published emission factors: U.S. EPA AP-42, ch. 1.3 for Fuel Oil Combustion, ch. 3.3 for Gasoline and Diesel Industrial Engines, ch. 3.4 for Large Stationary Diesel and All Stationary Dual-Fuel Engines, and ch 7.1 for Organic Liquid Storage Tanks. HAP emission factors are from AP-42, ch. 3.3 Gasoline and Diesel Industrial Engines and SDSs. Greenhouse gas calculations were done using emission factors from 40 CFR pt. 98, subp. C, and Global Warming Potentials factors from 40 CFR pt. 98, subp. A.

The existing tank added through the minor amendment (EQUI 87) was formerly an insignificant activity and continues to base emissions on U.S. EPA AP-42, ch 7.1 for Organic Liquid Storage Tanks. The SDS for gasoline stored is included as Attachment 3 to this TSD.

3.2 Monitoring

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements.

In evaluating the monitoring included in the permit, the MPCA considered the following:

- the likelihood of the facility violating the applicable requirements;
- whether add-on controls are necessary to meet the emission limits;
- the variability of emissions over time;
- the type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- the technical and economic feasibility of possible periodic monitoring methods; and
- the kind of monitoring found on similar units elsewhere.

The Table below summarizes the monitoring requirements.

Table 8. Monitoring

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
COMG 1 (EQUIs 1 & 2 Performance Testing)	40 CFR § 52.21 & Minn. R. 7007.3000; Minn. R. 7017.2030, subp. 4	Performance test for NO_x and Opacity	Performance testing operating at worst case operating conditions demonstrate that the unit is within the limit at COMG 6. Testing frequencies for emission factors (e.g., lb/mmBtu, lb/hr) used in calculating potential to emit are determined on a case-by-case basis. Testing frequencies are typically set at 12, 36, or 60-month increments. Past test results, applicable rules, potential emissions, location of source, and past compliance history play a factor in setting the testing frequency for emission factors. This permit requires opacity and lb/MMBtu NO_x testing every 60 months.
COMG 2 (EQUIs 3 & 4 Performance Testing)	40 CFR § 52.21 & Minn. R. 7007.3000; Minn. R. 7017.2030, subp. 4	Performance test for NO_x and Opacity	Performance testing operating at worst case operating conditions demonstrate that the unit is within the limit at COMG 6. To ensure continual compliance, records of hours of operation shall be generated; when over 100 hours, an Initial Performance Test will be required.
COMG 3 (EQUIs 5 & 6 Performance Testing)	40 CFR § 52.21 & Minn. R. 7007.3000; Minn. R. 7017.2030, subp. 4	Performance test for NO_x	Performance testing operating at worst case operating conditions demonstrate that the unit is within the limit at COMG 6. To ensure compliance, testing will be required within 90 days of either engine resuming operation.

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
COMG 4 (EQUIs 7, 8, 9 & 10 Performance Testing)	40 CFR § 52.21 & Minn. R. 7007.3000; Minn. R. 7017.2030, subp. 4	Performance test for NO_x and Opacity	Performance testing operating at worst case operating conditions demonstrate that the unit is within the limit at COMG 6. Testing frequencies for emission factors (e.g., lb/mmBtu, lb/hr) used in calculating potential to emit are determined on a case-by-case basis. Testing frequencies are typically set at 12, 36, or 60-month increments. Past test results, applicable rules, potential emissions, location of source, and past compliance history play a factor in setting the testing frequency for emission factors. This permit requires opacity and lb/MMBtu NO_x testing every 60 months.
COMG 5 (Internal Combustion Engines)	Fuel usage: 67,000 gal/month on a 12-month rolling average (Limit to avoid NSR)	Daily and monthly recordkeeping of combusted fuel	To ensure continual compliance, records of fuel combusted shall be generated on each day of operation. The Permittee may do this by keeping daily written usage logs or flow meters to determine the amount of fuel combusted. On a monthly basis, the monthly usage is determined as a 12-month rolling average.
	NO_x ≤4.0lbs/MMBtu for engines >600Hp (Limit to avoid NSR)	Performance test for NO_x	Performance testing demonstrates the engine is operating within the limit. All test results done to date today show that NO_x emission rates were less than the limit. Therefore, no new operating limit is applicable pursuant to Minn. R. 7017.2025, subp. 3 and the performance test frequency plan should not be changed. However, if this limit changes in the future, equation three of COMG 6 will have to be adjusted accordingly.
	Fuel limited to distillate fuel oil (Minn. R. 7005.0100, subp. 35a)	Fuel vendor certification and recordkeeping	Recordkeeping of fuel certification is adequate to demonstrate compliance with the requirement.
	Opacity ≤ 20 percent opacity (Minn. R. 7011.2300, subp. 1)	None	All units use distillate fuel oil with maximum sulfur content of 0.0015%; therefore, the likelihood of violating this limit is low for most engines.
	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input (Minn. R. 7005.0100, subp. 35a, Minn. R. 7011.2300, subp. 2(B))	Monthly recordkeeping of the type and amount of fuel used	These requirements apply to each engine in COMG 5, individually. The units use distillate fuel only; therefore, the likelihood of violating either of the limits is very small. The Permittee can demonstrate that the unit will continue to operate such that emissions are well below the emission limits by only burning distillate fuel. Design based PTE is 0.0015 lb/MMBtu of SO2 compared to the rule limit.

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
	Sulfur Content of Fuel <= 0.0015 percent by weight for distillate fuel oil (Minn. R. 7005.0100, subp. 35a)	Testing or receipt of supplier certification for the sulfur content of each shipment, and recordkeeping	Testing or supplier certification will ensure no distillate fuel oil shipment will violate the limit.
COMG 6 (NO_x Limit)	NO_x < 225 tons/year (Limit to avoid NSR)	Recordkeeping: monthly 12-month rolling average emissions calculations	The Permittee is required to calculate the 12-month rolling sum emissions of NO_x from all units in COMG 6.
COMG 7 (Emergency Internal Engines)	Operating and work practice standards (NESHAP ZZZZ)	Non-resettable hour meter, minimizing startup times, oil and filter changes, inspections of air cleaners, hoses and belts, maintenance plan, and recordkeeping.	Monitoring required by 40 CFR pt. 63, subp. ZZZZ is adequate to demonstrate compliance with the requirements of the standard because this standard was promulgated after November 15, 1990, and post-November 15, 1990, NSPS and NESHAPs contain adequate monitoring requirements.
COMG 8 (Emergency Compression Ignition Internal Combustion Engines)	Operating and work practice standards (NSPS IIII)	Purchase certified engine and: 1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions; 2) Change only those emission-related settings that are permitted by the manufacturer; and 3) Meet the	Monitoring required by the NSPS is adequate to demonstrate compliance with the requirements because this standard was promulgated after November 15, 1990, and post-November 15, 1990, NSPS and NESHAPs contain adequate monitoring requirements.
	CO ≤ 5.0gr/kw-hr PM ≤0.30gr/kw-hr NMHC + NO_x ≤4.00 gr/ kw-hr (NSPS IIII)		
	of Opacity <= 15 percent opacity during the lugging mode (NSPS III)		
	Opacity <= 20 percent opacity during the acceleration mode (NSPS IIII)		

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
	Opacity <= 50 percent opacity during the peaks (NSPS IIII)	requirements of 40 CFR 1039, 1042, and/or 1068 as they apply.	
	Opacity <= 20 percent opacity (Minn. R. 7011.2300, subp. 1)		
	Hours of operation ≤50hr/year nonemergency ≤100hr/year maintenance and testing (NSPS IIII)	Non-resettable hour meter, and recordkeeping.	
	Sulfur Content of Fuel <= 15.0 parts per million (NSPS IIII)	Fuel Supplier Certification for each shipment of diesel fuel.	
	Fuel limited to distillate fuel oil (Minn. R. 7005.0100, subp. 35a)		
	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input (Minn. R. 7005.0100, subp. 35a, Minn. R. 7011.2300, subp. 2(B))		

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
EQUI 26 (Boiler)	Fuel usage: 28,838 gal/month on a 12-month rolling average Fuel sulfur content ≤ 0.0015 percent by weight (Minn. R. 7005.0100, subp. 35a) NO_x ≤ 0.144lbs/MMBtu (Limit to avoid NSR & Minn. R. 7007.3000)	Recordkeeping: daily and monthly fuel used; fuel vendor certifications	Records of fuel usage shall be generated on each day of operation. The Permittee may do this by keeping daily written usage logs or flowmeters. The Permittee shall calculate, and record fuel usage in 12 month rolling average.
	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input (Minn. R. 7005.0100, subp. 35a)	Testing or receipt of supplier certification for the sulfur content of each shipment, and recordkeeping	Testing or supplier certification will ensure no distillate fuel oil shipment will violate the limit.
	Operating and work practice standards (NESHAP JJJJJJ)	Boiler tune-ups every 5 years; recordkeeping, reporting	Monitoring required by 40 CFR pt. 63, subp. JJJJJJ is adequate to demonstrate compliance with the requirements of the standard because this standard was promulgated after November 15, 1990, and post-November 15, 1990, NSPS and NESHAPs contain adequate monitoring requirements.
EQUI 85	Hours of operation ≤100hr/year for maintenance and testing ≤50hr/year non-emergency (NSPS JJJJ) NO_x ≤10 g/HP-hr CO ≤387 g/HP-hr (NSPS JJJJ)	Purchase of a certified engine, operation according to the manufacturer's emissions-related instructions, and records of maintenance	Monitoring required by the NSPS is adequate to demonstrate compliance with the requirements because this standard was promulgated after November 15, 1990, and post-November 15, 1990, NSPS and NESHAPs contain adequate monitoring requirements.
	Opacity ≤ 20 percent opacity (Minn. R. 7011.2300, subp. 1)	None	All units use distillate fuel oil with maximum sulfur content of 0.0015%; therefore, the likelihood of violating this limit is low for most engines.

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input (Minn. R. 7005.0100, subp. 35a, Minn. R. 7011.2300, subp. 2(B))	Monthly recordkeeping of the type and amount of fuel used	These requirements apply to each engine in COMG 5, individually. The units use distillate fuel only; therefore, the likelihood of violating either of the limits is very small. The Permittee can demonstrate that the unit will continue to operate such that emissions are well below the emission limits by only burning distillate fuel. Design based PTE is 0.0015 lb/MMBtu of SO2 compared to the rule limit.
EQUI 87 (Gasoline Tank)	Operating and work practice standards (NESHAP CCCCCC)	Recordkeeping	Monitoring and recordkeeping required by 40 CFR pt. 63, subp. CCCCCC is adequate to demonstrate compliance with the requirements of the standard because this standard was promulgated after November 15, 1990, and post-November 15, 1990, NSPS and NESHAPs contain adequate monitoring requirements.

*Location of the requirement in the permit (e.g., EQUI 1, STRU 2, etc.).

3.3 Insignificant activities

Xcel Energy - Prairie Island Nuclear Plant has several operations which are classified as insignificant activities under the MPCA's permitting rules. These are listed in Appendix A to the permit.

The permit is required to include periodic monitoring for all emissions units, including insignificant activities, per EPA guidance. The insignificant activities at this Facility are only subject to general applicable requirements. Using the criteria outlined earlier in this TSD, the following table documents the justification why no additional periodic monitoring is necessary for the current insignificant activities. See Attachment 1 of this TSD for PTE information for the insignificant activities.

Table 9. Insignificant activities

Insignificant activity	General applicable emission limit	Discussion
All finishing operations at a stationary source that emit only particulate matter that meet the requirements of Minn. R. 7008.4110 (10,000 lbs of particulate; installation, O & M of control equipment)	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0715)	Blasting Cabinet. For these operations, it is highly unlikely that they could violate the applicable requirement. The potential to emit of these operations is 1,352 lb/yr compared to the rule allowable of 10,000 lb/yr.
Emissions from a laboratory, as defined in Minn. R. 7007.1300, subp. 3(D)	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0715)	These are very small, intermittent, bench-top operations that typically do not even have any emissions. It is highly unlikely that they could violate the applicable requirement.
Brazing, soldering, torch-cutting, or welding equipment	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0715)	For these units, based on EPA published emissions factors, it is highly unlikely that they could violate the applicable requirement. In addition, these units are typically operated and vented inside a building, so testing for PM or opacity is not feasible.

Insignificant activity	General applicable emission limit	Discussion
Individual units with potential emissions less than 2000 lb/year of certain pollutants	PM, variable depending on airflow Opacity < 20% (with exceptions) (Minn. R. 7011.0715 and Minn. R. 7011.0610) or SO_2 < 0.50 lb/MMBtu Opacity < 20% (Minn. R. 7011.2300)	The site has 5 kerosene heaters with a total capacity of 630,000 btu/hr, and average potential to emit per unit of 41 lb/year of CO, 1,160 lb/year SO_2, 147 lb/year of NO_x, and 88 tpy of CO2e. There is a parts washer unit that uses ten gallons of solvent a year with total VOC emissions of 0.03 tpy. Also the source generates VOC fugitives from pumps, valves and flanges on 25 fuel oil tanks with a combined potential to emit of 1.15 of VOC tpy. Infrequently gluing equipment would be used on site, and would be done for purposes of routine plant upkeep. Based on the fuels used, infrequent use, and EPA published emissions factors, it is highly unlikely that any of the units listed under this subpart could violate the applicable requirements.
Fugitive dust emissions from unpaved roads and parking lots	Requirement to take reasonable measures to prevent PM from becoming airborne (Minn. R. 7011.0150)	Nearly all surfaces are currently paved. The permit contains a general requirement that this standard must be met.

3.4 Permit organization

This permit meets the MPCA Tempo Guidance for ordering and grouping of requirements as well as the use of permit appendices.

3.5 Comments received

Will be updated when the permit goes to public notice.

Public Notice Period: [start date] – [end date]
EPA Review Period: [start date] – [end date]

4. Permit fee assessment

This permit action is the reissuance of an individual Part 70; therefore, no application fees apply under Minn. R. 7002.0016, subp. 1. Minor amendment application fees were paid at time of application, and no additional fees were assessed.

5. Conclusion

Based on the information provided by Xcel Energy - Prairie Island Nuclear Plant the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 04900030-101 and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff members on permit team: Austin Coy (permit engineer)
Andrea Behrendt (peer reviewer)
Kayla Park (enforcement)
Marc Severin (stack testing)
Joey Handtmann (data coordinator)

Beckie Olson (permit writing assistant)
Laurie O'Brien (administrative support)

Tempo Activities: Administrative Amendment (IND20250001), Minor Amendment (IND20140002), Minor Amendment (IND20160001), Part 70 Reissuance (IND20180001)

Attachments:
1. PTE summary and emissions increase calculation spreadsheets
2. Subject item inventory and facility requirements
3. Gasoline Tank SDS

Attachment 1 – PTE Summary Calculation Spreadsheets

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

GI-07 Spreadsheet

Facility Emissions Summary
Air Quality Permit Program
Doc Type: Permit Application

1a) AQ Facility ID number: 4900030 1b) Agency Interest ID number: 1885
2) Facility name: Xcel Energy - Prairie Island Nuclear Plant

Follow the instructions to complete this spreadsheet. This spreadsheet can be copied into a tab for your emissions spreadsheet and must be submitted on a CD with your application. If you need to provide emissions information for more emissions units, add more sets of columns (3a through 3f) to the right as needed in the Emissions by Source table. If you need to provide information for more pollutants, add rows as needed.

Emissions by Source Table

3a) Tempo SI ID number:		EQUI 1				**3a)** Tempo SI ID number:		EQUI 2				**3a)** Tempo SI ID number:		EQUI 3				**3a)** Tempo SI ID number:		EQUI 4				**3a)** Tempo SI ID number:		EQUI 14				**3a)** Tempo SI ID numb
3b) Delta ID No.:		EU002				**3b)** Delta ID No.:		EU003				**3b)** Delta ID No.:		EU004				**3b)** Delta ID No.:		EU005				**3b)** Delta ID No.:		EU006				**3b)** Delta ID No.:
3c)	**3d)**	**3e)** Potential			**3f)**	**3c)**	**3d)**	**3e)** Potential			**3f)**	**3c)**	**3d)**	**3e)** Potential			**3f)**	**3c)**	**3d)**	**3e)** Potential			**3f)**	**3c)**	**3d)**	**3e)** Potential			**3f)**	**3c)**
Pollutant Name	CAS #	Pounds (lbs) per hour	tons per year un-restricted	tons per year limited	Actual tons per year	Pollutant Name	CAS #	Pounds (lbs) per hour	tons per year un-restricted	tons per year limited	Actual tons per year	Pollutant Name	CAS #	Pounds (lbs) per hour	tons per year un-restricted	tons per year limited	Actual tons per year	Pollutant Name	CAS #	Pounds (lbs) per hour	tons per year un-restricted	tons per year limited	Actual tons per year	Pollutant Name	CAS #	Pounds (lbs) per hour	tons per year un-restricted	tons per year limited	Actual tons per year	Pollutant Name
Particulate Matter		8.92	2.23	See COMG 5		Particulate Matter		8.92	2.23	See COMG 5		Particulate Matter		2.34	0.58	See COMG 5		Particulate Matter		2.34	0.58	See COMG 5		Particulate Matter		0.73	0.18	See COMG 5		Particulate Matter
PM < 10 micron		8.92	2.23	-		PM < 10 micron		8.92	2.23	-		PM < 10 micron		2.34	0.58	-		PM < 10 micron		2.34	0.58	-		PM < 10 micron		0.73	0.18	-		PM < 10 micron
PM < 2.5 micron		8.92	2.23	-		PM < 2.5 micron		8.92	2.23	-		PM < 2.5 micron		2.34	0.58	-		PM < 2.5 micron		2.34	0.58	-		PM < 2.5 micron		0.73	0.18	-		PM < 2.5 micron
Nitrogen Oxides		115.08	28.77	See COMG 6		Nitrogen Oxides		115.08	28.77	See COMG 6		Nitrogen Oxides		30.16	7.54	See COMG 6		Nitrogen Oxides		30.16	7.54	See COMG 6		Nitrogen Oxides		9.44	2.36	See COMG 6		Nitrogen Oxides
Carbon Monoxide		27.33	6.83	-		Carbon Monoxide		27.33	6.83	-		Carbon Monoxide		7.16	1.79	-		Carbon Monoxide		7.16	1.79	-		Carbon Monoxide		2.24	0.56	-		Carbon Monoxide
Sulfur Dioxide		0.04	0.01	-		Sulfur Dioxide		0.04	0.01	-		Sulfur Dioxide		0.01	2.83E-03	-		Sulfur Dioxide		0.01	2.83E-03	-		Sulfur Dioxide		3.54E-03	8.85E-04	-		Sulfur Dioxide
Volatile Organic Compounds		10.36	2.59	-		Volatile Organic Compounds		10.36	2.59	-		Volatile Organic Compounds		2.71	0.68	-		Volatile Organic Compounds		2.71	0.68	-		Volatile Organic Compounds		0.85	0.21	-		Volatile Organic Compounds
HAPs - Total		0.11	0.03	-		HAPs - Total		0.11	0.03	-		HAPs - Total		0.03	0.01	-		HAPs - Total		0.03	0.01	-		HAPs - Total		0.01	2.29E-03	-		HAPs - Total
Carbon Dioxide		4718.28	1179.57	-		Carbon Dioxide		4718.28	1179.57	-		Carbon Dioxide		1236.56	309.14	-		Carbon Dioxide		1236.56	309.14	-		Carbon Dioxide		387.04	96.76	-		Carbon Dioxide
Methane		0.19	0.05	-		Methane		0.19	0.05	-		Methane		0.05	0.01	-		Methane		0.05	0.01	-		Methane		0.02	3.90E-03	-		Methane
Nitrous Oxide		0.04	0.01	-		Nitrous Oxide		0.04	0.01	-		Nitrous Oxide		0.01	2.49E-03	-		Nitrous Oxide		0.01	2.49E-03	-		Nitrous Oxide		3.12E-03	7.80E-04	-		Nitrous Oxide
Carbon Dioxide Equivalent		4734.38	1183.59	-		Carbon Dioxide Equivalent		4734.38	1183.59	-		Carbon Dioxide Equivalent		1240.78	310.19	-		Carbon Dioxide Equivalent		1240.78	310.19	-		Carbon Dioxide Equivalent		388.36	97.09	-		Carbon Dioxide Equivalent
Lead Compounds						Lead Compounds						Lead Compounds						Lead Compounds						Lead Compounds						Lead Compounds
1,1,1-Trichloroethane		-	-	-		1,1,1-Trichloroethane		-	-	-		1,1,1-Trichloroethane		-	-	-		1,1,1-Trichloroethane		-	-	-		1,1,1-Trichloroethane		-	-	-		1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane		0.00	0.00	-		1,1,2,2-Tetrachloroethane		0.00	0.00	-		1,1,2,2-Tetrachloroethane		0.00	0.00	-		1,1,2,2-Tetrachloroethane		0.00	0.00	-		1,1,2,2-Tetrachloroethane		0.00	0.00	-		1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane		0.00	0.00	-		1,1,2-Trichloroethane		0.00	0.00	-		1,1,2-Trichloroethane		0.00	0.00	-		1,1,2-Trichloroethane		0.00	0.00	-		1,1,2-Trichloroethane		0.00	0.00	-		1,1,2-Trichloroethane
1,1-Dichloroethane		0.00	0.00	-		1,1-Dichloroethane		0.00	0.00	-		1,1-Dichloroethane		0.00	0.00	-		1,1-Dichloroethane		0.00	0.00	-		1,1-Dichloroethane		0.00	0.00	-		1,1-Dichloroethane
1,2-Dibromoethane (Ethylene dibromide); EDB		0.00	0.00	-		1,2-Dibromoethane (Ethylene dibromide); EDB		0.00	0.00	-		1,2-Dibromoethane (Ethylene dibromide); EDB		0.00	0.00	-		1,2-Dibromoethane (Ethylene dibromide); EDB		0.00	0.00	-		1,2-Dibromoethane (Ethylene dibromide); EDB		0.00	0.00	-		1,2-Dibromoethane (Ethylene dibromide); EDB
1,2-Dichloropropane		0.00	0.00	-		1,2-Dichloropropane		0.00	0.00	-		1,2-Dichloropropane		0.00	0.00	-		1,2-Dichloropropane		0.00	0.00	-		1,2-Dichloropropane		0.00	0.00	-		1,2-Dichloropropane
1,3-Butadiene		1.12E-03	2.81E-04	-		1,3-Butadiene		1.12E-03	2.81E-04	-		1,3-Butadiene		2.95E-04	7.37E-05	-		1,3-Butadiene		2.95E-04	7.37E-05	-		1,3-Butadiene		9.23E-05	2.31E-05	-		1,3-Butadiene
1,3-Dichloropropene		0.00	0.00	-		1,3-Dichloropropene		0.00	0.00	-		1,3-Dichloropropene		0.00	0.00	-		1,3-Dichloropropene		0.00	0.00	-		1,3-Dichloropropene		0.00	0.00	-		1,3-Dichloropropene
Acetaldehyde		0.02	0.01	-		Acetaldehyde		0.02	0.01	-		Acetaldehyde		0.01	1.45E-03	-		Acetaldehyde		0.01	1.45E-03	-		Acetaldehyde		1.81E-03	4.53E-04	-		Acetaldehyde
Acrolein		2.66E-03	6.65E-04	-		Acrolein		2.66E-03	6.65E-04	-		Acrolein		6.97E-04	1.74E-04	-		Acrolein		6.97E-04	1.74E-04	-		Acrolein		2.18E-04	5.46E-05	-		Acrolein
Arsenic compounds		-	-	-		Arsenic compounds		-	-	-		Arsenic compounds		-	-	-		Arsenic compounds		-	-	-		Arsenic compounds		-	-	-		Arsenic compounds
Benzene		0.03	0.01	-		Benzene		0.03	0.01	-		Benzene		0.01	1.76E-03	-		Benzene		0.01	1.76E-03	-		Benzene		2.20E-03	5.50E-04	-		Benzene
Beryllium Compounds		-	-	-		Beryllium Compounds		-	-	-		Beryllium Compounds		-	-	-		Beryllium Compounds		-	-	-		Beryllium Compounds		-	-	-		Beryllium Compounds
Cadmium compounds		-	-	-		Cadmium compounds		-	-	-		Cadmium compounds		-	-	-		Cadmium compounds		-	-	-		Cadmium compounds		-	-	-		Cadmium compounds
Carbon tetrachloride		0.00	0.00	-		Carbon tetrachloride		0.00	0.00	-		Carbon tetrachloride		0.00	0.00	-		Carbon tetrachloride		0.00	0.00	-		Carbon tetrachloride		0.00	0.00	-		Carbon tetrachloride
Chlorobenzene (Monochlorobenzene)		0.00	0.00	-		Chlorobenzene (Monochlorobenzene)		0.00	0.00	-		Chlorobenzene (Monochlorobenzene)		0.00	0.00	-		Chlorobenzene (Monochlorobenzene)		0.00	0.00	-		Chlorobenzene (Monochlorobenzene)		0.00	0.00	-		Chlorobenzene (Monochlorobenzene)
Chloroform		0.00	0.00	-		Chloroform		0.00	0.00	-		Chloroform		0.00	0.00	-		Chloroform		0.00	0.00	-		Chloroform		0.00	0.00	-		Chloroform
Chromium compounds		-	-	-		Chromium compounds		-	-	-		Chromium compounds		-	-	-		Chromium compounds		-	-	-		Chromium compounds		-	-	-		Chromium compounds
Dichloromethane (Methylene chloride)		0.00	0.00	-		Dichloromethane (Methylene chloride)		0.00	0.00	-		Dichloromethane (Methylene chloride)		0.00	0.00	-		Dichloromethane (Methylene chloride)		0.00	0.00	-		Dichloromethane (Methylene chloride)		0.00	0.00	-		Dichloromethane (Methylene chloride)
Ethylbenzene		0.00	0.00	-		Ethylbenzene		0.00	0.00	-		Ethylbenzene		0.00	0.00	-		Ethylbenzene		0.00	0.00	-		Ethylbenzene		0.00	0.00	-		Ethylbenzene
Formaldehyde		0.03	0.01	-		Formaldehyde		0.03	0.01	-		Formaldehyde		0.01	2.22E-03	-		Formaldehyde		0.01	2.22E-03	-		Formaldehyde		2.78E-03	6.96E-04	-		Formaldehyde
Manganese compounds		-	-	-		Manganese compounds		-	-	-		Manganese compounds		-	-	-		Manganese compounds		-	-	-		Manganese compounds		-	-	-		Manganese compounds
Mercury		-	-	-		Mercury		-	-	-		Mercury		-	-	-		Mercury		-	-	-		Mercury		-	-	-		Mercury
Methanol		0.00	0.00	-		Methanol		0.00	0.00	-		Methanol		0.00	0.00	-		Methanol		0.00	0.00	-		Methanol		0.00	0.00	-		Methanol
Naphthalene		2.44E-03	6.10E-04	-		Naphthalene		2.44E-03	6.10E-04	-		Naphthalene		6.39E-04	1.60E-04	-		Naphthalene		6.39E-04	1.60E-04	-		Naphthalene		2.00E-04	5.00E-05	-		Naphthalene
Nickel compounds		-	-	-		Nickel compounds		-	-	-		Nickel compounds		-	-	-		Nickel compounds		-	-	-		Nickel compounds		-	-	-		Nickel compounds
Polycyclic organic matter		4.83E-03	1.21E-03	-		Polycyclic organic matter		4.83E-03	1.21E-03	-		Polycyclic organic matter		1.27E-03	3.17E-04	-		Polycyclic organic matter		1.27E-03	3.17E-04	-		Polycyclic organic matter		3.96E-04	9.91E-05	-		Polycyclic organic matter
Selenium compounds		-	-	-		Selenium compounds		-	-	-		Selenium compounds		-	-	-		Selenium compounds		-	-	-		Selenium compounds		-	-	-		Selenium compounds
Styrene		0.00	0.00	-		Styrene		0.00	0.00	-		Styrene		0.00	0.00	-		Styrene		0.00	0.00	-		Styrene		0.00	0.00	-		Styrene
Toluene		0.01	2.94E-03	-		Toluene		0.01	2.94E-03	-		Toluene		3.08E-03	7.71E-04	-		Toluene		3.08E-03	7.71E-04	-		Toluene		9.65E-04	2.41E-04	-		Toluene
Vinyl chloride (chloroethene)		0.00	0.00	-		Vinyl chloride (chloroethene)		0.00	0.00	-		Vinyl chloride (chloroethene)		0.00	0.00	-		Vinyl chloride (chloroethene)		0.00	0.00	-		Vinyl chloride (chloroethene)		0.00	0.00	-		Vinyl chloride (chloroethene)
Xylenes, Total		0.01	2.05E-03	-		Xylenes, Total		0.01	2.05E-03	-		Xylenes, Total		2.15E-03	5.37E-04	-		Xylenes, Total		2.15E-03	5.37E-04	-		Xylenes, Total		6.73E-04	1.68E-04	-		Xylenes, Total

ber:	EQUI 5				3a) Tempo SI ID number:	EQUI 6				3a) Tempo SI ID number:	EQUI 27				3a) Tempo SI ID number:	EQUI 7				3a) Tempo SI ID number:	EQUI 8				3a) Tempo SI ID number:	EQUI 9
	EU007				3b) Delta ID No.:	EU008				3b) Delta ID No.:	EU009				3b) Delta ID No.:	EU010				3b) Delta ID No.:	EU011				3b) Delta ID No.:	EU012
3d)	3e) Potential			3f)	3c)	3d)	3e) Potential			3f)	3c)	3d)	3e) Potential			3f)	3c)	3d)	3e) Potential			3f)	3c)	3d)	3e) Potential			3f)	3c)	3d)	
CAS #	Pounds (lbs) per hour	tons per year un-restricted	tons per year limited	Actual tons per year	Pollutant Name	CAS #	Pounds (lbs) per hour	tons per year un-restricted	tons per year limited	Actual tons per year	Pollutant Name	CAS #	Pounds (lbs) per hour	tons per year un-restricted	tons per year limited	Actual tons per year	Pollutant Name	CAS #	Pounds (lbs) per hour	tons per year un-restricted	tons per year limited	Actual tons per year	Pollutant Name	CAS #	Pounds (lbs) per hour	tons per year un-restricted	tons per year limited	Actual tons per year	Pollutant Name	CAS #	Pounds (lbs) per hour
	7.92	1.98	See COMG 5		Particulate Matter		7.92	1.98	See COMG 5		Particulate Matter		0.74	0.18	See COMG 5		Particulate Matter		7.16	1.79	See COMG 5		Particulate Matter		7.16	1.79	See COMG 5		Particulate Matter		7.16
	7.92	1.98	-		PM < 10 micron		7.92	1.98	-		PM < 10 micron		0.74	0.18	-		PM < 10 micron		7.16	1.79	-		PM < 10 micron		7.16	1.79	-		PM < 10 micron		7.16
	7.92	1.98	-		PM < 2.5 micron		7.92	1.98	-		PM < 2.5 micron		0.74	0.18	-		PM < 2.5 micron		7.16	1.79	-		PM < 2.5 micron		7.16	1.79	-		PM < 2.5 micron		7.16
	102.16	25.54	See COMG 6		Nitrogen Oxides		102.16	25.54	See COMG 6		Nitrogen Oxides		9.52	2.38	See COMG 6		Nitrogen Oxides		92.40	23.10	See COMG 6		Nitrogen Oxides		92.40	23.10	See COMG 6		Nitrogen Oxides		92.40
	24.26	6.07	-		Carbon Monoxide		24.26	6.07	-		Carbon Monoxide		2.26	0.57	-		Carbon Monoxide		21.95	5.49	-		Carbon Monoxide		21.95	5.49	-		Carbon Monoxide		21.95
	0.04	0.01	-		Sulfur Dioxide		0.04	0.01	-		Sulfur Dioxide		3.57E-03	8.93E-04	-		Sulfur Dioxide		0.03	0.01	-		Sulfur Dioxide		0.03	0.01	-		Sulfur Dioxide		0.03
	9.19	2.30	-		Volatile Organic Compounds		9.19	2.30	-		Volatile Organic Compounds		0.86	0.21	-		Volatile Organic Compounds		8.32	2.08	-		Volatile Organic Compounds		8.32	2.08	-		Volatile Organic Compounds		8.32
	0.10	0.02	-		HAPs - Total		0.10	0.02	-		HAPs - Total		0.01	2.30E-03	-		HAPs - Total		0.09	0.02	-		HAPs - Total		0.09	0.02	-		HAPs - Total		0.09
	4188.56	1047.14	-		Carbon Dioxide		4188.56	1047.14	-		Carbon Dioxide		390.32	97.58	-		Carbon Dioxide		3788.40	947.10	-		Carbon Dioxide		3788.40	947.10	-		Carbon Dioxide		3788.40
	0.17	0.04	-		Methane		0.17	0.04	-		Methane		0.02	3.94E-03	-		Methane		0.15	0.04	-		Methane		0.15	0.04	-		Methane		0.15
	0.03	0.01	-		Nitrous Oxide		0.03	0.01	-		Nitrous Oxide		3.15E-03	7.87E-04	-		Nitrous Oxide		0.03	0.01	-		Nitrous Oxide		0.03	0.01	-		Nitrous Oxide		0.03
	4202.85	1050.71	-		Carbon Dioxide Equivalent		4202.24	1050.56	-		Carbon Dioxide Equivalent		391.65	97.91	-		Carbon Dioxide Equivalent		3800.78	950.19	-		Carbon Dioxide Equivalent		3800.78	950.19	-		Carbon Dioxide Equivalent		3800.78
					Lead Compounds						Lead Compounds						Lead Compounds						Lead Compounds						Lead Compounds		
	-	-	-		1,1,1-Trichloroethane		-	-	-		1,1,1-Trichloroethane		-	-	-		1,1,1-Trichloroethane		-	-	-		1,1,1-Trichloroethane		-	-	-		1,1,1-Trichloroethane		-
	0.00	0.00	-		1,1,2,2-Tetrachloroethane		0.00	0.00	-		1,1,2,2-Tetrachloroethane		0.00	0.00	-		1,1,2,2-Tetrachloroethane		0.00	0.00	-		1,1,2,2-Tetrachloroethane		0.00	0.00	-		1,1,2,2-Tetrachloroethane		0.00
	0.00	0.00	-		1,1,2-Trichloroethane		0.00	0.00	-		1,1,2-Trichloroethane		0.00	0.00	-		1,1,2-Trichloroethane		0.00	0.00	-		1,1,2-Trichloroethane		0.00	0.00	-		1,1,2-Trichloroethane		0.00
	0.00	0.00	-		1,1-Dichloroethane		0.00	0.00	-		1,1-Dichloroethane		0.00	0.00	-		1,1-Dichloroethane		0.00	0.00	-		1,1-Dichloroethane		0.00	0.00	-		1,1-Dichloroethane		0.00
	0.00	0.00	-		1,2-Dibromoethane (Ethylene dibromide); EDB		0.00	0.00	-		1,2-Dibromoethane (Ethylene dibromide); EDB		0.00	0.00	-		1,2-Dibromoethane (Ethylene dibromide); EDB		0.00	0.00	-		1,2-Dibromoethane (Ethylene dibromide); EDB		0.00	0.00	-		1,2-Dibromoethane (Ethylene dibromide); EDB		0.00
	0.00	0.00	-		1,2-Dichloropropane		0.00	0.00	-		1,2-Dichloropropane		0.00	0.00	-		1,2-Dichloropropane		0.00	0.00	-		1,2-Dichloropropane		0.00	0.00	-		1,2-Dichloropropane		0.00
	9.99E-04	2.50E-04	-		1,3-Butadiene		9.99E-04	2.50E-04	-		1,3-Butadiene		9.31E-05	2.33E-05	-		1,3-Butadiene		9.03E-04	2.26E-04	-		1,3-Butadiene		9.03E-04	2.26E-04	-		1,3-Butadiene		9.03E-04
	0.00	0.00	-		1,3-Dichloropropene		0.00	0.00	-		1,3-Dichloropropene		0.00	0.00	-		1,3-Dichloropropene		0.00	0.00	-		1,3-Dichloropropene		0.00	0.00	-		1,3-Dichloropropene		0.00
	0.02	4.90E-03	-		Acetaldehyde		0.02	4.90E-03	-		Acetaldehyde		1.83E-03	4.56E-04	-		Acetaldehyde		0.02	4.43E-03	-		Acetaldehyde		0.02	4.43E-03	-		Acetaldehyde		0.02
	2.36E-03	5.91E-04	-		Acrolein		2.36E-03	5.91E-04	-		Acrolein		2.20E-04	5.50E-05	-		Acrolein		2.14E-03	5.34E-04	-		Acrolein		2.14E-03	5.34E-04	-		Acrolein		2.14E-03
	-	-	-		Arsenic compounds		-	-	-		Arsenic compounds		-	-	-		Arsenic compounds		-	-	-		Arsenic compounds		-	-	-		Arsenic compounds		-
	0.02	0.01	-		Benzene		0.02	0.01	-		Benzene		2.22E-03	5.55E-04	-		Benzene		0.02	0.01	-		Benzene		0.02	0.01	-		Benzene		0.02
	-	-	-		Beryllium Compounds		-	-	-		Beryllium Compounds		-	-	-		Beryllium Compounds		-	-	-		Beryllium Compounds		-	-	-		Beryllium Compounds		-
	-	-	-		Cadmium compounds		-	-	-		Cadmium compounds		-	-	-		Cadmium compounds		-	-	-		Cadmium compounds		-	-	-		Cadmium compounds		-
	0.00	0.00	-		Carbon tetrachloride		0.00	0.00	-		Carbon tetrachloride		0.00	0.00	-		Carbon tetrachloride		0.00	0.00	-		Carbon tetrachloride		0.00	0.00	-		Carbon tetrachloride		0.00
	0.00	0.00	-		Chlorobenzene (Monochlorobenzene)		0.00	0.00	-		Chlorobenzene (Monochlorobenzene)		0.00	0.00	-		Chlorobenzene (Monochlorobenzene)		0.00	0.00	-		Chlorobenzene (Monochlorobenzene)		0.00	0.00	-		Chlorobenzene (Monochlorobenzene)		0.00
	0.00	0.00	-		Chloroform		0.00	0.00	-		Chloroform		0.00	0.00	-		Chloroform		0.00	0.00	-		Chloroform		0.00	0.00	-		Chloroform		0.00
	-	-	-		Chromium compounds		-	-	-		Chromium compounds		-	-	-		Chromium compounds		-	-	-		Chromium compounds		-	-	-		Chromium compounds		-
	0.00	0.00	-		Dichloromethane (Methylene chloride)		0.00	0.00	-		Dichloromethane (Methylene chloride)		0.00	0.00	-		Dichloromethane (Methylene chloride)		0.00	0.00	-		Dichloromethane (Methylene chloride)		0.00	0.00	-		Dichloromethane (Methylene chloride)		0.00
	0.00	0.00	-		Ethylbenzene		0.00	0.00	-		Ethylbenzene		0.00	0.00	-		Ethylbenzene		0.00	0.00	-		Ethylbenzene		0.00	0.00	-		Ethylbenzene		0.00
	0.03	0.01	-		Formaldehyde		0.03	0.01	-		Formaldehyde		2.81E-03	7.02E-04	-		Formaldehyde		0.03	0.01	-		Formaldehyde		0.03	0.01	-		Formaldehyde		0.03
	-	-	-		Manganese compounds		-	-	-		Manganese compounds		-	-	-		Manganese compounds		-	-	-		Manganese compounds		-	-	-		Manganese compounds		-
	-	-	-		Mercury		-	-	-		Mercury		-	-	-		Mercury		-	-	-		Mercury		-	-	-		Mercury		-
	0.00	0.00	-		Methanol		0.00	0.00	-		Methanol		0.00	0.00	-		Methanol		0.00	0.00	-		Methanol		0.00	0.00	-		Methanol		0.00
	2.17E-03	5.41E-04	-		Naphthalene		2.17E-03	5.41E-04	-		Naphthalene		2.02E-04	5.05E-05	-		Naphthalene		1.96E-03	4.90E-04	-		Naphthalene		1.96E-03	4.90E-04	-		Naphthalene		1.96E-03
	-	-	-		Nickel compounds		-	-	-		Nickel compounds		-	-	-		Nickel compounds		-	-	-		Nickel compounds		-	-	-		Nickel compounds		-
	4.29E-03	1.07E-03	-		Polycyclic organic matter		4.29E-03	1.07E-03	-		Polycyclic organic matter		4.00E-04	1.00E-04	-		Polycyclic organic matter		3.88E-03	9.70E-04	-		Polycyclic organic matter		3.88E-03	9.70E-04	-		Polycyclic organic matter		3.88E-03
	-	-	-		Selenium compounds		-	-	-		Selenium compounds		-	-	-		Selenium compounds		-	-	-		Selenium compounds		-	-	-		Selenium compounds		-
	0.00	0.00	-		Styrene		0.00	0.00	-		Styrene		0.00	0.00	-		Styrene		0.00	0.00	-		Styrene		0.00	0.00	-		Styrene		0.00
	0.01	2.61E-03	-		Toluene		0.01	2.61E-03	-		Toluene		9.73E-04	2.43E-04	-		Toluene		0.01	2.36E-03	-		Toluene		0.01	2.36E-03	-		Toluene		0.01
	0.00	0.00	-		Vinyl chloride (chloroethene)		0.00	0.00	-		Vinyl chloride (chloroethene)		0.00	0.00	-		Vinyl chloride (chloroethene)		0.00	0.00	-		Vinyl chloride (chloroethene)		0.00	0.00	-		Vinyl chloride (chloroethene)		0.00
	0.01	1.82E-03	-		Xylenes, Total		0.01	1.82E-03	-		Xylenes, Total		6.78E-04	1.70E-04	-		Xylenes, Total		0.01	1.65E-03	-		Xylenes, Total		0.01	1.65E-03	-		Xylenes, Total		0.01

			3a) Tempo SI ID number:		EQUI 10				3a) Tempo SI ID number:		EQUI 18				3a) Tempo SI ID number:		EQUI 85				3a) Tempo SI ID number:		EQUI 86			
			3b) Delta ID No.:		EU013				3b) Delta ID No.:		EU022				3b) Delta ID No.:						3b) Delta ID No.:					
3e) Potential		3f)	3c)	3d)	3e) Potential			3f)	3c)	3d)	3e) Potential			3f)	3c)	3d)	3e) Potential			3f)	3c)	3d)	3e) Potential			3f)
tons per year un-restricted	tons per year limited	Actual tons per year	Pollutant Name	CAS #	Pounds (lbs) per hour	tons per year un-restricted	tons per year limited	Actual tons per year	Pollutant Name	CAS #	Pounds (lbs) per hour	tons per year un-restricted	tons per year limited	Actual tons per year	Pollutant Name	CAS #	Pounds (lbs) per hour	tons per year un-restricted	tons per year limited	Actual tons per year	Pollutant Name	CAS #	Pounds (lbs) per hour	tons per year un-restricted	tons per year limited	Actual tons per year
1.79	See COMG 5		Particulate Matter		7.16	1.79	See COMG 5		Particulate Matter		0.81	0.20	See COMG 5		Particulate Matter		0.01	2.47E-03	See COMG 5		Particulate Matter		0.03	0.01	See COMG 5	
1.79	-		PM < 10 micron		7.16	1.79	-		PM < 10 micron		0.81	0.20	-		PM < 10 micron		0.01	2.47E-03	-		PM < 10 micron		0.03	0.01	-	
1.79	-		PM < 2.5 micron		7.16	1.79	-		PM < 2.5 micron		0.81	0.20	-		PM < 2.5 micron		0.01	2.47E-03	-		PM < 2.5 micron		0.03	0.01	-	
23.10	See COMG 6		Nitrogen Oxides		92.40	23.10	See COMG 6		Nitrogen Oxides		10.48	2.62	See COMG 6		Nitrogen Oxides		1.13	0.28	See COMG 6		Nitrogen Oxides		4.48	1.12	See COMG 6	
5.49	-		Carbon Monoxide		21.95	5.49	-		Carbon Monoxide		2.49	0.62	-		Carbon Monoxide		1.90	0.47	-		Carbon Monoxide		0.47	0.12	-	
0.01	-		Sulfur Dioxide		0.03	0.01	-		Sulfur Dioxide		3.93E-03	9.83E-04	-		Sulfur Dioxide		3.00E-04	7.50E-05	-		Sulfur Dioxide		4.67E-03	1.17E-03	-	
2.08	-		Volatile Organic Compounds		8.32	2.08	-		Volatile Organic Compounds		0.94	0.24	-		Volatile Organic Compounds		0.02	3.77E-03	-		Volatile Organic Compounds		0.06	0.02	-	
0.02	-		HAPs - Total		0.09	0.02	-		HAPs - Total		0.01	2.54E-03	-		HAPs - Total		0.02	4.14E-03	-		HAPs - Total		0.01	3.01E-03	-	
947.10	-		Carbon Dioxide		3788.40	947.10	-		Carbon Dioxide		429.68	107.42	-		Carbon Dioxide		56.10	14.03	-		Carbon Dioxide		510.04	127.51	-	
0.04	-		Methane		0.15	0.04	-		Methane		0.02	4.33E-03	-		Methane		1.12E-03	2.81E-04	-		Methane		0.02	0.01	-	
0.01	-		Nitrous Oxide		0.03	0.01	-		Nitrous Oxide		3.47E-03	8.66E-04	-		Nitrous Oxide		1.12E-04	2.81E-05	-		Nitrous Oxide		4.11E-03	1.03E-03	-	
950.19	-		Carbon Dioxide Equivalent		3800.78	950.19	-		Carbon Dioxide Equivalent		431.15	107.79	-		Carbon Dioxide Equivalent		56.16	14.04	-		Carbon Dioxide Equivalent		511.78	127.95	-	
			Lead Compounds						Lead Compounds						Lead Compounds						Lead Compounds					
-	-		1,1,1-Trichloroethane		-	-	-		1,1,1-Trichloroethane		-	-	-		1,1,1-Trichloroethane		-	-	-		1,1,1-Trichloroethane		-	-	-	
0.00	-		1,1,2,2-Tetrachloroethane		0.00	0.00	-		1,1,2,2-Tetrachloroethane		0.00	0.00	-		1,1,2,2-Tetrachloroethane		1.29E-05	3.23E-06	-		1,1,2,2-Tetrachloroethane		0.00	0.00	-	
0.00	-		1,1,2-Trichloroethane		0.00	0.00	-		1,1,2-Trichloroethane		0.00	0.00	-		1,1,2-Trichloroethane		1.29E-05	3.23E-06	-		1,1,2-Trichloroethane		0.00	0.00	-	
0.00	-		1,1-Dichloroethane		0.00	0.00	-		1,1-Dichloroethane		0.00	0.00	-		1,1-Dichloroethane		5.76E-06	1.44E-06	-		1,1-Dichloroethane		0.00	0.00	-	
0.00	-		1,2-Dibromoethane (Ethylene dibromide); EDB		0.00	0.00	-		1,2-Dibromoethane (Ethylene dibromide); EDB		0.00	0.00	-		1,2-Dibromoethane (Ethylene dibromide); EDB		1.09E-05	2.72E-06	-		1,2-Dibromoethane (Ethylene dibromide); EDB		0.00	0.00	-	
0.00	-		1,2-Dichloropropane		0.00	0.00	-		1,2-Dichloropropane		0.00	0.00	-		1,2-Dichloropropane		6.63E-06	1.66E-06	-		1,2-Dichloropropane		0.00	0.00	-	
2.26E-04	-		1,3-Butadiene		9.03E-04	2.26E-04	-		1,3-Butadiene		1.02E-04	2.56E-05	-		1,3-Butadiene		3.38E-04	8.45E-05	-		1,3-Butadiene		1.22E-04	3.04E-05	-	
0.00	-		1,3-Dichloropropene		0.00	0.00	-		1,3-Dichloropropene		0.00	0.00	-		1,3-Dichloropropene		6.63E-06	1.66E-06	-		1,3-Dichloropropene		0.00	0.00	-	
4.43E-03	-		Acetaldehyde		0.02	4.43E-03	-		Acetaldehyde		2.01E-03	5.02E-04	-		Acetaldehyde		1.42E-03	3.56E-04	-		Acetaldehyde		2.39E-03	5.96E-04	-	
5.34E-04	-		Acrolein		2.14E-03	5.34E-04	-		Acrolein		2.42E-04	6.06E-05	-		Acrolein		1.34E-03	3.35E-04	-		Acrolein		2.88E-04	7.19E-05	-	
-	-		Arsenic compounds		-	-	-		Arsenic compounds		-	-	-		Arsenic compounds		-	-	-		Arsenic compounds		-	-	-	
0.01	-		Benzene		0.02	0.01	-		Benzene		2.44E-03	6.11E-04	-		Benzene		8.06E-04	2.01E-04	-		Benzene		2.90E-03	7.25E-04	-	
-	-		Beryllium Compounds		-	-	-		Beryllium Compounds		-	-	-		Beryllium Compounds		-	-	-		Beryllium Compounds		-	-	-	
-	-		Cadmium compounds		-	-	-		Cadmium compounds		-	-	-		Cadmium compounds		-	-	-		Cadmium compounds		-	-	-	
0.00	-		Carbon tetrachloride		0.00	0.00	-		Carbon tetrachloride		0.00	0.00	-		Carbon tetrachloride		9.03E-06	2.26E-06	-		Carbon tetrachloride		0.00	0.00	-	
0.00	-		Chlorobenzene (Monochlorobenzene)		0.00	0.00	-		Chlorobenzene (Monochlorobenzene)		0.00	0.00	-		Chlorobenzene (Monochlorobenzene)		6.58E-06	1.64E-06	-		Chlorobenzene (Monochlorobenzene)		0.00	0.00	-	
0.00	-		Chloroform		0.00	0.00	-		Chloroform		0.00	0.00	-		Chloroform		6.99E-06	1.75E-06	-		Chloroform		0.00	0.00	-	
-	-		Chromium compounds		-	-	-		Chromium compounds		-	-	-		Chromium compounds		-	-	-		Chromium compounds		-	-	-	
0.00	-		Dichloromethane (Methylene chloride)		0.00	0.00	-		Dichloromethane (Methylene chloride)		0.00	0.00	-		Dichloromethane (Methylene chloride)		2.10E-05	5.25E-06	-		Dichloromethane (Methylene chloride)		0.00	0.00	-	
0.00	-		Ethylbenzene		0.00	0.00	-		Ethylbenzene		0.00	0.00	-		Ethylbenzene		1.26E-05	3.16E-06	-		Ethylbenzene		0.00	0.00	-	
0.01	-		Formaldehyde		0.03	0.01	-		Formaldehyde		3.09E-03	7.73E-04	-		Formaldehyde		0.01	2.61E-03	-		Formaldehyde		3.67E-03	9.17E-04	-	
-	-		Manganese compounds		-	-	-		Manganese compounds		-	-	-		Manganese compounds		-	-	-		Manganese compounds		-	-	-	
-	-		Mercury		-	-	-		Mercury		-	-	-		Mercury		-	-	-		Mercury		-	-	-	
0.00	-		Methanol		0.00	0.00	-		Methanol		0.00	0.00	-		Methanol		1.56E-03	3.90E-04	-		Methanol		0.00	0.00	-	
4.90E-04	-		Naphthalene		1.96E-03	4.90E-04	-		Naphthalene		2.22E-04	5.55E-05	-		Naphthalene		4.95E-05	1.24E-05	-		Naphthalene		2.64E-04	6.59E-05	-	
-	-		Nickel compounds		-	-	-		Nickel compounds		-	-	-		Nickel compounds		-	-	-		Nickel compounds		-	-	-	
9.70E-04	-		Polycyclic organic matter		3.88E-03	9.70E-04	-		Polycyclic organic matter		4.40E-04	1.10E-04	-		Polycyclic organic matter		1.21E-04	3.03E-05	-		Polycyclic organic matter		5.22E-04	1.31E-04	-	
-	-		Selenium compounds		-	-	-		Selenium compounds		-	-	-		Selenium compounds		-	-	-		Selenium compounds		-	-	-	
0.00	-		Styrene		0.00	0.00	-		Styrene		0.00	0.00	-		Styrene		6.07E-06	1.52E-06	-		Styrene		0.00	0.00	-	
2.36E-03	-		Toluene		0.01	2.36E-03	-		Toluene		1.07E-03	2.68E-04	-		Toluene		2.85E-04	7.11E-05	-		Toluene		1.27E-03	3.18E-04	-	
0.00	-		Vinyl chloride (chloroethene)		0.00	0.00	-		Vinyl chloride (chloroethene)		0.00	0.00	-		Vinyl chloride (chloroethene)		3.66E-06	9.15E-07	-		Vinyl chloride (chloroethene)		0.00	0.00	-	
1.65E-03	-		Xylenes, Total		0.01	1.65E-03	-		Xylenes, Total		7.47E-04	1.87E-04	-		Xylenes, Total		9.95E-05	2.49E-05	-		Xylenes, Total		8.86E-04	2.22E-04	-	

3a) Tempo SI ID number:		EQUI 26				3a) Tempo SI ID number:		EQUI 87				3a) Tempo SI ID number:		COMG 5				3a) Tempo SI ID number:		COMG 6								
3b) Delta ID No.:		EU001				3b) Delta ID No.:						3b) Delta ID No.:		GP001				3b) Delta ID No.:		GP007								
3c)	3d)	3e) Potential			3f)	3c)	3d)	3e) Potential			3f)	3c)	3d)	3e) Potential			3f)	3c)	3d)	3e) Potential			3f)	4a)	4b)	4c) Potential (tons/year)		4d) Actual
Pollutant Name	CAS #	Pounds (lbs) per hour	tons per year un-restricted	tons per year limited	Actual tons per year	Pollutant Name	CAS #	Pounds (lbs) per hour	tons per year un-restricted	tons per year limited	Actual tons per year	Pollutant Name	CAS #	Pounds (lbs) per hour	tons per year un-restricted	tons per year limited	Actual tons per year	Pollutant Name	CAS #	Pounds (lbs) per hour	tons per year un-restricted	tons per year limited	Actual tons per year	Pollutant Name	Potential (lbs/hr)	Unrestricted	Limited	tons/year
Particulate Matter		0.79	3.46	0.35		Particulate Matter						Particulate Matter		-	-	17.07		Particulate Matter		-	-	-		Particulate Matter	70.10	20.79	17.41	
PM < 10 micron		0.40	1.73	0.17		PM < 10 micron						PM < 10 micron		-	-	17.07		PM < 10 micron		-	-	-		PM < 10 micron	69.71	19.06	17.24	
PM < 2.5 micron		0.10	0.43	0.04		PM < 2.5 micron						PM < 2.5 micron		-	-	17.07		PM < 2.5 micron		-	-	-		PM < 2.5 micron	69.41	17.76	17.11	
Nitrogen Oxides		7.90	34.60	See COMG 6		Nitrogen Oxides						Nitrogen Oxides		-	-	-		Nitrogen Oxides		-	-	225.00		Nitrogen Oxides	907.35	259.46	225.00	
Carbon Monoxide		1.98	8.65	0.87		Carbon Monoxide						Carbon Monoxide		-	-	52.30		Carbon Monoxide		-	-	-		Carbon Monoxide	216.63	62.31	53.17	
Sulfur Dioxide		0.08	0.37	0.04		Sulfur Dioxide						Sulfur Dioxide		-	-	0.08		Sulfur Dioxide		-	-	-		Sulfur Dioxide	0.42	0.45	0.12	
Volatile Organic Compounds		0.08	0.35	0.03		Volatile Organic Compounds		0.05	0.13	0.13		Volatile Organic Compounds		-	-	19.82		Volatile Organic Compounds		-	-	-		Volatile Organic Compounds	80.65	20.61	19.98	
HAPs - Total		0.02	0.07	0.01		HAPs - Total		4.13E-04	1.81E-03	1.81E-03		HAPs - Total		-	-	0.21		HAPs - Total		-	-	-		HAPs - Total	0.91	0.30	0.22	
Carbon Dioxide		9016.79	39493.53	28.21		Carbon Dioxide						Carbon Dioxide		-	-	9029.28		Carbon Dioxide		-	-	-		Carbon Dioxide	46230.37	48796.92	9057.49	
Methane		0.37	1.60	1.14E-03		Methane						Methane		-	-	0.36		Methane		-	-	-		Methane	1.87	1.98	0.37	
Nitrous Oxide		0.07	0.32	2.29E-04		Nitrous Oxide						Nitrous Oxide		-	-	0.07		Nitrous Oxide		-	-	-		Nitrous Oxide	0.37	0.40	0.07	
Carbon Dioxide Equivalent		9047.73	39629.05	28.31		Carbon Dioxide Equivalent						Carbon Dioxide Equivalent		-	-	9060.09		Carbon Dioxide Equivalent		-	-	-		Carbon Dioxide Equivalent	46385.34	48963.46	9088.40	
Lead Compounds		3.56E-09	1.56E-08	1.56E-09		Lead Compounds						Lead Compounds						Lead Compounds						Lead Compounds	3.56E-09	1.56E-08	1.56E-09	
1,1,1-Trichloroethane		9.32E-05	4.08E-04	4.08E-05		1,1,1-Trichloroethane						1,1,1-Trichloroethane		-	-	-		1,1,1-Trichloroethane		-	-	-		1,1,1-Trichloroethane	9.32E-05	4.08E-04	4.08E-05	
1,1,2,2-Tetrachloroethane		-	-	-		1,1,2,2-Tetrachloroethane						1,1,2,2-Tetrachloroethane		-	-	0.00		1,1,2,2-Tetrachloroethane		-	-	-		1,1,2,2-Tetrachloroethane	1.29E-05	3.23E-06	0.00	
1,1,2-Trichloroethane		-	-	-		1,1,2-Trichloroethane						1,1,2-Trichloroethane		-	-	0.00		1,1,2-Trichloroethane		-	-	-		1,1,2-Trichloroethane	1.29E-05	3.23E-06	0.00	
1,1-Dichloroethane		-	-	-		1,1-Dichloroethane						1,1-Dichloroethane		-	-	0.00		1,1-Dichloroethane		-	-	-		1,1-Dichloroethane	5.76E-06	1.44E-06	0.00	
1,2-Dibromoethane (Ethylene dibromide); EDB		-	-	-		1,2-Dibromoethane (Ethylene dibromide); EDB						1,2-Dibromoethane (Ethylene dibromide); EDB		-	-	0.00		1,2-Dibromoethane (Ethylene dibromide); EDB		-	-	-		1,2-Dibromoethane (Ethylene dibromide); EDB	1.09E-05	2.72E-06	0.00	
1,2-Dichloropropane		-	-	-		1,2-Dichloropropane						1,2-Dichloropropane		-	-	0.00		1,2-Dichloropropane		-	-	-		1,2-Dichloropropane	6.63E-06	1.66E-06	0.00	
1,3-Butadiene		-	-	-		1,3-Butadiene						1,3-Butadiene		-	-	2.15E-03		1,3-Butadiene		-	-	-		1,3-Butadiene	0.01	2.30E-03	2.15E-03	
1,3-Dichloropropene		-	-	-		1,3-Dichloropropene						1,3-Dichloropropene		-	-	0.00		1,3-Dichloropropene		-	-	-		1,3-Dichloropropene	6.63E-06	1.66E-06	0.00	
Acetaldehyde		-	-	-		Acetaldehyde						Acetaldehyde		-	-	0.04		Acetaldehyde		-	-	-		Acetaldehyde	0.18	0.04	0.04	
Acrolein		-	-	-		Acrolein						Acrolein		-	-	0.01		Acrolein		-	-	-		Acrolein	0.02	0.01	0.01	
Arsenic compounds		1.58E-09	6.92E-09	6.92E-10		Arsenic compounds						Arsenic compounds		-	-	-		Arsenic compounds		-	-	-		Arsenic compounds	1.58E-09	6.92E-09	6.92E-10	
Benzene		8.45E-05	3.70E-04	3.70E-05		Benzene		4.53E-05	1.06E-04	1.06E-04		Benzene		-	-	0.05		Benzene		-	-	-		Benzene	0.21	0.05	0.05	
Beryllium Compounds		3.16E-09	1.38E-08	1.38E-09		Beryllium Compounds						Beryllium Compounds		-	-	-		Beryllium Compounds		-	-	-		Beryllium Compounds	3.16E-09	1.38E-08	1.38E-09	
Cadmium compounds		1.19E-09	5.19E-09	5.19E-10		Cadmium compounds						Cadmium compounds		-	-	-		Cadmium compounds		-	-	-		Cadmium compounds	1.19E-09	5.19E-09	5.19E-10	
Carbon tetrachloride		-	-	-		Carbon tetrachloride						Carbon tetrachloride		-	-	0.00		Carbon tetrachloride		-	-	-		Carbon tetrachloride	9.03E-06	2.26E-06	0.00	
Chlorobenzene (Monochlorobenzene)		-	-	-		Chlorobenzene (Monochlorobenzene)						Chlorobenzene (Monochlorobenzene)		-	-	0.00		Chlorobenzene (Monochlorobenzene)		-	-	-		Chlorobenzene (Monochlorobenzene)	6.58E-06	1.64E-06	0.00	
Chloroform		-	-	-		Chloroform						Chloroform		-	-	0.00		Chloroform		-	-	-		Chloroform	6.99E-06	1.75E-06	0.00	
Chromium compounds		1.19E-09	5.19E-09	5.19E-10		Chromium compounds						Chromium compounds		-	-	-		Chromium compounds		-	-	-		Chromium compounds	1.19E-09	5.19E-09	5.19E-10	
Dichloromethane (Methylene chloride)		-	-	-		Dichloromethane (Methylene chloride)						Dichloromethane (Methylene chloride)		-	-	0.00		Dichloromethane (Methylene chloride)		-	-	-		Dichloromethane (Methylene chloride)	2.10E-05	5.25E-06	0.00	
Ethylbenzene		2.51E-05	1.10E-04	1.10E-05		Ethylbenzene		3.76E-05	7.93E-05	7.93E-05		Ethylbenzene		-	-	0.00		Ethylbenzene		-	-	-		Ethylbenzene	7.53E-05	1.92E-04	9.03E-05	
Formaldehyde		0.01	0.06	0.01		Formaldehyde						Formaldehyde		-	-	0.06		Formaldehyde		-	-	-		Formaldehyde	0.29	0.13	0.07	
Manganese compounds		2.37E-09	1.04E-08	1.04E-09		Manganese compounds						Manganese compounds		-	-	-		Manganese compounds		-	-	-		Manganese compounds	2.37E-09	1.04E-08	1.04E-09	
Mercury		1.19E-09	5.19E-09	5.19E-10		Mercury						Mercury		-	-	-		Mercury		-	-	-		Mercury	1.19E-09	5.19E-09	5.19E-10	
Methanol						Methanol						Methanol		-	-	0.00		Methanol		-	-	-		Methanol	1.56E-03	3.90E-04	0.00	
Naphthalene		4.46E-04	1.96E-03	1.96E-04		Naphthalene						Naphthalene		-	-	4.67E-03		Naphthalene		-	-	-		Naphthalene	0.02	0.01	4.86E-03	
Nickel compounds		1.19E-09	5.19E-09	5.19E-10		Nickel compounds						Nickel compounds		-	-	-		Nickel compounds		-	-	-		Nickel compounds	1.19E-09	5.19E-09	5.19E-10	
Polycyclic organic matter (POM)		1.30E-03	0.01	5.71E-04		Polycyclic organic matter (POM)						Polycyclic organic matter		-	-	0.01		Polycyclic organic matter		-	-	-		Polycyclic organic matter	0.04	0.02	0.01	
Selenium compounds		5.93E-09	2.60E-08	2.60E-09		Selenium compounds						Selenium compounds		-	-	-		Selenium compounds		-	-	-		Selenium compounds	5.93E-09	2.60E-08	2.60E-09	
Styrene		-	-	-		Styrene						Styrene		-	-	0.00		Styrene		-	-	-		Styrene	6.07E-06	1.52E-06	0.00	
Toluene		2.45E-03	0.01	1.07E-03		Toluene		5.72E-04	1.28E-03	1.28E-03		Toluene		-	-	0.02		Toluene		-	-	-		Toluene	0.10	0.04	0.02	
Vinyl chloride (chloroethene)		-	-	-		Vinyl chloride (chloroethene)						Vinyl chloride (chloroethene)		-	-	0.00		Vinyl chloride (chloroethene)		-	-	-		Vinyl chloride (chloroethene)	3.66E-06	9.15E-07	0.00	
Xylenes, Total		4.31E-05	1.89E-04	1.89E-05		Xylenes, Total		1.64E-04	3.45E-04	3.45E-04		Xylenes, Total		-	-	0.02		Xylenes, Total		-	-	-		Xylenes, Total	0.06	0.02	0.02	

2014 Minor Amendment

Equipment	Equipment Name	Pollutant	Potential Emissions After Proposed Modification (lb/hr)	Potential Emissions Before Proposed Modification (lb/hr)	Potential Emissions Increase (lb/hr)	Potential Emissions After Proposed Modification (tpy)	Potential Emissions Increase (tpy)
EQUI 85	Communications Tower Emergency Generator	Particulate Matter	0.010	0.010	0.00	0.0025	0.0025
		PM < 10 micron	0.010	0.010	0.00	0.0025	0.0025
		PM < 2.5 micron	0.010	0.010	0.00	0.0025	0.0025
		Nitrogen Oxides	1.13	0.46	0.67	0.28	0.28
		Carbon Monoxide	1.90	0.06	1.84	0.47	0.47
		Sulfur Dioxide	0.0003	8.62E-05	2.14E-04	0.000075	0.000075
		Lead	0.00	0.00	0.00	0.00	0.00
		Total HAPs	0.017	6.85E-04	0.016	0.0041	0.0041
		CO_2e	56	1.13	55	14	14
		Volatile Organic Compounds	0.015	0.020	0.00	0.00	0.00
EQUI 87	Gasoline Tank	Particulate Matter	0.00	0.00	0.00	0.00	0.00
		PM < 10 micron	0.00	0.00	0.00	0.00	0.00
		PM < 2.5 micron	0.00	0.00	0.00	0.00	0.00
		Nitrogen Oxides	0.00	0.00	0.00	0.00	0.00
		Carbon Monoxide	0.00	0.00	0.00	0.00	0.00
		Sulfur Dioxide	0.00	0.00	0.00	0.00	0.00
		Lead	0.00	0.00	0.00	0.00	0.00
		Total HAPs	4.13E-04	0.00	4.13E-04	1.81E-03	1.81E-03
		CO_2e	0.00	0.00	0.00	0.00	0.00
		Volatile Organic Compounds	0.047	0.00	0.047	0.13	0.13

Pollutant	Potential Emissions Increase (lb/hr)	Thresholds for minor amendments * (lb/hr)	Are project increases (lb/hr) < thresholds?	Potential Emissions Increase (tpy)	NSR/112(g) threshold for new major source (tpy)	NSR/112(g) review required?
Particulate Matter				0.00	250	no
PM < 10 micron	0.00	3.42	Yes	0.00	250	no
PM < 2.5 micron				0.00	250	no
Nitrogen Oxides	0.67	9.13	Yes	0.28	250	no
Carbon Monoxide	1.84	22.8	Yes	0.47	250	no
Sulfur Dioxide	0.00	9.13	Yes	0.00	250	no
Lead				0.00	250	no
Total HAPs				0.01	25	no
CO2e				14	100,000	no
Volatile Organic Compounds	0.042	9.13	Yes	0.13	250	no

2016 Minor Amendment

Equipment	Equipment Name	Pollutant	Potential Emissions After Proposed Modification (lb/hr)	Potential Emissions Before Proposed Modification (lb/hr)	Potential Emissions Increase (lb/hr)	Potential Emissions After Proposed Modification (tpy)	Potential Emissions Increase (tpy)
EQUI 86	Substation Emergency Generator	Particulate Matter	0.030	0.00	0.030	0.0075	0.0075
		PM < 10 micron	0.030	0.00	0.030	0.0075	0.0075
		PM < 2.5 micron	0.030	0.00	0.030	0.0075	0.0075
		Nitrogen Oxides	4.48	0.00	4.48	1.12	1.12
		Carbon Monoxide	0.47	0.00	0.47	0.12	0.12
		Sulfur Dioxide	0.0047	0	0.0047	0.0012	0.0012
		Lead	0.00	0.00	0.00	0.00	0.00
		Total HAPs	0.012	0.00	0.012	0.00	0.00
		CO_2e	512	0.00	512	128	128
		Volatile Organic Compounds	0.060	0.00	0.060	0.015	0.015

Pollutant	Potential Emissions Increase (lb/hr)	Thresholds for minor amendments * (lb/hr)	Are project increases (lb/hr) < thresholds?	Potential Emissions Increase (tpy)	NSR/112(g) threshold for new major source (tpy)	NSR/112(g) review required?
Particulate Matter	0.030			0.01	250	no
PM < 10 micron	0.030	3.42	Yes	0.01	250	no
PM < 2.5 micron	0.030			0.01	250	no
Nitrogen Oxides	4.48	9.13	Yes	1.12	250	no
Carbon Monoxide	0.47	22.8	Yes	0.12	250	no
Sulfur Dioxide	0.0047	9.13	Yes	0.00	250	no
Lead	0.00			0.00	250	no
Total HAPs	0.012			0.003	25	no
CO2e				128	100,000	no
Volatile Organic Compounds	0.060	9.13	Yes	0.02	250	no

Single Fuel Emission Units

EQUI ID	EQUI 1	Diesel Engine D1
Heat Input (MMBTU/hr)	28.77	
Unlimited Hours (hr/yr)	500	
Limited Hours (hr/yr)	See COMG 5	
Firing Type	Diesel	

Pollutant	AP-42 Emission Factor (lb/MMBtu)	Other Emission Factor (lb/MMBtu)	Control Efficiency (%)	Unrestricted Emission Rate (lb/hr)	Controlled Emission Rate (lb/hr)	Unrestricted Emissions (tpy)	Limited Emissions (tpy)
Particulate Matter	3.10E-01			8.92E+00	8.92E+00	2.23E+00	0.00E+00
PM < 10 micron	3.10E-01			8.92E+00	8.92E+00	2.23E+00	0.00E+00
PM < 2.5 micron	3.10E-01			8.92E+00	8.92E+00	2.23E+00	0.00E+00
Nitrogen Oxides	4.41E+00	4.00E+00		1.15E+02	1.15E+02	2.88E+01	0.00E+00
Carbon Monoxide	9.50E-01			2.73E+01	2.73E+01	6.83E+00	0.00E+00
Sulfur Dioxide	2.90E-01	1.50E-03		4.32E-02	4.32E-02	1.08E-02	0.00E+00
Volatile Organic Compounds	3.60E-01			1.04E+01	1.04E+01	2.59E+00	0.00E+00
HAPs - Total	3.87E-03			1.11E-01	1.11E-01	2.79E-02	0.00E+00
Carbon Dioxide	1.64E+02			4.72E+03	4.72E+03	1.18E+03	0.00E+00
Methane	6.61E-03			1.90E-01	1.90E-01	4.76E-02	0.00E+00
Nitrous Oxide	1.32E-03			3.81E-02	3.81E-02	9.51E-03	0.00E+00
Carbon Dioxide Equivalent	1.65E+02			4.73E+03	4.73E+03	1.18E+03	0.00E+00
1,1,2,2-Tetrachloroethane	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1,2-Trichloroethane	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethane	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-Dibromoethane (Ethylene dibromide); EDB	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-Dichloropropane	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,3-Butadiene	3.91E-05			1.12E-03	1.12E-03	2.81E-04	0.00E+00
1,3-Dichloropropene	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
2,2,4-trimethylpentane	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetaldehyde	7.67E-04			2.21E-02	2.21E-02	5.52E-03	0.00E+00
Acrolein	9.25E-05			2.66E-03	2.66E-03	6.65E-04	0.00E+00
Benzene	9.33E-04			2.68E-02	2.68E-02	6.71E-03	0.00E+00
Benzo(e)pyrene	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biphenyl	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon tetrachloride	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene (Monochlorobenzene)	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chloroform	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Dichloromethane (Methylene chloride)	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethylbenzene	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	1.18E-03			3.39E-02	3.39E-02	8.49E-03	0.00E+00
Hexane	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methanol	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Naphthalene	8.48E-05			2.44E-03	2.44E-03	6.10E-04	0.00E+00
Phenol	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Polycyclic organic matter	1.68E-04			4.83E-03	4.83E-03	1.21E-03	0.00E+00
Styrene	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	4.09E-04			1.18E-02	1.18E-02	2.94E-03	0.00E+00
Vinyl chloride (chloroethene)	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes, Total	2.85E-04			8.20E-03	8.20E-03	2.05E-03	0.00E+00

Other Emission Factor and/or Control Efficiency Factor Notes:

Current NOx limit is 4 lb/MMBtu for COMG 5 units

Updated CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO2 = 1, CH4 = 28, and N2O = 265) (April 25, 2024).

EQUI ID	EQUI 2	Diesel Engine D2				
Heat Input (BTU/hr)	28.77					
Unlimited Hours (hr/yr)	500					
Limited Hours (hr/yr)	See COMG 5					
Firing Type	Diesel					
AP-42 Emission Factor (lb/MMBtu)	**Other Emission Factor (lb/MMBtu)**	**Control Efficiency (%)**	**Unrestricted Emission Rate (lb/hr)**	**Controlled Emission Rate (lb/hr)**	**Unrestricted Emissions (tpy)**	**Limited Emissions (tpy)**
3.10E-01			8.92E+00	8.92E+00	2.23E+00	0.00E+00
3.10E-01			8.92E+00	8.92E+00	2.23E+00	0.00E+00
3.10E-01			8.92E+00	8.92E+00	2.23E+00	0.00E+00
4.41E+00	4.00E+00		1.15E+02	1.15E+02	2.88E+01	0.00E+00
9.50E-01			2.73E+01	2.73E+01	6.83E+00	0.00E+00
2.90E-01	1.50E-03		4.32E-02	4.32E-02	1.08E-02	0.00E+00
3.60E-01			1.04E+01	1.04E+01	2.59E+00	0.00E+00
3.87E-03			1.11E-01	1.11E-01	2.79E-02	0.00E+00
1.64E+02			4.72E+03	4.72E+03	1.18E+03	0.00E+00
6.61E-03			1.90E-01	1.90E-01	4.76E-02	0.00E+00
1.32E-03			3.81E-02	3.81E-02	9.51E-03	0.00E+00
1.65E+02			4.73E+03	4.73E+03	1.18E+03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.91E-05			1.12E-03	1.12E-03	2.81E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.67E-04			2.21E-02	2.21E-02	5.52E-03	0.00E+00
9.25E-05			2.66E-03	2.66E-03	6.65E-04	0.00E+00
9.33E-04			2.68E-02	2.68E-02	6.71E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.18E-03			3.39E-02	3.39E-02	8.49E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.48E-05			2.44E-03	2.44E-03	6.10E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.68E-04			4.83E-03	4.83E-03	1.21E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.09E-04			1.18E-02	1.18E-02	2.94E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.85E-04			8.20E-03	8.20E-03	2.05E-03	0.00E+00

Other Emission Factor and/or Control Efficiency Factor Notes:

Current NOx limit is 4 lb/MMBtu for COMG 5 units

Updated CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO_2 = 1, CH_4 = 28, and N_2O = 265) (April 25, 2024).

EQUI ID	EQUI 3	Diesel Cooling Water Pump 12				
Heat Input (BTU/hr)	7.54					
Unlimited Hours (hr/yr)	500					
Limited Hours (hr/yr)	See COMG 5					
Firing Type	Diesel					
AP-42 Emission Factor (lb/MMBtu)	**Other Emission Factor (lb/MMBtu)**	**Control Efficiency (%)**	**Unrestricted Emission Rate (lb/hr)**	**Controlled Emission Rate (lb/hr)**	**Unrestricted Emissions (tpy)**	**Limited Emissions (tpy)**
3.10E-01			2.34E+00	2.34E+00	5.84E-01	0.00E+00
3.10E-01			2.34E+00	2.34E+00	5.84E-01	0.00E+00
3.10E-01			2.34E+00	2.34E+00	5.84E-01	0.00E+00
4.41E+00	4.00E+00		3.02E+01	3.02E+01	7.54E+00	0.00E+00
9.50E-01			7.16E+00	7.16E+00	1.79E+00	0.00E+00
2.90E-01	1.50E-03		1.13E-02	1.13E-02	2.83E-03	0.00E+00
3.60E-01			2.71E+00	2.71E+00	6.79E-01	0.00E+00
3.87E-03			2.92E-02	2.92E-02	7.30E-03	0.00E+00
1.64E+02			1.24E+03	1.24E+03	3.09E+02	0.00E+00
6.61E-03			4.99E-02	4.99E-02	1.25E-02	0.00E+00
1.32E-03			9.97E-03	9.97E-03	2.49E-03	0.00E+00
1.65E+02			1.24E+03	1.24E+03	3.10E+02	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.91E-05			2.95E-04	2.95E-04	7.37E-05	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.67E-04			5.78E-03	5.78E-03	1.45E-03	0.00E+00
9.25E-05			6.97E-04	6.97E-04	1.74E-04	0.00E+00
9.33E-04			7.03E-03	7.03E-03	1.76E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.18E-03			8.90E-03	8.90E-03	2.22E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.48E-05			6.39E-04	6.39E-04	1.60E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.68E-04			1.27E-03	1.27E-03	3.17E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.09E-04			3.08E-03	3.08E-03	7.71E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.85E-04			2.15E-03	2.15E-03	5.37E-04	0.00E+00

Other Emission Factor and/or Control Efficiency Factor Notes:

Current NOx limit is 4 lb/MMBtu for COMG 5 units

Updated CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO2 = 1, CH4 = 28, and N2O = 265) (April 25, 2024).

EQUI ID	EQUI 4	Diesel Cooling Water Pump 22				
Heat Input (BTU/hr)	7.54					
Unlimited Hours (hr/yr)	500					
Limited Hours (hr/yr)	See COMG 5					
Firing Type	Diesel					
AP-42 Emission Factor (lb/MMBtu)	**Other Emission Factor (lb/MMBtu)**	**Control Efficiency (%)**	**Unrestricted Emission Rate (lb/hr)**	**Controlled Emission Rate (lb/hr)**	**Unrestricted Emissions (tpy)**	**Limited Emissions (tpy)**
3.10E-01			2.34E+00	2.34E+00	5.84E-01	0.00E+00
3.10E-01			2.34E+00	2.34E+00	5.84E-01	0.00E+00
3.10E-01			2.34E+00	2.34E+00	5.84E-01	0.00E+00
4.41E+00	4.00E+00		3.02E+01	3.02E+01	7.54E+00	0.00E+00
9.50E-01			7.16E+00	7.16E+00	1.79E+00	0.00E+00
2.90E-01	1.50E-03		1.13E-02	1.13E-02	2.83E-03	0.00E+00
3.60E-01			2.71E+00	2.71E+00	6.79E-01	0.00E+00
3.87E-03			2.92E-02	2.92E-02	7.30E-03	0.00E+00
1.64E+02			1.24E+03	1.24E+03	3.09E+02	0.00E+00
6.61E-03			4.99E-02	4.99E-02	1.25E-02	0.00E+00
1.32E-03			9.97E-03	9.97E-03	2.49E-03	0.00E+00
1.65E+02			1.24E+03	1.24E+03	3.10E+02	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.91E-05			2.95E-04	2.95E-04	7.37E-05	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.67E-04			5.78E-03	5.78E-03	1.45E-03	0.00E+00
9.25E-05			6.97E-04	6.97E-04	1.74E-04	0.00E+00
9.33E-04			7.03E-03	7.03E-03	1.76E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.18E-03			8.90E-03	8.90E-03	2.22E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.48E-05			6.39E-04	6.39E-04	1.60E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.68E-04			1.27E-03	1.27E-03	3.17E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.09E-04			3.08E-03	3.08E-03	7.71E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.85E-04			2.15E-03	2.15E-03	5.37E-04	0.00E+00

Other Emission Factor and/or Control Efficiency Factor Notes:

Current NOx limit is 4 lb/MMBtu for COMG 5 units

Updated CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO2 = 1, CH4 = 28, and N2O = 265) (April 25, 2024).

EQUI ID	EQUI 14	Diesel Fire Pump 122
Heat Input (BTU/hr)	2.36	
Unlimited Hours (hr/yr)	500	
Limited Hours (hr/yr)	See COMG 5	
Firing Type	Diesel	

AP-42 Emission Factor (lb/MMBtu)	Other Emission Factor (lb/MMBtu)	Control Efficiency (%)	Unrestricted Emission Rate (lb/hr)	Controlled Emission Rate (lb/hr)	Unrestricted Emissions (tpy)	Limited Emissions (tpy)
3.10E-01			7.32E-01	7.32E-01	1.83E-01	0.00E+00
3.10E-01			7.32E-01	7.32E-01	1.83E-01	0.00E+00
3.10E-01			7.32E-01	7.32E-01	1.83E-01	0.00E+00
4.41E+00	4.00E+00		9.44E+00	9.44E+00	2.36E+00	0.00E+00
9.50E-01			2.24E+00	2.24E+00	5.61E-01	0.00E+00
2.90E-01	1.50E-03		3.54E-03	3.54E-03	8.85E-04	0.00E+00
3.60E-01			8.50E-01	8.50E-01	2.12E-01	0.00E+00
3.87E-03			9.14E-03	9.14E-03	2.29E-03	0.00E+00
1.64E+02			3.87E+02	3.87E+02	9.68E+01	0.00E+00
6.61E-03			1.56E-02	1.56E-02	3.90E-03	0.00E+00
1.32E-03			3.12E-03	3.12E-03	7.80E-04	0.00E+00
1.65E+02			3.88E+02	3.88E+02	9.71E+01	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.91E-05			9.23E-05	9.23E-05	2.31E-05	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.67E-04			1.81E-03	1.81E-03	4.53E-04	0.00E+00
9.25E-05			2.18E-04	2.18E-04	5.46E-05	0.00E+00
9.33E-04			2.20E-03	2.20E-03	5.50E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.18E-03			2.78E-03	2.78E-03	6.96E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.48E-05			2.00E-04	2.00E-04	5.00E-05	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.68E-04			3.96E-04	3.96E-04	9.91E-05	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.09E-04			9.65E-04	9.65E-04	2.41E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.85E-04			6.73E-04	6.73E-04	1.68E-04	0.00E+00

Other Emission Factor and/or Control Efficiency Factor Notes:

Current NOx limit is 4 lb/MMBtu for COMG 5 units

Updated CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO2 = 1, CH4 = 28, and N2O = 265) (April 25, 2024).

EQUI ID	EQUI 5	Diesel Engine D3				
Heat Input (BTU/hr)	25.54					
Unlimited Hours (hr/yr)	500					
Limited Hours (hr/yr)	See COMG 5					
Firing Type	Diesel					
AP-42 Emission Factor (lb/MMBtu)	**Other Emission Factor (lb/MMBtu)**	**Control Efficiency (%)**	**Unrestricted Emission Rate (lb/hr)**	**Controlled Emission Rate (lb/hr)**	**Unrestricted Emissions (tpy)**	**Limited Emissions (tpy)**
3.10E-01			7.92E+00	7.92E+00	1.98E+00	0.00E+00
3.10E-01			7.92E+00	7.92E+00	1.98E+00	0.00E+00
3.10E-01			7.92E+00	7.92E+00	1.98E+00	0.00E+00
4.41E+00	4.00E+00		1.02E+02	1.02E+02	2.55E+01	0.00E+00
9.50E-01			2.43E+01	2.43E+01	6.07E+00	0.00E+00
2.90E-01	1.50E-03		3.83E-02	3.83E-02	9.58E-03	0.00E+00
3.60E-01			9.19E+00	9.19E+00	2.30E+00	0.00E+00
3.87E-03			9.89E-02	9.89E-02	2.47E-02	0.00E+00
1.64E+02			4.19E+03	4.19E+03	1.05E+03	0.00E+00
6.61E-03			1.69E-01	1.69E-01	4.22E-02	0.00E+00
1.32E-03			3.38E-02	3.38E-02	8.45E-03	0.00E+00
1.65E+02			4.20E+03	4.20E+03	1.05E+03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.91E-05			9.99E-04	9.99E-04	2.50E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.67E-04			1.96E-02	1.96E-02	4.90E-03	0.00E+00
9.25E-05			2.36E-03	2.36E-03	5.91E-04	0.00E+00
9.33E-04			2.38E-02	2.38E-02	5.96E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.18E-03			3.01E-02	3.01E-02	7.53E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.48E-05			2.17E-03	2.17E-03	5.41E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.68E-04			4.29E-03	4.29E-03	1.07E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.09E-04			1.04E-02	1.04E-02	2.61E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.85E-04			7.28E-03	7.28E-03	1.82E-03	0.00E+00

Other Emission Factor and/or Control Efficiency Factor Notes:

Current NOx limit is 4 lb/MMBtu for COMG 5 units

Updated CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO_2 = 1, CH_4 = 28, and N_2O = 265) (April 25, 2024).

EQUI ID	EQUI 6	Diesel Engine D4				
Heat Input (BTU/hr)	25.54					
Unlimited Hours (hr/yr)	500					
Limited Hours (hr/yr)	See COMG 5					
Firing Type	Diesel					
AP-42 Emission Factor (lb/MMBtu)	**Other Emission Factor (lb/MMBtu)**	**Control Efficiency (%)**	**Unrestricted Emission Rate (lb/hr)**	**Controlled Emission Rate (lb/hr)**	**Unrestricted Emissions (tpy)**	**Limited Emissions (tpy)**
3.10E-01			7.92E+00	7.92E+00	1.98E+00	0.00E+00
3.10E-01			7.92E+00	7.92E+00	1.98E+00	0.00E+00
3.10E-01			7.92E+00	7.92E+00	1.98E+00	0.00E+00
4.41E+00	4.00E+00		1.02E+02	1.02E+02	2.55E+01	0.00E+00
9.50E-01			2.43E+01	2.43E+01	6.07E+00	0.00E+00
2.90E-01	1.50E-03		3.83E-02	3.83E-02	9.58E-03	0.00E+00
3.60E-01			9.19E+00	9.19E+00	2.30E+00	0.00E+00
3.87E-03			9.89E-02	9.89E-02	2.47E-02	0.00E+00
1.64E+02			4.19E+03	4.19E+03	1.05E+03	0.00E+00
6.61E-03			1.69E-01	1.69E-01	4.22E-02	0.00E+00
1.32E-03			3.38E-02	3.38E-02	8.45E-03	0.00E+00
1.65E+02	1.65E+02		4.20E+03	4.20E+03	1.05E+03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.91E-05			9.99E-04	9.99E-04	2.50E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.67E-04			1.96E-02	1.96E-02	4.90E-03	0.00E+00
9.25E-05			2.36E-03	2.36E-03	5.91E-04	0.00E+00
9.33E-04			2.38E-02	2.38E-02	5.96E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.18E-03			3.01E-02	3.01E-02	7.53E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.48E-05			2.17E-03	2.17E-03	5.41E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.68E-04			4.29E-03	4.29E-03	1.07E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.09E-04			1.04E-02	1.04E-02	2.61E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.85E-04			7.28E-03	7.28E-03	1.82E-03	0.00E+00

Other Emission Factor and/or Control Efficiency Factor Notes:

Current NOx limit is 4 lb/MMBtu for COMG 5 units

Updated CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO_2 = 1, CH_4 = 28, and N_2O = 265) (April 25, 2024).

EQUI ID	EQUI 27	Security Diesel Engine				
Heat Input (BTU/hr)	2.38					
Unlimited Hours (hr/yr)	500					
Limited Hours (hr/yr)	See COMG 5					
Firing Type	Diesel					
AP-42 Emission Factor (lb/MMBtu)	**Other Emission Factor (lb/MMBtu)**	**Control Efficiency (%)**	**Unrestricted Emission Rate (lb/hr)**	**Controlled Emission Rate (lb/hr)**	**Unrestricted Emissions (tpy)**	**Limited Emissions (tpy)**
3.10E-01			7.38E-01	7.38E-01	1.84E-01	0.00E+00
3.10E-01			7.38E-01	7.38E-01	1.84E-01	0.00E+00
3.10E-01			7.38E-01	7.38E-01	1.84E-01	0.00E+00
4.41E+00	4.00E+00		9.52E+00	9.52E+00	2.38E+00	0.00E+00
9.50E-01			2.26E+00	2.26E+00	5.65E-01	0.00E+00
2.90E-01	1.50E-03		3.57E-03	3.57E-03	8.93E-04	0.00E+00
3.60E-01			8.57E-01	8.57E-01	2.14E-01	0.00E+00
3.87E-03			9.22E-03	9.22E-03	2.30E-03	0.00E+00
1.64E+02			3.90E+02	3.90E+02	9.76E+01	0.00E+00
6.61E-03			1.57E-02	1.57E-02	3.94E-03	0.00E+00
1.32E-03			3.15E-03	3.15E-03	7.87E-04	0.00E+00
1.65E+02			3.92E+02	3.92E+02	9.79E+01	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.91E-05			9.31E-05	9.31E-05	2.33E-05	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.67E-04			1.83E-03	1.83E-03	4.56E-04	0.00E+00
9.25E-05			2.20E-04	2.20E-04	5.50E-05	0.00E+00
9.33E-04			2.22E-03	2.22E-03	5.55E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.18E-03			2.81E-03	2.81E-03	7.02E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.48E-05			2.02E-04	2.02E-04	5.05E-05	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.68E-04			4.00E-04	4.00E-04	1.00E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.09E-04			9.73E-04	9.73E-04	2.43E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.85E-04			6.78E-04	6.78E-04	1.70E-04	0.00E+00

Other Emission Factor and/or Control Efficiency Factor Notes:

Current NOx limit is 4 lb/MMBtu for COMG 5 units

Updated CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO2 = 1, CH4 = 28, and N2O = 265) (April 25, 2024).

EQUI ID	EQUI 7	Diesel Engine D5-1				
Heat Input (BTU/hr)	23.1					
Unlimited Hours (hr/yr)	500					
Limited Hours (hr/yr)	See COMG 5					
Firing Type	Diesel					
AP-42 Emission Factor (lb/MMBtu)	**Other Emission Factor (lb/MMBtu)**	**Control Efficiency (%)**	**Unrestricted Emission Rate (lb/hr)**	**Controlled Emission Rate (lb/hr)**	**Unrestricted Emissions (tpy)**	**Limited Emissions (tpy)**
3.10E-01			7.16E+00	7.16E+00	1.79E+00	0.00E+00
3.10E-01			7.16E+00	7.16E+00	1.79E+00	0.00E+00
3.10E-01			7.16E+00	7.16E+00	1.79E+00	0.00E+00
4.41E+00	4.00E+00		9.24E+01	9.24E+01	2.31E+01	0.00E+00
9.50E-01			2.19E+01	2.19E+01	5.49E+00	0.00E+00
2.90E-01	1.50E-03		3.47E-02	3.47E-02	8.66E-03	0.00E+00
3.60E-01			8.32E+00	8.32E+00	2.08E+00	0.00E+00
3.87E-03			8.95E-02	8.95E-02	2.24E-02	0.00E+00
1.64E+02			3.79E+03	3.79E+03	9.47E+02	0.00E+00
6.61E-03			1.53E-01	1.53E-01	3.82E-02	0.00E+00
1.32E-03			3.06E-02	3.06E-02	7.64E-03	0.00E+00
1.65E+02	1.65E+02		3.80E+03	3.80E+03	9.50E+02	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.91E-05			9.03E-04	9.03E-04	2.26E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.67E-04			1.77E-02	1.77E-02	4.43E-03	0.00E+00
9.25E-05			2.14E-03	2.14E-03	5.34E-04	0.00E+00
9.33E-04			2.16E-02	2.16E-02	5.39E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.18E-03			2.73E-02	2.73E-02	6.81E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.48E-05			1.96E-03	1.96E-03	4.90E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.68E-04			3.88E-03	3.88E-03	9.70E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.09E-04			9.45E-03	9.45E-03	2.36E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.85E-04			6.58E-03	6.58E-03	1.65E-03	0.00E+00

Other Emission Factor and/or Control Efficiency Factor Notes:

Current NOx limit is 4 lb/MMBtu for COMG 5 units

Updated CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO2 = 1, CH4 = 28, and N2O = 265) (April 25, 2024).

EQUI ID	EQUI 8	Diesel Engine D5-2
Heat Input (BTU/hr)	23.1	
1	500	
Limited Hours (hr/yr)	See COMG 5	
Firing Type	Diesel	

AP-42 Emission Factor (lb/MMBtu)	Other Emission Factor (lb/MMBtu)	Control Efficiency (%)	Unrestricted Emission Rate (lb/hr)	Controlled Emission Rate (lb/hr)	Unrestricted Emissions (tpy)	Limited Emissions (tpy)
3.10E-01			7.16E+00	7.16E+00	1.79E+00	0.00E+00
3.10E-01			7.16E+00	7.16E+00	1.79E+00	0.00E+00
3.10E-01			7.16E+00	7.16E+00	1.79E+00	0.00E+00
4.41E+00	4.00E+00		9.24E+01	9.24E+01	2.31E+01	0.00E+00
9.50E-01			2.19E+01	2.19E+01	5.49E+00	0.00E+00
2.90E-01	1.50E-03		3.47E-02	3.47E-02	8.66E-03	0.00E+00
3.60E-01			8.32E+00	8.32E+00	2.08E+00	0.00E+00
3.87E-03			8.95E-02	8.95E-02	2.24E-02	0.00E+00
1.64E+02			3.79E+03	3.79E+03	9.47E+02	0.00E+00
6.61E-03			1.53E-01	1.53E-01	3.82E-02	0.00E+00
1.32E-03			3.06E-02	3.06E-02	7.64E-03	0.00E+00
1.65E+02	1.65E+02		3.80E+03	3.80E+03	9.50E+02	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.91E-05			9.03E-04	9.03E-04	2.26E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.67E-04			1.77E-02	1.77E-02	4.43E-03	0.00E+00
9.25E-05			2.14E-03	2.14E-03	5.34E-04	0.00E+00
9.33E-04			2.16E-02	2.16E-02	5.39E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.18E-03			2.73E-02	2.73E-02	6.81E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.48E-05			1.96E-03	1.96E-03	4.90E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.68E-04			3.88E-03	3.88E-03	9.70E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.09E-04			9.45E-03	9.45E-03	2.36E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.85E-04			6.58E-03	6.58E-03	1.65E-03	0.00E+00

Other Emission Factor and/or Control Efficiency Factor Notes:

Current NOx limit is 4 lb/MMBtu for COMG 5 units

Updated CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO2 = 1, CH4 = 28, and N2O = 265) (April 25, 2024).

EQUI ID	EQUI 9	Diesel Engine D6-1
Heat Input (BTU/hr)	23.1	
Unlimited Hours (hr/yr)	500	
Limited Hours (hr/yr)	See COMG 5	
Firing Type	Diesel	

AP-42 Emission Factor (lb/MMBtu)	Other Emission Factor (lb/MMBtu)	Control Efficiency (%)	Unrestricted Emission Rate (lb/hr)	Controlled Emission Rate (lb/hr)	Unrestricted Emissions (tpy)	Limited Emissions (tpy)
3.10E-01			7.16E+00	7.16E+00	1.79E+00	0.00E+00
3.10E-01			7.16E+00	7.16E+00	1.79E+00	0.00E+00
3.10E-01			7.16E+00	7.16E+00	1.79E+00	0.00E+00
4.41E+00	4.00E+00		9.24E+01	9.24E+01	2.31E+01	0.00E+00
9.50E-01			2.19E+01	2.19E+01	5.49E+00	0.00E+00
2.90E-01	1.50E-03		3.47E-02	3.47E-02	8.66E-03	0.00E+00
3.60E-01			8.32E+00	8.32E+00	2.08E+00	0.00E+00
3.87E-03			8.95E-02	8.95E-02	2.24E-02	0.00E+00
1.64E+02			3.79E+03	3.79E+03	9.47E+02	0.00E+00
6.61E-03			1.53E-01	1.53E-01	3.82E-02	0.00E+00
1.32E-03			3.06E-02	3.06E-02	7.64E-03	0.00E+00
1.65E+02	1.65E+02		3.80E+03	3.80E+03	9.50E+02	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.91E-05			9.03E-04	9.03E-04	2.26E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.67E-04			1.77E-02	1.77E-02	4.43E-03	0.00E+00
9.25E-05			2.14E-03	2.14E-03	5.34E-04	0.00E+00
9.33E-04			2.16E-02	2.16E-02	5.39E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.18E-03			2.73E-02	2.73E-02	6.81E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.48E-05			1.96E-03	1.96E-03	4.90E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.68E-04			3.88E-03	3.88E-03	9.70E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.09E-04			9.45E-03	9.45E-03	2.36E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.85E-04			6.58E-03	6.58E-03	1.65E-03	0.00E+00

Other Emission Factor and/or Control Efficiency Factor Notes:

Current NOx limit is 4 lb/MMBtu for COMG 5 units

Updated CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO2 = 1, CH4 = 28, and N2O = 265) (April 25, 2024).

EQUI ID	EQUI 10	Diesel Engine D6-2
Heat Input (BTU/hr)	23.1	
Unlimited Hours (hr/yr)	500	
Limited Hours (hr/yr)	See COMG 5	
Firing Type	Diesel	

AP-42 Emission Factor (lb/MMBtu)	Other Emission Factor (lb/MMBtu)	Control Efficiency (%)	Unrestricted Emission Rate (lb/hr)	Controlled Emission Rate (lb/hr)	Unrestricted Emissions (tpy)	Limited Emissions (tpy)
3.10E-01			7.16E+00	7.16E+00	1.79E+00	0.00E+00
3.10E-01			7.16E+00	7.16E+00	1.79E+00	0.00E+00
3.10E-01			7.16E+00	7.16E+00	1.79E+00	0.00E+00
4.41E+00	4.00E+00		9.24E+01	9.24E+01	2.31E+01	0.00E+00
9.50E-01			2.19E+01	2.19E+01	5.49E+00	0.00E+00
2.90E-01	1.50E-03		3.47E-02	3.47E-02	8.66E-03	0.00E+00
3.60E-01			8.32E+00	8.32E+00	2.08E+00	0.00E+00
3.87E-03			8.95E-02	8.95E-02	2.24E-02	0.00E+00
1.64E+02			3.79E+03	3.79E+03	9.47E+02	0.00E+00
6.61E-03			1.53E-01	1.53E-01	3.82E-02	0.00E+00
1.32E-03			3.06E-02	3.06E-02	7.64E-03	0.00E+00
1.65E+02	1.65E+02		3.80E+03	3.80E+03	9.50E+02	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.91E-05			9.03E-04	9.03E-04	2.26E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.67E-04			1.77E-02	1.77E-02	4.43E-03	0.00E+00
9.25E-05			2.14E-03	2.14E-03	5.34E-04	0.00E+00
9.33E-04			2.16E-02	2.16E-02	5.39E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.18E-03			2.73E-02	2.73E-02	6.81E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.48E-05			1.96E-03	1.96E-03	4.90E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.68E-04			3.88E-03	3.88E-03	9.70E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.09E-04			9.45E-03	9.45E-03	2.36E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.85E-04			6.58E-03	6.58E-03	1.65E-03	0.00E+00

Other Emission Factor and/or Control Efficiency Factor Notes:

Current NOx limit is 4 lb/MMBtu for COMG 5 units

Updated CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO2 = 1, CH4 = 28, and N2O = 265) (April 25, 2024).

EQUI ID	EQUI 18	Warehouse Emergency Generator
Heat Input (MMBTU/hr)	2.62	
Unlimited Hours (hr/yr)	500	
Limited Hours (hr/yr)		
Firing Type	Diesel	

AP-42 Emission Factor (lb/MMBtu)	Other Emission Factor (lb/MMBtu)	Control Efficiency (%)	Unrestricted Emission Rate (lb/hr)	Controlled Emission Rate (lb/hr)	Unrestricted Emissions (tpy)	Limited Emissions (tpy)
3.10E-01			8.12E-01	8.12E-01	2.03E-01	0.00E+00
3.10E-01			8.12E-01	8.12E-01	2.03E-01	0.00E+00
3.10E-01			8.12E-01	8.12E-01	2.03E-01	0.00E+00
4.41E+00	4.00E+00		1.05E+01	1.05E+01	2.62E+00	0.00E+00
9.50E-01			2.49E+00	2.49E+00	6.22E-01	0.00E+00
2.90E-01	1.50E-03		3.93E-03	3.93E-03	9.83E-04	0.00E+00
3.60E-01			9.43E-01	9.43E-01	2.36E-01	0.00E+00
3.87E-03			1.01E-02	1.01E-02	2.54E-03	0.00E+00
1.64E+02			4.30E+02	4.30E+02	1.07E+02	0.00E+00
6.61E-03			1.73E-02	1.73E-02	4.33E-03	0.00E+00
1.32E-03			3.47E-03	3.47E-03	8.66E-04	0.00E+00
1.65E+02			4.31E+02	4.31E+02	1.08E+02	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.91E-05			1.02E-04	1.02E-04	2.56E-05	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.67E-04			2.01E-03	2.01E-03	5.02E-04	0.00E+00
9.25E-05			2.42E-04	2.42E-04	6.06E-05	0.00E+00
9.33E-04			2.44E-03	2.44E-03	6.11E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.18E-03			3.09E-03	3.09E-03	7.73E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.48E-05			2.22E-04	2.22E-04	5.55E-05	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.68E-04			4.40E-04	4.40E-04	1.10E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.09E-04			1.07E-03	1.07E-03	2.68E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.85E-04			7.47E-04	7.47E-04	1.87E-04	0.00E+00

Other Emission Factor and/or Control Efficiency Factor Notes:

Current NOx limit is 4 lb/MMBtu for COMG 5 units

Updated CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO_2 = 1, CH_4 = 28, and N_2O = 265) (April 25, 2024).

EQUI ID	EQUI 85	Communications tower emergency gen
Heat Input (MMBTU/hr)	0.51	5/1/2014
Unlimited Hours (hr/yr)	500	
Limited Hours (hr/yr)		
Firing Type	4SRB 90-105% Load	

AP-42 Emission Factor (lb/MMBtu)	Other Emission Factor (lb/MMBtu)	Control Efficiency (%)	Unrestricted Emission Rate (lb/hr)	Controlled Emission Rate (lb/hr)	Unrestricted Emissions (tpy)	Limited Emissions (tpy)
1.94E-02			9.90E-03	9.90E-03	2.47E-03	0.00E+00
1.94E-02			9.90E-03	9.90E-03	2.47E-03	0.00E+00
1.94E-02			9.90E-03	9.90E-03	2.47E-03	0.00E+00
2.21E+00			1.13E+00	1.13E+00	2.82E-01	0.00E+00
3.72E+00			1.90E+00	1.90E+00	4.74E-01	0.00E+00
5.88E-04			3.00E-04	3.00E-04	7.50E-05	0.00E+00
2.96E-02			1.51E-02	1.51E-02	3.77E-03	0.00E+00
3.25E-02			1.66E-02	1.66E-02	4.14E-03	0.00E+00
1.10E+02			5.61E+01	5.61E+01	1.40E+01	0.00E+00
2.20E-03			1.12E-03	1.12E-03	2.81E-04	0.00E+00
2.20E-04			1.12E-04	1.12E-04	2.81E-05	0.00E+00
1.10E+02			5.62E+01	5.62E+01	1.40E+01	0.00E+00
2.53E-05			1.29E-05	1.29E-05	3.23E-06	0.00E+00
2.53E-05			1.29E-05	1.29E-05	3.23E-06	0.00E+00
1.13E-05			5.76E-06	5.76E-06	1.44E-06	0.00E+00
2.13E-05			1.09E-05	1.09E-05	2.72E-06	0.00E+00
1.30E-05			6.63E-06	6.63E-06	1.66E-06	0.00E+00
6.63E-04			3.38E-04	3.38E-04	8.45E-05	0.00E+00
1.30E-05			6.63E-06	6.63E-06	1.66E-06	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.79E-03			1.42E-03	1.42E-03	3.56E-04	0.00E+00
2.63E-03			1.34E-03	1.34E-03	3.35E-04	0.00E+00
1.58E-03			8.06E-04	8.06E-04	2.01E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.77E-05			9.03E-06	9.03E-06	2.26E-06	0.00E+00
1.29E-05			6.58E-06	6.58E-06	1.64E-06	0.00E+00
1.37E-05			6.99E-06	6.99E-06	1.75E-06	0.00E+00
4.12E-05			2.10E-05	2.10E-05	5.25E-06	0.00E+00
2.48E-05			1.26E-05	1.26E-05	3.16E-06	0.00E+00
2.05E-02			1.05E-02	1.05E-02	2.61E-03	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.06E-03			1.56E-03	1.56E-03	3.90E-04	0.00E+00
9.71E-05			4.95E-05	4.95E-05	1.24E-05	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.38E-04			1.21E-04	1.21E-04	3.03E-05	0.00E+00
1.19E-05			6.07E-06	6.07E-06	1.52E-06	0.00E+00
5.58E-04			2.85E-04	2.85E-04	7.11E-05	0.00E+00
7.18E-06			3.66E-06	3.66E-06	9.15E-07	0.00E+00
1.95E-04			9.95E-05	9.95E-05	2.49E-05	0.00E+00

Other Emission Factor and/or Control Efficiency Factor Notes:

Current NOx limit is 4 lb/MMBtu for COMG 5 units

Updated CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO_2 = 1, CH_4 = 28, and N_2O = 265) (April 25, 2024).

EQUI ID	EQUI 86	substation	
Heat Input (MMBTU/hr)	3.11	11/1/2017	
Unlimited Hours (hr/yr)	500		
Limited Hours (hr/yr)			
Firing Type	Diesel		

AP-42 Emission Factor (lb/MMBtu)	Other Emission Factor (lb/MMBtu)	Control Efficiency (%)	Unrestricted Emission Rate (lb/hr)	Controlled Emission Rate (lb/hr)	Unrestricted Emissions (tpy)	Limited Emissions (tpy)
3.10E-01			3.00E-02	3.00E-02	7.50E-03	0.00E+00
3.10E-01			3.00E-02	3.00E-02	7.50E-03	0.00E+00
3.10E-01			3.00E-02	3.00E-02	7.50E-03	0.00E+00
4.41E+00			4.48E+00	4.48E+00	1.12E+00	0.00E+00
9.50E-01			4.70E-01	4.70E-01	1.18E-01	0.00E+00
2.90E-01	1.50E-03		4.67E-03	4.67E-03	1.17E-03	0.00E+00
3.60E-01			6.00E-02	6.00E-02	1.50E-02	0.00E+00
3.87E-03			1.20E-02	1.20E-02	3.01E-03	0.00E+00
1.64E+02			5.10E+02	5.10E+02	1.28E+02	0.00E+00
6.61E-03			2.06E-02	2.06E-02	5.14E-03	0.00E+00
1.32E-03			4.11E-03	4.11E-03	1.03E-03	0.00E+00
1.65E+02			5.12E+02	5.12E+02	1.28E+02	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.91E-05			1.22E-04	1.22E-04	3.04E-05	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.67E-04			2.39E-03	2.39E-03	5.96E-04	0.00E+00
9.25E-05			2.88E-04	2.88E-04	7.19E-05	0.00E+00
9.33E-04			2.90E-03	2.90E-03	7.25E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.18E-03			3.67E-03	3.67E-03	9.17E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.48E-05			2.64E-04	2.64E-04	6.59E-05	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.68E-04			5.22E-04	5.22E-04	1.31E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.09E-04			1.27E-03	1.27E-03	3.18E-04	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.85E-04			8.86E-04	8.86E-04	2.22E-04	0.00E+00

Other Emission Factor and/or Control Efficiency Factor Notes:

Lb/hr emissions for NOx, PM, CO, VOC based on manufacturer performance data. SO2 emissions based on 15 ppm sulfur in diesel fuel.

Updated CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO2 = 1, CH4 = 28, and N2O = 265) (April 25, 2024).

EQUI ID	COMG 5	Internal Combustion Engines		
Heat Input (MMBTU/hr)	12.57	Fuel HV	137000	btu/gal
Unlimited Hours (hr/yr)	0	Group Monthly Limit	67000	gal/month
Limited Hours (hr/yr)	8760		9179	mmbtu/month
Firing Type	Diesel	Heat Input to use to calc limited	12.5739726	mmbtu/hr

AP-42 Emission Factor (lb/MMBtu)	Other Emission Factor (lb/MMBtu)	Control Efficiency (%)	Unrestricted Emission Rate (lb/hr)	Controlled Emission Rate (lb/hr)	Unrestricted Emissions (tpy)	Limited Emissions (tpy)
3.10E-01			3.90E+00	0.00E+00	0.00E+00	1.71E+01
3.10E-01			3.90E+00	0.00E+00	0.00E+00	1.71E+01
3.10E-01			3.90E+00	0.00E+00	0.00E+00	1.71E+01
4.41E+00	4.00E+00		5.03E+01	0.00E+00	0.00E+00	2.20E+02
9.50E-01			1.19E+01	0.00E+00	0.00E+00	5.23E+01
2.90E-01	1.50E-03		1.89E-02	0.00E+00	0.00E+00	8.26E-02
3.60E-01			4.53E+00	0.00E+00	0.00E+00	1.98E+01
3.87E-03			4.87E-02	0.00E+00	0.00E+00	2.13E-01
1.64E+02			2.06E+03	0.00E+00	0.00E+00	9.03E+03
6.61E-03			8.31E-02	0.00E+00	0.00E+00	3.64E-01
1.32E-03			1.66E-02	0.00E+00	0.00E+00	7.28E-02
1.65E+02			2.07E+03	0.00E+00	0.00E+00	9.06E+03
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.91E-05			4.91E-04	0.00E+00	0.00E+00	2.15E-03
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.67E-04			9.64E-03	0.00E+00	0.00E+00	4.22E-02
9.25E-05			1.16E-03	0.00E+00	0.00E+00	5.09E-03
9.33E-04			1.17E-02	0.00E+00	0.00E+00	5.14E-02
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.18E-03			1.48E-02	0.00E+00	0.00E+00	6.50E-02
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.48E-05			1.07E-03	0.00E+00	0.00E+00	4.67E-03
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.68E-04			2.11E-03	0.00E+00	0.00E+00	9.25E-03
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.09E-04			5.14E-03	0.00E+00	0.00E+00	2.25E-02
0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.85E-04			3.58E-03	0.00E+00	0.00E+00	1.57E-02

Other Emission Factor and/or Control Efficiency Factor Notes:

Current NOx limit is 4 lb/MMBtu for COMG 5 units

Updated CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO2 = 1, CH4 = 28, and N2O = 265) (April 25, 2024).

Fuel Oil

EQUI ID	EQUI 26	Auxiliary Boiler
Heat Input (MMBtu/hr)	55.3	
Unlimited Fuel Usage (1000 Gal/hr)	0.395	
Limited Fuel Usage (1000 Gal/hr)	0.0395	Based on 28,838 gal/month permit limit
Unlimited Operating Hours	8760	
Limited Operating Hours	8760	
Sulfur %	0.0015	
Firing Type	Small, Distillate oil fired	

Pollutant	AP-42 Emission Factor (lb/1000 gal)	Other Emission Factor (lb/1000 gal)	Control Efficiency (%)	Unrestriced Emission Rate (lb/hr)	Controlled Emission Rate (lb/hr)	Unrestricted Emissions (tpy)	Limited Emissions (tpy)
Particulate Matter	2.00E+00			7.90E-01	7.90E-01	3.46E+00	3.46E-01
PM < 10 micron	1.00E+00			3.95E-01	3.95E-01	1.73E+00	1.73E-01
PM < 2.5 micron	2.50E-01			9.88E-02	9.88E-02	4.33E-01	4.33E-02
Nitrogen Oxides	2.00E+01			7.90E+00	7.90E+00	3.46E+01	3.46E+00
Carbon Monoxide	5.00E+00			1.98E+00	1.98E+00	8.65E+00	8.65E-01
Sulfur Dioxide	1.42E+02			8.41E-02	8.41E-02	3.69E-01	3.69E-02
Volatile Organic Compounds	2.00E-01			7.90E-02	7.90E-02	3.46E-01	3.46E-02
Lead Compounds	9.00E-09			3.56E-09	3.56E-09	1.56E-08	1.56E-09
HAPs - Total	4.31E-02			1.70E-02	1.70E-02	7.46E-02	7.46E-03
Carbon Dioxide	1.63E+02			9.02E+03	9.02E+03	3.95E+04	2.82E+01
Methane	6.61E-03			3.66E-01	3.66E-01	1.60E+00	1.14E-03
Nitrous Oxide	1.32E-03			7.31E-02	7.31E-02	3.20E-01	2.29E-04
Carbon Dioxide Equivalent	1.64E+02			9.05E+03	9.05E+03	3.96E+04	2.83E+01
1,1,1-Trichloroethane	2.36E-04			9.32E-05	9.32E-05	4.08E-04	4.08E-05
Antimony compounds	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Arsenic compounds	4.00E-09			1.58E-09	1.58E-09	6.92E-09	6.92E-10
Benzene	2.14E-04			8.45E-05	8.45E-05	3.70E-04	3.70E-05
Beryllium Compounds	8.00E-09			3.16E-09	3.16E-09	1.38E-08	1.38E-09
Cadmium compounds	3.00E-09			1.19E-09	1.19E-09	5.19E-09	5.19E-10
Chlorine	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium compounds	3.00E-09			1.19E-09	1.19E-09	5.19E-09	5.19E-10
Cobalt compounds	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethylbenzene	6.36E-05			2.51E-05	2.51E-05	1.10E-04	1.10E-05
Formaldehyde	3.30E-02			1.30E-02	1.30E-02	5.71E-02	5.71E-03
Manganese compounds	6.00E-09			2.37E-09	2.37E-09	1.04E-08	1.04E-09
Mercury	3.00E-09			1.19E-09	1.19E-09	5.19E-09	5.19E-10
Naphthalene	1.13E-03			4.46E-04	4.46E-04	1.96E-03	1.96E-04
Nickel compounds	3.00E-09			1.19E-09	1.19E-09	5.19E-09	5.19E-10
Phosphorus	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Polycyclic organic matter (POM)	3.30E-03			1.30E-03	1.30E-03	5.71E-03	5.71E-04
Selenium compounds	1.50E-08			5.93E-09	5.93E-09	2.60E-08	2.60E-09
Toluene	6.20E-03			2.45E-03	2.45E-03	1.07E-02	1.07E-03
Xylenes, Total	1.09E-04			4.31E-05	4.31E-05	1.89E-04	1.89E-05

Other Emission Factor and/or Control Efficiency Factor Notes:

Updated CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO2 = 1, CH4 = 28, and N2O = 265) (April 25, 2024).

Notes for AP-42, Section 1.3 Calculations:

PM emission factors for residual oil combustion without emissions controls are, on average, a function of fuel oil grade and sulfur content where S is the weight percent of sulfur in the oil and A is defined as follows (Per AP-42, Section 1.3, Table 1.3-4): No. 6 oil: A = 1.12(S) + 0.37; No. 5 oil: A = 1.2; and No. 4 oil: A = 0.84.

The SO2 emission factor is determined by multiplying the weight percent sulfur content of the fuel oil by a numerical constant, as found in AP-42 Section 1.3-1.

Emission factors for CO2, CH4, and N2O are from 40 CFR Part 98, Subpart C, Table C-1 and C-2 (November 29, 2013). CO2e emissions are based on global warming potentials from 40 CFR Part 98, Subpart A, Table A-1 (CO2 = 1, CH4 = 25, and N2O = 298) (November 29, 2013).

Xcel Energy - Prairie Island Nuclear Generating Plant
Permit Renewal Application
Potential to Emit Calculations

SF6 Emission Calculations		
Capacity of Electrical Equipment on Site	1,272	lbs
Leakage Rate[1]	0.0118	lbs
lbs Leaked	15	lbs
Tons Leaked	0.0075	Tons
Metric Tons Leaked	0.0068	Tons
Tons CO2e Leaked	159.89	Tons
SF6 Stored on Site CO2e Tons	13,558.92	Tons

[1] Based on usage records from the past five years.

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Estimating air emissions from vertical fixed roof storage tanks

Air quality

Doc. type: Permit Calculations
aq6-15 • 5/26/23

Excerpt from AP 42 Fifth Edition, Chapter 7, Volume 1, Liquid Storage Tanks (June 2020) from which this spreadsheet is based on:
The following section presents the emission estimation procedures for vertical fixed roof storage tanks. These procedures are valid for all volatile organic liquids and chemical mixtures. It is important to note that in all the emission estimation procedures, the physical properties of the vapor do not include the noncondensibles in the atmosphere, but only refer to the volatile components of the stored liquid. For example, the vapor-phase molecular weight is determined from the weighted average of the evaporated components of the stored liquid and does not include the contribution of atmospheric gases such as nitrogen and oxygen. To aid in the emission estimation procedures, a list of variables with their corresponding definitions was developed and is presented in Table 7.1-1. The molecules of water and alcohols are polar, meaning that the individual molecules of these substances have an attraction for one another, resulting in behavior that deviates significantly from ideal assumptions.

For use:
1. Follow instruction in this *Tank and Material Properties* tab
2. Check for errors in the *Error Notification* tab
3. Find summary findings in the *Summary* tab

Link:
AP 42 Chapter 7: Liquid Storage Tanks

*This spreadsheet is only to be used for estimating VOC and HAP emissions from routine operational losses from vertical fixed roof organic liquid storage tanks **that contain little to no water**. Fill in all light blue boxes and dark blue boxes below unless otherwise instructed.*

Facility name:	Xcel Energy - Prairie Island Generating Plant
Agency Interest ID:	
Date:	1/6/2026

Enter general information

Instructions *: Type requested information in each step's corresponding blue cell. Make sure to use the proper units if applicable. For certain entries (dark blue cells), if the requested information is unknown or limited in response type, use the dropdown list in the darker blue cell to indicate response, otherwise, type known value in same darker blue cell.*

Legend	
	Manually type in answer.
	First, use drop-down if applicable, otherwise manually type answer. For some cells, an error notification will alert users that only dropdown selections are allowed.

	Steps	*Input*	*Notes*	*Error notification*
1.	Tank subject Item ID (e.g. EQUI 1)	EQUI 87		
2.	Tank designation (e.g. TK001)	TK001		
3.	Tank capacity, gal	550		
4.	Product(s) stored	Gasoline	Example: *methanol, isopropanol. Tanks containing aqueous mixtures in which phase separation has occurred, resulting in a free layer of oil or other volatile materials floating on top of the water, should have emissions estimated on the basis of the properties of the free top layer.*	
5.	Closest nearby city	D. Rochester, MN		
	Enter vertical fixed roof tank dimensions and design parameters			
6.	Tank diameter, ft	4		
7.	Tank shell height, ft	6		
8.	Maintained liquid height, ft	Unknown	If value is known, type response. If value is unknown, select the darker blue cell and select "Unknown" from drop-down.	
9.	Minimum liquid height, ft	Unknown		
10.	Maximum liquid height, ft	Unknown		
11.	Are any contents of the tank crude oils?	No	Use drop-down list for input.	
12.	Annual net throughput, gal/yr	120,000		
13.	Annual sum of the increase in liquid level, ft/yr	Unknown	If sum is unknown, it can be estimated from the pump utilization records. Over the course of a year, the sum of increases in liquid level and the sum of the decrease in liquid level will be approximately the same.	
14.	Is the tank vapor balanced and/or does flashing occur?	No		
15.	Tank shell radius, ft	2		
16.	Tank roof type	Dome		
17.	Dome Radius, ft	3.2	The Dome roof radius is usually between 0.8-1.2 times the tank diameter (when the tank diameter is twice the tank shell radius).	
18.	Roof color	A. White		
19.	Roof reflective condition	B. Average		
20.	Tank shell color	A. White		
21.	Tank shell condition	B. Average		
22.	Breather vent pressure setting , psig	Unknown	Fugitive losses from high-pressure tanks are estimated as equipment leaks and are not addressed.	
23.	Breather vent vacuum setting, psig	Unknown	This will likely be a negative number.	
24.	Which option best describes the tank:	1. The tank is uninsulated	For purposes of estimated emissions, a storage tank should be deemed insulated only if the roof and shell are both sufficiently insulated so as to minimize heat exchange with ambient air.	
	<Leave this row blank>			
25.	Is the tank of bolted or riveted construction in which the roof or shell plates are **not** vapor tight?	Unknown		
	<Leave this row blank>			
	Select petroleum products			
26.	If the tank holds one of these listed petroleum products, use drop-down to select, otherwise select "None":	Motor Gasoline RVP 13		
	Enter the Liquid Weight Fraction of the selected petroleum product, lb/lb. If there are no other contents enter "1".	1	When select petroleum product dropdown list is used, HAP emissions from petroleum products must be calculated separately using Eq. 40-1 for each known HAP compound in Motor Gasoline RVP 13.	
	Organic liquid component table			
27.	<leave these rows in the table blank>			

			Antoine's Equation Constants[2,4]			

Organic liquid component, e.g., hexanol (up to 10 components).[3]	Organic liquid component CAS # (xxxxx-xx-x, include initial zeros, if applicable. This will auto fill properties for certain components).[3]	Hazardous Air Pollutant? (Yes/No)[1]	A (dimensionless)	B (°C)	C (°C)	Liquid weight fraction, (lb/lb)	Molecular weight, (lb/lb-mole)	Liquid density, (lb/gal)[4]
Toluene	108-88-3	Yes	7.017	1377.6	222.6	0.15	92.14	7.24
Xylene (m) {1,3-dimethyl benzene}	1330-20-7	Yes	7.009	1462.3	215.1	0.15	106.17	7.21
Trimethylbenzene (1,2,4)	95-63-6	No	7.044	1573.3	208.6	0.05	120.19	7.31
Benzene	71-43-2	Yes	6.906	1211.0	220.8	0.0035	78.11	7.32
Ethylbenzene	100-41-4	Yes	6.950	1419.3	212.6	0.03	106.17	7.24

Error; the sum of all liquid weight fractions does not equal to 1

	lb-mol/100 lb of mixture	*Liquid Mole Fraction, lb-mol/lb-mol*
Toluene	*0.163*	*0.111*
Xylene (m) {1,3-dim	*0.141*	*0.0964*
Trimethylbenzene	*0.042*	*0.028*
Benzene	*0.004*	*0.003*
Ethylbenzene	*0.028*	*0.019*
0		
0		
	1.465	1.000

Table notes:

1. A list of Hazardous Air Pollutants (HAP) is available here:
https://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications
2. The Antoine's equation constants are for use in the following form of the equation:

$$\log_{10} P_{VA} = A - \left(\frac{B}{T_{LA} + C}\right)$$

where:
A = constant in vapor pressure equation,
B = constant in vapor pressure equation
C = constant in vapor pressure equation, °C
T_{LA} = average daily liquid surface temperature, °C
P_{VA} = vapor pressure at average liquid surface temperature, mm Hg

3. Property autfill uses values in the Chemical Propeties tab which is copied from Table 7.1-3 in AP 42
4. Include references for chemical properties if not using values from Table 7.1-3 in AP 42
5. The EPA gave notification that bromopropane (n-propyl bromide) will be added to the HAP list (see link below). This edition does not indicate that the chemical is on the HAP list. Table 7.1-3 in AP 42 does not contain this molecule, however it was added to this spreadsheet for anticipated use. Chemical properties for bromopropane were taken from webbook.nist.gov and chemspider.com

https://www.federalregister.gov/documents/2020/06/18/2020-13145/granting-petitions-to-add-1-bromopropane-also-known-as-1-bp-to-the-list-of-hazardous-air-pollutants

Summary

Xcel Energy - Prairie Island Generating Plant AI:

1/6/26 EQUI 87/ TK001

Monthly and Yearly Emissions for EQUI 87

		Jan.	Feb.	March	April	May	June	July	August	Sep.	Oct.	Nov.	Dec.	Total Losses per year		lb/hr emissions (based on highest emitting month)	lb/hr emissions (based on annual emissions)
	Total Organic liquid losses, lb	***1.02E+01***	***1.14E+01***	***1.50E+01***	***2.09E+01***	***2.66E+01***	***3.24E+01***	***3.43E+01***	***3.23E+01***	***2.76E+01***	***2.09E+01***	***1.49E+01***	***1.13E+01***	***2.58E+02***	lb	4.70E-02	2.94E-02
	Toluene	*5.66E-02*	*6.93E-02*	*1.10E-01*	*1.88E-01*	*2.78E-01*	*3.82E-01*	*4.18E-01*	*3.83E-01*	*2.97E-01*	*1.92E-01*	*1.11E-01*	*6.87E-02*	***2.55E+00***	lb	5.72E-04	2.91E-04
	Xylene (m) (1,3-dimethyl benzene)	*1.25E-02*	*1.57E-02*	*2.65E-02*	*4.86E-02*	*7.58E-02*	*1.08E-01*	*1.20E-01*	*1.09E-01*	*8.16E-02*	*5.00E-02*	*2.70E-02*	*1.56E-02*	***6.90E-01***	lb	1.64E-04	7.88E-05
	Benzene	*5.51E-03*	*6.60E-03*	*9.95E-03*	*1.62E-02*	*2.30E-02*	*3.05E-02*	*3.31E-02*	*3.05E-02*	*2.43E-02*	*1.64E-02*	*1.00E-02*	*6.54E-03*	***2.13E-01***	lb	4.53E-05	2.43E-05
	Ethylbenzene	*2.91E-03*	*3.65E-03*	*6.13E-03*	*1.12E-02*	*1.74E-02*	*2.48E-02*	*2.74E-02*	*2.49E-02*	*1.87E-02*	*1.15E-02*	*6.25E-03*	*3.62E-03*	***1.59E-01***	lb	3.76E-05	1.81E-05
Individual HAPs																	
	Total Hazardous Air Pollutant Emissions, lb	***7.75E-02***	***9.53E-02***	***1.52E-01***	***2.64E-01***	***3.95E-01***	***5.45E-01***	***5.98E-01***	***5.47E-01***	***4.21E-01***	***2.69E-01***	***1.54E-01***	***9.44E-02***	***3.61E+00***	lb	8.19E-04	4.13E-04

Variables and Other Descriptions for EQUI 87

Variable	Variable description	Input value		Description	Input
D	tank diameter (ft)	4.0		EQUI #	EQUI 87
Hs	tank shell height (ft)	6.0		Capacity (gal)	550
HL	liquid height (ft)	3.0		Closest City	D. Rochester, MN
HLN	minimum liquid height (ft)	1.0		Contents	Gasoline
HLX	maximum liquid height (ft)	5.0		Roof Type	Dome
KP	working loss product factor (dimensionless)	1.00		Roof Color	A. White
Q	annual net throughput (bbl/yr)	2,857		Roof Condition	B. Average
SHQI	annual sum of the increase in liquid level (ft/yr)	1276.4		Shell Color	A. White
N	number of turnovers per year	319		Shell Condition	B. Average
KN	working loss turnover (saturation) factor (dimensionless)	0.3		Insulation Type	1. The tank is uninsulated
VQ	net working loss throughput (ft^3/yr)	16040.0		Tank **Not** Vapor tight:	Unknown
Rs	tank shell radius (ft)	2.0		Normal Vapor Space Pressure (psig)	N/A
SR	tank cone roof slope (ft/ft)	N/A		Select Petroleum Product	Motor Gasoline RVP 13
RR	tank dome radius (ft)	3.2		Crude Oil Contents?	No
HR	tank roof height (ft)	0.7		Vapor Balanced or Flashing?	No
HRO	roof outage (ft)	0.4			
HVO	vapor space outage (ft)	3.4			
VV	vapor space volume (ft^3)	42.3			
αR	tank roof surface solar absorbance (dimensionless)	0.3			
αS	tank shell surface solar absorbance (dimensionless)	0.3			
PBP	breather vent pressure setting (psig)	0.03			
PBV	breather vent vacuum setting. (psig)	-0.03			
ΔPB	breather vent pressure setting range (psig)	0.00			
P_I	pressure of the vapor space at normal operating conditions (psig)	N/A			
P_A	atmospheric pressure (psia)	14.01			
T_B	Constant Liquid Bulk Temp. (°R)	474.61			

Contents

Select petroleum product	Liquid weight fraction
Motor Gasoline RVP 13	1.000

Organic liquid	CAS#	HAP (Yes/No)	Ant. Coef. "A"	"B"	"C"	Liquid weight fraction (lb/lb)	Mol. weight (lb/lb-mole)	Liquid density (lb/gal)
Toluene	108-88-3	Yes	7.02	1377.60	222.64	0.150	92.14	7.24
Xylene (m) (1,3-dimethyl benzene)	1330-20-7	Yes	7.01	1462.30	215.11	0.150	106.17	7.21
Trimethylbenzene (1,2,4)	95-63-6	No	7.04	1573.30	208.56	0.050	120.19	7.31
Benzene	71-43-2	Yes	6.91	1211.00	220.79	0.004	78.11	7.32
Ethylbenzene	100-41-4	Yes	6.95	1419.30	212.61	0.030	106.17	7.24
0						0.000		
0						0.000		

Variable	Variable description	Stored value	
D	tank diameter (ft)	4.0	
Hs	tank shell height (ft)	6.0	
HL	liquid height (ft)	3.0	
HLN	minimum liquid height (ft)	1.0	
HLX	maximum liquid height (ft)	5.0	
KP	working loss product factor (dimensionless)	1.00	K_P defined in Eq 1-37
Q	annual net throughput (bbl/yr)	2,857	
SHQI	annual sum of the increase in liquid level (ft/yr)	1276.4	Eq. 1-37
N	number of turnovers per year (dimensionless)	319	Eq. 1-36
KN	working loss turnover	0.3	K_N defined in Eq. 1-35
VQ	net working loss throughput (ft^3/yr)	16040.0	Eq. 1-38
Rs	tank shell radius (ft)	2.0	
SR	tank cone roof slope (ft/ft)	N/A	e.g. S_R approximated using standard value
RR	tank dome radius (ft)	3.2	e.g. R_R approximated equivalent to D
HR	tank roof height (ft)	0.7	Dome: Eq. 1-19, Cone: Eq 1-17
HRO	roof outage (ft)	0.4	Dome: Eq. 1-20, Cone: Eq 1-19
HVO	vapor space outage (ft)	3.4	Eq. 1-16
VV	vapor space volume (ft^3)	42.3	Eq. 1-3
αR	tank roof surface solar absorbance (dimensionless)	0.25	Table 7.1-6
αS	tank shell surface solar absorbance (dimensionless)	0.25	Table 7.1-7
PBP	breather vent pressure setting (psig)	0.03	e.g. Default provided in Eq. 1-10
PBV	breather vent vacuum setting, (psig)	-0.03	e.g. Default provided in Eq. 1-11
ΔPB	breather vent pressure setting range (psig)	0.00	Eq. 1-10
P_I	pressure of the vapor space at normal operating conditions (psig)	N/A	
P_A	atmospheric pressure (psia)	14.01	Table 7.1-7
T_B	constant liquid bulk temperature (°R)	474.61	

Descriptions		
Insulation type:	1. The tank is uninsulated	1

Roof reflectivity matrix		4	(determines column in Table 7.1-6)
A. New	3		
B. Average	4		
C. Aged	5		

Shell reflectivity matrix		4	(determines column in Table 7.1-6)
A. New	3		
B. Average	4		
C. Aged	5		

Unknown drop-down
Unknown

Summary

	January	February	March	April	May	June	July	August	September	October	November	December	Total losses per year	
Total Organic liquid losses, lb	**1.02E+01**	**1.14E+01**	**1.50E+01**	**2.09E+01**	**2.66E+01**	**3.24E+01**	**3.43E+01**	**3.23E+01**	**2.76E+01**	**2.09E+01**	**1.49E+01**	**1.13E+01**	**257.72**	**lb**
Toluene	5.66E-02	6.93E-02	1.10E-01	1.88E-01	2.78E-01	3.82E-01	4.18E-01	3.83E-01	2.97E-01	1.92E-01	1.11E-01	6.87E-02	**2.55**	lb
Xylene (m) {1,3-dimethyl benzene}	1.25E-02	1.57E-02	2.65E-02	4.88E-02	7.58E-02	1.08E-01	1.20E-01	1.09E-01	8.16E-02	5.00E-02	2.70E-02	1.56E-02	**0.69**	lb
Benzene	5.51E-03	6.60E-03	9.95E-03	1.62E-02	2.30E-02	3.05E-02	3.31E-02	3.05E-02	2.43E-02	1.64E-02	1.00E-02	6.54E-03	**0.21**	lb
Ethylbenzene	2.91E-03	3.65E-03	6.13E-03	1.12E-02	1.74E-02	2.48E-02	2.74E-02	2.49E-02	1.87E-02	1.15E-02	6.25E-03	3.62E-03	**0.16**	lb
														lb
														lb
														lb
														lb
														lb
														lb
Total Hazardous Air Pollutant emissions, lb	**7.75E-02**	**9.53E-02**	**1.52E-01**	**2.64E-01**	**3.95E-01**	**5.45E-01**	**5.98E-01**	**5.47E-01**	**4.21E-01**	**2.69E-01**	**1.54E-01**	**9.44E-02**	**3.61E+00**	**lb**

Liquid Weight Fraction of Motor Gasoline RVP 13:	1.000
x_i = Liquid Mole Fraction, lb-mol/lb-mol	0.742
M_V = Vapor Molecular Weight	62
M_L = Liquid Molecular Weight, lb/lb-mol	92
W_L = Liquid Density, lb/gal	5.6
Vapor Pressure Equation Constant, A (dimensionless)	11.644
Vapor Pressure Equation Constant, B (°R)	5043.6

Organic liquid losses

	January	February	March	April	May	June	July	August	September	October	November	December	
T_{AN} = estimated daily minimum ambient temperature, °F	7.3	12.2	23.6	36.0	47.4	57.5	60.7	58.8	50.1	38.6	26.2	13.3	°F (from Table 7.1-7)
T_{AX} = estimated daily maximum ambient temperature, °F	21.8	26.8	39.1	55.3	67.0	76.4	79.0	77.0	70.3	57.4	40.7	27.1	°F (from Table 7.1-7)
T_{AA} = average daily ambient temperature, °R	474.25	479.2	491.1	505.4	516.9	526.7	529.6	527.6	519.9	507.7	493.2	479.9	°R, T_{AA}= ((T_{AX}+459.7)+(T_{AN}+459.7))/2 (Eq. 1-30)
ΔTA=average daily ambient temperature range, °R	14.5	14.6	15.5	19.3	19.6	18.9	18.3	18.2	20.2	18.8	14.5	13.8	°R, ΔT_A=(T_{AX}+459.7)-(T_{AN}+459.7) (Eq. 1-11)
I = average daily total insolation factor, Btu/(ft^2*day)	474.0	708.0	1106.0	1489.0	1709.0	1891.0	1955.0	1664.0	1286.0	848.0	513.0	384.0	Btu/(ft^2*day) (from Table 7.1-7)
T_B = liquid bulk temperature, °R	474.606	479.731	491.880	506.467	518.182	528.068	531.016	528.848	520.865	508.336	493.535	480.188	°R, T_B = T_{AA} + 0.003α_sI (Eq. 1-31)
T_{LA} = estimated average daily liquid surface temperature, °R	474.917	480.196	492.605	507.444	519.303	529.309	532.299	529.940	521.708	508.893	493.871	480.440	°R, Eq. 1-27,1-29, or T_{LA}=T_B for for fully insulated
T_{LA}, °F	15.2	20.5	32.9	47.8	59.6	69.6	72.6	70.3	62.0	49.2	34.2	20.8	°R to °F conversion
T_{LA}, °C	-9.3	-6.4	0.5	8.8	15.4	20.9	22.6	21.3	16.7	9.6	1.2	-6.2	°R to °C conversion
T_{LX}, °R	478.4	484.0	497.0	513.0	525.1	535.1	538.1	535.4	527.2	513.7	497.4	483.7	°R, T_{LX}= T_{LA} + 0.25*ΔTv
T_{LX}, °C	-7.3	-4.3	2.9	11.8	18.6	24.2	25.8	24.3	19.8	12.2	3.2	-4.4	°R to °C conversion
T_{LN}, °R	471.4	476.4	488.2	501.9	513.5	523.5	526.5	524.5	516.2	504.1	490.3	477.1	°R, T_{LN}= T_{LA} - 0.25*ΔTv
T_{LN}, °C	-11.3	-8.5	-1.9	5.7	12.1	17.7	19.4	18.2	13.6	6.9	-0.8	-8.1	°R to °C conversion
T_V = average vapor temperature, °R	475.2	480.7	493.3	508.4	520.4	530.6	533.6	531.0	522.6	509.4	494.2	480.7	°R, Eq. 1-32, 1-34, or T_V = T_B for fully insulated
ΔTv= average daily vapor Temperature range, °R	14.1	15.1	17.4	22.1	23.2	23.4	23.1	21.9	22.1	19.2	14.3	13.2	°R, Eq. 1-6, Eq. 1-8, or ΔTv = 0 for fully insulated tank

$$T_{LA} = \left(0.5 - \frac{0.8}{4.4(H_S/D) + 3.8}\right) T_{AA} + \left(0.5 + \frac{0.8}{4.4(H_S/D) + 3.8}\right) T_B + \frac{0.021 \propto_R I + 0.013(H_S/D) \propto_S I}{4.4(H_S/D) + 3.8}$$

Uninsulated Tank

$$T_{LA} = 0.4T_{AA} + 0.6T_B + 0.005\ \alpha\ I$$

Partially Insulated Tank

$$T_V = \frac{[2.2\ (H_S/D)+1.1]\ T_{AA} + 0.8\ T_B + 0.021 \propto_R I + 0.013(H_S/D) \propto_S I}{2.2\ (H_S/D) + 1.9}$$

Uninsulated Tank

$$T_V = 0.6T_{AA} + 0.4T_B + 0.01\ \alpha_R\ I$$

Partially Insulated Tank

$$\Delta T_V = \left(1 - \frac{0.8}{2.2\ (H_S/D) + 1.9}\right) \Delta T_A + \frac{0.042 \propto_R I + 0.026(H_S/D) \propto_S I}{2.2\ (H_S/D) + 1.9}$$

Uninsulated Tank

$$\Delta T_V = 0.6\ \Delta T_A + 0.02\ \alpha_R\ I$$

Partially Insulated Tank

	January	February	March	April	May	June	July	August	September	October	November	December	
Motor Gasoline RVP 13 Partial Pressure, psia	2.06535	2.32113	3.02421	4.07979	5.11935	6.15107	6.48927	6.22123	5.35378	4.19686	3.10464	2.33356	psia, Partial Pressure at T_{LA} = exp(A - (B/T_{LA}, °R)) * x_i (Eqs. 1-25 and 40-
Motor Gasoline RVP 13 Partial Pressure, mmHg	106.810	120.037	156.397	210.987	264.748	318.103	335.593	321.731	276.871	217.041	160.556	120.680	psia to mmHg conversion
Motor Gasoline RVP 13 Minimum Partial Pressure, psia	1.908	2.136	2.760	3.656	4.587	5.531	5.849	5.633	4.827	3.819	2.882	2.170	psia, Partial Pressure at T_{LN}= exp(A - (B/T_{LN}, °R)) * xi
Motor Gasoline RVP 13 Minimum Partial Pressure, mmHg	98.647	110.445	142.745	189.093	237.196	286.027	302.471	291.330	249.654	197.485	149.061	112.246	psia to mmHg conversion
Motor Gasoline RVP 13 Maximum Partial Pressure, psia	2.234	2.519	3.308	4.541	5.700	6.825	7.184	6.857	5.925	4.604	3.341	2.506	psia, Partial Pressure at T_{LX} to mmHg conversion = exp(A - (B/T_{LX}, °R)) * xi
Motor Gasoline RVP 13 Maximum Partial Pressure, mmHg	115.512	130.293	171.080	234.859	294.782	352.956	371.513	354.586	306.391	238.113	172.754	129.620	psia to mmHg conversion

Organic liquids	Hazardous Air Pollutant?	A (dimensionless)	B (°C)	C (°C)	Liquid Mole Fraction, lb-mol/lb-mol	Molecular Weight, (lb/lb-mole)	HAP Count	Organic Liquids
Toluene	Yes	7.017	1377.600	222.640	0.111	92.14	1	Toluene
Xylene (m) {1,3-dimethyl benzene}	Yes	7.009	1462.300	215.110	0.096	106.17	2	Xylene (m) {1,3-dimethyl benzene}
Trimethylbenzene (1,2,4)	No	7.044	1573.300	208.560	0.028	120.19		Trimethylbenzene (1,2,4)
Benzene	Yes	6.906	1211.000	220.790	0.003	78.11	3	Benzene
Ethylbenzene	Yes	6.950	1419.300	212.610	0.019	106.17	4	Ethylbenzene
						0.00		
						0.00		
						0.00		
						0.00		
						0.00		

	January	February	March	April	May	June	July	August	September	October	November	December	
Toluene Partial Pressure, mmHg	0.403	0.493	0.775	1.287	1.880	2.549	2.784	2.597	2.026	1.349	0.811	0.497	10^(A - (B/((T_{LA}, °C) + C))) * x_i (Eqs. 1-26 and 40-3)
Xylene (m) {1,3-dimethyl benzene} Partial Pressure, mmHg	0.077	0.097	0.163	0.289	0.445	0.627	0.693	0.641	0.484	0.305	0.171	0.098	10^(A - (B/((T_{LA}, °C) + C))) * x_i (Eqs. 1-26 and 40-3)
Trimethylbenzene (1,2,4) Partial Pressure, mmHg	0.004	0.005	0.009	0.018	0.030	0.044	0.049	0.045	0.033	0.019	0.010	0.005	10^(A - (B/((T_{LA}, °C) + C))) * x_i (Eqs. 1-26 and 40-3)
Benzene Partial Pressure, mmHg	0.046	0.055	0.083	0.131	0.183	0.240	0.260	0.245	0.196	0.136	0.086	0.056	10^(A - (B/((T_{LA}, °C) + C))) * x_i (Eqs. 1-26 and 40-3)
Ethylbenzene Partial Pressure, mmHg	0.018	0.023	0.038	0.067	0.102	0.144	0.159	0.147	0.111	0.070	0.040	0.023	10^(A - (B/((T_{LA}, °C) + C))) * x_i (Eqs. 1-26 and 40-3)
													10^(A - (B/((T_{LA}, °C) + C))) * x_i (Eqs. 1-26 and 40-3)
													10^(A - (B/((T_{LA}, °C) + C))) * x_i (Eqs. 1-26 and 40-3)
													10^(A - (B/((T_{LA}, °C) + C))) * x_i (Eqs. 1-26 and 40-3)
													10^(A - (B/((T_{LA}, °C) + C))) * x_i (Eqs. 1-26 and 40-3)
													10^(A - (B/((T_{LA}, °C) + C))) * x_i (Eqs. 1-26 and 40-3)

	January	February	March	April	May	June	July	August	September	October	November	December	
Minimum Toluene Partial Pressure, mmHg	0.351	0.427	0.664	1.070	1.566	2.138	2.345	2.204	1.705	1.151	0.714	0.439	10^(A - (B/((T_{LN}, °C) + C))) * xi
Minimum Xylene (m) {1,3-dimethyl benzene} Partial Pressure, mmHg	0.066	0.083	0.136	0.235	0.361	0.514	0.571	0.532	0.398	0.255	0.148	0.085	10^(A - (B/((T_{LN}, °C) + C))) * xi
Minimum Trimethylbenzene (1,2,4) Partial Pressure, mmHg	0.003	0.004	0.008	0.014	0.023	0.035	0.039	0.036	0.026	0.016	0.008	0.004	10^(A - (B/((T_{LN}, °C) + C))) * xi
Minimum Benzene Partial Pressure, mmHg	0.041	0.049	0.072	0.111	0.156	0.206	0.223	0.211	0.168	0.118	0.077	0.050	10^(A - (B/((T_{LN}, °C) + C))) * xi
Minimum Ethylbenzene Partial Pressure, mmHg	0.015	0.019	0.032	0.054	0.083	0.118	0.131	0.122	0.092	0.059	0.034	0.020	10^(A - (B/((T_{LN}, °C) + C))) * xi
													10^(A - (B/((T_{LN}, °C) + C))) * xi
													10^(A - (B/((T_{LN}, °C) + C))) * xi
													10^(A - (B/((T_{LN}, °C) + C))) * xi
													10^(A - (B/((T_{LN}, °C) + C))) * xi
													10^(A - (B/((T_{LN}, °C) + C))) * xi

	January	February	March	April	May	June	July	August	September	October	November	December	
Maximum Toluene Partial Pressure, mmHg	0.461	0.567	0.903	1.540	2.248	3.025	3.290	3.048	2.396	1.576	0.918	0.562	10^(A - (B/((T_{LX}, °C) + C))) * xi
Maximum Xylene (m) {1,3-dimethyl benzene} Partial Pressure, mmHg	0.090	0.114	0.194	0.355	0.544	0.761	0.837	0.768	0.585	0.364	0.197	0.113	10^(A - (B/((T_{LX}, °C) + C))) * xi
Maximum Trimethylbenzene (1,2,4) Partial Pressure, mmHg	0.005	0.006	0.011	0.023	0.037	0.055	0.061	0.055	0.040	0.024	0.012	0.006	10^(A - (B/((T_{LX}, °C) + C))) * xi
Maximum Benzene Partial Pressure, mmHg	0.052	0.063	0.095	0.153	0.215	0.280	0.302	0.282	0.228	0.157	0.097	0.062	10^(A - (B/((T_{LX}, °C) + C))) * xi
													10^(A - (B/((T_{LX}, °C) + C))) * xi
													10^(A - (B/((T_{LX}, °C) + C))) * xi
													10^(A - (B/((T_{LX}, °C) + C))) * xi
													10^(A - (B/((T_{LX}, °C) + C))) * xi
													10^(A - (B/((T_{LX}, °C) + C))) * xi
													10^(A - (B/((T_{LX}, °C) + C))) * xi

	January	February	March	April	May	June	July	August	September	October	November	December	
True vapor pressure, mmHg, P_{VA}	107.4	120.7	157.5	212.8	267.4	321.7	339.5	325.4	279.7	218.9	161.7	121.4	P_{VA} = SUM(P_X) (Eq. 1-24)
True vapor pressure, psia, P_{VA}	2.076	2.334	3.045	4.114	5.170	6.221	6.566	6.292	5.409	4.233	3.126	2.347	mmHg to psia conversion

	January	February	March	April	May	June	July	August	September	October	November	December	
P_A = Average atmospheric pressure, psia	14.01	14.01	14.01	14.01	14.01	14.01	14.01	14.01	14.01	14.01	14.01	14.01	psia, from Table 7.1-7, psia
P* = vapor pressure function, dimensionless	4.01E-02	4.55E-02	6.12E-02	8.67E-02	1.15E-01	1.46E-01	1.57E-01	1.48E-01	1.21E-01	8.97E-02	6.30E-02	4.58E-02	p*= '(P_{VA} / P_A) / (1 + (1 - (P_{VA} / P_A))$^{0.5}$)^2 (Eq. 2-4)
ΔPv=average daily vapor pressure range, psi	0.329	0.387	0.554	0.896	1.130	1.316	1.358	1.243	1.114	0.796	0.463	0.339	psia, ΔP_v=P_{VX}-P_{VN} (Eq. 1-9)
P_{VN}=vapor pressure at the average daily min. liquid surface temperature, psia	1.917	2.147	2.778	3.685	4.629	5.589	5.913	5.693	4.874	3.850	2.901	2.182	P_{VN} = vapor pressure at the average daily minimum liquid surface temperature
P_{VX}=vapor pressure at the average daily max. liquid surface temperature, psia	2.245	2.534	3.331	4.581	5.759	6.905	7.271	6.937	5.987	4.645	3.364	2.521	P_{VX} = vapor pressure at the average daily maximum liquid surface temperature

	January	February	March	April	May	June	July	August	September	October	November	December	
Vapor Mole Fraction (yi) of Motor Gasoline RVP 13	0.995	0.994	0.993	0.992	0.990	0.989	0.988	0.989	0.990	0.991	0.993	0.994	lb-mol/lb-mol, y_i = P_i / P_{VA} (Eq. 40-5)
Vapor Mole Fraction (yi) of Toluene	0.004	0.004	0.005	0.006	0.007	0.008	0.008	0.008	0.007	0.006	0.005	0.004	lb-mol/lb-mol, y_i = P_i / P_{VA} (Eq. 40-5)
Vapor Mole Fraction (yi) of Xylene (m) {1,3-dimethyl benzene}	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	lb-mol/lb-mol, y_i = P_i / P_{VA} (Eq. 40-5)
Vapor Mole Fraction (yi) of Trimethylbenzene (1,2,4)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	lb-mol/lb-mol, y_i = P_i / P_{VA} (Eq. 40-5)
Vapor Mole Fraction (yi) of Benzene	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	lb-mol/lb-mol, y_i = P_i / P_{VA} (Eq. 40-5)
Vapor Mole Fraction (yi) of Ethylbenzene	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	lb-mol/lb-mol, y_i = P_i / P_{VA} (Eq. 40-5)
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	lb-mol/lb-mol, y_i = P_i / P_{VA} (Eq. 40-5)
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	lb-mol/lb-mol, y_i = P_i / P_{VA} (Eq. 40-5)
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	lb-mol/lb-mol, y_i = P_i / P_{VA} (Eq. 40-5)
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	lb-mol/lb-mol, y_i = P_i / P_{VA} (Eq. 40-5)
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	lb-mol/lb-mol, y_i = P_i / P_{VA} (Eq. 40-5)
M_V = Vapor Molecular Weight of the Mixture, lb/lb-mol	62.00	62.00	62.00	62.00	62.00	62.00	62.00	62.00	62.00	62.00	62.00	62.00	lb/lb-mol, M_v = SUM($M_i y_i$) (Eq. 1-23)

M_{Vi} = Vapor Molecular Weight of component, lb/lb-mol

	January	February	March	April	May	June	July	August	September	October	November	December	
Vapor Weight Fraction (Zvi) of Motor Gasoline RVP 13	0.995	0.994	0.993	0.992	0.990	0.989	0.988	0.989	0.990	0.991	0.993	0.994	lb/lb, Z_{vi} = (y_i * M_i) / M_V (Eq. 40-6)
Vapor Weight Fraction (Zvi) of Toluene	0.006	0.006	0.007	0.009	0.010	0.012	0.012	0.012	0.011	0.009	0.007	0.006	lb/lb, Z_{vi} = (y_i * M_i) / M_V (Eq. 40-6)
Vapor Weight Fraction (Zvi) of Xylene (m) {1,3-dimethyl benzene}	0.001	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.001	lb/lb, Z_{vi} = (y_i * M_i) / M_V (Eq. 40-6)
Vapor Weight Fraction (Zvi) of Trimethylbenzene (1,2,4)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	lb/lb, Z_{vi} = (y_i * M_i) / M_V (Eq. 40-6)
Vapor Weight Fraction (Zvi) of Benzene	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	lb/lb, Z_{vi} = (y_i * M_i) / M_V (Eq. 40-6)
Vapor Weight Fraction (Zvi) of Ethylbenzene	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	lb/lb, Z_{vi} = (y_i * M_i) / M_V (Eq. 40-6)
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	lb/lb, Z_{vi} = (y_i * M_i) / M_V (Eq. 40-6)
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	lb/lb, Z_{vi} = (y_i * M_i) / M_V (Eq. 40-6)
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	lb/lb, Z_{vi} = (y_i * M_i) / M_V (Eq. 40-6)
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	lb/lb, Z_{vi} = (y_i * M_i) / M_V (Eq. 40-6)
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	lb/lb, Z_{vi} = (y_i * M_i) / M_V (Eq. 40-6)

	January	February	March	April	May	June	July	August	September	October	November	December	
K_E = vapor space expansion factor, per day	0.06	0.06	0.09	0.13	0.17	0.21	0.23	0.20	0.17	0.12	0.07	0.06	K_E= (ΔT_V/T_{LA})+((ΔP_V-ΔP_B)/(P_A-P_{VA})) (Eq. 1-5)
K_S = vented vapor saturation factor, dimensionless	0.73	0.71	0.65	0.58	0.52	0.47	0.46	0.47	0.51	0.57	0.64	0.70	K_S = 1/(1+0.053*P_{VA}*H_{VO}) (Eq. 1-21)
W_V = vapor density, lb/ft^3	2.524E-02	2.806E-02	3.566E-02	4.676E-02	5.740E-02	6.774E-02	7.109E-02	6.846E-02	5.980E-02	4.801E-02	3.655E-02	0.03	W_V= (M_V*P_{VA})/(10.731*T_V) (Eq. 1-21)
K_B = vent setting correction factor, dimensionless	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	K_B =1 or K_B = (((P_I+P_A)/K_N)-P_{VA})/(P_{BP}+P_A-P_{VA}) (Eq. 1-41)
check on Eq. 1-40, = K_N*((P_{BP}+P_A)/(P_I+P_A))	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

	January	February	March	April	May	June	July	August	September	October	November	December	Total Losses	
L_W = working loss = V_Q*K_N*K_P*W_V*K_B, lb/month (Eq. 1-35)	8.8	9.8	12.4	16.3	20.0	23.6	24.8	23.9	20.8	16.7	12.7	9.8	199.6	lb
L_S = standing loss = (1/12)*(365)*V_V*W_V*K_E*K_S lb/month, (Eq. 1-2)	1.4	1.6	2.6	4.7	6.6	8.8	9.5	8.4	6.7	4.2	2.2	1.4	58.1	lb
L_T = total routine loss, lb/month = L_S + L_W (Eq. 1-1)	**10.2**	**11.4**	**15.0**	**20.9**	**26.6**	**32.4**	**34.3**	**32.3**	**27.6**	**20.9**	**14.9**	**11.3**	**257.7**	**lb**

Hazardous Air Pollutant (HAP) Emissions, lb*

	January	February	March	April	May	June	July	August	September	October	November	December	Total	
Toluene	5.66E-02	6.93E-02	1.10E-01	1.88E-01	2.78E-01	3.82E-01	4.18E-01	3.83E-01	2.97E-01	1.92E-01	1.11E-01	6.87E-02	**2.55E+00**	lb, L_{Ti} = (Z_{Vi})(L_T) (Eq. 40-1)
Xylene (m) {1,3-dimethyl benzene}	1.25E-02	1.57E-02	2.65E-02	4.88E-02	7.58E-02	1.08E-01	1.20E-01	1.09E-01	8.16E-02	5.00E-02	2.70E-02	1.56E-02	**6.90E-01**	lb, L_{Ti} = (Z_{Vi})(L_T) (Eq. 40-1)
													0.00E+00	lb, L_{Ti} = (Z_{Vi})(L_T) (Eq. 40-1)
Benzene	5.51E-03	6.60E-03	9.95E-03	1.62E-02	2.30E-02	3.05E-02	3.31E-02	3.05E-02	2.43E-02	1.64E-02	1.00E-02	6.54E-03	**2.13E-01**	lb, L_{Ti} = (Z_{Vi})(L_T) (Eq. 40-1)
Ethylbenzene	2.91E-03	3.65E-03	6.13E-03	1.12E-02	1.74E-02	2.48E-02	2.74E-02	2.49E-02	1.87E-02	1.15E-02	6.25E-03	3.62E-03	**1.59E-01**	lb, L_{Ti} = (Z_{Vi})(L_T) (Eq. 40-1)
													0.00E+00	lb, L_{Ti} = (Z_{Vi})(L_T) (Eq. 40-1)
													0.00E+00	lb, L_{Ti} = (Z_{Vi})(L_T) (Eq. 40-1)
													0.00E+00	lb, L_{Ti} = (Z_{Vi})(L_T) (Eq. 40-1)
													0.00E+00	lb, L_{Ti} = (Z_{Vi})(L_T) (Eq. 40-1)
													0.00E+00	lb, L_{Ti} = (Z_{Vi})(L_T) (Eq. 40-1)
Total Hazardous Air Pollutant Emissions, lb	**7.75E-02**	**9.53E-02**	**1.52E-01**	**2.64E-01**	**3.95E-01**	**5.45E-01**	**5.98E-01**	**5.47E-01**	**4.21E-01**	**2.69E-01**	**1.54E-01**	**9.44E-02**	**3.61E+00**	lb

*When select petroleum product dropdown list is used, HAP emissions must be calculated using Eq. 40-2 for each known HAP compound.

Xcel Energy - Prairie Island Nuclear Plant

Demonstration that Abrasive Blasting Cabinet qualifies as Conditionally IA under 7008.4110

PM Emissions Calculation Required by 7008.4110 Subp. 4

Pollutant	**Operating Hours per Calendar Year** hr/yr	**Filtration System Design PM Rate**[1] gr/scf	**Design Air Flow Rate**[2] scfm	**Controlled Emissions** (lb pollutant/year)	**7008.4110 Subp. 2 Threshold (lbs/calendar year)**
PM (Particulate Matter)	8760	0.03	600	**1,352**	10,000
PM 10 (PM < 10 microns)	8760	0.03	600	**1,352**	10,000

1 Filtration system design particulate concentration assumed according to 7008.4110 Subp. 4 for fabric filters

2 Design air flow rate from manufacturer specifications for Empire # 3648, Pro-Finish® Blast Cabine

Sandblasting cabinet fabric filtration system is total enclosure

Xcel Energy - Prairie Island Nuclear Plant
Space Heaters

Heat content of kerosene 135000 btu/gal

Emission factors from AP-42, Section 1.3, for Residential Furnaces burning No.2 fuel oil.
Max sulfur content of Kerosene is 0.3%

			PM	PM10	NOx	SO2	VOC	CO	CO2	CH4	NO2	CO2e
	Emission factor (lb/1000 gal)		1.7	1.7	18	42.6	2.493	5	22381.33	0.892872162	0.178574432	
	btu/hr	gal/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Heater 1	155000	1.148	1.95E-03	1.95E-03	2.07E-02	4.89E-02	2.86E-03	5.74E-03	25.70	1.03E-03	2.05E-04	25.78
Heater 2	125000	0.926	1.57E-03	1.57E-03	1.67E-02	3.94E-02	2.31E-03	4.63E-03	20.72	8.27E-04	1.65E-04	20.79
Heater 3	125000	0.926	1.57E-03	1.57E-03	1.67E-02	3.94E-02	2.31E-03	4.63E-03	20.72	8.27E-04	1.65E-04	20.79
Heater 4	115000	0.852	1.45E-03	1.45E-03	1.53E-02	3.63E-02	2.12E-03	4.26E-03	19.07	7.61E-04	1.52E-04	19.13
Heater 5	110000	0.815	1.39E-03	1.39E-03	1.47E-02	3.47E-02	2.03E-03	4.07E-03	18.24	7.28E-04	1.46E-04	18.30
		Total lb/hr	7.93E-03	7.93E-03	8.40E-02	1.99E-01	1.16E-02	2.33E-02	104.45	4.17E-03	8.33E-04	104.78
		Total TPY	3.47E-02	3.47E-02	3.68E-01	8.71E-01	5.10E-02	1.02E-01	457.47	1.83E-02	3.65E-03	458.95

	CO2	CH4	NO2
kg/mmbtu	75.2	0.003	0.0006
lb/mmbtu	165.7876	0.006614	0.001323
mmbtu/10(	135		
lb/1000 ga	22381.33	0.892872	0.178574

	GWP
CO2	1
CH4	28
NO2	265

Xcel Energy - Prairie Island Nuclear Plant
Tank Emissions

Size	Lw, lb/yr	Lb, lb/yr	Lt, lb/yr
32,778	136	85	220
32,778	136	85	220
32,778	136	85	220
32,778	136	85	220
665	3	2	4
665	3	2	4
15,300	63	39	103
130	1	0	1
130	1	0	1
500	2	1	3
500	2	1	3
500	2	1	3
500	2	1	3
575	2	1	4
575	2	1	4
280	1	1	2
35,000	145	90	235
35,000	145	90	235
19,500	81	50	131
19,500	81	50	131
19,500	81	50	131
19,500	81	50	131
4,000	17	10	27
19,500	81	50	131
19,500	81	50	131

lb/yr	lb/hr	ton/yr
2,301	0.26	1.15

Working losses = Qw (1/359)(273.15/T)(VP/760)(MW)(Kn)(Kp)

Assume Qw = 2 x V
T = 293 K
VP = 2.6 mmHg
MW = 233 g/mol
Kn = 1
Kp = 1.0

Breathing losses = 365Mair(VP/760)(MW)

Mair = (Vv)(1/359)(Ke)(273.15/T)
Ke = Tr/T
Vv = Vt(100-Lt)/100

Assume Lt = 75
Tr = 4 K

New Mexico Environment, Department Air Quality Bureau

$$d_p = \frac{d_d}{(\rho_{salt} / \rho_w C_{TDS})^{1/3}}$$

d_p = Particle size/diameter, in microns

d_d = Drift droplet diameter, microns

C_{TDS} = Concentration of TDS in the circulating water, ppm x 10^{-6}

ρ_w = Density of Drift droplet, g/cm^3 = 1.0 g/cm^3

ρ_{salt} = Density of particle, g/cm^3 = 2.5 g/cm^3

C_{TDS} =	2000	2400	3000	% Mass	Wgt% PM_{10} in	Wgt% $PM_{2.5}$ in	Wgt% TSP/PM30
d_d	d_p	d_p	d_p	≤	PM Emissions (%)	PM Emissions (%)	PM Emissions (%)
10	0.930527	0.9887724	1.0650435	0			
20	1.8610539	1.9775447	2.1300870	0.196			
30	2.7915809	2.9663171	3.1951306	0.226		0.212	
40	3.7221079	3.9550895	4.2601741	0.514			
50	4.6526349	4.9438618	5.3252176	1.816			
60	5.5831618	5.9326342	6.3902611	5.702			
70	6.5136888	6.9214066	7.4553046	21.348			
90	8.3747427	8.8989513	9.5853917	49.812			
110	10.2357967	10.8764960	11.7154787	70.509	61.336		
130	12.0968506	12.8540408	13.8455658	82.023			
150	13.9579046	14.8315855	15.9756528	88.012			
180	16.7494855	17.7979026	19.1707834	91.032			
210	19.5410664	20.7642197	22.3659139	92.468			
240	22.3326473	23.7305368	25.5610445	94.091			
270	25.1242282	26.6968539	28.7561751	94.689			
300	27.9158091	29.6631710	31.9513056	96.288			96.470
350	32.5684440	34.6070328	37.2765232	97.011			
400	37.2210789	39.5508947	42.6017409	98.34			
450	41.8737137	44.4947565	47.9269585	99.071			
500	46.5263486	49.4386183	53.2521761	99.071			
600	55.8316183	59.3263420	63.9026113	100			

Footnotes:

- 2,000 TDS and 3,000 TDS taken from Size Distribution table within New Mexico Environment Department Air Quality Bureau Technical Memorandum for Calculating TSP, PM-10 and PM-2.5 from Cooling Towers; 2,400 TDS from the Plant Cooling Towers, calculated using equation in Step 5 Tech. Memo.

- According to the New Mexico Environment Department Air Quality Bureau Technical Memorandum for Calculating TSP, PM-10 and PM-2.5 from Cooling Towers; although the relationship between droplet size and percent mass is not linear, a linear interpolation of the tabulated data is acceptable between two adjacent rows (particle size) to determine an estimate of percent mass for a specific particle size (i.e. PM30, PM10 and PM2.5). Using this method explains our calculations for interpolation of Wgt% to get to 30 microns, 10 microns, and 2.5 microns.

Xcel Energy - Prairie Island Nuclear Generating Plant
Insignificant Activities
Cooling Towers

Prairie Island Nuclear Generating Plant
Cooling Towers

Assumptions		
Cooling Towers		
Drift Rate[2]	0.0015	%
Total Flow (per Tower)	153,500	gal/min
Average TDS[1]	170	ppm
Emissions, PM10 and PM2.5 are calculated as a fraction of PM emissions using the calculation procedure in "Calculating TSP, PM10 and PM2.5 from Cooling Towers" by New Mexico Environment Department, Air Quality Bureau.		
Cooling Towers Emission Factor = 170 g / 1,000,000 mL * 3785.4 mL/gal / 453.59 g/lb * 0.0015/100 = 2.13E-08 lb/gal		
[1]Average TDS is conservatively assumed to be the maximum sampled ppm at intake from 10/27/2015 to 9/4/2019		
[2]Drift rate based on manufacturer specifications		

Emissions

Unit Description	PMTotal (lb/hr)	PM (lb/hr)	PM (tpy)	PM10 (lb/hr)	PM10 (tpy)	PM2.5 (lb/hr)	PM2.5 (tpy)
Cooling Tower 1	0.20	0.19	0.83	0.12	0.53	4.16E-04	1.82E-03
Cooling Tower 2	0.20	0.19	0.83	0.12	0.53	4.16E-04	1.82E-03
Cooling Tower 3	0.20	0.19	0.83	0.12	0.53	4.16E-04	1.82E-03
Cooling Tower 4	0.20	0.19	0.83	0.12	0.53	4.16E-04	1.82E-03

Parts Washer Usage

Facility uses one parts washer. Parts washer is 35 gallon capacity with Zep Dyna 143 solvent. The surface area of the parts washer is 26" x 24". The parts washer has a cover on at all times not in use. Parts washer solvent is changed out once per year on each washer.

Zep Dyna 143 Usage:		
Max Annual Usage:	**35**	**Gallons**

Zep Dyna 143		**VOC?**	**HAP?**
Petroleum Distillate	100%	Yes	Yes
Density	6.59	lb/gal	

Emissions	
Pollutant	**VOC/HAP (tpy)**
Petroleum Distillate	0.12
Total	**0.12**

Attachment 2 – Subject item inventory and facility requirements

SI List

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	
Activity	Insignificant Air Emissions Activity	ACTV 3	Null	All IAs	
Agency Interest	Conventional Site	AISI 1885	Null	Null	
Component Group	Air Component Group	COMG 1	GP003	Performance Testing - EQUI 1/ EQUI 2	
		COMG 2	GP004	Performance Testing - EQUI 3/ EQUI 4	
		COMG 3	GP005	Performance Testing - EQUI 5/ EQUI 6	
		COMG 4	GP006	Performance Testing - EQUI 7, EQUI 8, EQUI 9, EQUI 10	
		COMG 5	GP001	Internal Combustion Engines	
		COMG 6	GP007	NOx-Limit	
		COMG 7	GP008	Emergency Internal Combustion Engines	
		COMG 8	GP002	Emergency Compression Ignition Internal Combustion Engines	
Equipment	Aboveground Storage Tank	EQUI 87	Null	Gasoline Storage Tank	
	Boiler	EQUI 26	EU001	Auxiliary Boiler 1	
	Reciprocating IC Engine	EQUI 1	EU002	Diesel Engine D1	
		EQUI 2	EU003	Diesel Engine D2	
		EQUI 3	EU004	Diesel Cooling Water Pump 12	
		EQUI 4	EU005	Diesel Cooling Water Pump 22	
		EQUI 5	EU007	Diesel Engine D3	
		EQUI 6	EU008	Diesel Engine D4	
		EQUI 7	EU010	Diesel Engine D5-1	
		EQUI 8	EU011	Diesel Engine D5-2	
		EQUI 9	EU012	Diesel Engine D6-1	
		EQUI 10	EU013	Diesel Engine D6-2	
		EQUI 14	EU006	Diesel Fire Pump 122	
		EQUI 18	EU022	Warehouse Emergency Generator	
		EQUI 27	EU009	Security Diesel Engine	
		EQUI 85	Null	Communications tower emergency generator	
		EQUI 86	Null	Substation Engine	
Structure	Building	STRU 1	BG030	Warehouse No. 2 (Decon)	
		STRU 2	BG031	Security Access Facility (SAF)	
		STRU 3	BG010	Heated Hazardous Waste Storage Building	
		STRU 4	BG012	Warehouse No. 12	
		STRU 5	BG014	Paint Shop	
		STRU 6	BG026	Cold/Haz Waste Building	
		STRU 7	BG001	New Administration Building	
		STRU 8	BG002	Plant Screen House - High Roof	
		STRU 9	BG003	Guard House	
		STRU 10	BG004	Turbine Building	
		STRU 11	BG005	Unit 2 Reactor Building	
		STRU 12	BG006	Auxillary Building	
		STRU 13	BG007	Unit 1 Reactor Building	
		STRU 14	BG008	Service Building - Maintenance	
		STRU 15	BG009	Service Building - Computer Building	
		STRU 16	BG011	Barrel Storage Building	
		STRU 17	BG013	Diesel Engine/Generator Building D3/D4	
		STRU 18	BG015	Warehouse No. 1	
		STRU 19	BG016	Cooling Tower (CT121)	
		STRU 20	BG017	Cooling Tower (CT122)	
		STRU 21	BG018	Cooling Tower (CT123)	
		STRU 22	BG019	Cooling Tower (CT124)	
		STRU 23	BG020	Chlorine House	
		STRU 24	BG021	Old Administration Building	
		STRU 25	BG022	Security Diesel Engine Building	
		STRU 26	BG023	Diesel Engine/Generator D5/D6 Building	
		STRU 27	BG024	Radwaste Building	
		STRU 28	BG025	Gas House	
		STRU 29	BG027	Fuel Oil Transfer House	
		STRU 30	BG028	Fuel Receipt Building	
		STRU 31	BG029	Containment Access Facility	
		STRU 60	Null	Water Treatment Brine Tank Enclosure	
		STRU 61	Null	Intake Screen	
		STRU 62	Null	Cooling Tower Equipment House	
		STRU 63	Null	Environmental Lab	
		STRU 64	Null	North Warehouse	
		STRU 65	Null	Receiving Warehouse	
		STRU 66	Null	NDP Building	
		STRU 67	Null	Steam Generator Mockup Building	
		STRU 68	Null	SGT A Warehouse	
		STRU 69	Null	SGT B Warehouse	
		STRU 70	Null	Distribution Center	
		STRU 71	Null	NPD Annex Building	
		STRU 72	Null	OCA Gatehouse	
		STRU 73	Null	Substation Control House	
		STRU 74	Null	Rad Monitor Building	

SI List

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	
Structure	Building	STRU 75	Null	ISFSI Equipment Storage Building	
		STRU 76	Null	Screen Storage Building	
		STRU 77	Null	Fab Shop 1 (Kelly)	
		STRU 78	Null	Deep Well Pumphouse #1	
		STRU 79	Null	Deep Well Pumphouse #2	
		STRU 80	Null	Met Tower Building	
		STRU 81	Null	121/122 CT Control House	
		STRU 82	Null	123/123 CT Control House	
		STRU 83	Null	Cooling Tower Pumphouse	
		STRU 84	Null	Communication Tower Building	
		STRU 85	Null	De-Icing Pumphouse	
		STRU 86	Null	SGR-13 Subcontractor Office Space	
		STRU 87	Null	NPSA Mower and Tractor Shed	
		STRU 88	Null	Tri-Wide Trailers	
		STRU 89	Null	Special Construction Double Wide Trailer	
		STRU 90	Null	Boat Storage	
		STRU 91	Null	Training Center	
		STRU 92	Null	Site Admin Building	
		STRU 93	Null	RSG Storage Building	
		STRU 94	Null	Flex Storage Building	
		STRU 95	Null	Cooling Tower Trailer	
		STRU 96	Null	Cooling Tower Storage Building	
		STRU 97	Null	Northwest Security Tower	
		STRU 98	Null	Northeast Security Tower	
		STRU 99	Null	North Security Tower	
		STRU 100	Null	Southeast Security Tower	
		STRU 101	Null	Southwest Security Tower	
		STRU 102	Null	SGR Conference Rms	
	Stack/Vent	STRU 33	SV001	Heating Boiler	
		STRU 34	SV003	Diesel Engine D2	
		STRU 35	SV004	Diesel Cooling Water Pump 12	
		STRU 36	SV005	Diesel Cooling Water Pump 22	
		STRU 37	SV006	Diesel Fire Pump 121	
		STRU 38	SV007	Diesel Engine D3	
		STRU 39	SV008	Diesel Engine D4	
		STRU 43	SV019	Warehouse Emergency Generator	
		STRU 44	SV020	Radio generator stack	
		STRU 49	SV013	Diesel Engine D6 -2	
		STRU 50	SV014	Diesel Fire Pump Engine	
		STRU 51	SV002	Diesel Engine D1	
		STRU 52	SV009	Diesel Security Engine	
		STRU 53	SV010	Diesel Engine D5 -1	
		STRU 54	SV011	Diesel Engine D5 -2	
		STRU 55	SV012	Diesel Engine D6 -1	
		STRU 58	Null	Communications tower emergency generator	
		STRU 59	Null	Substation engine stack	
Total Facility	Air Quality Total Facility	TFAC 1	04900030	Xcel Energy - Prairie Island Nuclear Plant	

Insignificant Activities

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

SI Category	SI Type	Status Description	Sub Attribute Description	
Activity	Insignificant Air Emissions Activity	Null	Minn. R. 7007.1300, subp. 3(D)	
			Minn. R. 7007.1300, subp. 3(E)	
			Minn. R. 7007.1300, subp. 3(F)	
			Minn. R. 7007.1300, subp. 3(G)	
			Minn. R. 7008.4110	

Emission Units 1

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

SI Type	Subject Item ID	Delta Designation	Description	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units	Material	Firing Method	Subject to CSAPR?	Electric Generating Capacity (MW)	Construction Start Date	Operation Start Date	Modification Date	
Boiler	EQUI 26	EU001	Auxiliary Boiler 1	Erie City	Keystone	55.3	million British thermal units/hours	Heat	Not coal burning	N	Null	1/1/1970	1/1/1970	Null	

Emission Units 2

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

SI Type	Subject Item ID	Delta Designation	Description	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units	Material	Engine Use	Firing Method	Engine Displacement	Engine Displacement Units	Construction Start Date	Operation Start Date	Modification Date	
Reciprocating IC Engine	EQUI 1	EU002	Diesel Engine D1	Fairbanks Morse	38TD81/8	29.3	million British thermal units/hours	Heat	Emergency/blacks..	CI	17	liters per cylinder	1/1/1971	1/1/1971	Null	
	EQUI 2	EU003	Diesel Engine D2	Fairbanks Morse	38TD81/8	29.3	million British thermal units/hours	Heat	Emergency/blacks..	CI	17	liters per cylinder	1/1/1971	1/1/1971	Null	
	EQUI 3	EU004	Diesel Cooling Water Pump 12	Caterpillar	D399	7.7	million British thermal units/hours	Heat	Emergency/blacks..	CI	4	liters per cylinder	1/1/1971	1/1/1971	Null	
	EQUI 4	EU005	Diesel Cooling Water Pump 22	Caterpillar	D399	7.7	million British thermal units/hours	Heat	Emergency/blacks..	CI	4	liters per cylinder	1/1/1971	1/1/1971	Null	
	EQUI 5	EU007	Diesel Engine D3	General Motors	MP45A	26.1	million British thermal units/hours	Heat	Emergency/blacks..	CI	10.6	liters per cylinder	1/1/1984	1/1/1984	Null	
	EQUI 6	EU008	Diesel Engine D4	General Motors	MP45B	26.1	million British thermal units/hours	Heat	Emergency/blacks..	CI	10.6	liters per cylinder	1/1/1984	1/1/1984	Null	
	EQUI 7	EU010	Diesel Engine D5-1	SACM	UD45 S5D	23.6	million British thermal units/hours	Heat	Emergency/blacks..	CI	10.2	liters per cylinder	1/1/1991	1/1/1993	Null	
	EQUI 8	EU011	Diesel Engine D5-2	SACM	UD45 S5D	23.6	million British thermal units/hours	Heat	Emergency/blacks..	CI	10.2	liters per cylinder	1/1/1991	1/1/1993	Null	
	EQUI 9	EU012	Diesel Engine D6-1	SACM	UD45 S5D	23.6	million British thermal units/hours	Heat	Emergency/blacks..	CI	10.2	liters per cylinder	1/1/1991	1/1/1993	Null	
	EQUI 10	EU013	Diesel Engine D6-2	SACM	UD45 S5D	23.6	million British thermal units/hours	Heat	Emergency/blacks..	CI	10.2	liters per cylinder	1/1/1991	1/1/1993	Null	
	EQUI 14	EU006	Diesel Fire Pump 122	Cummins	NT-280-1F	2.4	million British thermal units/hours	Heat	Emergency/blacks..	CI	1.25	liters per cylinder	1/1/1971	1/1/1971	Null	
	EQUI 18	EU022	Warehouse Emergency Generator	Generac	SD250	19.1	gallons/hours	Diesel Fuel	Emergency/blacks..	CI	1.45	liters per cylinder	6/1/2012	6/1/2012	Null	
	EQUI 27	EU009	Security Diesel Engine	Cummins	NT-655 CC	2.4	million British thermal units/hours	Heat	Emergency/blacks..	CI	1.25	liters per cylinder	1/1/1980	1/1/1980	Null	
	EQUI 85	Null	Communications tower emergency generator	Sentry Pro Power Systems	SP-300	0.5	million British thermal units/hours	Fuel	Emergency/blacks..	SI-4SLB	3	liters per cylinder	3/28/2014	3/29/2014	Null	
	EQUI 86	Null	Substation Engine	Caterpillar	C9 DITA	22.72	gallons/hours	Diesel Fuel	Emergency/blacks..	CI	1.47	liters per cylinder	TBD	TBD	Null	

Component Groups

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Group Member ID	
COMG 1	GP003	Performance Testing - EQUI 1/ EQUI 2	EQUI 1	
			EQUI 2	
COMG 2	GP004	Performance Testing - EQUI 3/ EQUI 4	EQUI 3	
			EQUI 4	
COMG 3	GP005	Performance Testing - EQUI 5/ EQUI 6	EQUI 5	
			EQUI 6	
COMG 4	GP006	Performance Testing - EQUI 7, EQUI 8, EQUI 9, EQUI 10	EQUI 7	
			EQUI 8	
			EQUI 9	
			EQUI 10	
COMG 5	GP001	Internal Combustion Engines	EQUI 1	
			EQUI 2	
			EQUI 3	
			EQUI 4	
			EQUI 5	
			EQUI 6	
			EQUI 7	
			EQUI 8	
			EQUI 9	
			EQUI 10	
			EQUI 14	
			EQUI 18	
			EQUI 27	
			EQUI 85	
			EQUI 86	
			STRU 28	
COMG 6	GP007	NOx-Limit	EQUI 1	
			EQUI 2	
			EQUI 3	
			EQUI 4	
			EQUI 5	
			EQUI 6	
			EQUI 7	
			EQUI 8	
			EQUI 9	
			EQUI 10	
			EQUI 14	
			EQUI 18	
			EQUI 26	

Component Groups

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Group Member ID	
COMG 6	GP007	NOx-Limit	EQUI 27	
			EQUI 85	
			EQUI 86	
COMG 7	GP008	Emergency Internal Combustion Engines	EQUI 1	
			EQUI 2	
			EQUI 3	
			EQUI 4	
			EQUI 5	
			EQUI 6	
			EQUI 7	
			EQUI 8	
			EQUI 9	
			EQUI 10	
			EQUI 14	
			EQUI 27	
COMG 8	GP002	Emergency Compression Ignition Internal Combustion Engines	EQUI 18	
			EQUI 86	

PTE by SI

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Component Group	Air Component Group	COMG 5	GP001	Internal Combustion Engines	1,3-Butadiene	0	0	0.00215	
					Acetaldehyde	0	0	0.0422	
					Acrolein	0	0	0.00509	
					Benzene	0	0	0.0514	
					Carbon Dioxide	0	0	9,029	
					Carbon Dioxide Equivalent	0	0	9,060	
					Carbon Monoxide	0	0	52.3	
					Formaldehyde	0	0	0.065	
					HAPs - Total	0	0	0.213	
					Methane	0	0	0.36	
					Naphthalene	0	0	0.00467	
					Nitrous Oxide	0	0	0.0727	
					Particulate Matter	0	0	17.07	
					PM < 2.5 micron	0	0	17.07	
					PM < 10 micron	0	0	17.07	
					Polycyclic organic matter	0	0	0.00925	
					Sulfur Dioxide	0	0	0.0826	
					Toluene	0	0	0.0225	
					Volatile Organic Compounds	0	0	19.82	
					Xylenes, Total	0	0	0.0157	
		COMG 6	GP007	NOx-Limit	Nitrogen Oxides	0	0	225	
Equipment	Boiler	EQUI 26	EU001	Auxiliary Boiler 1	1,1,1-Trichloroethane	9.32e-05	0.000408	4.08e-05	
					Arsenic compounds	1.58e-09	6.92e-09	6.92e-10	
					Benzene	8.45e-05	0.00037	3.7e-05	
					Beryllium Compounds	3.16e-09	1.38e-08	1.38e-09	
					Cadmium compounds	1.19e-09	5.19e-09	5.19e-10	
					Carbon Dioxide	9,020	39,500	28.2	
					Carbon Dioxide Equivalent	9,050	39,600	28.3	
					Carbon Monoxide	1.98	8.65	0.865	
					Chromium compounds	1.19e-09	5.19e-09	5.19e-10	
					Ethylbenzene	2.51e-05	0.00011	1.1e-05	
					Formaldehyde	0.013	0.0571	0.00571	
					HAPs - Total	0.017	0.0746	0.00746	
					Lead Compounds	3.56e-09	1.56e-08	1.56e-09	
					Manganese compounds	2.37e-09	1.04e-08	1.04e-09	
					Mercury Compounds	1.19e-09	5.19e-09	5.19e-10	
					Methane	0.36	1.56	0.00114	
					Naphthalene	0.000446	0.00196	0.000196	
					Nickel compounds	1.19e-09	5.19e-09	5.19e-10	
					Nitrogen Oxides	7.9	34.6	0	
					Nitrous Oxide	0.0731	0.32	0.000229	
					Particulate Matter	0.79	3.46	0.346	
					PM < 2.5 micron	0.1	0.43	0.043	
					PM < 10 micron	0.4	1.73	0.17	
					Polycyclic organic matter	0.0013	0.00571	0.000571	
					Selenium compounds	5.93e-09	2.6e-08	2.6e-09	
					Sulfur Dioxide	0.084	0.37	0.037	
					Toluene	0.00245	0.0107	0.00107	
					Volatile Organic Compounds	0.084	0.35	0.0346	
					Xylenes, Total	4.31e-05	0.0001886	1.89e-05	
	Reciprocating IC Engine	EQUI 1	EU002	Diesel Engine D1	1,3-Butadiene	0.00112	0.00493	0	
					Acetaldehyde	0.0221	0.0967	0	
					Acrolein	0.00266	0.0117	0	
					Benzene	0.0268	0.118	0	
					Carbon Dioxide	4,718	20,666	0	
					Carbon Dioxide Equivalent	4,734	20,737	0	
					Carbon Monoxide	27.3315	119.71	0	
					Formaldehyde	0.0339	0.149	0	
					HAPs - Total	0.111	0.488	0	
					Methane	0.19	0.83	0	
					Naphthalene	0.00244	0.0107	0	
					Nitrogen Oxides	115.08	504.05	0	
					Nitrous Oxide	0.038	0.17	0	
					Particulate Matter	8.92	39.06	0	
					PM < 2.5 micron	8.92	39.06	0	
					PM < 10 micron	8.92	39.06	0	
					Polycyclic organic matter	0.00483	0.0212	0	
					Sulfur Dioxide	0.0432	0.189	0	
					Toluene	0.0118	0.0515	0	
					Volatile Organic Compounds	10.36	45.36	0	
					Xylenes, Total	0.0082	0.0359	0	

PTE by SI

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Equipment	Reciprocating IC Engine	EQUI 2	EU003	Diesel Engine D2	1,3-Butadiene	0.00112	0.00493	0	
					Acetaldehyde	0.0221	0.0967	0	
					Acrolein	0.00266	0.0117	0	
					Benzene	0.0268	0.118	0	
					Carbon Dioxide	4,718	20,666	0	
					Carbon Dioxide Equivalent	4,734	20,737	0	
					Carbon Monoxide	27.3315	119.71	0	
					Formaldehyde	0.0339	0.149	0	
					HAPs - Total	0.111	0.488	0	
					Methane	0.19	0.83	0	
					Naphthalene	0.00244	0.0107	0	
					Nitrogen Oxides	115.08	504.05	0	
					Nitrous Oxide	0.038	0.17	0	
					Particulate Matter	8.92	39.06	0	
					PM < 2.5 micron	8.92	39.06	0	
					PM < 10 micron	8.92	39.06	0	
					Polycyclic organic matter	0.00483	0.0212	0	
					Sulfur Dioxide	0.0432	0.189	0	
					Toluene	0.0118	0.0515	0	
					Volatile Organic Compounds	10.36	45.36	0	
					Xylenes, Total	0.0082	0.0359	0	
		EQUI 3	EU004	Diesel Cooling Water Pump 12	1,3-Butadiene	0.000295	0.00129	0	
					Acetaldehyde	0.00578	0.0253	0	
					Acrolein	0.000697	0.00305	0	
					Benzene	0.00703	0.0308	0	
					Carbon Dioxide	1,237	5,416	0	
					Carbon Dioxide Equivalent	1,241	5,435	0	
					Carbon Monoxide	7.16	31.37	0	
					Formaldehyde	0.0089	0.039	0	
					HAPs - Total	0.0292	0.128	0	
					Methane	0.0499	0.218	0	
					Naphthalene	0.000639	0.0028	0	
					Nitrogen Oxides	30.16	132.1	0	
					Nitrous Oxide	0.00997	0.044	0	
					Particulate Matter	2.34	10.24	0	
					PM < 2.5 micron	2.34	10.24	0	
					PM < 10 micron	2.34	10.24	0	
					Polycyclic organic matter	0.00127	0.00555	0	
					Sulfur Dioxide	0.0113	0.0495	0	
					Toluene	0.00308	0.0135	0	
					Volatile Organic Compounds	2.71	11.89	0	
					Xylenes, Total	0.00215	0.00941	0	
		EQUI 4	EU005	Diesel Cooling Water Pump 22	1,3-Butadiene	0.000295	0.00129	0	
					Acetaldehyde	0.00278	0.0253	0	
					Acrolein	0.000697	0.00305	0	
					Benzene	0.00703	0.0308	0	
					Carbon Dioxide	1,237	5,416	0	
					Carbon Dioxide Equivalent	1,241	5,435	0	
					Carbon Monoxide	7.16	31.37	0	
					Formaldehyde	0.0089	0.039	0	
					HAPs - Total	0.0292	0.128	0	
					Methane	0.0499	0.218	0	
					Naphthalene	0.000639	0.0028	0	
					Nitrogen Oxides	30.16	132.1	0	
					Nitrous Oxide	0.00997	0.044	0	
					Particulate Matter	2.34	10.24	0	
					PM < 2.5 micron	2.34	10.24	0	
					PM < 10 micron	2.34	10.24	0	
					Polycyclic organic matter	0.00127	0.00555	0	
					Sulfur Dioxide	0.0113	0.0495	0	
					Toluene	0.00308	0.0135	0	
					Volatile Organic Compounds	2.71	11.89	0	
					Xylenes, Total	0.00215	0.00941	0	
		EQUI 5	EU007	Diesel Engine D3	1,3-Butadiene	0.000999	0.00437	0	
					Acetaldehyde	0.0196	0.0858	0	
					Acrolein	0.00236	0.0103	0	
					Benzene	0.0238	0.104	0	
					Carbon Dioxide	4,189	18,346	0	
					Carbon Dioxide Equivalent	4,203	18,408	0	
					Carbon Monoxide	24.26	106.27	0	
					Formaldehyde	0.0301	0.132	0	

PTE by SI

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Equipment	Reciprocating IC Engine	EQUI 5	EU007	Diesel Engine D3	HAPs - Total	0.0989	0.433	0	
					Methane	0.17	0.74		
					Naphthalene	0.00217	0.00949	0	
					Nitrogen Oxides	102.16	447.46	0	
					Nitrous Oxide	0.034	0.15	0	
					Particulate Matter	7.92	34.68	0	
					PM < 2.5 micron	7.92	34.68	0	
					PM < 10 micron	7.92	34.68	0	
					Polycyclic organic matter	0.00429	0.0188	0	
					Sulfur Dioxide	0.0383	0.168	0	
					Toluene	0.0104	0.0458	0	
					Volatile Organic Compounds	9.19	40.27	0	
					Xylenes, Total	0.00728	0.0319	0	
		EQUI 6	EU008	Diesel Engine D4	1,3-Butadiene	0.000999	0.00437	0	
					Acetaldehyde	0.0196	0.0858	0	
					Acrolein	0.00236	0.0103	0	
					Benzene	0.0238	0.104	0	
					Carbon Dioxide	4,189	18,346	0	
					Carbon Monoxide	24.26	106.27	0	
					Formaldehyde	0.0301	0.132	0	
					HAPs - Total	0.0989	0.433	0	
					Methane	0.17	0.74	0	
					Naphthalene	0.00217	0.00949	0	
					Nitrogen Oxides	102.16	447.46	0	
					Particulate Matter	7.92	34.68	0	
					PM < 2.5 micron	7.92	34.68	0	
					PM < 10 micron	7.92	34.68	0	
					Polycyclic organic matter	0.00429	0.0188	0	
					Sulfur Dioxide	0.0383	0.168	0	
					Toluene	0.0104	0.0458	0	
					Volatile Organic Compounds	9.19	40.27	0	
					Xylenes, Total	0.00728	0.0319	0	
		EQUI 7	EU010	Diesel Engine D5-1	1,3-Butadiene	0.000903	0.00396	0	
					Acetaldehyde	0.0177	0.0776	0	
					Acrolein	0.00214	0.00936	0	
					Benzene	0.0216	0.0944	0	
					Carbon Dioxide	3,788	16,593	0	
					Carbon Dioxide Equivalent	3,801	16,647	0	
					Carbon Monoxide	21.95	96.12	0	
					Formaldehyde	0.0273	0.119	0	
					HAPs - Total	0.0895	0.392	0	
					Methane	0.15	0.67	0	
					Naphthalene	0.00196	0.00858	0	
					Nitrogen Oxides	92.4	404.71	0	
					Nitrous Oxide	0.0306	0.134	0	
					Particulate Matter	7.16	31.37	0	
					PM < 2.5 micron	7.16	31.37	0	
					PM < 10 micron	7.16	31.37	0	
					Polycyclic organic matter	0.00388	0.017	0	
					Sulfur Dioxide	0.0347	0.152	0	
					Toluene	0.00945	0.0414	0	
					Volatile Organic Compounds	8.32	36.42	0	
					Xylenes, Total	0.00658	0.0288	0	
		EQUI 8	EU011	Diesel Engine D5-2	1,3-Butadiene	0.000903	0.00396	0	
					Acetaldehyde	0.0177	0.0776	0	
					Acrolein	0.00214	0.00936	0	
					Benzene	0.0216	0.0944	0	
					Carbon Dioxide	3,788	16,593	0	
					Carbon Dioxide Equivalent	3,801	16,647	0	
					Carbon Monoxide	21.95	96.12	0	
					Formaldehyde	0.0273	0.119	0	
					HAPs - Total	0.0895	0.392	0	
					Methane	0.15	0.67	0	
					Naphthalene	0.00196	0.00858	0	
					Nitrogen Oxides	92.4	404.71	0	
					Nitrous Oxide	0.0306	0.134	0	
					Particulate Matter	7.16	31.37	0	
					PM < 2.5 micron	7.16	31.37	0	
					PM < 10 micron	7.16	31.37	0	
					Polycyclic organic matter	0.00388	0.017	0	
					Sulfur Dioxide	0.0347	0.152	0	

PTE by SI

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Equipment	Reciprocating IC Engine	EQUI 8	EU011	Diesel Engine D5-2	Toluene	0.00945	0.0414	0	
					Volatile Organic Compounds	8.32	36.42	0	
					Xylenes, Total	0.00658	0.0288	0	
		EQUI 9	EU012	Diesel Engine D6-1	1,3-Butadiene	0.000903	0.00396	0	
					Acetaldehyde	0.0177	0.0776	0	
					Acrolein	0.00214	0.00936	0	
					Benzene	0.0216	0.0944	0	
					Carbon Dioxide	3,788	16,593	0	
					Carbon Dioxide Equivalent	3,801	16,647	0	
					Carbon Monoxide	21.95	96.12	0	
					Formaldehyde	0.0273	0.119	0	
					HAPs - Total	0.0895	0.392	0	
					Methane	0.15	0.67	0	
					Naphthalene	0.0096	0.00858	0	
					Nitrogen Oxides	92.4	404.71	0	
					Nitrous Oxide	0.0306	0.134	0	
					Particulate Matter	7.16	31.37	0	
					PM < 2.5 micron	7.16	31.37	0	
					PM < 10 micron	7.16	31.37	0	
					Polycyclic organic matter	0.00388	0.017	0	
					Sulfur Dioxide	0.0347	0.152	0	
					Toluene	0.00945	0.0414	0	
					Volatile Organic Compounds	8.32	36.42	0	
					Xylenes, Total	0.00658	0.0288	0	
		EQUI 10	EU013	Diesel Engine D6-2	1,3-Butadiene	0.000903	0.00396	0	
					Acetaldehyde	0.0177	0.0776	0	
					Acrolein	0.00214	0.00936	0	
					Benzene	0.0216	0.0944	0	
					Carbon Dioxide	3,788	16,593	0	
					Carbon Dioxide Equivalent	3,801	16,647	0	
					Carbon Monoxide	21.95	96.12	0	
					Formaldehyde	0.0273	0.119	0	
					HAPs - Total	0.0895	0.392	0	
					Methane	0.15	0.67	0	
					Naphthalene	0.00196	0.00858	0	
					Nitrogen Oxides	92.4	404.71	0	
					Nitrous Oxide	0.0306	0.134	0	
					Particulate Matter	7.16	31.37	0	
					PM < 2.5 micron	7.16	31.37	0	
					PM < 10 micron	7.16	31.37	0	
					Polycyclic organic matter	0.00388	0.017	0	
					Sulfur Dioxide	0.0347	0.152	0	
					Toluene	0.00945	0.0414	0	
					Volatile Organic Compounds	8.32	36.42	0	
					Xylenes, Total	0.00658	0.0288	0	
		EQUI 14	EU006	Diesel Fire Pump 122	1,3-Butadiene	9.23e-05	0.000404	0	
					Acetaldehyde	0.00181	0.00793	0	
					Acrolein	0.000218	0.000956	0	
					Benzene	0.0022	0.00964	0	
					Carbon Dioxide	387	1,695	0	
					Carbon Dioxide Equivalent	388	1,701	0	
					Carbon Monoxide	2.24	9.82	0	
					Formaldehyde	0.00278	0.0122	0	
					HAPs - Total	0.00914	0.04	0	
					Methane	0.0156	0.0684	0	
					Naphthalene	0.0002	0.000877	0	
					Nitrogen Oxides	9.44	41.35	0	
					Nitrous Oxide	0.00312	0.0137	0	
					Particulate Matter	0.732	3.2	0	
					PM < 2.5 micron	0.732	3.2	0	
					PM < 10 micron	0.732	3.2	0	
					Polycyclic organic matter	0.000396	0.00174	0	
					Sulfur Dioxide	0.00354	0.0155	0	
					Toluene	0.000965	0.00423	0	
					Volatile Organic Compounds	0.85	3.72	0	
					Xylenes, Total	0.000673	0.00295	0	
		EQUI 18	EU022	Warehouse Emergency Generator	1,3-Butadiene	0.000102	0.000449	0	
					Acetaldehyde	0.00201	0.0088	0	
					Acrolein	0.000242	0.00106	0	
					Benzene	0.00244	0.0107	0	
					Carbon Dioxide	430	1,882	0	

PTE by SI

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Equipment	Reciprocating IC Engine	EQUI 18	EU022	Warehouse Emergency Generator	Carbon Dioxide Equivalent	431	1,888	0	
					Carbon Monoxide	2.49	10.9	0	
					Formaldehyde	0.00309	0.0135	0	
					HAPs - Total	0.0101	0.0445	0	
					Methane	0.0173	0.0759	0	
					Naphthalene	0.000222	0.000973	0	
					Nitrogen Oxides	10.48	45.9	0	
					Nitrous Oxide	0.00347	0.0152	0	
					Particulate Matter	0.812	3.56	0	
					PM < 2.5 micron	0.812	3.56	0	
					PM < 10 micron	0.812	3.56	0	
					Polycyclic organic matter	0.00044	0.00193	0	
					Sulfur Dioxide	0.00393	0.0172	0	
					Toluene	0.00107	0.00469	0	
					Volatile Organic Compounds	0.943	4.13	0	
					Xylenes, Total	0.000747	0.00327	0	
		EQUI 27	EU009	Security Diesel Engine	1,3-Butadiene	9.31e-05	0.000408	0	
					Acetaldehyde	0.00183	0.008	0	
					Acrolein	0.00022	0.000964	0	
					Benzene	0.00222	0.00973	0	
					Carbon Dioxide	390	1,710	0	
					Carbon Dioxide Equivalent	392	1,715	0	
					Carbon Monoxide	2.26	9.9	0	
					Formaldehyde	0.002813	0.01232	0	
					HAPs - Total	0.00922	0.0404	0	
					Methane	0.0157	0.0689	0	
					Naphthalene	0.0002021	0.0008854	0	
					Nitrogen Oxides	9.52	41.7	0	
					Nitrous Oxide	0.00315	0.0138	0	
					Particulate Matter	0.738	3.23	0	
					PM < 2.5 micron	0.738	3.23	0	
					PM < 10 micron	0.738	3.23	0	
					Polycyclic organic matter	0.0004	0.00175	0	
					Sulfur Dioxide	0.00357	0.0156	0	
					Toluene	0.000975	0.00427	0	
					Volatile Organic Compounds	0.857	3.75	0	
					Xylenes, Total	0.0006794	0.002976	0	
		EQUI 85	Null	Communications tower emergency generator	1,1-Dichloroethane	5.76e-06	2.52e-05	0	
					1,1,2-Trichloroethane	1.29e-05	5.65e-05	0	
					1,1,2,2-Tetrachloroethane	1.29e-05	5.65e-05	0	
					1,2-Dibromoethane (Ethylene dibromide); EDB	1.09e-05	4.76e-05	0	
					1,2-Dichloropropane	6.63e-06	2.9e-05	0	
					1,3-Butadiene	0.000338	0.00148	0	
					1,3-Dichloropropene	6.63e-06	2.9e-05	0	
					Acetaldehyde	0.00142	0.00623	0	
					Acrolein	0.00134	0.00587	0	
					Benzene	0.000806	0.00353	0	
					Carbon Dioxide	56.1	246	0	
					Carbon Dioxide Equivalent	56.2	246	0	
					Carbon Monoxide	1.9	8.31	0	
					Carbon tetrachloride	9.03e-06	3.95e-05	0	
					Chlorobenzene (Monochlorobenzene)	6.58e-06	2.88e-05	0	
					Chloroform	6.99e-06	3.06e-05	0	
					Dichloromethane (Methylene chloride)	2.1e-05	9.2e-05	0	
					Ethylbenzene	1.26e-05	5.54e-05	0	
					Formaldehyde	0.0105	0.0458	0	
					HAPs - Total	0.0166	0.0725	0	
					Methane	0.00112	0.00492	0	
					Methanol	0.00156	0.00684	0	
					Naphthalene	4.95e-05	0.000217	0	
					Nitrogen Oxides	1.13	4.94	0	
					Nitrous Oxide	0.000112	0.000492	0	
					Particulate Matter	0.0099	0.0434	0	
					PM < 2.5 micron	0.0099	0.0434	0	
					PM < 10 micron	0.0099	0.0434	0	
					Polycyclic organic matter	0.000121	0.000532	0	
					Styrene	6.07e-06	2.66e-05	0	
					Sulfur Dioxide	0.0003	0.00131	0	
					Toluene	0.000285	0.00125	0	
					Vinyl chloride (chloroethene)	3.66e-06	1.6e-05	0	
					Volatile Organic Compounds	0.0151	0.0661	0	

PTE by SI

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Equipment	Reciprocating IC Engine	EQUI 85	Null	tower emergency generator	Xylenes, Total	9.95e-05	0.000436	0	
		EQUI 86	Null	Substation Engine	1,3-Butadiene	0.000122	0.000533	0	
					Acetaldehyde	0.00239	0.0104	0	
					Acrolein	0.000288	0.00126	0	
					Benzene	0.0029	0.0127	0	
					Carbon Dioxide	510.04	2,233.9752	0	
					Carbon Dioxide Equivalent	512	2,242	0	
					Carbon Monoxide	2.95	12.94	0	
					Formaldehyde	0.00367	0.0161	0	
					HAPs - Total	0.012	0.0528	0	
					Methane	0.0206	0.0901	0	
					Naphthalene	0.000264	0.00116	0	
					Nitrogen Oxides	12.44	54.49	0	
					Nitrous Oxide	0.00411	0.018	0	
					Particulate Matter	0.964	4.22	0	
					PM < 2.5 micron	0.964	4.22	0	
					PM < 10 micron	0.964	4.22	0	
					Polycyclic organic matter	0.000522	0.00229	0	
					Sulfur Dioxide	0.00467	0.0204	0	
					Toluene	0.00127	0.00557	0	
					Volatile Organic Compounds	1.12	4.9	0	
					Xylenes, Total	0.000886	0.00388	0	

Relationships

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Relationship	Related SI ID	% Flow	Related SI Type	Related Delta Designation	Relationship Start Date	Relationship End Date	
Equipment	Boiler	EQUI 26	EU001	Auxiliary Boiler 1	sends to	STRU 33	100	Stack/Vent	SV001	6/22/2000	Null	
	Reciprocating IC Engine	EQUI 1	EU002	Diesel Engine D1	sends to	STRU 51	100	Stack/Vent	SV002	6/22/2000	Null	
		EQUI 2	EU003	Diesel Engine D2	sends to	STRU 34	100	Stack/Vent	SV003	6/22/2000	Null	
		EQUI 3	EU004	Diesel Cooling Water Pump 12	sends to	STRU 35	100	Stack/Vent	SV004	6/22/2000	Null	
		EQUI 4	EU005	Diesel Cooling Water Pump 22	sends to	STRU 36	100	Stack/Vent	SV005	6/22/2000	Null	
		EQUI 5	EU007	Diesel Engine D3	sends to	STRU 38	100	Stack/Vent	SV007	6/22/2000	Null	
		EQUI 6	EU008	Diesel Engine D4	sends to	STRU 39	100	Stack/Vent	SV008	6/22/2000	Null	
		EQUI 7	EU010	Diesel Engine D5-1	sends to	STRU 53	100	Stack/Vent	SV010	6/22/2000	Null	
		EQUI 8	EU011	Diesel Engine D5-2	sends to	STRU 54	100	Stack/Vent	SV011	6/22/2000	Null	
		EQUI 9	EU012	Diesel Engine D6-1	sends to	STRU 55	100	Stack/Vent	SV012	6/22/2000	Null	
		EQUI 10	EU013	Diesel Engine D6-2	sends to	STRU 49	100	Stack/Vent	SV013	6/22/2000	Null	
		EQUI 14	EU006	Diesel Fire Pump 122	sends to	STRU 37	100	Stack/Vent	SV006	6/22/2000	Null	
		EQUI 18	EU022	Warehouse Emergency Generator	sends to	STRU 43	100	Stack/Vent	SV019	8/14/2013	Null	
		EQUI 27	EU009	Security Diesel Engine	sends to	STRU 52	100	Stack/Vent	SV009	6/22/2000	Null	
		EQUI 85	Null	Communications tower emergency generator	sends to	STRU 58	100	Stack/Vent	Null	3/29/2014	Null	
		EQUI 86	Null	Substation Engine	sends to	STRU 59	100	Stack/Vent	Null	7/28/2017	Null	

Aboveground Storage Tanks

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Capacity (gal)	Construction Type	Column Diameter (ft)	Number of Columns	Deck Type	Interior Diameter (ft)	Interior Height (ft)	Max True Vapor Pressure (psia)	Construction Type	Seal Type	Support Type	Construction or Installation Start Date	
EQUI 87	Null	Gasoline Storage Tank	550	Fixed Roof	Null	Null	Null	4	6	8.8	Fixed Roof	Null	Null	7/25/2000	

Building

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Height	Units (height)	Length	Units (length)	Width	Units (width)	
STRU 1	BG030	Warehouse No. 2 (Decon)	18	feet	75	feet	50	feet	
STRU 2	BG031	Security Access Facility (SAF)	14.5	feet	77.6	feet	65.6	feet	
STRU 3	BG010	Heated Hazardous Waste Storage Building	16	feet	25	feet	12.5	feet	
STRU 4	BG012	Warehouse No. 12	18	feet	60	feet	50	feet	
STRU 5	BG014	Paint Shop	18	feet	137	feet	60	feet	
STRU 6	BG026	Cold/Haz Waste Building	21.5	feet	24	feet	25	feet	
STRU 7	BG001	New Administration Building	55.5	feet	123.5	feet	120	feet	
STRU 8	BG002	Plant Screen House - High Roof	30	feet	130	feet	74.5	feet	
STRU 9	BG003	Guard House	14	feet	60	feet	60	feet	
STRU 10	BG004	Turbine Building	107.5	feet	440	feet	180	feet	
STRU 11	BG005	Unit 2 Reactor Building	204	feet	120	feet	120	feet	
STRU 12	BG006	Auxillary Building	80	feet	335	feet	215	feet	
STRU 13	BG007	Unit 1 Reactor Building	204	feet	120	feet	120	feet	
STRU 14	BG008	Service Building - Maintenance	60	feet	125	feet	50	feet	
STRU 15	BG009	Service Building - Computer Building	60	feet	125	feet	50	feet	
STRU 16	BG011	Barrel Storage Building	65	feet	150	feet	75	feet	
STRU 17	BG013	Diesel Engine/Generator Building D3/D4	12.5	feet	57	feet	20	feet	
STRU 18	BG015	Warehouse No. 1	30	feet	137	feet	119	feet	
STRU 19	BG016	Cooling Tower (CT121)	53	feet	432	feet	36	feet	
STRU 20	BG017	Cooling Tower (CT122)	53	feet	432	feet	36	feet	
STRU 21	BG018	Cooling Tower (CT123)	53	feet	432	feet	36	feet	
STRU 22	BG019	Cooling Tower (CT124)	53	feet	432	feet	36	feet	
STRU 23	BG020	Chlorine House	14	feet	31	feet	18	feet	
STRU 24	BG021	Old Administration Building	40	feet	110	feet	65	feet	
STRU 25	BG022	Security Diesel Engine Building	14	feet	25	feet	25	feet	
STRU 26	BG023	Diesel Engine/Generator D5/D6 Building	71.7	feet	125	feet	60	feet	
STRU 27	BG024	Radwaste Building	65	feet	95	feet	33	feet	
STRU 28	BG025	Gas House	15	feet	37.5	feet	25	feet	
STRU 29	BG027	Fuel Oil Transfer House	14	feet	13	feet	13	feet	

Building

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Height	Units (height)	Length	Units (length)	Width	Units (width)	
STRU 30	BG028	Fuel Receipt Building	114.5	feet	160	feet	100	feet	
STRU 31	BG029	Containment Access Facility	12	feet	92	feet	25	feet	
STRU 60	Null	Water Treatment Brine Tank Enclosure	20	feet	15	feet	13	feet	
STRU 61	Null	Intake Screen	42	feet	174	feet	65	feet	
STRU 62	Null	Cooling Tower Equipment House	15.42	feet	54	feet	50	feet	
STRU 63	Null	Environmental Lab	15.83	feet	0	feet	50	feet	
STRU 64	Null	North Warehouse	21.08	feet	200	feet	80	feet	
STRU 65	Null	Receiving Warehouse	24.33	feet	200	feet	70	feet	
STRU 66	Null	NDP Building	12	feet	200	feet	66	feet	
STRU 67	Null	Steam Generator Mockup Building	21.58	feet	42	feet	42	feet	
STRU 68	Null	SGT A Warehouse	22.42	feet	110	feet	62	feet	
STRU 69	Null	SGT B Warehouse	22.33	feet	110	feet	62	feet	
STRU 70	Null	Distribution Center	30.75	feet	250	feet	250	feet	
STRU 71	Null	NPD Annex Building	22	feet	140	feet	75	feet	
STRU 72	Null	OCA Gatehouse	9.67	feet	20	feet	12	feet	
STRU 73	Null	Substation Control House	12.17	feet	42	feet	26	feet	
STRU 74	Null	Rad Monitor Building	14	feet	20	feet	20	feet	
STRU 75	Null	ISFSI Equipment Storage Building	29	feet	52	feet	36	feet	
STRU 76	Null	Screen Storage Building	16.42	feet	40	feet	40	feet	
STRU 77	Null	Fab Shop 1 (Kelly)	26.5	feet	38	feet	30	feet	
STRU 78	Null	Deep Well Pumphouse #1	11.83	feet	10	feet	10	feet	
STRU 79	Null	Deep Well Pumphouse #2	11.83	feet	10	feet	10	feet	
STRU 80	Null	Met Tower Building	12	feet	14	feet	14	feet	
STRU 81	Null	121/122 CT Control House	13.42	feet	54	feet	22	feet	
STRU 82	Null	123/123 CT Control House	13.42	feet	54	feet	22	feet	
STRU 83	Null	Cooling Tower Pumphouse	9.33	feet	96	feet	40	feet	
STRU 84	Null	Communication Tower Building	18.18	feet	24	feet	10	feet	
STRU 85	Null	De-Icing Pumphouse	10.25	feet	23	feet	15	feet	
STRU 86	Null	SGR-13 Subcontractor Office Space	13	feet	64	feet	38	feet	

Building

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Height	Units (height)	Length	Units (length)	Width	Units (width)	
STRU 87	Null	NPSA Mower and Tractor Shed	9.67	feet	30	feet	26	feet	
STRU 88	Null	Tri-Wide Trailers	12.33	feet	58	feet	26	feet	
STRU 89	Null	Special Construction Double Wide Trailer	12	feet	58	feet	24	feet	
STRU 90	Null	Boat Storage	13.18	feet	40	feet	28	feet	
STRU 91	Null	Training Center	19	feet	290	feet	155	feet	
STRU 92	Null	Site Admin Building	47.67	feet	250	feet	100	feet	
STRU 93	Null	RSG Storage Building	31	feet	114	feet	85	feet	
STRU 94	Null	Flex Storage Building	24.33	feet	175	feet	75	feet	
STRU 95	Null	Cooling Tower Trailer	13.83	feet	60	feet	38	feet	
STRU 96	Null	Cooling Tower Storage Building	24	feet	80	feet	54	feet	
STRU 97	Null	Northwest Security Tower	44	feet	12	feet	12	feet	
STRU 98	Null	Northeast Security Tower	44	feet	12	feet	12	feet	
STRU 99	Null	North Security Tower	44	feet	12	feet	12	feet	
STRU 100	Null	Southeast Security Tower	44	feet	12	feet	12	feet	
STRU 101	Null	Southwest Security Tower	44	feet	12	feet	12	feet	
STRU 102	Null	SGR Conference Rms	11.83	feet	60	feet	58	feet	

Stack/Vents

AI ID (Name): 1885 (Xcel Energy - Prairie Island Nuclear Plant)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Stack Height (feet)	Stack Diameter (feet)	Stack Length (feet)	Stack Width (feet)	Stack Flow Rate (cubic ft/min)	Discharge Temperature (°F)	Flow Rate/Temp Information Source	Discharge Direction	
STRU 33	SV001	Heating Boiler	118	3.4	Null	Null	22,800	500	Manufacturer	Upwards with a cap on stack/vent	
STRU 34	SV003	Diesel Engine D2	75	1.83	Null	Null	37,400	750	Manufacturer	Upwards with no cap on stack/vent	
STRU 35	SV004	Diesel Cooling Water Pump 12	24.8	1	Null	Null	7,300	850	Manufacturer	Horizontally	
STRU 36	SV005	Diesel Cooling Water Pump 22	24.8	1	Null	Null	7,300	850	Manufacturer	Horizontally	
STRU 37	SV006	Diesel Fire Pump 121	32.8	0.7	Null	Null	2,300	800	Manufacturer	Horizontally	
STRU 38	SV007	Diesel Engine D3	20	3	Null	Null	28,900	650	Manufacturer	Upwards with no cap on stack/vent	
STRU 39	SV008	Diesel Engine D4	20	3	Null	Null	28,900	650	Manufacturer	Upwards with no cap on stack/vent	
STRU 43	SV019	Warehouse Emergency Generator	5.8	0.42	Null	Null	1,550	1,000	Manufacturer	Upwards with no cap on stack/vent	
STRU 44	SV020	Radio generator stack	12	0.1	Null	Null	21	800	Manufacturer	Horizontally	
STRU 49	SV013	Diesel Engine D6 -2	78	2.3	Null	Null	26,466	842	Manufacturer	Horizontally	
STRU 50	SV014	Diesel Fire Pump Engine	8.5	0.33	Null	Null	1,264	950	Manufacturer	Upwards with a cap on stack/vent	
STRU 51	SV002	Diesel Engine D1	75	1.83	Null	Null	37,400	750	Manufacturer	Upwards with no cap on stack/vent	
STRU 52	SV009	Diesel Security Engine	15	0.7	Null	Null	2,300	800	Manufacturer	Horizontally	
STRU 53	SV010	Diesel Engine D5 -1	78	2.3	Null	Null	26,466	842	Manufacturer	Horizontally	
STRU 54	SV011	Diesel Engine D5 -2	78	2.3	Null	Null	26,466	842	Manufacturer	Horizontally	
STRU 55	SV012	Diesel Engine D6 -1	78	2.3	Null	Null	26,466	842	Manufacturer	Horizontally	
STRU 58	Null	Communications tower emergency generator	15	0.2	Null	Null	250	1,056	Manufacturer	Horizontally	
STRU 59	Null	Substation engine stack	10	0.3	Null	Null	2,840	450	Manufacturer	Upwards with no cap on stack/vent	

SI Id	Sequence	Requirement
TFAC 1	1240	Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee must comply with all requirements contained in the Appendices: Appendix A. Insignificant activities and general applicable requirements Appendix B. 40 CFR Part 63, Subpart A—General Provisions Appendix C. 40 CFR Part 63, Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines Appendix D. 40 CFR Part 63, Subpart JJJJJJ—National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources Appendix E. 40 CFR Part 60, Subpart A—General Provisions Appendix F. 40 CFR Part 60, Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines Appendix G. 40 CFR Part 60, Subpart JJJJ—Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. [Minn. R. 7007.0800, subp. 2(A) & (B)]
TFAC 1	4090	This permit establishes limits on the facility to keep it a minor source under New Source Review. The Permittee cannot make any change at the source that would make the source a major source under New Source Review until a permit amendment has been issued. This includes changes that might otherwise qualify as insignificant modifications and minor or moderate amendments. [Title I Condition: Avoid major modification under 40 CFR 52.21(b)(2) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TFAC 1	4100	The Permittee must submit an annual report by the 31st of January. The report must describe the changes made at the Facility during the previous calendar year using the latest MPCA application forms. The report must include information for any new, modified, or replaced Subject Items. The report must document the VOC 12-month rolling sum calculations for the previous calendar year. The report must be submitted with the annual Compliance Certification required by this permit. As part of the Annual Report, the Permittee must verify and certify that the Facility has maintained minor source status for New Source Review. [Minn. R. 7007.0800, subp. 2(A)]
TFAC 1	4110	Equipment Labeling: The Permittee must permanently affix a unique number to each emissions unit for tracking purposes. Each number must correlate the unit to the appropriate Subject Item number used in this permit. The number can be affixed by placard, stencil, or other means. The number must be maintained so that it is readable and visible at all times from a safe distance. If equipment is added, it must be given a new unique number; numbers from replaced or removed equipment must not be reused. [Minn. R. 7007.0800, subp. 2(A)]
TFAC 1	4120	Equipment Inventory: The Permittee must maintain a written list of all emissions units and control equipment on site. The Permittee must update the list to include any replaced, modified, or new equipment prior to making the change. The list must correlate the units to the Subject Item numbers used in this permit and must include the data on GI-04, GI-05B, GI-05C, and GI-05F. The date of construction must be the date the change was made for replaced, modified, or new equipment. [Minn. R. 7007.0800, subp. 2(A)]
TFAC 1	7400	The Permittee must comply with Minn. Stat. 116.385. The Permittee may not use trichloroethylene at its permitted facility including in any manufacturing, processing, or cleaning processes, except as described in Minn. Stat. 116.385, subd. 2(b) and 4. This is a state-only requirement and is not enforceable by the U.S. Environmental Protection Agency (EPA) Administrator and citizens under the Clean Air Act. [Minn. R. 7007.0100, subp. 7(X), Minn. Stat. 116.385]
TFAC 1	7420	PERMIT SHIELD: Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements. This permit shall not alter or affect the liability of the Permittee for any violation of applicable requirements prior to or at the time of permit issuance. [Minn. R. 7007.1800(A)(2)]

SI Id	Sequence	Requirement
TFAC 1	7450	The Permittee must comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0090. Compliance must be demonstrated upon written request by the MPCA. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TFAC 1	7540	Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted. [Minn. R. 7011.0020]
TFAC 1	7550	The Permittee must at all times properly operate and maintain the facilities and systems of treatment and control and the appurtenances related to them that are installed or used by the Permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. [Minn. R. 7007.0800, subp. 16(J)]
TFAC 1	7560	Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 16(J)]
TFAC 1	7570	Operation Changes: In any shutdown, breakdown, or deviation the Permittee must immediately or as soon as possible considering plant and personnel safety take all practical steps to modify operations to reduce the emission of any regulated air pollutant. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment are permitted to operate. [Minn. R. 7019.1000, subp. 4]
TFAC 1	7580	Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150. [Minn. R. 7011.0150]
TFAC 1	7590	Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the U.S. Environmental Protection Agency (EPA) Administrator and citizens under the Clean Air Act. [Minn. R. 7030.0010-7030.0080]
TFAC 1	7600	Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A). [Minn. R. 7007.0800, subp. 9(A)]
TFAC 1	7610	The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16. [Minn. R. 7007.0800, subp. 16]
TFAC 1	7620	Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in this permit. [Minn. R. ch. 7017]
TFAC 1	7630	Performance Test Notifications and Submittals: Performance Test Notification and Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due seven days before each Performance Test Performance Test Report: due 45 days after each Performance Test The Notification, Test Plan, and Test Report must be submitted in a format specified by the commissioner. [Minn. R. 7017.2017, Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2]
TFAC 1	7640	Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's follow up compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025, subp. 3]

SI Id	Sequence	Requirement
TFAC 1	7650	Monitoring Equipment Calibration - The Permittee shall either: 1. Calibrate or replace required monitoring equipment every 12 months; or 2. Calibrate at the frequency stated in the manufacturer's specifications. For each monitor, the Permittee shall maintain a record of all calibrations, including the date conducted, and any corrective action that resulted. The Permittee shall include the calibration frequencies, procedures, and manufacturer's specifications (if applicable) in the Operations and Maintenance Plan. Any requirements applying to continuous emission monitors are listed separately in this permit. [Minn. R. 7007.0800, subp. 4(D)]
TFAC 1	7660	Operation of Monitoring Equipment: Unless noted elsewhere in this permit, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system. [Minn. R. 7007.0800, subp. 4(D)]
TFAC 1	7670	Recordkeeping: Retain all records at the stationary source, unless otherwise specified within this permit, for five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A). [Minn. R. 7007.0800, subp. 5(C)]
TFAC 1	7680	Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes. [Minn. R. 7007.0800, subp. 5(B)]
TFAC 1	7690	If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. For expiring permits, these records shall be kept for a period of five years from the date the change was made or until permit reissuance, whichever is longer. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format. [Minn. R. 7007.1200, subp. 4]
TFAC 1	7770	Shutdown Notifications: Notify the commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the Permittee does not have advance knowledge of the shutdown, the Permittee must notify the commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in items A, B, and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the owner or operator must inform the commissioner of the cause of the shutdown and the estimated duration. The owner or operator must notify the commissioner when the shutdown is over. [Minn. R. 7019.1000, subp. 3]
TFAC 1	7780	Breakdown Notifications: Notify the commissioner within 24 hours of a breakdown of more than one hour of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in items A, B, and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the Permittee must inform the commissioner of the cause of the breakdown and the estimated duration. The Permittee must notify the commissioner when the breakdown is over. [Minn. R. 7019.1000, subp. 2]
TFAC 1	7790	Notification of Deviations Endangering Human Health or the Environment: Immediately after discovery of the deviation or immediately after when the deviation reasonably should have been discovered, notify the commissioner either orally or by e-mail, or telephone the state duty officer at 800-422-0798 or 651-649-5451, of any deviation from permit conditions that could endanger human health or the environment. [Minn. R. 7019.1000, subp. 1]

SI Id	Sequence	Requirement
TFAC 1	7800	Notification of Deviations Endangering Human Health or the Environment Report: Within two working days of discovery, notify the commissioner in writing of any deviation from permit conditions that could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation. [Minn. R. 7019.1000, subp. 1]
TFAC 1	7810	The Permittee must submit a semiannual deviations report : Due semiannually, by the 30th of January and July. The first semiannual report submitted by the Permittee must cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. Submit this on form DRF-2 (Deviation Reporting Form). If no deviations have occurred, submit the signed report certifying that there were no deviations. [Minn. R. 7007.0800, subp. 6(B)(2)]
TFAC 1	7830	Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed. Upon adoption of a new or amended federal applicable requirement, and if there are three or more years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150 - 7007.1500]
TFAC 1	7840	Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H). Performance testing deadlines from the General Provisions of 40 CFR pt. 60 and pt. 63 are examples of deadlines for which the MPCA does not have authority to grant extensions and therefore do not meet the requirements of Minn. R. 7007.1400, subp. 1(H). [Minn. R. 7007.1400, subp. 1(H)]
TFAC 1	7860	The Permittee must submit a compliance certification : Due annually, by the 31st of January (for the previous calendar year). Submit this on form CR-04 (Annual Compliance Certification Report). This report covers all deviations experienced during the calendar year. If no deviations have occurred, submit the signed report certifying that there were no deviations. [Minn. R. 7007.0800, subp. 6(D)]
TFAC 1	7870	Within 15 days of a request from the Commissioner, the Permittee must provide a complete summary of all performance tests required at the facility including the subject item, pollutant, most recent test date (if applicable), and the date of the next test in an approved format. [Minn. R. 7007.0800, subp. 16(L)]
TFAC 1	7890	The Permittee shall submit an application for permit reissuance : Due 180 calendar days before Permit Expiration Date. [Minn. R. 7007.0400, subp. 2]
TFAC 1	7900	Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. Submit in a format specified by the Commissioner. [Minn. R. 7019.3000-7019.3100]
TFAC 1	7910	Emission Fees: due 30 days after receipt of an MPCA bill. [Minn. R. 7002.0005-7002.0085]
TFAC 1	7941	The Permittee shall not have engines that meet subparagraph (1)(iii) under the definition of Nonroad Engine at 40 CFR 1068.30 in one location within the stationary source for more than 12 consecutive months. A location is any single site at a building, structure, facility, or installation. Any engine, or engines, that replaces an engine at a location and that is intended to perform the same or similar function as the engine it replaced will be included in calculating the consecutive time period. [40 CFR 1068.30]
TFAC 1	7942	For a nonroad engine that is excluded from any requirements of 40 CFR 1068 because it is a stationary engine, the Permittee may not move it or install it in any mobile equipment, except as allowed by the provisions of 40 CFR 1068. The Permittee may not circumvent or attempt to circumvent the residence-time requirements of subparagraph (2)(iii) of the Nonroad Engine definition at 40 CFR 1068.30. [40 CFR 1068.101(b)(3)]

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TFAC 1	7943	The Permittee shall conduct an inventory of all engines on-site that meet subparagraph (1)(iii) under the definition of Nonroad Engine at 40 CFR 1068.30, once each calendar quarter; inventories shall not take place in consecutive months. This applies to nonroad engines that are owned by the Permittee, or rented and operated by the Permittee, or brought onsite and operated by a vendor or contractor. The inventory shall include the following: 1) Date that the nonroad engine is inventoried. 2) Identification number. 3) Function of the nonroad engine (e.g. compressor, welder). 4) Location of the engine within the stationary source. 5) Statement that the nonroad engine has not been located in a single location for 12 consecutive months, and movement between locations has not been for purposes of circumvention of residence time requirements of subparagraph (2)(iii) under the definition of Nonroad Engine at 40 CFR 1068.30. [40 CFR 1068.30(nonrd engn)(1)(iii), Minn. R. 7007.0800, subps. 4-5]
TFAC 1	7944	A nonroad engine ceases to be a nonroad engine and becomes a new stationary engine if: 1. At any time, it meets the criteria specified in subparagraph (2)(iii) under the definition of Nonroad Engine in 40 CFR 1068.30. For example, a portable generator engine ceases to be a nonroad engine if it is used or will be used in a single specific location for 12 months or longer. If the Administrator or the Permitting authority determines that an engine will be or has been used in a single specific location for 12 months or longer, it ceased to be a nonroad engine when it was placed in that location. OR 2. It is otherwise regulated by a federal New Source Performance Standard promulgated under Section 111 of the Clean Air Act (42 U.S.C. 7411). [40 CFR 1068.31(e)]
COMG 1	20045	Opacity: The Permittee shall conduct a performance test due before 12/2/2027 and every 36 months thereafter to measure opacity from EQUI 1 or EQUI 2. Testing shall commence with EQUI 2 and subsequently alternate between EQUI 1 and EQUI 2 at intervals not to exceed 36 months. The first test is due by the date specified above and all subsequent tests shall be completed every 36 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 9, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7017.2020, subp. 1]

SI Id	Sequence	Requirement
COMG 1	20060	Nitrogen Oxides: The Permittee shall conduct a performance test due before 6/14/2026 and every 60 months thereafter to measure emissions from EQUI 1 or EQUI 2. Testing shall commence with EQUI 2 and subsequently alternate between EQUI 1 and EQUI 2 at intervals not to exceed 60 months. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 7E, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 2	7	Recordkeeping - EQUI 3 and EQUI 4 Operating Hours: by the 15th day of each month, the Permittee shall separately record EQUI 3 and EQUI 4 operating hours for the previous month, and separately record cumulative operating hours for EQUI 3 and EQUI 4 during the previous 12-month period. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 2	19905	Opacity: The Permittee shall conduct an initial performance test due 90 calendar days after notification of resuming operation of either EQUI 3 or EQUI 4 for more than 100 hours in any 12-month period and at a minimum every 60 months thereafter to measure opacity. The Commissioner will set the subsequent test frequency as stated in a follow up compliance letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the follow up compliance letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 9, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7017.2020, subp. 1]

SI Id	Sequence	Requirement
COMG 2	19920	Nitrogen Oxides: The Permittee shall conduct an initial performance test due 90 calendar days after notification of resuming operation of either EQUI 3 or EQUI 4 for more than 100 hours in any 12-month period and at a minimum every 60 months thereafter to measure emissions. The Commissioner will set the subsequent test frequency as stated in a follow up compliance letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the follow up compliance letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 7E, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 3	19905	Opacity: The Permittee shall conduct an initial performance test due 90 calendar days after notification of resuming operation of either EQUI 5 or EQUI 6 and every 60 months thereafter to measure opacity. The Commissioner will set the subsequent test frequency as stated in a follow up compliance letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the follow up compliance letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 9, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7017.2020, subp. 1]

SI Id	Sequence	Requirement
COMG 3	19920	Nitrogen Oxides: The Permittee shall conduct an initial performance test due 90 calendar days after notification of resuming operation of either EQUI 5 or EQUI 6 and every 60 months thereafter to measure emissions. The Commissioner will set the subsequent test frequency as stated in a follow up compliance letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the follow up compliance letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 7E, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 4	20045	Opacity: The Permittee shall conduct a performance test due before 8/19/2030 and every 60 months thereafter to measure opacity from an emission unit pair (EQUI 7 & 8 or EQUI 9 & 10) that has not been tested in the previous 60 months. Testing shall commence with EQUIs 7 & 8 and subsequently alternate between EQUIs 7 & 8 and EQUIs 9 & 10 at intervals not to exceed 60 months. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 9, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7017.2020, subp. 1]

SI Id	Sequence	Requirement
COMG 4	20060	Nitrogen Oxides: The Permittee shall conduct a performance test due before 8/19/2030 and every 60 months thereafter to measure emissions from an emission unit pair (EQUI 7 & 8 or EQUI 9 & 10) that has not been tested in the previous 60 months. Testing shall commence with EQUIs 7 & 8 and subsequently alternate between EQUIs 7 & 8 and EQUIs 9 & 10 at intervals not to exceed 60 months. The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 7E, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a follow up compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 5	3	Fuel Usage <= 67,000 gallons per month 12-month rolling average for all COMG 5 internal combustion engines. All emission units or stacks added to COMG 5 as allowed in this permit shall be included in this calculation. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 5	4	The Permittee must limit emissions of Nitrogen Oxides <= 4.0 pounds per million Btu heat input for each emission unit in COMG 5 with a brake hp rating of greater than 600 hp (EQUI 1, EQUI 2, EQUI 3, EQUI 4, EQUI 5, EQUI 6, EQUI 7, EQUI 8, EQUI 9, EQUI 10). This limit is not applicable to EQUI 14, EQUI 18, EQUI 85, and EQUI 86. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 5	5	All internal combustion engines at the facility, including existing or new, except nonroad engines, are subject to the requirements of COMG 5 and COMG 6. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 5	11	Daily Recordkeeping -- fuel usage: On each day of operation, the Permittee shall calculate, record, and maintain daily totals of: 1) number of gallons of distillate fuel for all engines greater than 600hp, and 2) number of gallons of distillate fuel for all engines less than 600hp, based on written usage logs or flowmeters. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 5	12	Monthly Recordkeeping - fuel usage: By the last day of the month, the Permittee shall calculate and record the following: 1) The total fuel usage in gallons for all COMG 5 emission units for the previous calendar month using the daily fuel usage records. 2) The 12-month rolling average fuel usage for the previous 12-month period by averaging the monthly fuel usage for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5]
COMG 5	13	Fuel Sulfur Content Monitoring: The permittee shall determine fuel sulfur content according to one of the following methods for all fuel oil combusted in all engines: (1) Test each shipment of diesel fuel according to current ASTM or EPA method(s) and keep records of lab analyses of sulfur content; or (2) Obtain and maintain a fuel supplier certification for each shipment of diesel fuel, showing that the sulfur content does not exceed the appropriate limit. [Minn. R. 7007.0800, subps. 4-5]
COMG 5	3520	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
COMG 5	3535	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.0015 lb/MMBtu due to equipment design and allowable fuels. This applies individually to each emission unit in COMG 5. [Minn. R. 7011.2300, subp. 2(B)]
COMG 5	3540	Fuel type: Diesel only, by design. [Minn. R. 7005.0100, subp. 35a]

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COMG 5	3550	Hours of Operation: The Permittee shall maintain documentation on site that the unit is an emergency generator by design that qualifies under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995, that allows calculation of potential emissions based on 500 operating hours per year. [Minn. R. 7007.0800, subps. 4-5]
COMG 5	3565	Fuel Supplier Certification: The Permittee shall obtain and maintain a fuel supplier certification for each shipment of diesel fuel oil, certifying that the sulfur content does not exceed 0.0015 percent by weight. [Minn. R. 7007.0800, subps. 4-5]
COMG 6	1	The Permittee must limit emissions of Nitrogen Oxides <= 225 tons per year 12-month rolling sum to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit. All NOx-emitting equipment at the Facility is subject to this limit except for non-road engines and insignificant activities. If the Permittee replaces any existing NOx-emitting equipment, adds new NOx-emitting equipment, or modifies the existing equipment, such equipment is subject to this permit limit as well as all of the requirements of COMG 6. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. The Permittee is not required to complete NOx calculations described in Minn. R. 7007.1200, subp. 2. A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement or requires revisions to the limits or monitoring and recordkeeping in this permit. [Title I Condition: Avoid major modification under 40 CFR 52.21(b)(2) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 6	5	Monthly recordkeeping - NOx Emissions. By the last day of the month, the Permittee shall calculate and record the following: 1. The total NOx emissions for the previous calendar month using the daily usage records from COMG 5 or EQUI 26 and using the formulas specified in this permit; 2. The total NOx emissions for the previous calendar month using the daily usage records from fuel oil or propane using the formula #4 specified in this permit; and 3. The 12-month rolling sum NOx emissions for the previous 12-month period by summing the monthly NOx emissions data for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5]
COMG 6	6	Monthly Recordkeeping Calculation - NOx Emissions. The Permittee shall calculate NOx emissions using the following equations: NOx (tons per month) = NOx from boiler (EQUI 26) + NOx from engines<600hp + NOx from engines greater than 600hp + NOx from new equipment Equation 1. NOx emissions for EQUI 26: NOx (tons per month) = (B*C*D)/2000 Where: B= gallons per month of fuel used in EQUI 26 during the previous month. C= 0.144 lb/MMBtu, NOx emission factor from permit. D= 0.137 MMBtu/gal, heat content of distillate fuel oil. Equation 2. NOx for engines less than 600hp: NOx (tons per month) = (B*C*D)/2000

SI Id	Sequence	Requirement
		Where: B= gallons per month of fuel used in engines less than 600hp in COMG 5 during the previous month. C= 4.41 lb/MMBtu, NOx emission factor from AP-42 Section 3.3. D= 0.139 MMBtu/gal, heat content of distillate fuel oil. Equation 3. NOx for engines greater than 600hp: NOx (tons per month) = (B*C*D)/2000 Where: B= gallons per hour of fuel used in engines in COMG 5 greater than 600hp during the previous month. C= 4.00 lb/MMBtu, NOx emission factor from permit. D= 0.139 MMBtu/gal, heat content of distillate fuel oil. Equation 4. NOx from new emission units: NOx (tons per month) = (E*F)/2000 Where: E= quantity of fuel (units/month) F= emission factor (lb/unit) from most recent published version of AP-42. [Minn. R. 7007.0800, subps. 4-5]
COMG 6	9	Daily Recordkeeping for all fuels except fuel in COMG 5 and EQUI 26: On each day of operation, the Permittee shall calculate, record, and maintain daily totals of cubic feet of propane or gallons of fuel oil of all boilers, based on written usage logs or flowmeters. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major modification under 40 CFR 52.21(b)(2) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 6	10	Monthly Recordkeeping - for all fuels except fuel in COMG 5 and EQUI 26: By the last day of the month, the Permittee shall calculate and record the following: 1) The total fuel usage in gallons or cubic feet for all new emission units for the previous calendar month using the daily fuel usage records. 2) The 12-month rolling average fuel usage for the previous 12-month period by averaging the monthly fuel usage for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5]
COMG 7	3	Hours of Operation: The Permittee shall maintain documentation on site that the unit is an emergency generator by design that qualifies under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995, that allows calculation of potential emissions based on 500 operating hours per year. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
		The Permittee must comply with all applicable requirements of 40 CFR pt. 63, subp. ZZZZ as follows: 40 CFR 63.6585(a); 40 CFR 63.6585(c); 40 CFR 63.6585(d); 40 CFR 63.6590(a)(1)(iii); 40 CFR 63.6595(a)(1); 40 CFR 63.6595(b)(2); 40 CFR 63.6603(a); 40 CFR 63.6604(b); 40 CFR 63.6605(a); 40 CFR 63.6605(b); 40 CFR 63.6625(e); 40 CFR 63.6625(e)(3); 40 CFR 63.6625(f); 40 CFR 63.6625(h); 40 CFR 63.6625(i); 40 CFR 63.6640(a); 40 CFR 63.6640(b); 40 CFR 63.6640(e); 40 CFR 63.6640(f); 40 CFR 63.6640(f)(1);
COMG 7	21040	40 CFR 63.6640(f)(2)(i);
		40 CFR 63.6640(f)(4); 40 CFR 63.6645(a)(5); 40 CFR 63.6650(a); 40 CFR 63.6650(f); 40 CFR 63.6650(h); 40 CFR 63.6655(a); 40 CFR 63.6655(d); 40 CFR 63.6655(e)(2); 40 CFR 63.6655(f)(2); 40 CFR 63.6660(a)-(c); 40 CFR 63.6665; 40 CFR 63.6675; 40 CFR pt. 63, subp. ZZZZ, Table 2d, item 4; 40 CFR pt. 63, subp. ZZZZ, Table 6, item 9; 40 CFR pt. 63, subp. ZZZZ, Table 7, item 4; and 40 CFR pt. 63, subp. ZZZZ, Table 8 A copy of 40 CFR pt. 63, subp. ZZZZ is included in Appendix C. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 63, subp. ZZZZ, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.8150]

SI Id	Sequence	Requirement
COMG 7	35690	The Permittee must comply with all applicable requirements of 40 CFR pt. 63, subp. A as follows: 40 CFR 63.1; 40 CFR 63.2; 40 CFR 63.3; 40 CFR 63.4; 40 CFR 63.5; 40 CFR 63.6(a)-(d); 40 CFR 63.6(f)(2)-(3); 40 CFR 63.6(g); 40 CFR 63.6(i); 40 CFR 63.6(j); 40 CFR 63.7(a)-(d); 40 CFR 63.7(e)(2)-(4); 40 CFR 63.7(f)-(h); 40 CFR 63.8(a)(1)-(2); 40 CFR 63.8(b); 40 CFR 63.8(c)(1)(ii); 40 CFR 63.8(c)(2)-(4); 40 CFR 63.8(c)(6)-(8); 40 CFR 63.8(d)-(g); 40 CFR 63.9(a)-(e); 40 CFR 63.9(g)(1);
		40 CFR 63.9(g)(3); 40 CFR 63.9(h)-(k); 40 CFR 63.10(a); 40 CFR 63.10(b)(1); 40 CFR 63.10(b)(2)(vi)-(xiv); 40 CFR 63.10(b)(3); 40 CFR 63.10(c); 40 CFR 63.10(d)(1)-(2); 40 CFR 63.10(d)(4); 40 CFR 63.10(e)(1); 40 CFR 63.10(e)(2)(i); 40 CFR 63.10(f); 40 CFR 63.12; 40 CFR 63.13; 40 CFR 63.14; 40 CFR 63.15; and 40 CFR 63.16. A copy of 40 CFR pt. 63, subp. A is included in Appendix B. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 63, subp. A, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.0050, subp. 1(B), Minn. R. 7017.1010 & 7017.2015, subp. 3, Minn. R. 7019.0100]
COMG 8	5	Opacity <= 20 percent during acceleration mode; 15 percent during the lugging mode; and 50 percent during the peaks in either the acceleration or lugging modes as described in 40 CFR 1039.105(b). [40 CFR 60.4205(b), 40 CFR 63.6590(c), 40 CFR 89.113, Minn. R. 7011.2305, Minn. R. 7011.8150]
COMG 8	3520	Opacity <= 20 percent opacity once operating temperatures have been attained. This limit applies to each emission unit in the group. [Minn. R. 7011.2300, subp. 1]

SI Id	Sequence	Requirement
COMG 8	3535	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. This limit applies to each emission unit in the group. The potential to emit from the unit is 0.0015 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
COMG 8	3540	Fuel type: Diesel only, by design. [Minn. R. 7005.0100, subp. 35a]
COMG 8	3550	Hours of Operation: The Permittee must maintain documentation on site that the unit is an emergency generator by design that qualifies under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995, that allows calculation of potential emissions based on 500 operating hours per year. [Minn. R. 7007.0800, subps. 4-5]
COMG 8	3560	The Permittee must keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5]
COMG 8	3565	Fuel Supplier Certification: The Permittee must obtain and maintain a fuel supplier certification for each shipment of diesel fuel oil, certifying that the sulfur content does not exceed 0.0015 percent by weight. [Minn. R. 7007.0800, subps. 4-5]
COMG 8	19530	The emission units in COMG 8 are new affected sources as defined under 40 CFR pt. 63, subp. ZZZZ, and the facility is an area source as defined at 40 CFR 63.2. The Permittee shall meet the requirements of 40 CFR pt. 63, subp. ZZZZ by meeting the requirements of 40 CFR pt. 60, subp. IIII. No further requirements of 40 CFR pt. 63, subp. ZZZZ apply to COMG 8. [40 CFR 63.6590(c), Minn. R. 7011.8150]
COMG 8	28160	The Permittee must limit Sulfur Content of Fuel <= 15.0 parts per million and either a minimum cetane index of 40 or a maximum aromatic content of 35 percent by volume, as required by 40 CFR 1090.305. [40 CFR 60.4207(b), Minn. R. 7011.2305]
COMG 8	35560	The Permittee must limit emissions of NMHC+NOx <= 4.0 grams per kilowatt-hour as described in 40 CFR pt. 1039, Appendix I. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), Minn. R. 7011.2305]
COMG 8	35570	The Permittee must limit emissions of Particulate Matter <= 0.30 grams per kilowatt-hour as described in 40 CFR pt. 1039, Appendix I. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), Minn. R. 7011.2305]
COMG 8	35580	The Permittee must limit emissions of Carbon Monoxide <= 5.0 grams per kilowatt-hour as described in 40 CFR pt. 1039, Appendix I. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), Minn. R. 7011.2305]
COMG 8	35590	The Permittee must limit emissions of Opacity <= 20 percent opacity during the acceleration mode. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), Minn. R. 7011.2305]
COMG 8	35600	The Permittee must limit emissions of Opacity <= 15 percent opacity during the lugging mode. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), Minn. R. 7011.2305]
COMG 8	35610	The Permittee must limit emissions of Opacity <= 50 percent opacity during the peaks in either the acceleration or lugging modes. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), Minn. R. 7011.2305]

SI Id	Sequence	Requirement
COMG 8	35680	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. IIII as follows: 40 CFR 60.4200(a)(2)(i); 40 CFR 60.4205(b); 40 CFR 60.4206; 40 CFR 60.4207(b); 40 CFR 60.4208(a); 40 CFR 60.4209(a); 40 CFR 60.4211(a); 40 CFR 60.4211(c); 40 CFR 60.4211(f)(1); 40 CFR 60.4211(f)(2)(i); 40 CFR 60.4211(f)(3); 40 CFR 60.4214(b); 40 CFR 60.4214(d); 40 CFR 60.4214(g)-(j); 40 CFR 60.4218; 40 CFR 60.4219; and 40 CFR pt. 60, subp. IIII, Table 8. A copy of 40 CFR pt. 60, subp. IIII is included in Appendix G. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR 63.6590(c), 40 CFR pt. 60, subp. IIII, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.2305]
COMG 8	35685	If the emergency stationary engine operates for the purposes specified in 40 CFR 60.4211(f)(3)(i), the Permittee must submit an annual report for each calendar year no later than March 31 of the following calendar year. The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emission Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (https://cdx.epa.gov/). However, if the reporting form not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in 40 CFR 60.4 and emailed to the MPCA as directed in Section 2 of this permit for other compliance submittals. Beginning on February 26, 2025, submit the annual report electronically according to 40 CFR 60.4214(g). [40 CFR 60.4214(d), 40 CFR 60.4214(g), Minn. R. 7011.2305]

SI Id	Sequence	Requirement
COMG 8	35700	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. A as follows: 40 CFR 60.1; 40 CFR 60.2; 40 CFR 60.3; 40 CFR 60.4; 40 CFR 60.5; 40 CFR 60.6; 40 CFR 60.7; 40 CFR 60.8; 40 CFR 60.9; 40 CFR 60.10; 40 CFR 60.12; 40 CFR 60.13; 40 CFR 60.14; 40 CFR 60.15; 40 CFR 60.16; 40 CFR 60.17; and 40 CFR 60.19; A copy of 40 CFR pt. 60, subp. A is included in Appendix F. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. A, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.0050, subp. 1(A), Minn. R. 7017.1010 & 7017.2015, subp. 2, Minn. R. 7019.0100]
COMG 8	35730	The Permittee shall submit a notification of anticipated date for conducting opacity observations: Due 30 calendar days before Opacity Observation Date. [40 CFR 60.7(a)(6), Minn. R. 7019.0100, subp. 1]
COMG 8	35740	The Permittee shall submit notification of the date construction of replacement began: Due 60 calendar days before Date of Construction or Replacement (or as soon as practicable). Submit the information specified in 40 CFR 60.15(d)(1) through (7). The notification shall be submitted electronically on Form CS-02. [40 CFR 60.15(d), Minn. R. 7011.0050]
EQUI 26	2	Fuel Usage <= 28,838 gallons per month 12-month rolling average. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 26	3	The Permittee must limit emissions of Nitrogen Oxides <= 0.144 pounds per million Btu heat input. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 26	7	Sulfur Content of Fuel <= 0.0015 percent by weight. [Minn. R. 7005.0100, subp. 35a]
EQUI 26	9	Daily Recordkeeping - fuel usage: On each day of operation, the Permittee must calculate, record, and maintain daily totals of number of gallons of permitted fuel of EQUI 26, based on written usage logs or flowmeters. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major modification under 40 CFR 52.21(b)(2) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 26	10	Monthly Recordkeeping - fuel usage: By the last day of the month, the Permittee must calculate and record the following: 1) The total fuel usage in gallons for EQUI 26 for the previous calendar month using the daily fuel usage records. 2) The 12-month rolling average fuel usage for the previous 12-month period by summing the monthly fuel usage for the previous 12 months. [Minn. R. 7007.0800, subp. 5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
EQUI 26	11	Fuel Sulfur Content Monitoring: The permittee shall determine fuel sulfur content according to one of the following methods for all fuel oil combusted in all engines: (1) Test each shipment of diesel fuel according to current ASTM or EPA method(s) and keep records of lab analyses of sulfur content; or (2) Obtain and maintain a fuel supplier certification for each shipment of diesel fuel, showing that the sulfur content does not exceed the appropriate limit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 26	9440	40 CFR pt. 63, subp. JJJJJJ is an Applicable Requirement under Minn. R. 7007.0100, subp. 7(D); however, this standard is not delegated to MPCA. [Minn. R. 7007.0100, subp. 7(D)]
EQUI 26	9490	The Permittee must comply with all applicable requirements of 40 CFR pt. 63, subp. JJJJJJ as follows: 40 CFR 63.11193; 40 CFR 63.11194(a)(1); 40 CFR 63.11194(b); 40 CFR 63.11196(a); 40 CFR 63.11200(c); 40 CFR 63.11200(g); 40 CFR 63.11201(b); 40 CFR 63.11201(d); 40 CFR 63.11205(a); 40 CFR 63.11210(c); 40 CFR 63.11210(i) 40 CFR 63.11214(b); 40 CFR 63.11214(c); 40 CFR 63.11223(a)-(b); 40 CFR 63.11223(f)
		40 CFR 63.11225(a)(1)-(2); 40 CFR 63.11225(a)(4)(i); 40 CFR 63.11225(a)(4)(iii); 40 CFR 63.11225(a)(4)(vi); 40 CFR 63.11225(b); 40 CFR 63.11225(c)(1); 40 CFR 63.11225(c)(2)(i); 40 CFR 63.11225(c)(2)(iii); 40 CFR 63.11225(c)(4)-(6); 40 CFR 63.11225(d); 40 CFR 63.11225(g); 40 CFR 63.11235; 40 CFR 63.11237; and 40 CFR 63, subp. JJJJJJ, Table 2, item 14. A copy of 40 CFR pt. 63, subp. JJJJJJ is included in Appendix E. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 63, subp. JJJJJJ, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.7055]
EQUI 26	9500	The Permittee must prepare by March 1, and submit to the Administrator upon request, a 5-year compliance certification report for the previous 5-year period containing the information described in 40 CFR 63.11225(b)(1) and (2). The Permittee must submit the compliance report by March 15 if the Permittee had any instance described in 40 CFR 63.11225(b)(3). [40 CFR 63.11225(b), Minn. R. 7011.7055]

SI Id	Sequence	Requirement
EQUI 26	27820	The Permittee must comply with all applicable requirements of 40 CFR pt. 63, subp. A as follows: 40 CFR 63.1(a); 40 CFR 63.1(b)(1); 40 CFR 63.1(b)(3); 40 CFR 63.1(c)(1)-(2); 40 CFR 63.1(c)(5); 40 CFR 63.1(c)(6); 40 CFR 63.1(e); 40 CFR 63.2; 40 CFR 63.3; 40 CFR 63.4(a)-(c); 40 CFR 63.6(a)(1)-(2); 40 CFR 63.6(b)(1)-(5); 40 CFR 63.6(b)(7); 40 CFR 63.6(c)(1)-(2);
		40 CFR 63.6(c)(5); 40 CFR 63.6(g); 40 CFR 63.6(h)(2)-(9); 40 CFR 63.6(i)(1)-(6); 40 CFR 63.6(i)(8)-(9); 40 CFR 63.6(i)(11); 40 CFR 63.6(j); 40 CFR 63.7(a)(2); 40 CFR 63.7(a)(2)(ix); 40 CFR 63.7(a)(3)-(4); 40 CFR 63.7(b)-(d); 40 CFR 63.7(e)(2); 40 CFR 63.7(e)(3); 40 CFR 63.7(f)-(h); 40 CFR 63.8(b)(1)-(3); 40 CFR 63.8(c)(1)(ii); 40 CFR 63.8(c)(2)-(8); 40 CFR 63.8(d)-(g); 40 CFR 63.9(b)(1)-(2); 40 CFR 63.9(b)(4);

SI Id	Sequence	Requirement
		40 CFR 63.9(b)(5); 40 CFR 63.9(c)-(k); 40 CFR 63.10(a)(5)-(7); 40 CFR 63.10(b)(1); 40 CFR 63.10(b)(2)(i)-(v); 40 CFR 63.10(b)(2)(vi)-(viii); 40 CFR 63.10(b)(2)(ix); 40 CFR 63.10(b)(2)(x); 40 CFR 63.10(b)(2)(xi); 40 CFR 63.10(b)(2)(xii); 40 CFR 63.10(b)(2)(xiii); 40 CFR 63.10(b)(2)(xiv); 40 CFR 63.10(b)(3); 40 CFR 63.10(c); 40 CFR 63.10(d)(1)-(5); 40 CFR 63.10(e)-(f); 40 CFR 63.11(a)-(e); 40 CFR 63.12; 40 CFR 63.13; 40 CFR 63.14; 40 CFR 63.15(a)-(b); and 40 CFR 63.16. A copy of 40 CFR pt. 63, subp. A is included in Appendix B. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 63, subp. A, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.0050, subp. 1(B), Minn. R. 7017.1010 & 7017.2015, subp. 3, Minn. R. 7019.0100]
EQUI 85	3520	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
EQUI 85	3535	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.0015 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
EQUI 85	3540	Fuel type: Propane only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 85	3550	Hours of Operation: The Permittee shall maintain documentation on site that the unit is an emergency generator by design that qualifies under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995, that allows calculation of potential emissions based on 500 operating hours per year. [Minn. R. 7007.0800, subps. 4-5]
EQUI 85	3560	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5]
EQUI 85	3565	Fuel Supplier Certification: The Permittee shall obtain and maintain a fuel supplier certification for each shipment of diesel fuel oil, certifying that the sulfur content does not exceed 0.0015 percent by weight. [Minn. R. 7007.0800, subps. 4-5]
EQUI 85	3870	The Permittee must limit HC+NOx <= 10.0 grams per horsepower-hour. [40 CFR 60.4233(e), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7011.2310]
EQUI 85	3880	The Permittee must limit Carbon Monoxide <= 387 grams per horsepower-hour. [40 CFR 60.4233(e), 40 CFR pt. 60, subp. JJJJ(Table 1), Minn. R. 7011.2310]

SI Id	Sequence	Requirement
EQUI 85	3890	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. JJJJ as follows: 40 CFR 60.4230(a)(4)(iv); 40 CFR 60.4230(a)(6); 40 CFR 60.4233(d); as it pertains to stationary SI ICE meeting the criteria in the first sentence of this item; 40 CFR 60.4234; 40 CFR 60.4237(c); 40 CFR 60.4243(a)(1); 40 CFR 60.4243(b)(1); 40 CFR 60.4243(d)(1); 40 CFR 60.4243(d)(2); 40 CFR 60.4243(d)(2)(i); 40 CFR 60.4243(d)(3); 40 CFR 60.4243(e); 40 CFR 60.4245(a)(1)-(a)(3); 40 CFR 60.4245(b); 40 CFR 60.4245(g)-(j); 40 CFR 60.4246; 40 CFR 60.4248; and 40 CFR pt. 60, subp JJJJ Table 1. A copy of 40 CFR pt. 60, subp. JJJJ is included in Appendix H. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. JJJJ, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.2310]
EQUI 85	19530	EQUI 85 is a new affected source as defined under 40 CFR pt. 63, subp. ZZZZ, and the facility is an area source as defined at 40 CFR 63.2. The Permittee shall meet the requirements of 40 CFR pt. 63, subp. ZZZZ by meeting the requirements of 40 CFR pt. 60, subp. JJJJ. No further requirements of 40 CFR pt. 63, subp. ZZZZ apply to EQUI 85. [40 CFR 63.6590(c), Minn. R. 7011.8150]
EQUI 85	28220	If the emergency stationary engine operates for the purposes specified in 40 CFR 60.4243(d)(3)(i), the Permittee must submit an annual report for each calendar year no later than March 31 of the following calendar year. The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emission Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange CDX) (https://cdx.epa.gov/). However, if the reporting form is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in 40 CFR 60.4 and emailed to the MPCA as directed in Section 2 of this permit for other compliance submittals. Beginning on February 26, 2025, submit the annual report electronically according to 40 CFR 60.4214(g). [40 CFR 60.4245(e)(2), 40 CFR 60.4245(e)(3), 40 CFR 60.4245(g), Minn. R. 7011.2310, g]

SI Id	Sequence	Requirement
EQUI 85	35700	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. A as follows: 40 CFR 60.1(a)-(c); 40 CFR 60.2; 40 CFR 60.3; 40 CFR 60.4; 40 CFR 60.5; 40 CFR 60.6(a)-(b); 40 CFR 60.7; 40 CFR 60.9; 40 CFR 60.10; 40 CFR 60.11; 40 CFR 60.12; 40 CFR 60.14; 40 CFR 60.15; 40 CFR 60.17; and 40 CFR 60.19. A copy of 40 CFR pt. 60, subp. A is included in Appendix F. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. A, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.0050, subp. 1(A), Minn. R. 7017.1010 & 7017.2015, subp. 2, Minn. R. 7019.0100]
EQUI 87	1	The Permittee must comply with all applicable requirements of 40 CFR pt. 63, subp. A as follows: 40 CFR 63.1(a), (b)(1), (b)(3), (c)(1), (c)(2), (c)(5), (c)(6), (e); 40 CFR 63.2; 40 CFR 63.3; 40 CFR 63.4(a)-(c); 40 CFR 63.5, except notifications are not required; 40 CFR 63.6(a)(1)-(2), (b)(1)-(5), (f), (g), (i)(1)-(14), (j); 40 CFR 63.7(a)(2), (a)(2)(ix), (a)(3)-(4); (b), (c), (d), (e)(2)-(3), (f), (g), (h); 40 CFR 63.8(a)(1)-(2), (a)(4), (b)(1), 40 CFR 63.9(b)(1)-(2), (b)(4)-(5), (c), (d), (e); 40 CFR 63.9(g), except no opacity standards; 40 CFR 63.9(h), except no opacity standards; 40 CFR 63.9(i), (j), (k); 40 CFR 63.10(a), (b)(1), (b)(2)(iii), (b)(2)(xii)-(xiv), (b)(3); 40 CFR 63.10(d)(1)-(2), (d)(4), (f); 40 CFR 63.12; 40 CFR 63.13; 40 CFR 63.14; 40 CFR 63.15(a); and 40 CFR 63.15(b). A copy of 40 CFR pt. 63, subp. A is included in Appendix B. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR 63.11130, 40 CFR pt. 63, subp. A, CAAA of 1990.0100, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.0050, subp. 1(B), Minn. R. 7011.7185, Minn. R. 7017.1010 & 7017.2025]

SI Id	Sequence	Requirement
EQUI 87	2	The Permittee must, at all times, operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.11115(a), Minn. R. 7011.7185]
EQUI 87	3	The Permittee must not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, the following: 1. Minimize gasoline spills; 2. Clean up spills as expeditiously as practicable; 3. Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use; 4. Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation
EQUI 87	4	The Permittee is not required to submit notifications or reports as specified in 40 CFR 63.11125, 63.11126 or 40 CFR pt. 63, subp. A, but the Permittee must have records available within 24 hours of a request by the Administrator to document the gasoline throughput. [40 CFR 63.11116(b), Minn. R. 7011.7185]

Attachment 3 – Gasoline SDS

Material Safety Data Sheet

MSDS ID NO.: 0127MAR019
Revision date: 01/30/2004

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product name: MAPLLC Regular Unleaded Gasoline
Synonyms: Conventional Regular Unleaded Gasoline
Chemical Family: Petroleum Hydrocarbon

Supplier:
Marathon Ashland Petroleum LLC
539 SOUTH MAIN STREET
FINDLAY OH 45840

Other Information: 419-421-3070
Emergency telephone number: 877-627-5463

2. COMPOSITION/INFORMATION ON INGREDIENTS

Gasoline is a complex combination of hydrocarbons consisting of paraffins, cycloparaffins, aromatic and olefinic hydrocarbons having carbon numbers predominantly greater than C3 and boiling in the range of 85-500 F. Can contain small amounts of dye and other additives (>0.02%) which are not considered hazardous at the concentrations used.

Product Information

Name	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA - Vacated PELs - Time Weighted Ave	Other:
MAPLLC Regular Unleaded Gasoline	86290-81-5	100	300 ppm TWA; 500 ppm STEL		

Component Information

Name	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA - Vacated PELs - Time Weighted Ave	Other:
Saturated Hydrocarbons	Mixture	55-80			
Aromatic Hydrocarbons	Mixture	20-40			
Toluene	108-88-3	3-15	= 50 ppm TWA skin - potential for cutaneous absorption	= 100 ppm TWA = 150 ppm STEL = 375 mg/m³ TWA = 560 mg/m³ STEL	
Xylene	1330-20-7	5-15	= 100 ppm TWA = 150 ppm STEL	= 100 ppm TWA = 150 ppm STEL = 435 mg/m³ TWA = 655 mg/m³ STEL	
Unsaturated Hydrocarbons	Mixture	1-15			
1,2,4 Trimethylbenzene	95-63-6	2-5	= 25 ppm TWA	= 125 mg/m³ TWA = 25 ppm TWA	
Benzene	71-43-2	0.5-3.5	= 0.5 ppm TWA = 2.5 ppm STEL skin - potential for cutaneous absorption	= 10 ppm TWA unless specified in 1910.1028 = 25 ppm Ceiling unless specified in 1910.1028 = 50 ppm STEL 10 min, unless specified in 1910.1028	OSHA Exposure Limit as specified in 1910.1028: =1.0 ppm TWA = 5 ppm STEL = 0.5 ppm Action Level
Ethyl Benzene	100-41-4	1-3	= 100 ppm TWA = 125 ppm STEL	= 100 ppm TWA = 125 ppm STEL = 435 mg/m³ TWA = 545 mg/m³ STEL	

Notes: The manufacturer has voluntarily elected to reflect exposure limits contained in OSHA's 1989 air contaminants standard in its MSDS's, even though certain of those exposure limits were vacated in 1992.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

GASOLINE IS A CLEAR OR COLORED LIQUID WITH A STRONG HYDROCARBON ODOR. IT IS A VOLATILE AND EXTREMELY FLAMMABLE LIQUID THAT MAY CAUSE FLASH FIRES. KEEP AWAY FROM HEAT, SPARKS AND OPEN FLAME. THIS PRODUCT CONTAINS BENZENE WHICH MAY CAUSE CANCER OR BE TOXIC TO BLOOD-FORMING ORGANS. NEVER SIPHON THIS PRODUCT BY MOUTH. IF SWALLOWED, THIS PRODUCT MAY GET SUCKED INTO THE LUNGS (ASPIRATED) AND CAUSE LUNG DAMAGE OR EVEN DEATH.

OSHA WARNING LABEL:

DANGER!
EXTREMELY FLAMMABLE.
ASPIRATION (INADVERTENT SUCTION) OF LIQUID INTO THE LUNGS CAN PRODUCE CHEMICAL PNEUMONIA OR EVEN DEATH.
CONTAINS BENZENE WHICH MAY CAUSE CANCER OR BE TOXIC TO BLOOD-FORMING ORGANS.

CONSUMER WARNING LABEL:

GASOLINE HEALTH AND SAFETY WARNING STATEMENT:

EXTREMELY FLAMMABLE, VAPORS MAY EXPLODE.
HARMFUL OR FATAL IF SWALLOWED.
LONG TERM EXPOSURE TO VAPORS HAS CAUSED CANCER IN LABORATORY ANIMALS.
KEEP FACE AWAY FROM NOZZLE WHILE FILLING.
KEEP NOZZLE AWAY FROM EYES AND SKIN.
NEVER SIPHON BY MOUTH.
DON'T OVERFILL TANK.
FOR USE AS A MOTOR FUEL ONLY.

STATIC ELECTRICITY, SPARK EXPLOSION, ELECTRONIC DEVICES WARNING:

DO NOT GET BACK IN YOUR VEHICLE WHILE REFUELING.
RE-ENTRY COULD CAUSE STATIC ELECTRICITY BUILD UP.
USE APPROVED CONTAINER.
PUT CONTAINER ON GROUND (NEVER ON OR IN A VEHICLE).
KEEP NOZZLE IN CONTACT WITH CONTAINER.
KEEP CELLULAR PHONES OR OTHER DEVICES IN YOUR VEHICLE DURING REFUELING.

Inhalation:

Exposure to vapor concentrations of gasoline exceeding 1,000 ppm can cause respiratory irritation, headache, dizziness, nausea and loss of coordination. Higher concentrations may cause loss of consciousness, cardiac sensitization, coma and death resulting from respiratory failure.
Intentional overexposure to high concentrations of product vapors (such as huffing) can cause nervous system and brain damage, convulsions and sudden death from cardiac arrest.

Ingestion:

Ingestion may result in nausea, vomiting, diarrhea and restlessness. Aspiration (inadvertent suction) of liquid into the lungs must be avoided as even small quantities in the lungs can produce chemical pneumonitis, pulmonary edema/hemorrhage and even death.

Skin contact:

Prolonged and repeated liquid contact can cause defatting and drying of the skin and can lead to irritation and/or dermatitis.

Eye contact:

Eye irritation may result from contact with the liquid or exposure to the vapor at concentrations above the TLV.

Carcinogenic Evaluation:

Product Information

Name	IARC:	NTP:	ACGIH - Carcinogens:	OSHA - Select Carcinogens:
MAPLLC Regular Unleaded Gasoline 86290-81-5	A2 - Possible Human Carcinogen		A3 - Animal Carcinogen	

Notes:

The International Agency for Research on Cancer (IARC) has determined that there is inadequate evidence for the carcinogenicity of gasoline in humans. IARC determined that limited evidence of carcinogenicity in animals exists. IARC's overall evaluation of gasoline, in spite of limited carcinogenicity evidence, has resulted in the IARC designation of gasoline as possibly carcinogenic to humans (Group 2B) because gasoline contains benzene.

IARC has determined that there is inadequate evidence for the carcinogenicity of gasoline engine exhaust in humans or animals. However, IARC's overall evaluation on gasoline engine exhaust, in spite of the absence of carcinogenicity data, has resulted in the IARC designation of gasoline engine exhaust as possibly carcinogenic to humans (Group 2B) because of the presence of certain engine exhaust components.

Component Information

Name	IARC:	NTP:	ACGIH - Carcinogens:	OSHA - Select Carcinogens:
Toluene 108-88-3			A4 - Not Classifiable as a Human Carcinogen	
Xylene 1330-20-7			A4 - Not Classifiable as a Human Carcinogen	
Benzene 71-43-2	Supplement 7, 1987; Monograph 29, 1982	Known Carcinogen Reasonably Anticipated To Be A Carcinogen	A1 - Confirmed Human Carcinogen	Present
Ethyl Benzene 100-41-4	Monograph 77, 2000		A3 - Animal Carcinogen	

Notes:

The International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), and OSHA have determined that there is sufficient evidence for the carcinogenicity of benzene in humans (Group 1A).

The International Agency for Research on Cancer (IARC) has concluded that ethyl benzene is possibly carcinogenic to humans (Group 2B).

4. FIRST AID MEASURES

Inhalation: If affected, move person to fresh air. If breathing is difficult, administer oxygen. If not breathing or if no heartbeat, give artificial respiration or cardiopulmonary resuscitation (CPR). Immediately call a physician. If symptoms or irritation occur with any exposure, call a physician.

Skin contact: Wash with soap and large amounts of water. Remove contaminated clothing. If symptoms or irritation occur, call a physician.

Ingestion: If swallowed, do not induce vomiting and do not give liquids. Immediately call a physician.

Eye contact: Flush eyes with large amounts of tepid water for at least 15 minutes. If symptoms or irritation occur, call a physician.

Medical conditions aggravated by exposure: Pre-existing eye, skin, respiratory, liver and/or kidney disorders may be aggravated by exposure to components of this product.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

For small fires, Class B fire extinguishing media such as CO2, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFT/ATC) can be used. Fire fighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

Specific hazards:

This product has been determined to be a flammable liquid per the OSHA Hazard Communication Standard, and should be handled accordingly. Vapors may travel along the ground or be moved by ventilation and ignited by many sources such as pilot lights, sparks, electric motors, static discharge, or other ignition sources at locations distant from material handling. Flashback can occur along vapor trail. For additional fire related information, see NFPA 30 or the North American Emergency Response Guide 128.

Special protective equipment for firefighters:

Avoid using straight water streams. Water may be ineffective in extinguishing low flash point fires, but can be used to cool exposed surfaces. Avoid excessive water spray application. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Keep run-off water out of sewers and water sources.

Flash point: -50
Autoignition temperature: CA 495 F
Flammable limits in air - lower (%): 1.4
Flammable limits in air - upper (%): 7.6

NFPA rating:
Health: 1
Flammability: 3
Reactivity: 0
Other: -

HMIS classification:
Health: 1
Flammability: 3
Reactivity: 0
Special: *See Section 8 for guidance in selection of personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Eliminate all ignition sources. Advise authorities and National Response Center (800-424-8802) if substance has entered a watercourse or sewer. Notify local health and pollution control agencies, if appropriate. Contain liquid with sand or soil. Recover and return free product to proper containers. Use suitable absorbent materials such as vermiculite, sand, or clay to clean up residual liquids.

7. HANDLING AND STORAGE

Handling:

Comply with all applicable EPA, OSHA, NFPA and consistent state and local requirements. Use appropriate grounding and bonding practices. Store in properly closed containers that are appropriately labeled and in a cool well-ventilated area. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. Do not cut, drill, grind or weld on empty containers since they may contain explosive residues. Avoid skin contact. Exercise good personal hygiene including removal of soiled clothing and prompt washing with soap and water.

For use as a motor fuel only. Product should never be used as a solvent due to its flammable and potentially toxic properties. Siphoning by mouth can result in lung aspiration which can be harmful or fatal.

Portable containers of 12 gallons (45 liters) or less should never be filled while they are in or on a motor vehicle or marine craft. Static electric discharge can ignite fuel vapors when filling non-grounded containers or vehicles on trailers. Containers should be placed on the ground. The nozzle spout must be kept in contact with the container before and during the entire filling operation. Use only approved containers. A buildup of static electricity can occur upon re-entry into a vehicle during fueling especially in cold or dry climate conditions. The charge is generated by the action of dissimilar fabrics (i.e., clothing and upholstery) rubbing across each other as a person enters/exits the vehicle. A flash fire can result from this discharge if sufficient flammable vapors are present. Therefore, do not get back in your vehicle while refueling. Cellular phones and other electronic devices may have the potential to emit electrical charges (sparks). Sparks in potentially explosive atmospheres (including fueling areas such as gas stations) could cause an explosion if sufficient flammable vapors are present. Therefore, turn off cellular phones and other electronic devices when working in potentially explosive atmospheres or keep devices inside your vehicle during refueling.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT

Engineering measures:	Local or general exhaust required in an enclosed area or with inadequate ventilation.
Respiratory protection:	Approved organic vapor chemical cartridge or supplied air respirators should be worn for exposures to any components exceeding the TLV or STEL. Observe respirator protection factor criteria cited in ANSI Z88.2. Self-contained breathing apparatus should be used for fire fighting.
Skin and body protection:	Use nitrile rubber, viton or PVA gloves for repeated or prolonged skin exposure.
Eye protection:	No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields.
Hygiene measures:	No special protective clothing is normally required. Select protective clothing depending on industrial operations. Use mechanical ventilation equipment that is explosion-proof.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance:	Clear Or Colored Liquid
Physical state (Solid/Liquid/Gas):	Liquid
Substance type (Pure/Mixture):	Mixture
Color:	Clear or Colored
Odor:	Strong Hydrocarbon
Molecular weight:	100
pH:	Neutral
Boiling point/range:	90-437 F
Melting point/range:	Not determined.
Decomposition temperature:	Not applicable.
Specific gravity:	0.70-0.77
Density:	5.9-6.3 lbs/gal
Bulk density:	No data available.
Vapor density:	3-4
Vapor pressure:	403-776 mm HG @ 100 F
Evaporation rate:	No data available.

Solubility:	Negligible
Solubility in other solvents:	No data available.
Partition coefficient (n-octanol/water):	2.13-4.5
VOC content(%):	100%
Viscosity:	No data available.

10. STABILITY AND REACTIVITY

Stability:	The material is stable at 70 F, 760 mm pressure.
Polymerization:	Will not occur.
Hazardous decomposition products:	Combustion produces carbon monoxide, aldehydes, aromatic and other hydrocarbons.
Materials to avoid:	Strong oxidizers such as nitrates, chlorates, peroxides.
Conditions to avoid:	Excessive heat, sources of ignition, open flame.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Product Information

Name	CAS Number	Inhalation:	Dermal:	Oral:
MAPLLC Regular Unleaded Gasoline	86290-81-5	>10,000 ppm [Dog]	>5 ml/kg [Rabbit]	>14 ml/kg [Rat]

Lifetime inhalation studies with full vaporized gasoline (67, 292 and 2,056 ppm) produced kidney damage and kidney tumors in male rats but not in female rats or male and female mice. Female mice developed a slightly higher incidence of liver tumors compared to controls at the highest exposure level. Results from separate studies with compounds producing similar effects, i.e., 1,4-dichlorobenzene and perchloroethylene, have shown that the kidney damage and kidney tumors develop via the formation of alpha-2u-globulin, a mechanism unique to the male rat. Humans do not form alpha-2u-globulin, therefore, tumors resulting from this mechanism are not relevant in humans. The biologic significance of the mouse liver tumor response with regard to human health risk is questionable.

Summary of health effect information on gasoline engine exhaust:

Chronic inhalation studies of gasoline engine exhaust in mice, rats and hamsters did not produce any carcinogenic effects. Condensates/extracts of gasoline engine exhaust produced an increase in tumors compared to controls when testing by skin painting, subcutaneous injection, intratracheal instillation or implantation into the lungs. Combustion of gasoline produces gases and particulates which include carbon monoxide, carbon dioxide, oxides of nitrogen and/or sulfur and hydrocarbons. Significant exposure to carbon monoxide vapors decreases the oxygen carrying capacity of the blood and may cause tissue hypoxia via formation of carboxyhemoglobin. Overexposure to CO can cause headache, nausea, nervous system depression, coma and death.

Summary of health effect data on gasoline components:

This product may contain benzene at a level of >0.1%. Repeated or prolonged exposure to benzene at concentrations in excess of the TLV may cause serious injury to blood-forming organs. Significant chronic exposure to benzene vapor has been reported to produce various blood disorders ranging from anemia to certain forms of leukemia (cancer) in man. Benzene produced tumors in rats and mice in lifetime chronic toxicity studies, but the response has not been consistent across species, strain, sex or route of exposure. Animal studies on benzene have demonstrated immune toxicity, chromosomal aberrations, testicular effects and alterations in reproductive cycles and embryo/fetotoxicity, but not teratogenicity.

The product contains >1.0% ethyl benzene (EB). Rats and mice exposed to 750 ppm EB for 6 hours/day, 5 days/week for two years developed kidney tumors in male and femmale rats and lung tumors in male mice and liver tumor in female mice.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects:

Product can cause fouling of shoreline and may be harmful to aquatic life in low concentrations. This product does not concentrate or accumulate in the food chain.

The aquatic toxicity of gasoline is as follows:

FreshwaterToxicity:
LD50 is 8 ppm at 96 hours in bluegill.
TLM is 90 ppm at 24 hours in juvenile shad.

SaltwaterToxicity:
LC50 is 2 ppm at 96 hours in mullet.
LD50 is 1.5 ppm at 96 hours in grass shrimp.
LC50 is 2 ppm at 96 hours in menhaden.
TLM is 91 ppm at 24 hours in juvenile shad.

13. DISPOSAL CONSIDERATIONS

Cleanup Considerations:

This product as produced is not specifically listed as an EPA RCRA hazardous waste according to federal regulations (40 CFR 261). However, when discarded or disposed of, it may meet the criteria of an "ignitable" hazardous waste (D001). This product could also contain benzene at >0.5 ppm and could exhibit the characteristics of "toxicity" (D018) as determined by the toxicity characteristic leaching procedure (TCLP). This material could become a hazardous waste if mixed or contaminated with a hazardous waste or other substance(s). It is the responsibility of the user to determine if disposal material is hazardous according to federal, state and local regulations.

14. TRANSPORT INFORMATION

49 CFR 172.101:

DOT:

Transport Information: This material when transported via US commerce would be regulated by DOT Regulations.

Proper shipping name:	Gasoline
UN/Identification No:	UN 1203
Hazard Class:	3
Packing group:	II
DOT reportable quantity (lbs):	Not applicable.

TDG (Canada):

Proper shipping name:	Gasoline
UN/Identification No:	UN 1203
Hazard Class:	3
Packing group:	II
Regulated substances:	Not applicable.

15. REGULATORY INFORMATION

Federal Regulatory Information:

US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

OSHA Hazard Communication Standard: This product has been evaluated and determined to be hazardous as defined in OSHA's Hazard Communication Standard.

EPA Superfund Amendment & Reauthorization Act (SARA):

SARA Section 302: This product contains the following component(s) that have been listed on EPA's Extremely Hazardous Substance (EHS) List:

Name	CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs
Saturated Hydrocarbons	NA
Aromatic Hydrocarbons	NA
Toluene	NA
Xylene	NA
Unsaturated Hydrocarbons	NA
1,2,4 Trimethylbenzene	NA
Benzene	NA
Ethyl Benzene	NA

SARA Section 304: This product contains the following component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

Name	CERCLA/SARA - Hazardous Substances and their Reportable Quantities
Saturated Hydrocarbons	NA
Aromatic Hydrocarbons	NA
Toluene	= 0.454 kg final RQ = 1 lb final RQ = 10 lb final RQ = 100 lb final RQ = 1000 lb final RQ = 4.54 kg final RQ = 45.4 kg final RQ = 454 kg final RQ
Xylene	= 100 lb final RQ = 45.4 kg final RQ
Unsaturated Hydrocarbons	NA
1,2,4 Trimethylbenzene	NA
Benzene	= 0.454 kg final RQ = 0.454 kg statutory RQ = 1 lb final RQ = 1 lb statutory RQ = 10 lb final RQ = 10 lb final RQ receives an adjustable RQ of 10 lbs based on potential carcinogenicity in August 14, 1989 final rule = 100 lb final RQ = 4.54 kg final RQ = 4.54 kg final RQ receives an adjustable RQ of 10 lbs based on potential carcinogenicity in August 14, 1989 final rule = 45.4 kg final RQ
Ethyl Benzene	= 100 lb final RQ = 1000 lb final RQ = 45.4 kg final RQ = 454 kg final RQ

SARA Section 311/312: The following EPA hazard categories apply to this product:

Acute Health Hazard.
Chronic Health Hazard.
Fire Hazard.

SARA Section 313: This product contains the following component(s) that may be subject to reporting on the Toxic Release Inventory (TRI) From R:

Name	CERCLA/SARA 313 Emission reporting:
Saturated Hydrocarbons	None
Aromatic Hydrocarbons	None
Toluene	= 1.0 percent de minimis concentration
Xylene	= 1.0 percent de minimis concentration
Unsaturated Hydrocarbons	None
1,2,4 Trimethylbenzene	= 1.0 percent de minimis concentration
Benzene	= 0.1 percent de minimis concentration
Ethyl Benzene	= 0.1 percent de minimis concentration

State and Community Right-To-Know Regulations:
The following component(s) of this material are identified on the regulatory lists below:

Saturated Hydrocarbons

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed.
Pennsylvania Right-To-Know:	Not Listed.
Massachusetts Right-To Know:	Not Listed.
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Not Listed
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Aromatic Hydrocarbons

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed.
Pennsylvania Right-To-Know:	Not Listed.
Massachusetts Right-To Know:	Not Listed.
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Not Listed
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Toluene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	developmental toxicity; initial date 1/1/91

New Jersey Right-To-Know:	sn 1866
Pennsylvania Right-To-Know:	environmental hazard
Massachusetts Right-To Know:	Present
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Toxic, Flammable; skin
Michigan critical materials register list:	Annual usage threshold = 100 pounds
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	flammable - third degree
New Jersey - Environmental Hazardous Substances List:	SN 1866
Illinois - Toxic Air Contaminants	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	= 1 lb Land/Water RQ = 1,000 lbs Air RQ

Xylene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	sn 2014
Pennsylvania Right-To-Know:	environmental hazard
Massachusetts Right-To Know:	Present
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Toxic, Flammable
Michigan critical materials register list:	Annual usage threshold = 100 pounds (all isomers)
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	flammable - third degree
New Jersey - Environmental Hazardous Substances List:	SN 2014
Illinois - Toxic Air Contaminants	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	= 1 lb Land/Water RQ = 1,000 lbs Air RQ

Unsaturated Hydrocarbons

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed.
Pennsylvania Right-To-Know:	Not Listed.
Massachusetts Right-To Know:	Not Listed.
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Not Listed
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants	Not Listed

New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

1,2,4 Trimethylbenzene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	sn 1929 sn 2716
Pennsylvania Right-To-Know:	[present] environmental hazard
Massachusetts Right-To Know:	Present
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Toxic
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	SN 2716
Illinois - Toxic Air Contaminants	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Benzene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	carcinogen; initial date 2/27/87 developmental toxicity; initial date 12/26/97 male reproductive toxicity; initial date 12/26/97
New Jersey Right-To-Know:	sn 0197
Pennsylvania Right-To-Know:	environmental hazard; special hazardous substance
Massachusetts Right-To Know:	Carcinogen; Extraordinarily hazardous
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Toxic, Flammable, Carcinogen; skin
Michigan critical materials register list:	Annual usage threshold = 100 pounds
Massachusetts Extraordinarily Hazardous Substances:	carcinogen; extraordinarily hazardous
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	[present]
New Jersey - Special Hazardous Substances:	carcinogen; flammable - third degree; mutagen
New Jersey - Environmental Hazardous Substances List:	SN 0197
Illinois - Toxic Air Contaminants	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	= 1 lb Land/Water RQ = 10 lbs Air RQ

Ethyl Benzene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	sn 0851
Pennsylvania Right-To-Know:	environmental hazard
Massachusetts Right-To Know:	Present
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Toxic, Flammable
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed

California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	flammable - third degree
New Jersey - Environmental Hazardous Substances List:	SN 0851
Illinois - Toxic Air Contaminants	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	= 1 lb Land/Water RQ = 1,000 lbs Air RQ

Canadian Regulatory Information:

Canada DSL/NDSL Inventory: This product and/or its components are listed either on the Domestic Substances List (DSL) or the Non Domestic Substance List (NDSL).

Name	Canada - WHMIS: Classifications of Substances:	Canada - WHMIS: Ingredient Disclosure:
Toluene	B2; D2A	1% (English Item 1578, French Item 1622)
Xylene	B2; D2A; D2B	
1,2,4 Trimethylbenzene	B3	0.1% (English Item 1640, French Item 1684) 1% (English Item 1638, French Item 1682)
Benzene	B2; D2A	0.1% (English Item 153, French Item 277)
Ethyl Benzene	B2; D2A; D2B	0.1% (English Item 697, French Item 864)

16. OTHER INFORMATION

Additional Information: No data available.

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End of Safety Data Sheet