# Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 1467, PSDTX1090M1, and N284

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant’s property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

# Air Contaminants Data

| **Emission Point No. (1)** | **Source Name (2)** | **Air Contaminant Name (3)** | **Emission Rates** | |
| --- | --- | --- | --- | --- |
| **lbs/hour** | **TPY (4)** |
| SC-7 | Mitsubishi M501 GAC | NOx | 25.2 | 120.58 |
| CO | 18.4 | 237.02 |
| VOC | 7.00 | 113.99 |
| PM | 7.00 | 30.66 |
| PM10 | 7.00 | 30.66 |
| PM2.5 | 7.00 | 30.66 |
| SO2 | 1.54 | 6.75 |
| NH3 | 18.7 | 81.91 |
| H2SO4 | 1.41 | 6.18 |
| HAPs | 1.40 | 6.33 |
| SC-7 | Mitsubishi M501 GAC (MSS) | NOx | 58.50 | -- |
| CO | 555.67 | -- |
| VOC | 312.92 | -- |
| HAPs | 2.09 | -- |
| FIRE-2 | Emergency Diesel Firewater Pump Engine | NOx | 0.60 | 0.028 |
| CO | 0.13 | 0.007 |
| VOC | 0.05 | 0.003 |
| PM | 0.03 | 0.002 |
| PM10 | 0.03 | 0.002 |
| PM2.5 | 0.03 | 0.002 |
| SO2 | <0.01 | <0.01 |
| HAPs | <0.01 | <0.01 |
| LH-1 | Forced Draft Line Heater | NOx | 0.118 | 0.515 |
| CO | 0.145 | 0.635 |
| VOC | 0.031 | 0.137 |
| PM | 0.019 | 0.083 |
| PM10 | 0.019 | 0.083 |
| PM2.5 | 0.019 | 0.083 |
| SO2 | <0.01 | 0.017 |
| HAPs | <0.01 | 0.032 |
| FUG-7 | Unit 7 Piping Fugitives (10) | VOC | 0.029 | 0.13 |
| **Unit 4** | | | | |
| S4-1 | Westinghouse W501-B6  69 MW Turbine  with 124 MMBtu/hr Duct Burner (11) | NOx (12) | 188 | 674 |
| CO (12) | 840 | 1,665 |
| SO2 | 17 | 12 |
| VOC | 12 | 44 |
| PM/PM10/ PM2.5 | 2 | 6 |
| S4-2 | Westinghouse W501-B6  69 MW Turbine  with 124 MMBtu/hr Duct Burner (11) | NOx (12) | 188 | 674 |
| CO (12) | 840 | 1,665 |
| SO2 | 17 | 12 |
| VOC | 12 | 44 |
| PM/PM10/ PM2.5 | 2 | 6 |
| **Unit 6 Simple Cycle** | | | | |
| SC-S6A | GE Frame 7EA  70 MW Turbine  without Duct Burner  High Load Operation (8) | NOx | 174 | - |
| CO | 233 | - |
| VOC | 8 | - |
| PM/PM10/ PM2.5 | 9 | - |
| SO2 | 14 | - |
| H2SO4 | 2 | - |
| SC-S6A | GE Frame 7EA  70 MW Turbine  without Duct Burner  Startup, Shutdown, and Low Load Operation (9)  (Limited to 2,500 hours per year) | NOx | 180 | - |
| CO | 386 | - |
| VOC | 5 | - |
| PM/PM10/ PM2.5 | 9 | - |
| SO2 | 14 | - |
| H2SO4 | 2 | - |
| SC-S6A | Annual Emissions from EPN SC-S6A (11) | NOx | - | 283 (6) |
| CO | - | 363 |
| VOC | - | 8 |
| PM/PM10/ PM2.5 | - | 29 |
| SO2 | - | 13 |
| H2SO4 | - | 2 |
| SC-S6B | GE Frame 7EA  70 MW Turbine  without Duct Burner  High Load Operation (8) | NOx | 174 | - |
| CO | 233 | - |
| VOC | 8 | - |
| PM/PM10/ PM2.5 | 9 | - |
| SO2 | 14 | - |
| H2SO4 | 2 | - |
| SC-S6B | GE Frame 7EA  70 MW Turbine  without Duct Burner  Startup, Shutdown, and Low Load Operation (9)  (Limited to 2,500 hours per year) | NOx | 180 | - |
| CO | 386 | - |
| VOC | 5 | - |
| PM/PM10/ PM2.5 | 9 | - |
| SO2 | 14 | - |
| H2SO4 | 2 | - |
| SC-S6B | Annual Emissions from EPN SC-S6B (11) | NOx | - | 283 (6) |
| CO | - | 363 |
| VOC | - | 8 |
| PM/PM10/ PM2.5 | - | 29 |
| SO2 | - | 13 |
| H2SO4 | - | 2 |
| **Unit 6 Combine Cycle** | | | | |
| CC-S6A | GE Frame 7EA  70 MW Turbine  with 285 MMBtu/hr Duct Burner  High Load Operation (8) | NOx | 42 | - |
| CO | 326 | - |
| VOC | 18 | - |
| PM/PM10/ PM2.5 | 15 | - |
| SO2 | 20 | - |
| H2SO4 | 3.8 | - |
| NH3 | 20 | - |
| CC-S6A | GE Frame 7EA  70 MW Turbine  with 285 MMBtu/hr Duct Burner  Startup, Shutdown, and Low Load Operation (9) | NOx | 180 | - |
| CO | 518 | - |
| VOC | 18 | - |
| PM/PM10/ PM2.5 | 15 | - |
| SO2 | 20 | - |
| H2SO4 | 3.8 | - |
| CC-S6A | Annual Emissions from EPN CC-S6A (11) | NOx | - | 165 (7) |
| CO | - | 456 |
| VOC | - | 25 |
| PM/PM10/ PM2.5 | - | 38 |
| SO2 | - | 16 |
| H2SO4 | - | 3.1 |
| NH3 | - | 50 |
| CC-S6B | GE Frame 7EA  70 MW Turbine  with 285 MMBtu/hr Duct Burner  High Load Operation (8) | NOx | 42 | - |
| CO | 326 | - |
| VOC | 18 | - |
| PM/PM10/ PM2.5 | 15 | - |
| SO2 | 20 | - |
| H2SO4 | 3.8 | - |
| NH3 | 20 | - |
| CC-S6B | GE Frame 7EA  70 MW Turbine  with 285 MMBtu/hr Duct Burner  Startup, Shutdown, and Low Load Operation (9) | NOx | 180 | - |
| CO | 518 | - |
| VOC | 18 | - |
| PM/PM10/ PM2.5 | 15 | - |
| SO2 | 20 | - |
| H2SO4 | 3.8 | - |
| CC-S6B | Annual Emissions from EPN CC-S6B (11) | NOx | - | 165 (7) |
| CO | - | 456 |
| VOC | - | 25 |
| PM/PM10/ PM2.5 | - | 38 |
| SO2 | - | 16 |
| H2SO4 | - | 3.1 |
| NH3 | - | 50 |
| FIRE | Firewater Pump Engine | NOx | 9.3 | 0.9 |
| CO | 2.0 | 0.2 |
| VOC | 0.8 | <0.1 |
| PM/PM10/ PM2.5 | 0.7 | <0.1 |
| SO2 | 0.1 | <0.1 |
| H2SO4 | <0.1 | <0.1 |
| OTD-1 | Diesel Storage Tank 1 | VOC | <0.1 | <0.1 |
| OTD-2 | Diesel Storage Tank 2 | VOC | <0.1 | <0.1 |
| OTD-3 | Diesel Storage Tank 3 | VOC | <0.1 | <0.1 |
| LO-1 | Gas Turbine GT-6A Lube Oil Vent | VOC | <0.1 | 0.2 |
| PM/PM10/ PM2.5 | <0.1 | 0.2 |
| LO-2 | Gas Turbine GT-6B Lube Oil Vent | VOC | <0.1 | 0.2 |
| PM/PM10/ PM2.5 | <0.1 | 0.2 |
| LO-3 | Steam Turbine Lube Oil Vent | VOC | <0.1 | 0.2 |
| PM/PM10/ PM2.5 | <0.1 | 0.2 |
| FUG-6 | Unit 6 Piping Fugitives (10) | VOC | 0.3 | 1.5 |
| H2S | <0.1 | 0.1 |
| NH3 | 0.5 | 2.2 |
| Cl2 | <0.1 | 0.4 |
| OTA-1 | Ammonia Storage Tank 1 | NH3 | <0.1 | 0.4 |
| CT-1467-4 | Cooling Tower 4 | PM | 5.94 | 26.04 |
| PM10 | 0.38 | 1.67 |
| PM2.5 | 0.01 | 0.03 |
| HOCl (5) | <0.1 | <0.1 |
| CT-1467-6 | Cooling Tower 6 | PM | 1.49 | 6.51 |
| PM10 | 0.10 | 0.42 |
| PM2.5 | 0.002 | 0.01 |
| HOCl (5) | <0.1 | <0.1 |
| FUG-4 | Unit 4 Fugitives (10) | VOC | 0.5 | 2.2 |
| Cl2 | 0.08 | 0.35 |
| MSSFUG | MSS Fugitive Emissions (ILE) (10) | NOx | <0.01 | <0.01 |
| CO | <0.01 | <0.01 |
| PM | <0.01 | <0.01 |
| PM10 | <0.01 | <0.01 |
| PM2.5 | <0.01 | <0.01 |
| VOC | 7.00 | 1.07 |
| NH3 | <0.01 | <0.01 |

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.

(2) Specific point source name. For fugitive sources, use area name or fugitive source name.

(3) NOx - total oxides of nitrogen

CO - carbon monoxide

VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1

SO2 - sulfur dioxide

PM - total particulate matter, suspended in the atmosphere, including PM10 and PM2.5

PM10 - total particulate matter equal to or less than 10 microns in diameter, including PM2.5

PM2.5 - particulate matter equal to or less than 2.5 microns in diameter

H2SO4 - sulfuric acid

H2S - hydrogen sulfide

NH3 - anhydrous ammonia

Cl2 - chlorine

HOCl - hypochlorous acid

HAPs - hazardous air pollutants

(4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.

(5) Inorganic compounds calculated at HOCl.

(6) For Unit 6, the annual NOx emissions for Simple Cycle Operations assumes up to 2,500 hours of startup, shutdown, and low load operation per turbine.

(7) For Unit 6, the annual NOx emissions after HRSG installation is determined assuming a limitation of 2,500 hours of simple cycle operation and up to 2,500 hours of startup, shutdown, and low load operation per turbine.

(8) High Load Operation is defined in Special Condition No. 6(A)(1).

(9) Low Load Operation is defined in Special Condition No. 6(A)(2).

(10) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.

(11) The tpy emission limit specified in the MAERT for this facility includes emissions from the facility during both normal operations and planned MSS activities.

(12) The NOx and CO lb/hr and tpy emission rates are authorized by Standard Permit Registration No. 114528.

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| --- | --- |
| Date: | TBD |

Permit Number GHGPSDTX132

This table lists the maximum allowable emission rates of greenhouse gas (GHG) emissions, as defined in Title 30 Texas Administrative Code § 101.1, for sources of GHG air contaminants on the applicant’s property authorized by this permit. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

Air Contaminants Data

| **Emission Point No. (1)** | **Source Name (2)** | **Air Contaminant Name (3)** | **Emission Rates** |
| --- | --- | --- | --- |
| **TPY (4)** |
| SC-7 | Mitsubishi M501 GAC High Load Operation (GHG) | CO2 | 1,317,066 |
| CH4 | 625.66 |
| N2O | 2.66 |
| CO2e | 1,333,499 |
| FIRE-2 | Emergency Diesel Firewater Pump Engine | CO2 | 5.65 |
| CH4 | <0.01 |
| N2O | <0.01 |
| CO2e | 5.67 |
| LN-1 | Forced Draft Line Heater | CO2 | 1822.72 |
| CH4 | 0.03 |
| N2O | <0.01 |
| CO2e | 1824.61 |
| FUG-7 | Unit 7 Piping Fugitives (5) | CO2 | 0.04 |
| CH4 | 6.66 |
| CO2e | 169.97 |

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.

(2) Specific point source name. For fugitive sources, use area name or fugitive source name.

(3) CO2 - carbon dioxide

N2O - nitrous oxide

CH4 - methane

CO2e - carbon dioxide equivalents, based on the following Global Warming Potentials from 40 CFR Part 98, subpart A, Table A-1, effective January 1, 2015: CO2 (1), CH4 (25), N2O (298), and SF6(22,800)

(4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period. Annual emission limits include both normal and maintenance, startup, and shutdown (MSS) emissions.

(5) Fugitive emission rates are estimates and are enforceable through compliance with the applicable special conditions and permit application representations.

|  |  |
| --- | --- |
| Date: | TBD |