Facility Name:	Dartmouth-Hitchcock Medical Center	Facility Contact:	Jona Roberts
Facility ID No.:	3300900003	Telephone No.:	603-650-8457
Facility Address:	1 Medical Center Drive, Lebanon, NH 03756	Engineer:	CAB

Emission Factors lbs/1000 gallons

Fuel/Sulfur	Emission Factor Source	Size	TSP	PM10	SO2	NOx	CO	VOC
#6 FO 1% S	AP-42, Chapters 1.3-1 & 1.3-2 & 1.3-7 (10/96) *Criteria Pollutant Emission Factors for Fuel Oil Combustion < 100 MMBtu/hr*	lb/kgal	12.4	10.7	157.0	55.0	5.0	0.28
#2 FO 0.4% S	AP-42, Chapter 3.4, (10/96) *Large Stationary Diesel & All Stationary Duel Fuel Engines > 600 hp*	lb/kgal	9.8	6.9	55.3	438.0	116	11.2
#2 FO 500 ppm (0.05 %S) until 10/01/10 then 15 ppm (0.0015 %S)	EPA Certified Tier 2 Emission Factors	g/kWh	0.2	0.2		6	3.5	6.4
		lb/kgal	6.5	6.5	6.9	207	112	207
#2 FO 0.4% S	AP-42, Chapters 1.3-1 & 1.3-2 & 1.3-7 (10/96) *Criteria Pollutant Emission Factors for Fuel Oil Combustion Residential Furnaces*	lb/kgal	2.0	1.1	56.8	18	5	0.713
LPG	AP-42, Chapter 1.5 (07/08) *Liquefied Petroleum Gas Combustion* Commercial Boilers	lb/kgal	0.7	0.2	1.50	13	7.5	0.8

BOILERS Potential Short Term Emissions (lb/hr)

EU Identification	Fuel	% Sulfur	MMBtu/hr	gals/hr	TSP lb/hr	PM10 lbs/hr	SO2 lbs/hr	NOx lbs/hr	CO lbs/hr	VOC lbs/hr
Boiler #1 (EU01)	#6 FO	1.0	47.00	313	3.89	3.35	49.19	17.23	1.57	0.09
Boiler #2 (EU02)	#6 FO	1.0	47.00	313	3.89	3.35	49.19	17.23	1.57	0.09
Boiler #3 (EU03)	#6 FO	1.0	47.00	313	3.89	3.35	49.19	17.23	1.57	0.09

EMERGENCY GENERATORS Potential Short Term Emissions (lb/hr)

EU Identification	Fuel	Installation Date	Engine Output Rating (hp)	MMBtu/hr	gals/hr	TSP lb/hr	PM10 lbs/hr	SO2 lbs/hr	NOx lbs/hr	CO lbs/hr	VOC lbs/hr
EG #1 (EU04)	#2 FO	1988/1991	1809	12.82	91.6	0.89	0.64	5.07	40.12	10.63	1.03
EG #2 (EU05)	#2 FO	1988/1991	1809	12.82	91.6	0.89	0.64	5.07	40.12	10.63	1.03
EG #3 (EU06)	#2 FO	1988/1991	1809	12.82	91.6	0.89	0.64	5.07	40.12	10.63	1.03
EG #4 (EU07)	#2 FO	1988/1991	1809	12.82	91.6	0.89	0.64	5.07	40.12	10.63	1.03
EG (EU08)	#2 FO	2008/2009	1072	8.29	59.2	0.38	0.38	0.41	12.25	6.63	12.25

BOILERS Permitted Short Term Emissions (lb/day) (at 15,000 gal/day)

EU Identification	Fuel	% Sulfur	MMBtu/hr	gals/day[1]	TSP lb/day	PM10 lbs/day	SO2 lbs/day	NOx lbs/day	CO lbs/day	VOC lbs/day
Boiler #1 (EU01)	#6 FO	1.0	47.00	15,000	186.40	160.25	######	825.00	75.00	4.20
Boiler #2 (EU02)	#6 FO	1.0	47.00							
Boiler #3 (EU03)	#6 FO	1.0	47.00							

BOILERS Permitted Long Term Emissions (TPY based on 3,000,000 gal/yr permit limit)

EU Identification	Fuel	% Sulfur	MMBtu/hr	gals/hr	gals/yr[2]	TSP TPY	PM10 TPY	SO2 TPY	NOx TPY	CO TPY	VOC TPY
Boiler #1 (EU01)	#6 FO	1.0	47.00	313.0	3,000,000	18.64	16.02	235.50	82.50	7.50	0.42
Boiler #2 (EU02)	#6 FO	1.0	47.00	313.0	All oil assumed to be burned in a single boiler						
Boiler #3 (EU03)	#6 FO	1.0	47.00	313.0							

EMERGENCY GENERATORS Permitted Long Term Emissions (TPY based on 500 hrs/yr)

EU Identification	Fuel	Installation Date	Engine Output Rating (hp)	MMBtu/hr	gals/hr	TSP TPY	PM10 TPY	SO2 TPY	NOx TPY	CO TPY	VOC TPY
EG #1 (EU04)	#2 FO	1988/1991	1809	12.82	91.6	0.22	0.16	1.27	10.03	2.66	0.26
EG #2 (EU05)	#2 FO	1988/1991	1809	12.82	91.6	0.22	0.16	1.27	10.03	2.66	0.26
EG #3 (EU06)	#2 FO	1988/1991	1809	12.82	91.6	0.22	0.16	1.27	10.03	2.66	0.26
EG #4 (EU07)	#2 FO	1988/1991	1809	12.82	91.6	0.22	0.16	1.27	10.03	2.66	0.26
EG (EU08)	#2 FO	2008/2009	1072	8.29	59.2	0.10	0.10	0.10	3.06	1.66	3.06

FACILITY WIDE Total Permitted Emissions (Boilers - 3,000,000 gal/yr) (EGs - 500 hours)

EU Identification	Fuel	Installation Date	MMBtu/hr	gals/hr	Annual gals	TSP TPY	PM10 TPY	SO2 TPY	NOx TPY	CO TPY	VOC TPY
Boiler #1 (EU01)	#6 FO	1988/1989	47.00	313.0	3,000,000	18.64	16.02	235.50	82.50	7.50	0.42
Boiler #2 (EU02)	#6 FO	1988/1989	47.00	313.0							

Boiler #3 (EU03)	#6 FO	1988/1989	47.00	313.0	All oil assumed to be burned in a single boiler						
EG #1 (EU04)	#2 FO	1988/1991	12.82	91.6	45,800	0.22	0.16	1.27	10.03	2.66	0.26
EG #2 (EU05)	#2 FO	1988/1991	12.82	91.6	45,800	0.22	0.16	1.27	10.03	2.66	0.26
EG #3 (EU06)	#2 FO	1988/1991	12.82	91.6	45,800	0.22	0.16	1.27	10.03	2.66	0.26
EG #4 (EU07)	#2 FO	1988/1991	12.82	91.6	45,800	0.22	0.16	1.27	10.03	2.66	0.26
EG (EU08)	#2 FO	2008/2009	8.29	59.2	29,600	0.10	0.10	0.10	3.06	1.66	3.06
Total						**19.63**	**16.76**	**240.67**	**125.68**	**19.78**	**4.51**
Major Source						**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**50.00**

Title V Source for SO_2 and NOx.

FACILITY WIDE Total Potential Emissions (Boilers - 8760 hrs/yr) (EGs - 500 hours) (Insignificant Devices - 8760 hrs/yr)											
EU Identification	Fuel	Installation Date	MMBtu/hr	gals/hr	Annual gals	TSP TPY	PM10 TPY	SO2 TPY	NOx TPY	CO TPY	VOC TPY
Boiler #1 (EU01)	#6 FO	1988/1989	47.00	313.0	2,741,880	17.04	14.65	215.24	75.40	6.85	0.38
Boiler #2 (EU02)	#6 FO	1988/1989	47.00	313.0	2,741,880	17.04	14.65	215.24	75.40	6.85	0.38
Boiler #3 (EU03)	#6 FO	1988/1989	47.00	313.0	2,741,880	17.04	14.65	215.24	75.40	6.85	0.38
EG #1 (EU04)	#2 FO	1988/1991	12.82	91.6	45,800	0.22	0.16	1.27	10.03	2.66	0.26
EG #2 (EU05)	#2 FO	1988/1991	12.82	91.6	45,800	0.22	0.16	1.27	10.03	2.66	0.26
EG #3 (EU06)	#2 FO	1988/1991	12.82	91.6	45,800	0.22	0.16	1.27	10.03	2.66	0.26
EG #4 (EU07)	#2 FO	1988/1991	12.82	91.6	45,800	0.22	0.16	1.27	10.03	2.66	0.26
EG (EU08)	#2 FO	2008/2009	8.29	59.2	29,600	0.10	0.10	0.10	3.06	1.66	3.06
FHW Furnace/Boiler	#2 FO	2003	0.768	5.5	48,055	0.05	0.03	1.36	0.43	0.12	0.02
FHW Furnace/Boiler	#2 FO	2003	0.768	5.5	48,055	0.05	0.03	1.36	0.43	0.12	0.02
FHW Furnace/Boiler	#2 FO	2002	0.098	0.7	6,132	0.01	0.00	0.17	0.06	0.02	0.00
FHW Furnace/Boiler	#2 FO	2002	0.098	0.7	6,132	0.01	0.00	0.17	0.06	0.02	0.00
FHW Furnace/Boiler	#2 FO	unknown	0.480	3.4	30,034	0.03	0.02	0.85	0.27	0.08	0.01
Boiler 2009 Building	LPG	2009	2.000	21.3	186,383	0.07	0.02	0.14	1.21	0.70	0.07
Boiler 2009 Building	LPG	2009	2.000	21.3	186,383	0.07	0.02	0.14	1.21	0.70	0.07
Boiler 2009 Building	LPG	2009	2.000	21.3	186,383	0.07	0.02	0.14	1.21	0.70	0.07
Total						**52.43**	**44.80**	**655.23**	**274.27**	**35.29**	**5.51**
Major Source						**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**50.00**

Title V Source for SO_2 and NOx.

Fuel	Heat Content AP-42 5th ed. (Btu/gal)	Btu	British thermal unit	1 kilovolt-ampere (kva) = 1 kilowatt (kW) = 1.3405 horsepower (hp) [electric]
#2 FO	140,000	S	sulfur	per *onlineconversion.com/power.htm*
#6 FO	150,000	cf	standard cubic foot	1,000,000 Btu/hour [I.T.] = 392.9 horsepower [electric]

[1]Daily permit limit is required to meet the standard for SO_2.

[2]Annual permit limit from old operating permits PO-B-1700, 1701, & 1702.