EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit Numbers 19637 and PSD-TX-767M2

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. 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. (EPN) (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates * lb/hr (4) | TPY (5) |
| **Case I: Turbine and Duct Burner Firing Simultaneously** | | | | |
| CG-1 | 18 MW (ISO) Westinghouse Model 191 Gas Turbine with 183 MMBtu/hr Fired Duct Burner | $NO_x$ | 41.4 | 181 |
| | | CO | 38.0 | 166 |
| | | VOC | 3.7 | 16 |
| | | PM | 7.5 | 24 |
| | | $SO_2$ | 4.6 | 20 |
| CG-2 | 18 MW (ISO) Westinghouse Model 191 Gas Turbine with 183 MMBtu/hr Fired Duct Burner | $NO_x$ | 41.4 | 181 |
| | | CO | 38.0 | 166 |
| | | VOC | 3.7 | 16 |
| | | PM | 7.5 | 24 |
| | | $SO_2$ | 4.6 | 20 |
| CG-3 | Fugitive VOC (6) | VOC | 0.4 | 2 |
| **Case II: Duct Burner Firing Only** | | | | |
| CG-1 | 375 MMBtu/hr (HHV) Duct Burner | $NO_x$ | 56.2 | 38 |
| | | CO | 37.5 | 26 |
| | | VOC | 6.0 | 4 |
| | | PM | 12.5 | 6 |
| | | $SO_2$ | 8.8 | 6 |
| CG-2 | 375 MMBtu/hr (HHV) Duct Burner | $NO_x$ | 56.2 | 38 |
| | | CO | 37.5 | 26 |
| | | VOC | 6.0 | 4 |
| | | PM | 12.5 | 6 |
| | | $SO_2$ | 8.8 | 6 |

* Emission rates are based on and the facilities are limited by a maximum operating schedule of 8,760 hours per year.

Total emissions from the combined operation of both Duct Burners (EPNs CG-1 and CG-2) in stand alone mode are as follows:

| | | | | |
|---|---|---|---|---|
| | Two 375 MMBtu/hr (HHV) Duct Burners | $NO_x$ | | 38 |
| | | CO | | 26 |
| | | VOC | | 4 |
| | | PM | | 6 |
| | | $SO_2$ | | 6 |
| CG-3 | Fugitive VOC (6) | VOC | 0.4 | <1 |

**Case III: Turbine Only Firing**

| | | | | |
|---|---|---|---|---|
| CG-1 | 18 MW (ISO) Westinghouse Model 191 Gas Turbine | $NO_x$ | 23.1 | 101 |
| | | CO | 23.4 | 102 |
| | | VOC | 0.8 | 4 |
| | | PM | 1.5 | 7 |
| | | $SO_2$ | 0.2 | <1 |
| CG-2 | 18 MW (ISO) Westinghouse Model 191 Gas Turbine | $NO_x$ | 23.1 | 101 |
| | | CO | 23.4 | 102 |
| | | VOC | 0.8 | 4 |
| | | PM | 1.5 | 7 |
| | | $SO_2$ | 0.2 | <1 |
| CG-3 | Fugitive VOC (6) | VOC | 0.4 | 2 |

* Emission rates are based on, and limited by, the turbines in stand alone mode and a maximum operating schedule of 8,760 hours per year.

Compliance with the annual emission limits and operating schedules is based on a rolling 12-month year rather than the calendar year.

**Boilers - Firing Refinery Fuel Gas:**

| | | | | |
|---|---|---|---|---|
| 81BF5601 | No. 1 Package Boiler (366 MMBtu/hr) | | $NO_x$ (9) | 3.95 |
| | | | CO | 13.63 |
| | | VOC | 1.83 | |
| | | PM | 3.66 | |
| | | $SO_x$ | 9.10 | |
| | | $NH_3$ (9) | | 1.83 |

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

| EPN (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates * lb/hr (4) | TPY (5) |
|---|---|---|---|---|
| 81BF5602 | No. 2 Package Boiler (366 MMBtu/hr) | $NO_x$ (9) | 3.95 | |
| | | CO | 13.63 | |
| | | VOC | 1.83 | |
| | | PM | 3.66 | |
| | | $SO_x$ | 9.10 | |
| | | $NH_3$ (9) | 1.83 | |
| 81BF5603 | No. 3 Package Boiler (366 MMBtu/hr) | $NO_x$ (9) | 3.95 | |
| | | CO | 13.63 | |
| | | VOC | 1.83 | |
| | | PM | 3.66 | |
| | | $SO_x$ | 9.10 | |
| | | $NH_3$ (9) | 1.83 | |
| 81BF5601, 81BF5602, and 81BF5603 | Package Boilers (Nos. 1, 2, and 3) | $NO_x$ | | 35.5 |
| | | CO | | 131.5 |
| | | VOC | | 20.4 |
| | | PM | 26.0 | |
| | | $SO_x$ | 43.9 | |
| | | $NH_3$ | 16.0 | |
| 81 FUG | 81FUG | $NH_3$ | 0.01 | 0.04 |
| | | VOC | 1.0 | 4.0 |

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

(1) Emission point identification - emission point number from plot plan.
(2) Specific point source name.
ISO - Rated electric output at International Standards Organization standard day conditions of 59°F, 1 atmosphere, and 60 percent relative humidity.
HHV - high heating value
(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
$NO_x$ - total oxides of nitrogen
$SO_2$ - sulfur dioxide
PM - particulate matter suspended in the atmosphere, including $PM_{10}$.
$PM_{10}$ - particulate matter equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no PM greater than 10 microns is emitted.
CO - carbon monoxide
$NH_3$ - Ammonia
(4) Turbine maximum hourly emissions based on minimum ambient temperature.
(5) Turbine annual emissions based on base load at average annual ambient temperature of 68°F.
(6) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.
(7) Hourly rates are based on maximum firing rate and a maximum operating schedule of 8,760 hours.
(8) Compliance with annual emission limits is based on a rolling 12-month period.
(9) During May and June 2007 these package boilers may be operated without SCR, only one at a time, for no more than a total of 336 hours. Allowable emissions for each boiler when operated without SCR are 13.18 lb/hr for $NO_x$, zero for $NH_3$, and same as above for CO, VOC, PM, and $SO_x$.

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

| EPN (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates * lb/hr (4) | TPY (5) |
|---|---|---|---|---|

Dated _