Emission Sources - Maximum Allowable Emission Rates

Permit Number 106921

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) |
| ENG-01 | Control Room Emergency Generator | VOC | 0.41 | 0.02 |
| | | $NO_x$ | 0.78 | 0.04 |
| | | CO | 1.60 | 0.08 |
| | | $SO_2$ | <0.01 | <0.01 |
| | | PM | 0.02 | <0.01 |
| | | $PM_{10}$ | 0.02 | <0.01 |
| | | $PM_{2.5}$ | 0.02 | <0.01 |
| ENG-02 | Flare Blower Emergency Generator | VOC | 0.88 | 0.05 |
| | | $NO_x$ | 1.70 | 0.09 |
| | | CO | 3.30 | 0.17 |
| | | $SO_2$ | <0.01 | <0.01 |
| | | PM | 0.05 | <0.01 |
| | | $PM_{10}$ | 0.05 | <0.01 |
| | | $PM_{2.5}$ | 0.05 | <0.01 |
| ENG-03 | Emergency Air Compressor | VOC | 3.70 | 0.19 |
| | | $NO_x$ | 3.70 | 0.19 |
| | | CO | 3.20 | 0.16 |
| | | $SO_2$ | <0.01 | <0.01 |
| | | PM | 0.19 | <0.01 |
| | | $PM_{10}$ | 0.19 | <0.01 |
| | | $PM_{2.5}$ | 0.19 | <0.01 |

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| | | | | |
|---|---|---|---|---|
| ENG-04 | Emergency Firewater Pump | VOC | 3.60 | 0.18 |
| | | $NO_x$ | 3.60 | 0.18 |
| | | CO | 3.10 | 0.16 |
| | | $SO_2$ | <0.01 | <0.01 |
| | | PM | 0.18 | 0.01 |
| | | $PM_{10}$ | 0.18 | 0.01 |
| | | $PM_{2.5}$ | 0.18 | 0.01 |
| ENG-07 | Frac-3 & 4 Emergency Air Compressor | VOC | 1.40 | 0.07 |
| | | $NO_x$ | 2.60 | 0.13 |
| | | CO | 5.30 | 0.27 |
| | | $SO_2$ | <0.01 | <0.01 |
| | | PM | 0.09 | <0.01 |
| | | $PM_{10}$ | 0.09 | <0.01 |
| | | $PM_{2.5}$ | 0.09 | <0.01 |
| ENG-09 | Frac-3 & 4 Emergency Generator | VOC | 0.86 | 0.04 |
| | | $NO_x$ | 1.60 | 0.08 |
| | | CO | 3.20 | 0.16 |
| | | $SO_2$ | <0.01 | <0.01 |
| | | PM | 0.05 | <0.01 |
| | | $PM_{10}$ | 0.05 | <0.01 |
| | | $PM_{2.5}$ | 0.05 | <0.01 |

Emission Sources - Maximum Allowable Emission Rates

| | | | | |
|---|---|---|---|---|
| H-5500 | Hot Oil Heater H-5500 | VOC | 0.72 | -- |
| | | $NO_x$ | 1.54 | -- |
| | | CO | 5.76 | -- |
| | | $SO_2$ | 25.26 | -- |
| | | $H_2S$ | 0.07 | -- |
| | | $NH_3$ | 0.71 | -- |
| | | PM | 0.77 | -- |
| | | $PM_{10}$ | 0.77 | -- |
| | | $PM_{2.5}$ | 0.77 | -- |
| | Heater MSS Emissions | $NO_x$ | 7.68 | -- |
| | | CO | 46.10 | -- |
| H-5501 | Hot Oil Heater H-5501 | VOC | 0.72 | -- |
| | | $NO_x$ | 1.54 | -- |
| | | CO | 5.76 | -- |
| | | $SO_2$ | 25.26 | -- |
| | | $H_2S$ | 0.07 | -- |
| | | $NH_3$ | 0.71 | -- |
| | | PM | 0.77 | -- |
| | | $PM_{10}$ | 0.77 | -- |
| | | $PM_{2.5}$ | 0.77 | -- |
| | Heater MSS Emissions | $NO_x$ | 7.68 | -- |
| | | CO | 46.10 | -- |

Emission Sources - Maximum Allowable Emission Rates

| | | | | |
|---|---|---|---|---|
| H-5502 | Hot Oil Heater H-5502 | VOC | 0.72 | -- |
| | | $NO_x$ | 1.54 | -- |
| | | CO | 5.76 | -- |
| | | $SO_2$ | 25.26 | -- |
| | | $H_2S$ | 0.07 | -- |
| | | $NH_3$ | 0.71 | -- |
| | | PM | 0.77 | -- |
| | | $PM_{10}$ | 0.77 | -- |
| | | $PM_{2.5}$ | 0.77 | -- |
| | Heater MSS Emissions | $NO_x$ | 7.68 | -- |
| | | CO | 46.10 | -- |
| H-7500 | Hot Oil Heater H-7500 | VOC | 0.72 | -- |
| | | $NO_x$ | 1.54 | -- |
| | | CO | 5.76 | -- |
| | | $SO_2$ | 25.26 | -- |
| | | $H_2S$ | 0.07 | -- |
| | | $NH_3$ | 0.71 | -- |
| | | PM | 0.77 | -- |
| | | $PM_{10}$ | 0.77 | -- |
| | | $PM_{2.5}$ | 0.77 | -- |
| | Heater MSS Emissions | $NO_x$ | 7.68 | - |
| | | CO | 46.10 | - |

Emission Sources - Maximum Allowable Emission Rates

| | | | | |
|---|---|---|---|---|
| H-7501 | Hot Oil Heater H-7501 | VOC | 0.72 | -- |
| | | $NO_x$ | 1.54 | -- |
| | | CO | 5.76 | -- |
| | | $SO_2$ | 25.26 | -- |
| | | $H_2S$ | 0.07 | -- |
| | | $NH_3$ | 0.71 | -- |
| | | PM | 0.77 | -- |
| | | $PM_{10}$ | 0.77 | -- |
| | | $PM_{2.5}$ | 0.77 | -- |
| | Heater MSS Emissions | $NO_x$ | 7.68 | - |
| | | CO | 46.10 | - |
| H-7502 | Hot Oil Heater H-7502 | VOC | 0.72 | -- |
| | | $NO_x$ | 1.54 | -- |
| | | CO | 5.76 | -- |
| | | $SO_2$ | 25.26 | -- |
| | | $H_2S$ | 0.07 | -- |
| | | $NH_3$ | 0.71 | -- |
| | | PM | 0.77 | -- |
| | | $PM_{10}$ | 0.77 | -- |
| | | $PM_{2.5}$ | 0.77 | -- |
| | Heater MSS Emissions | $NO_x$ | 7.68 | -- |
| | | CO | 46.10 | -- |

Emission Sources - Maximum Allowable Emission Rates

| | | | | |
|---|---|---|---|---|
| H-5500/H-5501/H-5502/H-7500/H-7501/H-7502 | Hot Oil Heater Cap (6) | VOC | - | 8.82 |
| | | $NO_x$ | - | 35.13 |
| | | CO | - | 93.09 |
| | | $SO_2$ | - | 104.71 |
| | | $H_2S$ | - | 0.29 |
| | | $NH_3$ | - | 11.25 |
| | | PM | - | 17.55 |
| | | $PM_{10}$ | - | 17.55 |
| | | $PM_{2.5}$ | - | 17.55 |
| | Heater MSS Emissions (6) | $NO_x$ | - | 0.74 |
| | | CO | - | 4.42 |
| H-41500 | Hot Oil Heater H-41500 | VOC | 2.24 | --- |
| | | $NO_x$ | 1.92 | --- |
| | | CO | 7.20 | --- |
| | | $SO_2$ | 13.73 | --- |
| | | $H_2S$ | 0.07 | --- |
| | | $NH_3$ | 0.88 | --- |
| | | PM | 0.96 | --- |
| | | $PM_{10}$ | 0.96 | --- |
| | | $PM_{2.5}$ | 0.96 | --- |
| | Heater MSS Emissions | $NO_x$ | 9.60 | --- |
| | | CO | 57.60 | --- |

Emission Sources - Maximum Allowable Emission Rates

| | | | | |
|---|---|---|---|---|
| H-41501 | Hot Oil Heater H-41501 | VOC | 2.24 | --- |
| | | $NO_x$ | 1.92 | --- |
| | | CO | 7.20 | --- |
| | | $SO_2$ | 13.73 | --- |
| | | $H_2S$ | 0.07 | --- |
| | | $NH_3$ | 0.88 | --- |
| | | PM | 0.96 | --- |
| | | $PM_{10}$ | 0.96 | --- |
| | | $PM_{2.5}$ | 0.96 | --- |
| | Heater MSS Emissions | $NO_x$ | 9.60 | --- |
| | | CO | 57.60 | --- |
| H-51500 | Hot Oil Heater H-51500 | VOC | 2.24 | --- |
| | | $NO_x$ | 1.92 | --- |
| | | CO | 7.20 | --- |
| | | $SO_2$ | 13.73 | --- |
| | | $H_2S$ | 0.07 | --- |
| | | $NH_3$ | 0.88 | --- |
| | | PM | 0.96 | --- |
| | | $PM_{10}$ | 0.96 | --- |
| | | $PM_{2.5}$ | 0.96 | --- |
| | Heater MSS Emissions | $NO_x$ | 9.60 | --- |
| | | CO | 57.60 | --- |

Emission Sources - Maximum Allowable Emission Rates

| | | | | |
|---|---|---|---|---|
| H-51501 | Hot Oil Heater H-51501 | VOC | 2.24 | --- |
| | | $NO_x$ | 1.92 | --- |
| | | CO | 7.20 | --- |
| | | $SO_2$ | 13.73 | --- |
| | | $H_2S$ | 0.07 | --- |
| | | $NH_3$ | 0.88 | --- |
| | | PM | 0.96 | --- |
| | | $PM_{10}$ | 0.96 | --- |
| | | $PM_{2.5}$ | 0.96 | --- |
| | Heater MSS Emissions | $NO_x$ | 9.60 | --- |
| | | CO | 57.60 | --- |
| H-41500/H-41501/H-51500/H-51501 | Hot Oil Heater Cap (7) | VOC | --- | 13.37 |
| | | $NO_x$ | --- | 18.28 |
| | | CO | --- | 80.80 |
| | | $SO_2$ | --- | 57.24 |
| | | $H_2S$ | --- | 0.28 |
| | | $NH_3$ | --- | 10.76 |
| | | PM | --- | 15.24 |
| | | $PM_{10}$ | --- | 15.24 |
| | | $PM_{2.5}$ | --- | 15.24 |
| | Hot Oil Heater MSS Emissions (7) | $NO_x$ | --- | 0.56 |
| | | CO | --- | 3.34 |

Emission Sources - Maximum Allowable Emission Rates

| | | | | |
|---|---|---|---|---|
| Fl-5600 | Flare | VOC | 0.01 | 0.06 |
| | | $NO_x$ | 0.35 | 1.50 |
| | | CO | 1.40 | 6.10 |
| | | $SO_2$ | <0.01 | 0.02 |
| FL-02 | Flare | VOC | 0.01 | 0.06 |
| | | $NO_x$ | 0.35 | 1.50 |
| | | CO | 1.40 | 6.10 |
| | | $SO_2$ | <0.01 | 0.02 |
| CT-5601 | Cooling Tower CT-5601 | VOC | 2.52 | 3.15 |
| | | PM | 1.50 | 6.57 |
| | | $PM_{10}$ | 0.60 | 2.63 |
| | | $PM_{2.5}$ | 0.15 | 0.66 |
| CT-7601 | Cooling Tower CT-7601 | VOC | 2.53 | 4.71 |
| | | PM | 1.50 | 6.57 |
| | | $PM_{10}$ | 0.60 | 2.63 |
| | | $PM_{2.5}$ | 0.15 | 0.66 |
| CT-41601 | Cooling Tower CT-41601 | VOC | 3.01 | 3.15 |
| | | PM | 1.80 | 6.58 |
| | | $PM_{10}$ | 0.72 | 2.63 |
| | | $PM_{2.5}$ | 0.18 | 0.66 |
| CT-51601 | Cooling Tower CT-51601 | VOC | 3.70 | 4.05 |
| | | PM | 2.20 | 8.44 |
| | | $PM_{10}$ | 0.88 | 3.38 |
| | | $PM_{2.5}$ | 0.22 | 0.84 |
| T-2421 | Spent Caustic Tank T-2421 | VOC | 0.99 | 0.01 |

Emission Sources - Maximum Allowable Emission Rates

| | | | | |
|---|---|---|---|---|
| | | $H_2S$ | <0.01 | <0.001 |
| T-3421 | Spent Caustic Tank T-3421 | VOC | 0.99 | 0.01 |
| | | $H_2S$ | <0.01 | <0.001 |
| T-5631 | Wastewater Tank T-5631 | VOC | 1.69 | 0.02 |
| T-7631 | Wastewater Tank T-7631 | VOC | 1.69 | 0.02 |
| CAS-2421 | Controlled Emissions from Spent Caustic Tank (EPN T-2421) | VOC | 0.05 | <0.01 |
| CAS-3421 | Controlled Emissions from Spent Caustic Tank (EPN T-3421) | VOC | 0.05 | <0.01 |
| LOAD-2421 | Spent Caustic Loading (T-2421) | VOC | 0.09 | <0.01 |
| LOAD-5631 | Wastewater Loading (T-5631) | VOC | 0.09 | <0.01 |
| LOAD-3421 | Spent Caustic Loading (T-3421) | VOC | 0.09 | <0.01 |
| LOAD-7631 | Wastewater Loading (T-7631) | VOC | 0.09 | <0.01 |
| LOAD-SC-3 | Spent Caustic Loading (Frac-4) | VOC | 0.09 | <0.01 |
| LOAD-C3-3 | Pressurized Loading (Frac-3 & 4 Contribution) | VOC | 0.47 | <0.01 |
| FUG-01 | EPS and Frac-1 Equipment Leak Fugitives (5) | VOC | 2.18 | 9.53 |
| | | $NH_3$ | 0.13 | 0.55 |
| FUG-02 | Frac-2 Equipment Leak Fugitives (5) | VOC | 1.19 | 5.22 |
| FUG-03 | Frac-3 Equipment Leak Fugitives (5) | VOC | 1.22 | 5.32 |
| | | $H_2S$ | 0.01 | 0.02 |
| FUG-04 | Frac-4 Equipment Leak Fugitives (5) | VOC | 1.22 | 5.32 |
| | | $H_2S$ | 0.01 | 0.02 |
| | | $NH_3$ | 0.02 | 0.10 |
| MSS FL-5600/FL-2 | MSS Flaring Cap (8) | VOC | 620.88 | 12.79 |

Emission Sources - Maximum Allowable Emission Rates

| | | | | |
|---|---|---|---|---|
| | | $NO_x$ | 246.65 | 5.52 |
| | | CO | 1531.80 | 34.60 |
| | | $SO_2$ | 0.25 | 0.03 |
| | | $H_2S$ | <0.01 | <0.001 |
| MSS-FUG | MSS Degassing | VOC | 176.80 | 3.43 |
| | | $NH_3$ | 0.47 | <0.01 |
| MSS-FUG-3 | MSS De-gassing (Frac-3 & 4 Contribution) | VOC | 169.00 | 1.44 |
| | | $NH_3$ | 0.07 | <0.01 |
| | | $H_2S$ | <0.01 | <0.001 |

(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) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
$H_2S$ - Hydrogen Sulfide
$NO_x$ - total oxides of nitrogen
$SO_2$ - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including $PM_{10}$ and $PM_{2.5}$, as represented
$PM_{10}$ - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
CO - carbon monoxide
$NH_3$ - ammonia
(4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period.
(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.
(6) Annual Emissions represent combined annual emissions from heaters H-5500, H-5501, H-5502, H-7500, H-7501, and H-7502.
(7) Annual Emissions represent combined annual emissions from heaters H-41500, H-41501, H-51500, and H-51501.
(8) Emissions represent total combined emission rates from EPNs FL-5600 and FL-02.

Date: September 19, 2019