

PB 205 268

SPRINGFIELD, OHIO AIR POLLUTANT EMISSION
INVENTORY

David V. Mason

National Air Pollution Control Administration
Durham, North Carolina

August 1969

0840
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**SPRINGFIELD, OHIO
AIR POLLUTANT EMISSION INVENTORY**

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16. Abstracts The results of the Springfield Statistical Metropolitan Study Area are presented in tabular form. The Springfield study area is made up of one county which has a population of 131,440. Information has been compiled on the following emission sources: industrial processing, fuel usage, refuse disposal, motor vehicle activity and population.																					
17. Key Words and Document Analysis. 17a. Descriptors <table border="0"> <tr> <td>Air pollution</td> <td>Transportation</td> </tr> <tr> <td>Emission</td> <td>Fuels</td> </tr> <tr> <td>Inventories</td> <td>Combustion</td> </tr> <tr> <td>Sources</td> <td>Industrial wastes</td> </tr> <tr> <td>Sulfur oxides</td> <td>Refuse disposal</td> </tr> <tr> <td>Particles</td> <td>Exhaust emissions</td> </tr> <tr> <td>Carbon monoxide</td> <td></td> </tr> <tr> <td>Hydrocarbons</td> <td></td> </tr> <tr> <td>Nitrogen oxides</td> <td></td> </tr> </table>				Air pollution	Transportation	Emission	Fuels	Inventories	Combustion	Sources	Industrial wastes	Sulfur oxides	Refuse disposal	Particles	Exhaust emissions	Carbon monoxide		Hydrocarbons		Nitrogen oxides	
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David V. Mason

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
Consumer Protection and Environmental Health Service
National Air Pollution Control Administration
Air Quality and Emission Data Division
Durham, North Carolina
August, 1969

SPRINGFIELD EMISSION INVENTORY

An emission inventory of the Springfield, Ohio SMSA was conducted in July to help in the designation of the Air Quality Control Region in central Ohio.

The Springfield SMSA is made up of only county, Clark County, which borders the Dayton SMSA. The 1960 population of Clark County was 131,440, while the 1967 population had increased 5% to 137,700. Springfield is the largest city in Clark County. About 65% of the people in Clark County live in Springfield and almost all the industry is located there.

Working in coordination with the Ohio Department of Health, information was gathered on many of the air pollutant sources in the county. In addition to the industrial process information, data was also collected for fuel useage and refuse disposal from the State of Ohio.

The Metropolitan Planning Agency in Springfield, Ohio was able to supply good data on both the population and the motor vehicle activity in the Study Area.

The results of the inventory are presented on a grid reference system (Figure) extended from the grid system used in the Dayton SMSA Emission Inventory.

The following tables represent the results of the Springfield Emission Inventory.

SUMMARY OF EMISSIONS IN THE SPRINGFIELD STUDY AREA 1967
(TONS/YEAR)

	SO _x	PART.	CO	HC	NO _x
Transportation					
Road Vehicle	130	160	34,700	2,630	1,790
Evaporation				2,530	
Combustion of Fuels in Stationary Sources					
Industry	--	10	--	--	160
Steam-Electric	2,470	7,160	260	70	900
Residential	1,380	2,470	2,600	550	920
Commercial	--	10	--	--	110
Refuse Disposal					
Incineration	20	100	440	10	30
Open Burning	--	160	850	50	10
Industrial Process		540			
TOTAL EMISSIONS	4,000	10,610	38,850	5,840	3,920

FUEL CONSUMPTION IN SPRINGFIELD STUDY AREA

	Coal (Tons)	Residual Fuel Oil (1000 gal.)	Distillate Fuel Oil (1000 gal.)	Natural Gas (10 ⁶ cu. ft.)
Industrial	Neg.	Neg.	Neg.	1,460
Steam-Electric	104,000	--	--	--
Residential	10,200	--	7,100	4,770
Commercial	9,700	--	Neg.	1,070

Jurisdiction	Tons Generated	Incineration Municipal	On-Site	Landfills	Dumps	On-Site Burning
Clark County	130,000	--	20,000	40,000	50,000	20,000

POINT SOURCES FOR SPRINGFIELD AIR POLLUTANT EMISSION INVENTORY (TONS/DAY)

	Hor. Coord. (100m)	Vert. Coord. (100m)	SUM	SO _x WIN	AVG	SUM	PART. WIN	AVG	SUM	CO WIN	AVG	SUM	HC WIN	AVG	SUM	NO _x WIN	AVG
Industry	7735	44250				0.13	0.13	0.13									
Industry	7740	44275				0.16	0.16	0.16									
Power Plant	7685	44250	6.43	6.43	6.43	13.87	13.87	13.87	0.60	0.60	0.60	0.20	0.20	0.20	2.42	2.42	2.42
Power Plant	7720	44260	0.00	0.71	0.35	0.00	11.48	5.74	0.00	.22	.11	0.00	0.00	0.00	0.00	.10	.05
Institution	7715	44265	.52	.52	.52	.22	.22	.22	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10
Institution	7755	44255	.38	.38	.38	.14	.14	.14	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.07	0.07
Institution	7720	44275	.51	.51	.51	.21	.21	.21	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
Industry	7670	44245				1.00	1.00	1.00									
TOTAL					8.19			21.47			.71			.20			2.65

AIR POLLUTANT EMISSIONS FOR SPRINGFIELD STUDY AREA BY GRID (TONS/DAY)

Grid	Hor. Coord. (100m)	Vert. Coord. (100m)	Area (sq. mi)	SO _x AVG.	PART. AVG.	CO AVG.	HC AVG.	NO _x AVG.
26	7800	44000	154.40	0.01	0.02	0.54	0.07	0.03
32	7550	44150	38.60	0.08	0.04	2.78	0.41	0.18
33	7650	44150	38.60	0.12	0.05	4.57	0.69	0.30
37	7500	44300	154.40	0.14	0.07	5.09	0.76	0.34
42	7750	44150	38.60	0.06	0.13	2.42	0.36	0.16
43	7850	44150	38.60	0.06	0.04	1.96	0.29	0.13
44	7650	44250	38.60	6.49	14.91	2.64	0.50	2.55
45	7750	44250	38.60	5.20	14.25	79.04	11.94	6.80
46	7850	44250	38.60	0.07	0.04	1.97	0.29	0.13
47	7650	44350	38.60	0.05	0.04	1.53	0.22	0.09
48	7750	44350	38.60	0.07	0.04	2.42	0.36	0.14
49	7850	44350	38.60	0.03	0.04	1.34	0.19	0.07

