

Location	TONS OF POLLUTANT									
	NO x	SO x	CO	PM	O3	Pb	HAPs	ODCs	Other emissions	
Indiana University Biotechnology Research and Training Center Boiler Units: L3B-01 and L3B-02	1.14	0.007	0.95	0.09	0	0.0000056	0	0	0.072	
Small Diesel Emergency Generators	1.4	0.1	0.3	0.1	0	0	0	0	0.97	
Large Emergency Generators (>600 Hp) (26 Hours of Operation per Year)	9.73	0.69	2.1	0.64	0	0	0	0	6.78	
Natural Gas Emergency Generators	0.019	0.00006	0.0035	0.00039	0	0	0	0	0.0012	
Incineration Equipment	0.0095	0.0098	0.0009	1.88	0	0	0	0	0	
<b>TOTALS</b>	<b>12.2985</b>	<b>0.80686</b>	<b>3.3544</b>	<b>2.71039</b>	<b>0</b>	<b>0.0000056</b>	<b>0</b>	<b>0</b>	<b>7.8232</b>	

**ACTUAL EMISSION SUMMARY**  
**INDIANA UNIVERSITY – PURDUE UNIVERSTIY INDIANAPOLIS**  
**2019 Summary**

**Indiana University Biotechnology Research and Training Center Boiler Units: L3B-01 and L3B-02**

10 <sup>6</sup> scf Natural Gas	Pollutant	Emission Factor	Pounds of Pollutant	Tons of Pollutant
22.7	NO <sub>x</sub>	100	2270	1.14
22.7	CO	84	1906.8	0.95
22.7	PM	7.6	172.5	0.09
22.7	SO <sub>2</sub>	0.6	13.62	6.8 x 10 <sup>-3</sup>
22.7	VOC	5.5	124.9	6.25 x 10 <sup>-2</sup>
22.7	Pb	0.0005	1.3 x 10 <sup>-2</sup>	5.7 x 10 <sup>-6</sup>

**Small Diesel Emergency Generators (<600 Hp)**

Generator	Rated Hp
ESG-01	536.4
IHG-01	469.5
TKG-01	449
HO/IPG-01	402.3
XRG-01	402.3
WD-PCG-01	308.4
PEG-01	258.2
WD-HSG-01	258.2
WD-LVG-01	234.7
BAG-01	107.3
XLG-01	167.6
<b>Total Hp</b>	<b>3613.9</b>

Total Rate HP	Pollutant	Hours of Operation	Emission Factor	Pounds of Pollutant	Tons of Pollutant
3613.9	NO <sub>x</sub>	25	0.031	2800.8	1.4
3613.9	CO	25	0.00668	603.5	0.30
3613.9	PM	25	0.00205	185.2	0.1
3613.9	SO <sub>2</sub>	25	0.00220	198.8	0.1
3613.9	VOC	25	0.02159	1950.6	0.98

**Large Emergency Generators (>600 Hp) (25 Hours of Operation per Year)**

<b>Generator</b>	<b>Rated Hp</b>
<b>WD-RVG-01</b>	<b>2447.3</b>
<b>WD-RVG-02</b>	<b>2447.3</b>
<b>ITG-01</b>	<b>1676.3</b>
<b>R3G-01</b>	<b>1676.3</b>
<b>R3G-02</b>	<b>1676.3</b>
<b>NBG-01</b>	<b>1341</b>
<b>ULG-01</b>	<b>1341</b>
<b>R2G-01</b>	<b>1206.9</b>
<b>R4G-01</b>	<b>1206.9</b>
<b>MSG-01</b>	<b>1206.9</b>
<b>MSG-02</b>	<b>1206.9</b>
<b>HSG-01</b>	<b>1180</b>
<b>IBG-01</b>	<b>1072.8</b>
<b>HSG-01</b>	<b>1072.8</b>
<b>DSG-01</b>	<b>1005.8</b>
<b>GKG-01</b>	<b>890</b>
<b>L3G-01</b>	<b>1005.8</b>
<b>ELG-01</b>	<b>804.6</b>
<b>CEG-01</b>	<b>637</b>
<b>Total Hp</b>	<b>25,101.9</b>

<b>Total Rate HP</b>	<b>Pollutant</b>	<b>Hours of Operation</b>	<b>Emission Factor</b>	<b>Pounds of Pollutant</b>	<b>Tons of Pollutant</b>
<b>25,101.9</b>	<b>NO<sub>x</sub></b>	<b>25</b>	<b>0.031</b>	<b>19454.0</b>	<b>9.76</b>
<b>25,101.9</b>	<b>CO</b>	<b>25</b>	<b>0.00668</b>	<b>4192.0</b>	<b>2.1</b>
<b>25,101.9</b>	<b>PM</b>	<b>25</b>	<b>0.00205</b>	<b>1286.5</b>	<b>0.64</b>
<b>25,101.9</b>	<b>SO<sub>2</sub></b>	<b>25</b>	<b>0.00220</b>	<b>1380.6</b>	<b>0.69</b>
<b>25,101.9</b>	<b>VOC</b>	<b>25</b>	<b>0.02159</b>	<b>13548.8</b>	<b>6.77</b>

**Natural Gas Emergency Generators**

Generator	Rated Hp
XDG-01	258.2
S2G-01	33.5
<b>Total Hp</b>	<b>301.7</b>

(1hp = 2544 BTU/hr. 301.7 hp x 2544 BTU/hr = 767,524.8 BTU/hr x 25 hr = 19,225,813 MMBtu = 19.23 MMBtu)

Total Rate HP	Pollutant	Hours of Operation	Emission Factor	Pounds of Pollutant	Tons of Pollutant
301.7	NO <sub>x</sub>	25	1.94	37.3	0.02
301.7	CO	25	0.353	6.8	3.4 x 10 <sup>-3</sup>
301.7	PM	25	0.0384	0.74	3.7 x 10 <sup>-4</sup>
301.7	SO <sub>2</sub>	25	0.000588	1.1 x 10 <sup>-2</sup>	5.7 x 10 <sup>-5</sup>
301.7	VOC	25	0.120	2.3	1.2 x 10 <sup>-3</sup>

**Incineration Equipment**

CS4I-01

Hours of Operation: 8 Hours/day, 5 days per year = 40 Hours

Hours of Operation	Pollutant	Emission Rate (Pounds/Hour)	Pounds of Pollutant	Tons of Pollutant
40	NO <sub>x</sub>	0.474	19.0	9.45 x 10 <sup>-3</sup>
40	CO	0.04485	1.8	9.0 x 10 <sup>-4</sup>
40	PM	0.5145	20.58	1.0 x 10 <sup>-2</sup>
40	SO <sub>2</sub>	0.4875	19.5	9.8 x 10 <sup>-3</sup>

**Campus Emission Summary (In tons)**

Emission Source	Pollutant - NO <sub>x</sub>	Pollutant - CO	Pollutant - PM	Pollutant - SO <sub>2</sub>	Pollutant - VOC
L3 Boilers	1.14	0.95	1.01	0.0079	0.72
Small Generators	1.4	0.30	0.1	0.10	0.98
Large Generators	9.76	2.1	0.64	0.69	6.77
Natural Gas Generators	0.019	0.0034	0.00037	0.000057	0.0012
CS4 Incinerator	0.0095	0.0009	0.01	0.0098	-----
<b>Totals</b>	<b>12.33</b>	<b>3.35</b>	<b>1.76</b>	<b>0.81</b>	<b>7.82</b>