

Table C-1. Potential Emission Summary

Emission Point	Annual Emission Rate (tpy)							
	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO	HAP
Existing Engines and Cooling Units ^a	2.64	3.73	3.73	0.11	39.52	1.09	4.18	2.88E-02
Existing Diesel Storage Tanks	--	--	--	--	--	2.00	--	2.00E-02
Building D Main Gensets	0.11	0.41	0.41	0.01	16.24	0.33	3.29	9.64E-03
Building D Support Gensets	2.68E-03	0.01	0.01	0.01	0.10	0.00	0.05	1.78E-04
Previously Permitted Building E Gensets	2.29	5.96	5.96	0.02	29.57	3.67	3.76	2.67E-01
Previously Permitted Gensets	5.05	10.11	10.11	0.16	85.43	7.10	11.27	0.33
Project Emissions - Additional Building E Gensets	0.78	2.04	2.04	0.01	9.67	1.27	1.22	0.10
WAC Exemption Levels ^b	1.25	0.75	0.50	2.00	2.00	2.00	5.00	N/A
NSR Required?	No	Yes	Yes	No	Yes	No	No	N/A
Facility-Wide Potential Emissions	5.82	12.16	12.16	0.16	95.10	8.36	12.50	0.42
Title V Threshold	--	100	100	100	100	100	100	25
Title V Required?	N/A	No	No	No	No	No	No	No
PSD Major Source Threshold	--	250	250	250	250	250	250	N/A
PSD Major Source?	N/A	No	No	No	No	No	No	No

a. PTE from existing engines and cooling units are calculated based on the quantity and type of units actually installed and planned. These emissions include permitted emissions for the cooling units and diesel storage tanks included in Approval Order No. 20AQ-E022. HAP emissions are the sum of PTE for the TAPs that are HAPs too, assuming the unlisted HAPs are emitted in negligible amount.

b. WAC exemption levels are listed in WAC 173-400-110 Table 110(5).

Table C-2. Potential Facility-Wide TAP and HAP Emissions

Pollutant	Project Emission Rate	Existing Equipment PTE	Total
	(tpy)		
Acenaphthene	1.88E-05	1.74E-04	1.93E-04
Acenaphthylene	3.71E-05	3.44E-04	3.81E-04
Acetaldehyde	0.02	1.16E-03	0.02
Acrolein	9.93E-04	3.19E-04	1.31E-03
Anthracene	4.94E-06	4.62E-05	5.11E-05
Arsenic	4.69E-05	0.00E+00	4.69E-05
Benzene	5.46E-03	0.03	0.03
Benzo(a)anthracene	2.50E-06	2.36E-05	2.61E-05
Benzo(a)pyrene	1.03E-06	9.59E-06	1.06E-05
Benzo(b)fluoranthene	4.46E-06	4.12E-05	4.57E-05
Benzo(g,h,i)perylene	2.23E-06	2.08E-05	2.30E-05
Benzo(k)fluoranthene	8.75E-07	8.14E-06	9.01E-06
1,3-Butadiene	6.37E-03	1.13E-05	6.38E-03
Cadmium	4.40E-05	0.00E+00	4.40E-05
Chlorobenzene	5.86E-06	0.00E+00	5.86E-06
Chromium	1.76E-05	0.00E+00	1.76E-05
Chromium (VI)	2.93E-06	0.00E+00	2.93E-06
Chrysene	6.14E-06	5.69E-05	6.30E-05
Copper	1.20E-04	0.00E+00	1.20E-04
Dibenz(a,h)anthracene	1.39E-06	1.30E-05	1.44E-05
Ethyl benzene	3.19E-04	0.00E+00	3.19E-04
Fluoranthene	1.62E-05	1.52E-04	1.68E-04
Fluorene	5.14E-05	4.84E-04	5.35E-04
Formaldehyde	0.05	3.27E-03	0.05
Hexane	7.88E-04	0.00E+00	7.88E-04
Hydrogen chloride	5.46E-03	0.00E+00	5.46E-03
Indeno(1,2,3-cd)pyrene	1.66E-06	1.55E-05	1.71E-05
Lead	2.43E-04	0.00E+00	2.43E-04
Manganese	9.08E-05	0.00E+00	9.08E-05
Mercury	5.86E-05	0.00E+00	5.86E-05
Naphthalene	5.77E-04	4.85E-03	5.43E-03
Nickel	1.14E-04	0.00E+00	1.14E-04
Phenanthrene	1.64E-04	1.52E-03	1.69E-03
Propylene	1.37E-02	1.11E-02	0.02
Pyrene	1.49E-05	1.39E-04	1.54E-04
Selenium	6.45E-05	0.00E+00	6.45E-05
Toluene	3.09E-03	1.05E-02	1.36E-02
Xylenes	1.24E-03	7.25E-03	8.49E-03
Zinc	6.56E-04	0.00E+00	6.56E-04
PAH's	1.64E-03	0.00E+00	1.64E-03
Diesel engine exhaust, particulate	0.78	0.94	1.71
SO ₂	7.29E-03	0.16	0.17
CO	1.22	14.29	15.51
NO ₂	0.97	9.17	10.13

BUILDING E PROJECT SUMMARY

Proposed Building E Operating Hours Limit:	1350	hrs/yr
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a. Annual operating hours for all engines is based on 25 hrs/yr/engine at Building E.

Table C-3. Operation Scenario Summary

Operation Scenario	Project	Maximum Operations for Each Engine		Maximum Operations for All Engines		
		(hr/day/engine)	(hr/yr/engine)	(engine-hr/hr)	(engine-hr/day)	(engine-hr/yr)
Main Genset Running at Any Load ^{a,b} - Not Yet Installed	Previously Permitted	24	25	34	816	866
Main Genset Running at Any Load ^{a,b} - Installed	Previously Permitted	24	25	5	120	127
Support Genset Running at Any Load ^b	Previously Permitted	24	25	1	24	25
Main Genset Running at Any Load ^a	New Project	24	25	13	312	331
Total Operating Hours				53	1272	1350

a. This operating scenario includes all categories of operations, including emergency run, maintenance and testing runs. When all engines are required to be operated at the same time (e.g., emergency operation, certain testing), the maximum number of days of such operation will be 2 days in any given year while keeping the total number of hours per calendar year equal to or below 1,350. Maintenance and testing runs outside of these 2 days will be operated for a single engine at any hour, up to 24 engine-hours in any day.

b. The previously permitted gensets include

34

CAT, Cummins, or Kohler main gensets. For these gensets, the worst-case model parameters are used.

In addition to those main gensets, there are:

5

Cummins DQKAF model main gensets that have been installed at Building E.

1

support genset.

c. The project includes

13

CAT, Cummins, or Kohler main gensets. For these gensets, the worst-case model parameters are used.

Criteria Pollutants Emission Estimate - Main Gensets - Building E (Cummins DQKAF)

Pollutant	Emission Factor	Maximum Engine Emission Rate Across Any			All Installed Engines (tpy)
		Warm Engine (lb/hr/engine)	Cold-Start (lb/hr/engine)	(tpy/engine) ^e	
Particulate Matter (PM) ^b	Maximum Vendor Hourly Emission Rate	0.57	0.60	0.007711	0.04
Condensable PM ^b	Maximum Vendor Hourly Emission Rate for Total Hydrocarbon	0.50	0.53	0.006747	0.03
Particulate Matter <10 microns (PM ₁₀) ^b	Maximum Vendor Hourly Emission Rate	1.07	1.13	0.014458	0.07
Particulate Matter < 2.5 microns (PM _{2.5}) ^b	Maximum Vendor Hourly Emission Rate	1.07	1.13	0.014458	0.07
Sulfur Dioxide (SO ₂) ^c	1.21E-05 lb/hp-hr per AP-42	0.04	0.04	0.000501	0.00
Carbon Monoxide (CO) ^d	Maximum Vendor Hourly Emission Rate	5.71	6.47	0.083419	0.42
Nitrogen Oxides (NO _x) ^d	Maximum Vendor Hourly Emission Rate	62.27	62.20	0.792112	3.96
Volatile Organic Compounds (VOC)	Maximum Vendor Hourly Emission Rate	0.50	0.53	0.006747	0.03

a. This operating scenario includes all categories of operations, including emergency run, maintenance and testing runs. When all engines are required to be operated at the same time (e.g., emergency operation, certain testing), the maximum number of days of such operation will be 2 days in any given year while keeping the total number of hours per calendar year equal to or below 1,350. Maintenance and testing runs outside of these 2 days will be operated for a single engine at any hour, up to 24 engine-hours in any day.

b. Diesel PM hourly emissions are the maximum based on engine specifications across all loads and vendors (see Load Emissions tables) for conservatism. PM₁₀ and PM_{2.5} emissions are the diesel PM emission rates plus the condensable PM emission rate. Condensable PM emissions are conservatively assumed to be the same as hydrocarbon emissions from vendor data, which is also conservatively assumed to be the maximum hourly emission rate across all loads and vendors.

c. SO₂ emissions are calculated conservatively assuming constant operation at 100% load (i.e., maximum engine power). SO₂ emissions are based on maximum sulfur content allowed in ULSD (15 ppm) and are calculated according to methodology presented in AP-42, Chapter 3.4, Table 3.4-1.

d. NO_x and CO hourly emissions are the maximum based on engine specifications across all loads and vendors (see Load Emissions tables) for conservatism.

e. Emission calculations conservatively assumes

25

1-hour cold-start periods per year.

Criteria Pollutants Emission Estimate - Main Gensets - Worst Case - Building E (Previously Permitted)

Pollutant	Emission Factor	Maximum Engine Emission Rate Across Any			Annual Total for All Engines (tpy)
		Warm Engine (lb/hr/engine)	Cold-Start (lb/hr/engine)	(tpy/engine) ^e	
Particulate Matter (PM) ^b	Maximum Vendor Hourly Emission Rate	1.12	4.76	0.07	2.22
Condensable PM ^b	Maximum Vendor Hourly Emission Rate for Total Hydrocarbon	1.82	7.76	0.11	3.62
Particulate Matter <10 microns (PM ₁₀) ^b	Maximum Vendor Hourly Emission Rate	2.93	12.52	0.17	5.83
Particulate Matter < 2.5 microns (PM _{2.5}) ^b	Maximum Vendor Hourly Emission Rate	2.93	12.52	0.17	5.83
Sulfur Dioxide (SO ₂) ^c	1.21E-05 lb/hp-hr per AP-42	0.04	0.04	0.00	0.02
Carbon Monoxide (CO) ^d	Maximum Vendor Hourly Emission Rate	6.53	7.40	0.10	3.24
Nitrogen Oxides (NO _x) ^d	Maximum Vendor Hourly Emission Rate	62.27	58.33	0.74	25.09
Volatile Organic Compounds (VOC)	Maximum Vendor Hourly Emission Rate	1.82	7.76	0.11	3.62

a. This operating scenario includes all categories of operations, including emergency run, maintenance and testing runs. When all engines are required to be operated at the same time (e.g., emergency operation, certain testing), the maximum number of days of such operation will be 2 days in any given year while keeping the total number of hours per calendar year equal to or below 1,350. Maintenance and testing runs outside of these 2 days will be operated for a single engine at any hour, up to 24 engine-hours in any day.

b. Diesel PM hourly emissions are the maximum based on engine specifications across all loads and vendors (see Load Emissions tables) for conservatism. PM₁₀ and PM_{2.5} emissions are the diesel PM emission rates plus the condensable PM emission rate. Condensable PM emissions are conservatively assumed to be the same as hydrocarbon emissions from vendor data, which is also conservatively assumed to be the maximum hourly emission rate across all loads and vendors.

c. SO₂ emissions are calculated conservatively assuming constant operation at 100% load (i.e., maximum engine power). SO₂ emissions are based on maximum sulfur content allowed in ULSD (15 ppm) and are calculated according to methodology presented in AP-42, Chapter 3.4, Table 3.4-1.

d. NO_x and CO hourly emissions are the maximum based on engine specifications across all loads and vendors (see Load Emissions tables) for conservatism.

e. Emission calculations conservatively assumes

25

1-hour cold-start periods per year.

Table C-4. Criteria Pollutants Emission Estimate - Main Gensets - Worst Case - Building E (New Project)

Pollutant	Emission Factor	Maximum Engine Emission Rate Across Any			Annual Total for All Engines (tpy)
		Warm Engine (lb/hr/engine)	Load/Vendor ^a Cold-Start (lb/hr/engine)	(tpy/engine) ^e	
Particulate Matter (PM) ^b	Maximum Vendor Hourly Emission Rate	1.12	4.76	0.06	0.78
Condensable PM ^b	Maximum Vendor Hourly Emission Rate for Total Hydrocarbon	1.79	7.76	0.10	1.27
Particulate Matter <10 microns (PM ₁₀) ^b	Maximum Vendor Hourly Emission Rate	2.90	12.52	0.16	2.04
Particulate Matter < 2.5 microns (PM _{2.5}) ^b	Maximum Vendor Hourly Emission Rate	2.90	12.52	0.16	2.04
Sulfur Dioxide (SO ₂) ^c	1.21E-05 lb/hp-hr per AP-42	0.04	0.04	0.00	0.01
Carbon Monoxide (CO) ^d	Maximum Vendor Hourly Emission Rate	6.53	7.40	0.09	1.22
Nitrogen Oxides (NO _x) ^d	Maximum Vendor Hourly Emission Rate	62.27	58.33	0.74	9.67
Volatile Organic Compounds (VOC)	Maximum Vendor Hourly Emission Rate	1.79	7.76	0.10	1.27

a. This operating scenario includes all categories of operations, including emergency run, maintenance and testing runs. When all engines are required to be operated at the same time (e.g., emergency operation, certain testing), the maximum number of days of such operation will be 2 days in any given year while keeping the total number of hours per calendar year equal to or below 1,350. Maintenance and testing runs outside of these 2 days will be operated for a single engine at any hour, up to 24 engine-hours in any day.

b. Diesel PM hourly emissions are the maximum based on engine specifications across all loads and vendors (see Load Emissions tables) for conservatism. PM₁₀ and PM_{2.5} emissions are the diesel PM emission rates plus the condensable PM emission rate. Condensable PM emissions are conservatively assumed to be the same as hydrocarbon emissions from vendor data, which is also conservatively assumed to be the maximum hourly emission rate across all loads and vendors.

c. SO₂ emissions are calculated conservatively assuming constant operation at 100% load (i.e., maximum engine power). SO₂ emissions are based on maximum sulfur content allowed in ULSD (15 ppm) and are calculated according to methodology presented in AP-42, Chapter 3.4, Table 3.4-1.

d. NO_x and CO hourly emissions are the maximum based on engine specifications across all loads and vendors (see Load Emissions tables) for conservatism.

e. Emission calculations conservatively assumes

25

1-hour cold-start periods per year.

Criteria Pollutants Emission Estimate - Support Genset - Building E (Previously Permitted)

Pollutant	Emission Factor	Maximum Engine Emission Rate Across Any			Annual Total for All Engines (tpy)
		Warm Engine (lb/hr/engine)	Cold-Start (lb/hr/engine)	(tpy/engine) ^e	
Particulate Matter (PM) ^b	Maximum Vendor Hourly Emission Rate	0.56	2.41	3.30E-02	0.03
Condensable PM ^b	Maximum Vendor Hourly Emission Rate for Total Hydrocarbon	0.38	1.61	2.20E-02	0.02
Particulate Matter <10 microns (PM ₁₀) ^b	Maximum Vendor Hourly Emission Rate	0.94	4.01	5.50E-02	0.05
Particulate Matter < 2.5 microns (PM _{2.5}) ^b	Maximum Vendor Hourly Emission Rate	0.94	4.01	5.50E-02	0.05
Sulfur Dioxide (SO ₂) ^c	1.21E-05 lb/hp-hr per AP-42	0.03	0.03	3.43E-04	0.00
Carbon Monoxide (CO) ^d	Maximum Vendor Hourly Emission Rate	5.98	7.40	9.61E-02	0.10
Nitrogen Oxides (NO _x) ^d	Maximum Vendor Hourly Emission Rate	43.76	40.99	5.19E-01	0.52
Volatile Organic Compounds (VOC)	Maximum Vendor Hourly Emission Rate	0.38	1.61	2.20E-02	0.02

a. This operating scenario includes all categories of operations, including emergency run, maintenance and testing runs. When all engines are required to be operated at the same time (e.g., emergency operation, certain testing), the maximum number of days of such operation will be 2 days in any given year while keeping the total number of hours per calendar year equal to or below 1,350. Maintenance and testing runs outside of these 2 days will be operated for a single engine at any hour, up to 24 engine-hours in any day.

b. Diesel PM hourly emissions are the maximum based on engine specifications across all loads and vendors (see Load Emissions tables) for conservatism. PM₁₀ and PM_{2.5} emissions are the diesel PM emission rates plus the condensable PM emission rate. Condensable PM emissions are conservatively assumed to be the same as hydrocarbon emissions from vendor data, which is also conservatively assumed to be the maximum hourly emission rate across all loads and vendors.

c. SO₂ emissions are calculated conservatively assuming constant operation at 100% load (i.e., maximum engine power). SO₂ emissions are based on maximum sulfur content allowed in ULSD (15 ppm) and are calculated according to methodology presented in AP-42, Chapter 3.4, Table 3.4-1.

d. NO_x and CO hourly emissions are the maximum based on engine specifications across all loads and vendors (see Load Emissions tables) for conservatism.

e. Emission calculations conservatively assumes 25 1-minute cold-start periods per year.

Fuel Consumption Summary

Operation Mode ^a	Hourly Fuel Consumption Rate ^b (gal/hr)	Maximum Hourly Scenario		Maximum Daily Scenario		Annual Scenario	
		Maximum Number of Engines Running in Any Single Hour	Subtotal (gal/hr)	Maximum Number of Engines-Hours in Any Single Day	Subtotal (gal/day)	Number of Engines-Hours in a Year	Subtotal (gal/yr)
Main Genset Maximum Load - Worst Case Not Installed	177.00	34	6,018	816	144,432	866	153,289
Main Genset Maximum Load - Worst Case Installed	153.00	5	765	120	18,360	127	19,486
Main Genset Maximum Load - Worst Case New Project	177.00	13	2,301	312	55,224	331	58,610
Support Genset Maximum Load	105.90	1	106	24	2,542	25	2,697
Total	612.90		9,190		220,558		234,082

a. This operating scenario includes all categories of operations, including emergency run, maintenance and testing runs. When all engines are required to be operated at the same time (e.g., emergency operation, certain testing), the maximum number of days of such operation will be 2 days in any given year while keeping the total number of hours per calendar year equal to or below 1,350. Maintenance and testing runs outside of these 2 days will be operated for a single engine at any hour, up to 24 engine-hours in any day.

b. The maximum hourly fuel consumption rate among all vendors at 100% load is used to determine the daily and annual fuel consumptions for conservatism.

Table C-5. Maximum Emissions for All Engines - Building E Additional Gensets

Pollutant	Maximum Emission for All Engines		
	Hourly Total for All Engines (lb/hr)	Daily Totals for All Engines (lb/day)	Annual Total for All Engines (tpy)
Particulate Matter (PM)	61.91	1485.74	0.78
Condensable PM	100.88	2421.20	1.27
Particulate Matter <10 microns (PM ₁₀)	162.79	3906.94	2.04
Particulate Matter < 2.5 microns (PM _{2.5})	162.79	3906.94	2.04
Sulfur Dioxide (SO ₂)	0.57	13.73	0.01
Carbon Monoxide (CO)	96.25	2309.98	1.22
Nitrogen Oxides (NO _x)	809.48	19427.47	9.67
Volatile Organic Compounds (VOC)	100.88	2421.20	1.27
Hazardous Air Pollutants (HAPs)	7.76	186.28	0.10

Table C-6. Building E Additional Gensets HAP and TAP Emissions

Pollutant	CAS Number	HAP?	TAP?	AP-42 Emission	Ventura County AB 2588 Diesel Internal		Building E Main Genset Emissions - Worst Case			Averaging	De Minimis	SQER	Project	Modeling
				Factors ¹ (lb/MMBtu)	Combustion Emission Factors ¹ (lb/1000 gal)	(lb/MMBtu)	(lb/hr)	(lb/day)	(tpy)			(lb/avg period)		
Acenaphthene	83-32-9	Yes	No	4.68E-06			1.48E-03	0.04	1.88E-05	-	-	-	-	--
Acenaphthylene	208-96-8	Yes	No	9.23E-06			2.91E-03	0.07	3.71E-05	-	-	-	-	--
Acetaldehyde	75-07-0	Yes	Yes	2.52E-05	0.78	5.72E-03	1.80	43.26	0.02	year	3.00E+00	6.00E+01	45.91	No
Acrolein	107-02-8	Yes	Yes	7.88E-06	0.03	2.47E-04	0.08	1.87	9.93E-04	24-hr	1.30E-03	2.60E-02	1.87	Yes
Anthracene	120-12-7	Yes	No	1.23E-06			3.88E-04	9.31E-03	4.94E-06	-	-	-	-	--
Arsenic	7440-38-2	Yes	Yes		1.60E-03	1.17E-05	3.68E-03	0.09	4.69E-05	year	2.50E-03	4.90E-02	0.09	Yes
Benzene	71-43-2	Yes	Yes	7.76E-04	0.19	1.36E-03	0.43	10.29	5.46E-03	year	1.00E+00	2.10E+01	10.92	No
Benzo(a)anthracene	56-55-3	Yes	Yes	6.22E-07			1.96E-04	4.71E-03	2.50E-06	year	4.50E-02	8.90E-01	4.99E-03	De Minimis
Benzo(a)pyrene	50-32-8	Yes	Yes	2.57E-07			8.10E-05	1.94E-03	1.03E-06	year	8.20E-03	1.60E-01	2.06E-03	De Minimis
Benzo(b)fluoranthene	205-99-2	Yes	Yes	1.11E-06			3.50E-04	8.40E-03	4.46E-06	year	4.50E-02	8.90E-01	8.91E-03	De Minimis
Benzo(g,h,i)perylene	--	Yes	No	5.56E-07			1.75E-04	4.21E-03	2.23E-06	-	-	-	-	--
Benzo(k)fluoranthene	207-08-9	Yes	Yes	2.18E-07			6.87E-05	1.65E-03	8.75E-07	year	4.50E-02	8.90E-01	1.75E-03	De Minimis
1,3-Butadiene	106-99-0	Yes	Yes		0.22	1.59E-03	0.50	12.01	6.37E-03	year	2.70E-01	5.40E+00	12.74	Yes
Cadmium	7440-43-9	Yes	Yes		1.50E-03	1.09E-05	3.45E-03	0.08	4.40E-05	year	1.90E-03	3.90E-02	0.09	Yes
Chlorobenzene	108-90-7	Yes	Yes		2.00E-04	1.46E-06	4.60E-04	1.10E-02	5.86E-06	24-hr	3.70E+00	7.40E+01	1.10E-02	De Minimis
Chromium	7440-47-3	Yes	Yes		6.00E-04	4.38E-06	1.38E-03	0.03	1.76E-05	24-hr	3.70E-04	7.40E-03	0.03	Yes
Chromium (VI)	18540-29-9	No	Yes		1.00E-04	7.30E-07	2.30E-04	5.52E-03	2.93E-06	year	3.30E-05	6.50E-04	5.86E-03	Yes
Chrysene	218-01-9	Yes	Yes	1.53E-06			4.82E-04	1.16E-02	6.14E-06	year	4.50E-01	8.90E+00	1.23E-02	De Minimis
Copper	7440-50-8	No	Yes		4.10E-03	2.99E-05	9.43E-03	0.23	1.20E-04	1-hr	9.30E-03	1.90E-01	9.43E-03	No
Dibenz(a,h)anthracene	53-70-3	Yes	Yes	3.46E-07			1.09E-04	2.62E-03	1.39E-06	year	4.10E-03	8.20E-02	2.78E-03	De Minimis
Ethyl benzene	100-41-4	Yes	Yes		1.09E-02	7.96E-05	0.03	0.60	3.19E-04	year	3.20E+00	6.50E+01	0.64	De Minimis
Fluoranthene	206-44-0	Yes	No	4.03E-06			1.27E-03	0.03	1.62E-05	-	-	-	-	--
Fluorene	86-73-7	Yes	No	1.28E-05			4.04E-03	0.10	5.14E-05	-	-	-	-	--
Formaldehyde	50-00-0	Yes	Yes	7.89E-05	1.73	1.26E-02	3.97	95.32	0.05	year	1.40E+00	2.70E+01	101.17	Yes
Hexane	110-54-3	Yes	Yes		0.03	1.96E-04	0.06	1.49	7.88E-04	24-hr	2.60E+00	5.20E+01	1.49	De Minimis
Hydrogen chloride	7647-01-0	Yes	Yes		0.19	1.36E-03	0.43	10.29	5.46E-03	24-hr	3.30E-02	6.70E-01	10.29	Yes
Indeno(1,2,3-cd)pyrene	193-39-5	Yes	Yes	4.14E-07			1.31E-04	3.13E-03	1.66E-06	year	4.50E-02	8.90E-01	3.32E-03	De Minimis
Lead	7439-92-1	Yes	Yes		8.30E-03	6.06E-05	0.02	0.46	2.43E-04	year	1.00E+01	1.40E+01	0.49	De Minimis
Manganese	7439-96-5	Yes	Yes		3.10E-03	2.26E-05	7.13E-03	0.17	9.08E-05	24-hr	1.10E-03	2.20E-02	0.17	Yes
Mercury	7439-97-6	Yes	Yes		2.00E-03	1.46E-05	4.60E-03	0.11	5.86E-05	24-hr	1.10E-04	2.20E-03	0.11	Yes
Naphthalene	91-20-3	Yes	Yes	1.30E-04	0.02	1.44E-04	0.05	1.09	5.77E-04	year	2.40E-01	4.80E+00	1.15	No
Nickel	7440-02-0	Yes	Yes		3.90E-03	2.85E-05	8.97E-03	0.22	1.14E-04	year	3.10E-02	6.20E-01	0.23	No
Phenanthrene	85-01-8	Yes	No	4.08E-05			1.29E-02	0.31	1.64E-04	-	-	-	-	--
Propylene	115-07-1	No	Yes	2.79E-04	0.47	3.41E-03	1.07	25.79	1.37E-02	24-hr	1.10E+01	2.20E+02	25.79	No
Pyrene	129-00-0	Yes	No	3.71E-06			1.17E-03	0.03	1.49E-05	-	-	-	-	--
Selenium	7782-49-2	Yes	Yes		2.20E-03	1.61E-05	5.06E-03	0.12	6.45E-05	24-hr	7.40E-02	1.50E+00	0.12	No
Toluene	108-88-3	Yes	Yes	2.81E-04	0.11	7.69E-04	0.24	5.82	3.09E-03	24-hr	1.90E+01	3.70E+02	5.82	De Minimis
Xylenes	1330-20-7	Yes	Yes	1.93E-04	0.04	3.09E-04	0.10	2.34	1.24E-03	24-hr	8.20E-01	1.60E+01	2.34	No
Zinc	7440-66-6	No	No		0.02	1.64E-04	0.05	1.24	6.56E-04	-	-	-	-	--
PAH's	--	No	No		0.06	4.08E-04	0.13	3.09	1.64E-03	-	-	-	-	--
Diesel engine exhaust, particulate	--	No	Yes	See Vendor Data			61.91	87.58	0.78	year	2.70E-02	5.40E-01	1,554.49	Yes
SO ₂	7446-09-05	No	Yes	See Vendor Data			0.57	1.58	7.29E-03	1-hr	4.60E-01	1.20E+00	0.57	No
CO	630-08-0	No	Yes	See Vendor Data			96.25	246.50	1.22	1-hr	1.10E+00	4.30E+01	96.25	Yes
NO ₂	10102-44-0	No	Yes	See Vendor Data			80.95	1,942.75	0.97	1-hr	4.60E-01	8.70E-01	80.95	Yes
Total HAP Emissions:							7.76	186.28	0.10					
Total TAP Emissions:							248.50	2,490.13	3.09					

1. AP-42 emission factors are from AP-42 Tables 3.4-3 and 3.4-4. Emission factors are from Ventura County Air Pollution Control District, AB 2588 Combustion Emission Factors for Diesel Internal Combustion.

2. Diesel heat content 0.137 MMBtu/gal per AP-42, Appendix A. Fuel consumption rate is provided in Table 1c. Emissions in this table represent the maximum hourly, daily, and annual emission for each pollutant.

3. Modeling is required if the project emissions are greater than the respective Small Quantity Emission Rate.

4. These are categorized as polycyclic organic matter (POM), which is a HAP.

5. Diesel particulate matter is assumed to be equivalent to filterable particulate matter.

6. SO₂, CO and NO_x emissions with maximum operation scenario (when all emergency generators are in operation) are listed here. It is conservatively assumed that 10% of NO_x are emitted in the form of NO₂.

[illegible][illegible][illegible][illegible]

Table C-8a. Cold Start Scaling Factors

Pollutant	Spike Duration (seconds) ^a	Cold-Start Emission Spike ^a	Steady-State (Warm) Emissions ^a	Cold-Start Scaling Factor
		(ppm)	(ppm)	
PM+HC	14	900	30	4.27
NO _x	8	40	38	0.94
CO	20	750	30	9.00

a. Spike duration, cold-start emission spike, and steady-state (warm) emissions based on data from California Energy Commission (CEC) "Air Quality Implications of Backup Generators in California. The cold-start scaling factor is derived as the ratio of the spike concentration and duration to the steady-state emissions for the initial 60 seconds. An example calculation is provided below for HC. Since a cold-start curve was not developed by CEC, it is assumed that the PM will experience the same trend as HC.

Table C-8b. Building E Cold Start Emission Rates

Pollutant	Worst-case Emission Rate (lb/hr/engine)		
	Main Genset - Worst Case		
	Warm	Cold-Start	Startup Emission Rate ¹
HC	1.82	7.76	1.92
NO _x	62.27	58.33	62.20
CO	6.53	58.79	7.40
DEEP/PM	1.12	4.76	1.18
PM ₁₀ /PM _{2.5}	2.93	12.52	3.09

a. Startup hourly emission rate assumes one minute of cold-start emissions and 59 minutes of warm engine emissions.

Table C-8c. Building E Cold Start Emissions

Pollutant	Annual Emissions from Cold Start Hours - Main Gensets
	(tpy)
HC	0.35
NO _x	11.32
CO	1.35
DEEP	0.21
PM ₁₀ /PM _{2.5}	0.56

a. Calculations conservatively assume

28

cold starts per engine, per year.

Table E-2. DPM Load Analysis Parameters - Building E Additional Gensets

Operation Load	Flow Rate ¹	Diameter	Exit Velocity	Temperature ^a	Stack Height	DPM Maximum Hourly Emission Rate ¹		DPM Maximum Hourly Emission Rate, Cold Start ¹		DPM Annual Emissions	Maximum Annualized Modeled Emission Rate
	(acfm)	(m)	(m/s)	(K)	(ft)	(lb/hr/engine)	(g/s/engine)	(lb/hr/engine)	(g/s/engine)	(lb/yr/engine)	(g/s/engine)
Cummins QSK60-G26											
10%	4,384	0.46	12.44969289	641	60	0.18	2.31E-02	0.19	2.43E-02	4.91	7.06E-05
25%	6,823	0.46	19.38	748	60	0.39	4.91E-02	0.41	5.18E-02	10.46	1.50E-04
50%	10,860	0.46	30.84	784	60	0.41	5.14E-02	0.43	5.42E-02	10.96	1.58E-04
75%	14,796	0.46	42.02	773	60	0.24	3.02E-02	0.25	3.19E-02	6.44	9.26E-05
100%	19,205	0.46	54.54	799	60	0.64	8.06E-02	0.67	8.50E-02	17.16	2.47E-04
Cummins QSK60-G14											
10%	4,403	0.46	12.50364913	595	60	0	6.11E-02	0.51	6.44E-02	13.00	1.87E-04
25%	6,770	0.46	19.23	661	60	0.56	7.09E-02	0.59	7.48E-02	15.10	2.17E-04
50%	11,174	0.46	31.73	711	60	0.51	6.37E-02	0.53	6.71E-02	13.56	1.95E-04
75%	14,037	0.46	39.86	729	60	0.32	4.04E-02	0.34	4.26E-02	8.60	1.24E-04
100%	16,429	0.46	46.66	751	60	0.57	7.20E-02	0.60	7.59E-02	15.33	2.20E-04
Rehiko KD2250^{1,4}											
10%	4,427	0.46	12.57	608	60	0.22	2.78E-02	0.23	2.93E-02	5.92	8.51E-05
25%	7,200	0.46	20.45	683	60	0.50	6.25E-02	0.52	6.59E-02	13.31	1.91E-04
50%	11,950	0.46	33.94	673	60	0.39	4.86E-02	0.41	5.13E-02	10.35	1.49E-04
75%	17,221	0.46	48.90	718	60	0.74	9.38E-02	0.78	9.89E-02	19.97	2.87E-04
100%	17,715	0.46	50.31	723	60	0.28	3.47E-02	0.29	3.66E-02	7.39	1.06E-04
Rehiko KD2500^{1,5}											
10%	4,603	0.46	13.07	618	60	0.28	3.53E-02	0.29	3.72E-02	7.51	1.08E-04
25%	7,546	0.46	21.43	688	60	0.60	7.50E-02	0.63	7.91E-02	15.97	2.30E-04
50%	12,735	0.46	36.16	673	60	0.51	6.38E-02	0.53	6.72E-02	13.58	1.95E-04
75%	18,402	0.46	52.26	738	60	1.12	1.41E-01	1.18	1.48E-01	29.95	4.31E-04
100%	18,617	0.46	52.87	743	60	0.30	3.75E-02	0.31	3.95E-02	7.99	1.15E-04
Cat 3516C - 2250											
10%	4,259	0.46	12.09	557	60	0.30	3.78E-02	0.32	3.99E-02	8.05	1.16E-04
25%	6,779	0.46	19.25	654	60	0.30	3.78E-02	0.32	3.99E-02	8.05	1.16E-04
50%	11,023	0.46	31.30	685	60	0.30	3.78E-02	0.32	3.99E-02	8.05	1.16E-04
75%	14,428	0.46	40.97	699	60	0.28	3.53E-02	0.30	3.72E-02	7.51	1.08E-04
100%	17,407	0.46	49.43	717	60	0.31	3.91E-02	0.33	4.12E-02	8.32	1.20E-04
Cat 3516C - 2500											
10%	4,428	0.46	12.58	568	60	0.31	3.91E-02	0.33	4.12E-02	8.32	1.20E-04
25%	7,238	0.46	20.55	662	60	0.31	3.91E-02	0.33	4.12E-02	8.32	1.20E-04
50%	11,701	0.46	33.23	686	60	0.29	3.65E-02	0.31	3.85E-02	7.78	1.12E-04
75%	15,126	0.46	42.95	702	60	0.27	3.40E-02	0.28	3.59E-02	7.24	1.04E-04
100%	18,497	0.46	52.53	729	60	0.41	5.17E-02	0.43	5.45E-02	11.00	1.58E-04

Table E-3. TAP Model Emission Rates - Building E Additional Gensets

Pollutant	Averaging Period	Emission Rate (g/s)
Acrolein	24-hr	7.56E-04
Arsenic	year	1.04E-07
1,3-Butadiene	year	1.41E-05
Cadmium	year	9.73E-08
Chromium	24-hr	1.34E-05
Chromium (VI)	year	6.48E-09
Formaldehyde	year	1.12E-04
Hydrogen chloride	24-hr	4.15E-03
Manganese	24-hr	6.91E-05
Mercury	24-hr	4.46E-05
Diesel engine exhaust, particulate	year	1.72E-03
CO	1-hr	9.33E-01
NO2	1-hr	7.85E+00

Table E-1. For Each Main Genset - Criteria Pollutant Model Parameters Adjusted for Agency Comments

Load	Flow Rate ^a	Diameter	Height	Temp ^a	Exit Velocity
	(acfm)	(ft)	(ft)	(K)	(m/s)
100%	15607.55	1.51	60	681.24	44.32
75%	13335.15	1.51	60	663.88	37.87
50%	10317	1.51	60	639.49	29.30
25%	6432	1.51	60	621.39	18.26

a. Consistent with agency comments, a 5% reduction in flow rate and temperature is applied to all operating loads.

Lower Loads

Load	Flow Rate ^a	Diameter ^b	Height	Temp ^a	Exit Velocity
	(acfm)	(ft)	(ft)	(K)	(m/s)
10%	4259	1.79	60	556.98	8.55

a. Consistent with other applications submitted to Ecology, a 30% reduction in exit velocity is accounted for at 10% load conditions to account for the rain flap at the stack tip.

Initial modeling submitted for this application had an exit velocity of:

12.09

b. An effective stack diameter is developed by dividing the actual flow rate from the engine by the adjusted exit velocity.

Table E-4. Modeled Rectangular Buildings

Model ID	Description	UTM X (m)	UTM Y (m)	Elevation (m)	Height (m)	X Length (m)	Y Length (m)	Angle (Degrees)
BUILD_D	Building D	286910.1	5236112.2	395.5	8.08	158.2	80.6	2.9

Table E-5. Modeled Polygon Buildings

Model ID	Description	UTM X (m)	UTM Y (m)	Elevation (m)	Height (m)
BUILD_C	Existing Building	286884	5236274	397.01	8.53
BUILD_B	Existing Building	287223	5236464.95	397.33	8.53
BUILD_A	Existing Building	287218.45	5236317.87	396.06	8.53
DWALLE	Genset Enclosure - Building D, East Side	287072.7	5236189.7	395.62	3.66
DWALLW	Genset Enclosure - Building D, West Side	286877.6	5236202.8	396.4	3.66
DWALLSW	Genset Enclosure - Building D, Southwest Side	286911	5236112.6	395.5	3.66
DWALLSE	Genset Enclosure - Building D, Southeast Side	287001.7	5236106.9	395.03	3.66
BUILD_E	Existing Building	286578.1	5236377.8	398.14	6.1
EWALL_NW	Genset Enclosure - Building E, Northwest Side	286576.9	5236380	398.17	3.05
EWALL_NE	Genset Enclosure - Building E, Northeast Side	286808	5236273.7	397.11	3.05
EWALL_SW	Genset Enclosure - Building E, Southwest Side	286569.1	5236188.1	396.55	3.05
EWALL_SE	Genset Enclosure - Building E, Southeast Side	286804.3	5236178.5	396.35	3.05

Table E-6. Model Background Concentrations

Pollutant	Averaging Period	Background Concentration/ Use^{a,b,c}	Units	Background Concentration ($\mu\text{g}/\text{m}^3$)
NO ₂	1-hr	N/A	N/A	N/A
	Annual	3.00	ppb	5.6
PM ₁₀	24-hr	77.85	$\mu\text{g}/\text{m}^3$	77.9
PM _{2.5}	24-hr	18.49	$\mu\text{g}/\text{m}^3$	18.5
	Annual	5.69	$\mu\text{g}/\text{m}^3$	5.7
CO	1-hr	1.13	ppm	1293.6
	8-hr	0.79	ppm	904.4
O ₃	PVMRM	51.97	ppb	101.9
	8-hr	57.55	ppb	112.9
SO ₂	1-hr	3.05	ppb	8.0
	3-hr	5.60	ppb	14.7
	24-hr	0.93	ppb	2.4
	Annual	0.17	ppb	0.4
DPM	Annual	0.14	$\mu\text{g}/\text{m}^3$	0.14

a. Background concentrations for models are determined using the NW-AIRQUEST database tool.

<https://idahodeq.maps.arcgis.com/apps/MapSeries/index.html?appid=0c8a006e11fe4ec5939804b873098dfe>

b. Time varying NO₂ background concentrations were used to quantify NO₂ 1-hr total impacts, as described in Section 6.10.1.1 of the associated NOC application report.

c. Background concentration for DPM are consistent with the NOC application submitted for Approval Order No. 20AQ-E022.

Table E-7. Secondary PM_{2.5} Calculations

Precursor Pollutant	Precursor Project Emissions ^a (tpy)	MERP Modeled Emissions (tpy)	Maximum Concentration ^b	
			PM _{2.5} - Daily (µg/m ³)	PM _{2.5} - Annual (µg/m ³)
NO _x	39.24	500	3.40E-03	1.96E-04
SO ₂	0.03	500	2.91E-05	5.18E-07
Total			3.43E-03	1.96E-04

a. The listed precursor emissions are the worst-case project emissions among all operating scenarios.

b. The modeled emission rate precursor concentrations are determined by scaling the project emission rate by the modeled air quality impact from the Klickitat County, WA modeled source as shown in Equation 1, *Clarification on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and PM_{2.5} under the PSD Permitting Program (2024)*:

Equation 1: Project Air Quality Impact = Project emission rate x Modeled air quality impact from hypothetical source / Modeled emission rate from hypothetical source

Note that total Building E emissions are conservatively used for the "project" emissions for the purpose of determining secondary PM_{2.5} impacts.

"MaxConc" values are shown below per the MERPs View Qlik tool:

	Daily PM _{2.5}	Annual PM _{2.5}
NO _x	0.04333	0.00249
SO ₂	0.49867	0.00887

			(µg/m3)	(lb/averaging period)	(lb/averaging period)
Common Name	CAS #	Averaging Period	ASIL	SQER	De Minimis
Acetaldehyde	75-07-0	year	3.70E-01	6.00E+01	3.00E+00
Acetamide	60-35-5	year	5.00E-02	8.10E+00	4.10E-01
Acetonitrile	75-05-8	24-hr	6.00E+01	4.40E+00	2.20E-01
2-Acetylaminofluorene	53-96-3	year	4.60E-04	7.50E-02	3.80E-03
Acrolein	107-02-8	24-hr	3.50E-01	2.60E-02	1.30E-03
Acrylamide	79-06-1	year	6.00E-03	9.80E-01	4.90E-02
Acrylic acid	79-10-7	24-hr	1.00E+00	7.40E-02	3.70E-03
Acrylonitrile	107-13-1	year	3.40E-03	5.60E-01	2.80E-02
Actinomycin D	50-76-0	year	4.00E-07	6.50E-05	3.20E-06
Alar (daminozide)	1596-84-5	year	2.00E-01	3.20E+01	1.60E+00
Aldrin	309-00-2	year	2.00E-04	3.30E-02	1.70E-03
Allyl chloride	107-05-1	year	1.70E-01	2.70E+01	1.40E+00
3-Amino-9-ethylcarbazole hydrochloride	6109-97-3	year	4.50E-02	7.40E+00	3.70E-01
2-Amino-3-methyl-9H-pyrido[2,3-b]indole	68006-83-7	year	2.90E-03	4.80E-01	2.40E-02
1-Amino-2-methylantraquinone	82-28-0	year	2.30E-02	3.80E+00	1.90E-01
2-Amino-3-methylimidazo-[4,5-f]quinoline	76180-96-6	year	2.50E-03	4.10E-01	2.00E-02
2-Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol	712-68-5	year	2.20E-04	3.50E-02	1.80E-03
A-alpha-c(2-amino-9h-pyrido[2,3-b]indole)	26148-68-5	year	8.70E-03	1.40E+00	7.10E-02
2-Aminoanthraquinone	117-79-3	year	6.40E-02	1.00E+01	5.20E-01
o-Aminoazotoluene	97-56-3	year	9.10E-04	1.50E-01	7.40E-03
4-Aminobiphenyl	92-67-1	year	1.70E-04	2.70E-02	1.40E-03
Amitrole	61-82-5	year	3.70E-03	6.00E-01	3.00E-02
Ammonia	7664-41-7	24-hr	5.00E+02	3.70E+01	1.90E+00
Ammonium bisulfate	7803-63-6	1-hr	1.20E+02	2.20E-01	1.10E-02
Aniline	62-53-3	year	6.30E-01	1.00E+02	5.10E+00
o-Anisidine	90-04-0	year	2.50E-02	4.10E+00	2.00E-01
o-Anisidine hydrochloride	134-29-2	year	3.20E-02	5.20E+00	2.60E-01
Antimony trioxide	1309-64-4	24-hr	2.00E-01	1.50E-02	7.40E-04
Aramite	140-57-8	year	1.20E-01	1.90E+01	9.40E-01
Tris(1-aziridinyl)phosphine sulfide	52-24-4	year	2.90E-04	4.80E-02	2.40E-03
Arsenic & inorganic arsenic compounds, NOS	7440-38-2	year	3.00E-04	4.90E-02	2.50E-03
Arsine	7784-42-1	24-hr	1.50E-02	1.10E-03	5.60E-05
Asbestos (fibers/cubic centimeter)	1332-21-4	year	4.30E-06	7.10E-04	3.50E-05
Actinolite asbestos (fibers/cubic centimeter)	12172-67-7	year	4.30E-06	7.10E-04	3.50E-05
Amosite asbestos (fibers/cubic centimeter)	12172-73-5	year	4.30E-06	7.10E-04	3.50E-05
Anthophyllite asbestos (fibers/cubic centimeter)	17068-78-9	year	4.30E-06	7.10E-04	3.50E-05
Chrysotile asbestos (fibers/cubic centimeter)	12001-29-5	year	4.30E-06	7.10E-04	3.50E-05
Crocidolite asbestos (fibers/cubic centimeter)	12001-28-4	year	4.30E-06	7.10E-04	3.50E-05
Libby amphibole asbestos and amphiboles, NOS (fibers/cubic centimeter)	—	year	5.90E-06	9.60E-04	4.80E-05
Tremolite asbestos (fibers/cubic centimeter)	14567-73-8	year	4.30E-06	7.10E-04	3.50E-05
Auramine	492-80-8	year	4.00E-03	6.50E-01	3.20E-02
Azaserine	115-02-6	year	3.20E-04	5.20E-02	2.60E-03
Azathioprine	446-86-6	year	2.00E-03	3.20E-01	1.60E-02
Azobenzene	103-33-3	year	3.20E-02	5.20E+00	2.60E-01
Barium chromate	10294-40-3	year	2.00E-05	3.20E-03	1.60E-04
Benz[a]anthracene	56-55-3	year	5.50E-03	8.90E-01	4.50E-02
Benzene	71-43-2	year	1.30E-01	2.10E+01	1.00E+00
Benzidine	92-87-5	year	4.30E-06	7.00E-04	3.50E-05
Benzo[a]pyrene	50-32-8	year	1.00E-03	1.60E-01	8.20E-03
Benzo[b]fluoranthene	205-99-2	year	5.50E-03	8.90E-01	4.50E-02
Benzo[j]fluoranthene	205-82-3	year	5.50E-03	8.90E-01	4.50E-02
Benzo[k]fluoranthene	207-08-9	year	5.50E-03	8.90E-01	4.50E-02
Benzyl chloride	100-44-7	year	2.00E-02	3.30E+00	1.70E-01
Benzyl violet 4B	1694-09-3	year	1.80E-01	2.80E+01	1.40E+00
Beryllium & compounds, NOS	—	year	4.20E-04	6.80E-02	3.40E-03
Beryllium oxide	1304-56-9	year	4.20E-04	6.80E-02	3.40E-03
Beryllium sulfate	13510-49-1	year	1.20E-06	1.90E-04	9.40E-06
beta-Butyrolactone	3068-88-0	year	3.40E-03	5.60E-01	2.80E-02
beta-Propiolactone	57-57-8	year	2.50E-04	4.10E-02	2.00E-03
Bis(2-chloroethyl) ether	111-44-4	year	1.40E-03	2.30E-01	1.10E-02
Bis(chloromethyl) ether	542-88-1	year	7.70E-05	1.20E-02	6.20E-04

Boron & compounds, NOS	—	24-hr	3.00E+02	2.20E+01	1.10E+00
Bromobenzene	108-86-1	24-hr	6.00E+01	4.40E+00	2.20E-01
Bromodichloromethane	75-27-4	year	2.70E-02	4.40E+00	2.20E-01
Bromoform	75-25-2	year	9.10E-01	1.50E+02	7.40E+00
Bromomethane (methyl bromide)	74-83-9	24-hr	5.00E+00	3.70E-01	1.90E-02
1-Bromopropane	106-94-5	24-hr	1.00E+02	7.40E+00	3.70E-01
1,3-Butadiene	106-99-0	year	3.30E-02	5.40E+00	2.70E-01
Butylated hydroxyanisole	25013-16-5	year	1.80E+01	2.80E+03	1.40E+02
C.I. basic red 9 monohydrochloride	569-61-9	year	1.40E-02	2.30E+00	1.10E-01
Cadmium & compounds, NOS	7440-43-9	year	2.40E-04	3.90E-02	1.90E-03
Caprolactam	105-60-2	24-hr	2.20E+00	1.60E-01	8.20E-03
Captafol	2425-06-1	year	2.30E-02	3.80E+00	1.90E-01
Captan	133-06-2	year	1.50E+00	2.50E+02	1.20E+01
Carbon disulfide	75-15-0	24-hr	8.00E+02	5.90E+01	3.00E+00
Carbon monoxide	630-08-0	1-hr	2.30E+04	4.30E+01	1.10E+00
Carbon tetrachloride	56-23-5	year	1.70E-01	2.70E+01	1.40E+00
Carbonyl sulfide	463-58-1	24-hr	1.00E+01	7.40E-01	3.70E-02
Cerium oxide	1306-38-3	24-hr	9.00E-01	6.70E-02	3.30E-03
Chlorambucil	305-03-3	year	7.70E-06	1.20E-03	6.20E-05
Chlordane	57-74-9	year	1.00E-02	1.60E+00	8.10E-02
Chlordecone	143-50-0	year	2.20E-04	3.50E-02	1.80E-03
Chlorendic acid	115-28-6	year	3.80E-02	6.20E+00	3.10E-01
Chlorinated paraffins	108171-26-2	year	4.00E-02	6.50E+00	3.20E-01
Chlorine	7782-50-5	24-hr	1.50E-01	1.10E-02	5.60E-04
Chlorine dioxide	10049-04-4	24-hr	6.00E-01	4.40E-02	2.20E-03
1-Chloro-1,1-difluoroethane	75-68-3	24-hr	5.00E+04	3.70E+03	1.90E+02
3-Chloro-2-methyl-1-propene	563-47-3	year	2.50E-02	4.10E+00	2.00E-01
2-Chloroacetophenone	532-27-4	24-hr	3.00E-02	2.20E-03	1.10E-04
Chloroalkanes C10-13 (chlorinated paraffins)	85535-84-8	year	4.00E-02	6.50E+00	3.20E-01
Chlorobenzene	108-90-7	24-hr	1.00E+03	7.40E+01	3.70E+00
Chlorobenzilate	510-15-6	year	3.20E-02	5.20E+00	2.60E-01
Chlorodifluoromethane (Freon 22)	75-45-6	24-hr	5.00E+04	3.70E+03	1.90E+02
Chloroethane (ethyl chloride)	75-00-3	24-hr	3.00E+04	2.20E+03	1.10E+02
Chloroform	67-66-3	year	4.30E-02	7.10E+00	3.50E-01
Chloromethane (methyl chloride)	74-87-3	24-hr	9.00E+01	6.70E+00	3.30E-01
Chloromethyl methyl ether	107-30-2	year	1.40E-03	2.40E-01	1.20E-02
4-Chloro-o-phenylenediamine	95-83-0	year	2.20E-01	3.50E+01	1.80E+00
p-Chloro-o-toluidine	95-69-2	year	1.30E-02	2.10E+00	1.10E-01
Chloropicrin	76-06-2	24-hr	4.00E-01	3.00E-02	1.50E-03
Chloroprene	126-99-8	year	2.00E-03	3.30E-01	1.60E-02
Chlorothalonil	1897-45-6	year	1.10E+00	1.80E+02	9.10E+00
Chlorozotocin	54749-90-5	year	1.40E-05	2.40E-03	1.20E-04
Chromic trioxide	1333-82-0	year	7.70E-06	1.30E-03	6.30E-05
Chromic(VI) acid	7738-94-5	year	9.10E-06	1.50E-03	7.40E-05
Chromium(III), insoluble particulates, NOS	—	24-hr	5.00E+00	3.70E-01	1.90E-02
Chromium(III), soluble particulates, NOS	7440-47-3	24-hr	1.00E-01	7.40E-03	3.70E-04
Chromium(VI) & compounds, NOS	18540-29-9	year	4.00E-06	6.50E-04	3.30E-05
Chrysene	218-01-9	year	5.50E-02	8.90E+00	4.50E-01
Cinnamyl anthranilate	87-29-6	year	7.70E-01	1.20E+02	6.20E+00
Cobalt and compounds, NOS	7440-48-4	24-hr	1.00E-01	7.40E-03	3.70E-04
Coke oven emissions	—	year	9.70E-04	1.60E-01	7.90E-03
Copper & compounds	7440-50-8	1-hr	1.00E+02	1.90E-01	9.30E-03
p-Cresidine	120-71-8	year	2.30E-02	3.80E+00	1.90E-01
Cresols (mixture), including m-cresol, o-cresol, p-cresol	1319-77-3	24-hr	6.00E+02	4.40E+01	2.20E+00
m-Cresol (3-methylphenol)	108-39-4	24-hr	6.00E+02	4.40E+01	2.20E+00
o-Cresol (2-methylphenol)	95-48-7	24-hr	6.00E+02	4.40E+01	2.20E+00
p-Cresol (4-methylphenol)	106-44-5	24-hr	6.00E+02	4.40E+01	2.20E+00
Cumene	98-82-8	24-hr	4.00E+02	3.00E+01	1.50E+00
Cupferron	135-20-6	year	1.60E-02	2.60E+00	1.30E-01
Cyclohexane	110-82-7	24-hr	6.00E+03	4.40E+02	2.20E+01
Cyclophosphamide (anhydrous)	50-18-0	year	5.90E-03	9.60E-01	4.80E-02
Cyclophosphamide (hydrated)	6055-19-2	year	6.30E-03	1.00E+00	5.10E-02
D & C red no. 9	5160-02-1	year	6.70E-01	1.10E+02	5.40E+00
Dacarbazine	4342-03-4	year	7.10E-05	1.20E-02	5.80E-04
Dantron	117-10-2	year	4.50E-02	7.40E+00	3.70E-01

Di(2-ethylhexyl)phthalate	117-81-7	year	4.20E-01	6.80E+01	3.40E+00
2,4-Diaminoanisole	615-05-4	year	1.50E-01	2.50E+01	1.20E+00
2,4-Diaminoanisole sulfate	39156-41-7	year	2.70E-01	4.40E+01	2.20E+00
4,4'-Diaminodiphenyl ether	101-80-4	year	2.50E-02	4.10E+00	2.00E-01
2,4-Diaminotoluene (2,4-toluene diamine)	95-80-7	year	9.10E-04	1.50E-01	7.40E-03
Diazinon	333-41-5	24-hr	1.00E+01	7.40E-01	3.70E-02
Dibenz[a,h]acridine	226-36-8	year	5.50E-03	8.90E-01	4.50E-02
Dibenz[a,h]anthracene	53-70-3	year	5.00E-04	8.20E-02	4.10E-03
Dibenz[a,j]acridine	224-42-0	year	5.50E-03	8.90E-01	4.50E-02
Dibenzo[a,e]pyrene	192-65-4	year	5.50E-04	8.90E-02	4.50E-03
Dibenzo[a,h]pyrene	189-64-0	year	5.50E-05	8.90E-03	4.50E-04
Dibenzo[a,i]pyrene	189-55-9	year	5.50E-05	8.90E-03	4.50E-04
Dibenzo[a,l]pyrene	191-30-0	year	5.50E-05	8.90E-03	4.50E-04
7H-Dibenzo[c,g]carbazole	194-59-2	year	5.50E-04	8.90E-02	4.50E-03
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	year	3.20E-04	5.20E-02	2.60E-03
Tris(2,3-dibromopropyl)phosphate	126-72-7	year	1.50E-03	2.50E-01	1.20E-02
1,4-Dichlorobenzene	106-46-7	year	9.10E-02	1.50E+01	7.40E-01
3,3'-Dichlorobenzidine	91-94-1	year	2.90E-03	4.80E-01	2.40E-02
DDD (dichlorodiphenyldichloroethane)	72-54-8	year	1.40E-02	2.40E+00	1.20E-01
DDE (dichlorodiphenyldichloroethylene)	72-55-9	year	1.00E-02	1.70E+00	8.40E-02
DDT(dichlorodiphenyltrichloroethane)	50-29-3	year	1.00E-02	1.70E+00	8.40E-02
1,1-Dichloroethane (ethylidene dichloride)	75-34-3	year	6.30E-01	1.00E+02	5.10E+00
trans-1,2-Dichloroethene	156-60-5	24-hr	8.10E+02	6.00E+01	3.00E+00
1,1-Dichloroethylene (1,1-DCE)	75-35-4	24-hr	2.00E+02	1.50E+01	7.40E-01
Dichloromethane	75-09-2	year	6.00E+01	9.80E+03	4.90E+02
1,2-Dichloropropane (propylene dichloride)	78-87-5	year	1.00E-01	1.60E+01	8.10E-01
1,3-Dichloropropene	542-75-6	year	2.50E-01	4.10E+01	2.00E+00
2,3-Dichloropropene	78-88-6	24-hr	9.20E+00	6.80E-01	3.40E-02
Dichlorvos (DDVP)	62-73-7	year	1.20E-02	2.00E+00	9.80E-02
Dieldrin	60-57-1	year	2.20E-04	3.50E-02	1.80E-03
Diesel engine exhaust, particulate	—	year	3.30E-03	5.40E-01	2.70E-02
Diethanolamine	111-42-2	24-hr	3.00E+00	2.20E-01	1.10E-02
Diethylstilbestrol	56-53-1	year	1.00E-05	1.60E-03	8.10E-05
1,1-Difluoroethane	75-37-6	24-hr	4.00E+04	3.00E+03	1.50E+02
Diglycidyl resorcinol ether	101-90-6	year	2.00E-03	3.30E-01	1.70E-02
Dihydrosafrole	94-58-6	year	7.70E-02	1.20E+01	6.20E-01
4-Dimethylaminoazobenzene	60-11-7	year	7.70E-04	1.20E-01	6.20E-03
trans-2[(dimethylamino)-methylimino]-5-[2-(5-nitro-2-furyl)-vinyl]-1,3,4-oxadiazole	55738-54-0	year	7.70E-03	1.20E+00	6.20E-02
7,12-Dimethylbenz[a]anthracene	57-97-6	year	8.50E-06	1.40E-03	6.90E-05
Dimethyl carbamoyl chloride	79-44-7	year	2.70E-04	4.40E-02	2.20E-03
1,1-Dimethylhydrazine	57-14-7	24-hr	5.00E-01	3.70E-02	1.90E-03
1,2-Dimethylhydrazine	540-73-8	year	6.30E-06	1.00E-03	5.10E-05
Dimethylvinylchloride	513-37-1	year	7.70E-02	1.20E+01	6.20E-01
1,6-Dinitropyrene	42397-64-8	year	5.50E-05	8.90E-03	4.50E-04
1,8-Dinitropyrene	42397-65-9	year	5.50E-04	8.90E-02	4.50E-03
2,4-Dinitrotoluene	121-14-2	year	1.10E-02	1.80E+00	9.10E-02
1,4-Dioxane	123-91-1	year	2.00E-01	3.20E+01	1.60E+00
1,2-Diphenylhydrazine (hydrazobenzene)	122-66-7	year	4.00E-03	6.50E-01	3.20E-02
Direct black 38	1937-37-7	year	4.80E-04	7.70E-02	3.90E-03
Direct blue 6	2602-46-2	year	4.80E-04	7.70E-02	3.90E-03
Direct brown 95	16071-86-6	year	5.30E-04	8.50E-02	4.30E-03
Disperse blue 1	2475-45-8	year	7.70E-01	1.20E+02	6.20E+00
Disulfoton	298-04-4	24-hr	2.00E-01	1.50E-02	7.40E-04
Epichlorohydrin	106-89-8	year	4.30E-02	7.10E+00	3.50E-01
1,2-Epoxybutane	106-88-7	24-hr	2.00E+01	1.50E+00	7.40E-02
Estradiol 17B	50-28-2	year	9.10E-05	1.50E-02	7.40E-04
Ethyl benzene	100-41-4	year	4.00E-01	6.50E+01	3.20E+00
Ethyl carbamate (urethane)	51-79-6	year	2.10E-03	3.40E-01	1.70E-02
Ethylene dibromide (EDB, 1,2-dibromoethane)	106-93-4	year	1.70E-03	2.70E-01	1.40E-02
Ethylene dichloride (EDC, 1,2-dichloroethane)	107-06-2	year	3.80E-02	6.20E+00	3.10E-01
Ethylene glycol	107-21-1	24-hr	4.00E+02	3.00E+01	1.50E+00
Ethylene glycol monobutyl ether	111-76-2	24-hr	8.20E+01	6.10E+00	3.00E-01
Ethylene glycol monoethyl ether (2-ethoxyethanol)	110-80-5	24-hr	7.00E+01	5.20E+00	2.60E-01
Ethylene glycol monoethyl ether acetate	111-15-9	24-hr	3.00E+02	2.20E+01	1.10E+00

Ethylene glycol monomethyl ether (2-methoxyethanol)	109-86-4	24-hr	6.00E+01	4.40E+00	2.20E-01
Ethylene glycol monomethyl ether acetate	110-49-6	24-hr	9.00E+01	6.70E+00	3.30E-01
Ethylene oxide	75-21-8	year	2.00E-04	3.30E-02	1.60E-03
Ethylene thiourea	96-45-7	year	7.70E-02	1.20E+01	6.20E-01
Ethyleneimine	151-56-4	year	5.30E-05	8.50E-03	4.30E-04
Ferric sulfate	10028-22-5	1-hr	1.20E+02	2.20E-01	1.10E-02
Fluorides (fluoride containing chemicals), NOS	—	24-hr	1.30E+01	9.60E-01	4.80E-02
Fluorine gas F ₂	7782-41-4	24-hr	1.60E+01	1.20E+00	5.90E-02
Formaldehyde	50-00-0	year	1.70E-01	2.70E+01	1.40E+00
Furmecyclox	60568-05-0	year	1.20E-01	1.90E+01	9.40E-01
Furylfuramide	3688-53-7	year	1.40E-02	2.40E+00	1.20E-01
Glu-P-1	67730-11-4	year	7.10E-04	1.20E-01	5.80E-03
Glu-P-2	67730-10-3	year	2.50E-03	4.10E-01	2.00E-02
Glutaraldehyde	111-30-8	24-hr	8.00E-02	5.90E-03	3.00E-04
Guthion (azinphos-methyl)	86-50-0	24-hr	1.00E+01	7.40E-01	3.70E-02
Gyromitrin	16568-02-8	year	3.40E-04	5.60E-02	2.80E-03
HC blue 1	2784-94-3	year	6.70E-02	1.10E+01	5.40E-01
Heptachlor	76-44-8	year	7.70E-04	1.20E-01	6.20E-03
Heptachlor epoxide	1024-57-3	year	3.80E-04	6.20E-02	3.10E-03
Heptachlorodibenzo-p-dioxin, NOS	37871-00-4	year	2.60E-06	4.30E-04	2.10E-05
Hexachlorobenzene	118-74-1	year	2.20E-03	3.50E-01	1.80E-02
Hexachlorobutadiene	87-68-3	year	4.50E-02	7.40E+00	3.70E-01
Hexachlorocyclohexane	608-73-1	year	9.10E-04	1.50E-01	7.40E-03
alpha-Hexachlorocyclohexane	319-84-6	year	1.30E-03	2.10E-01	1.10E-02
beta-Hexachlorocyclohexane	319-85-7	year	2.30E-03	3.80E-01	1.90E-02
gamma-Hexachlorocyclohexane (lindane)	58-89-9	year	3.20E-03	5.20E-01	2.60E-02
Hexachlorocyclopentadiene	77-47-4	24-hr	2.00E-01	1.50E-02	7.40E-04
Hexachlorodibenzo-p-dioxins, NOS	34465-46-8	year	2.60E-07	4.30E-05	2.10E-06
Hexachloroethane	67-72-1	year	9.10E-02	1.50E+01	7.40E-01
Hexamethylene diisocyanate	822-06-0	24-hr	7.00E-02	5.20E-03	2.60E-04
n-Hexane	110-54-3	24-hr	7.00E+02	5.20E+01	2.60E+00
2-Hexanone	591-78-6	24-hr	3.00E+01	2.20E+00	1.10E-01
Hydrazine	302-01-2	year	2.00E-04	3.30E-02	1.70E-03
Hydrazine sulfate	10034-93-2	year	1.20E-03	1.90E-01	9.40E-03
Hydrogen chloride	7647-01-0	24-hr	9.00E+00	6.70E-01	3.30E-02
Hydrogen cyanide	74-90-8	24-hr	8.00E-01	5.90E-02	3.00E-03
Hydrogen fluoride	7664-39-3	24-hr	1.40E+01	1.00E+00	5.20E-02
Hydrogen sulfide	7783-06-4	24-hr	2.00E+00	1.50E-01	7.40E-03
Indeno[1,2,3-cd]pyrene	193-39-5	year	5.50E-03	8.90E-01	4.50E-02
Isophorone	78-59-1	24-hr	2.00E+03	1.50E+02	7.40E+00
Isopropyl alcohol	67-63-0	1-hr	3.20E+03	5.90E+00	3.00E-01
Lasiocarpine	303-34-4	year	4.50E-04	7.40E-02	3.70E-03
Lead & compounds, NOS	7439-92-1	year	8.30E-02	1.40E+01	1.00E+01
Lead acetate	301-04-2	year	1.30E-02	2.00E+00	1.00E-01
Lead chromate oxide	18454-12-1	year	4.20E-05	6.90E-03	3.40E-04
Lead chromate	7758-97-6	year	2.50E-05	4.10E-03	2.00E-04
Lead phosphate	7446-27-7	year	8.30E-02	1.40E+01	6.80E-01
Lead subacetate	1335-32-6	year	9.10E-02	1.50E+01	7.40E-01
Malathion	121-75-5	24-hr	2.00E+01	1.50E+00	7.40E-02
Maleic anhydride	108-31-6	24-hr	7.00E-01	5.20E-02	2.60E-03
Manganese & compounds	7439-96-5	24-hr	3.00E-01	2.20E-02	1.10E-03
Melphalan	148-82-3	year	2.70E-05	4.40E-03	2.20E-04
Mercury, elemental	7439-97-6	24-hr	3.00E-02	2.20E-03	1.10E-04
Diethyl mercury	627-44-1	24-hr	1.40E-01	1.00E-02	5.20E-04
Dimethyl mercury	593-74-8	24-hr	1.40E-01	1.00E-02	5.20E-04
Methyl alcohol (methanol)	67-56-1	24-hr	2.00E+04	1.50E+03	7.40E+01
3-Methylcholanthrene	56-49-5	year	9.60E-05	1.60E-02	7.80E-04
5-Methylchrysene	3697-24-3	year	5.50E-04	8.90E-02	4.50E-03
4,4'-Methylenebis(2-chloroaniline) (MOCA)	101-14-4	year	1.40E-03	2.30E-01	1.10E-02
4,4'-Methylenebis(2-methylaniline)	838-88-0	year	3.80E-03	6.20E-01	3.10E-02
4,4'-Methylenebis(N,N'-dimethylaniline)	101-61-1	year	7.70E-02	1.20E+01	6.20E-01
4,4'-Methylenedianiline	101-77-9	year	2.20E-03	3.50E-01	1.80E-02
4,4'-Methylenedianiline dihydrochloride	13552-44-8	year	2.20E-03	3.50E-01	1.80E-02
Methylene diphenyl diisocyanate (MDI)	101-68-8	24-hr	8.00E-02	5.90E-03	3.00E-04
Methyl ethyl ketone	78-93-3	24-hr	5.00E+03	3.70E+02	1.90E+01

Methyl isobutyl ketone (MIBK, hexone)	108-10-1	24-hr	3.00E+03	2.20E+02	1.10E+01
Methyl isocyanate	624-83-9	24-hr	1.00E+00	7.40E-02	3.70E-03
Methyl methacrylate	80-62-6	24-hr	7.00E+02	5.20E+01	2.60E+00
Methyl methanesulfonate	66-27-3	year	3.60E-02	5.80E+00	2.90E-01
2-Methyl-1-nitroanthraquinone	129-15-7	year	8.30E-04	1.40E-01	6.80E-03
N-Methyl-N-nitro-N-nitrosoguanidine	70-25-7	year	4.20E-04	6.80E-02	3.40E-03
Methyl tert-butyl ether	1634-04-4	year	3.80E+00	6.20E+02	3.10E+01
Methylthiouracil	56-04-2	year	9.10E-03	1.50E+00	7.40E-02
Michler's ketone	90-94-8	year	4.00E-03	6.50E-01	3.20E-02
Mirex	2385-85-5	year	2.00E-04	3.20E-02	1.60E-03
Mitomycin C	50-07-7	year	4.30E-07	7.10E-05	3.50E-06
Monocrotaline	315-22-0	year	3.40E-04	5.60E-02	2.80E-03
N,N-Dimethylformamide	68-12-2	24-hr	8.00E+01	5.90E+00	3.00E-01
Naphthalene	91-20-3	year	2.90E-02	4.80E+00	2.40E-01
2-Naphthylamine	91-59-8	year	2.00E-03	3.20E-01	1.60E-02
Nickel & compounds, NOS	7440-02-0	year	3.80E-03	6.20E-01	3.10E-02
Nickel acetate	373-02-4	year	1.20E-02	1.90E+00	9.40E-02
Nickel carbonate	3333-67-3	year	7.80E-03	1.30E+00	6.30E-02
Nickel carbonate hydroxide	12607-70-4	year	6.60E-03	1.10E+00	5.40E-02
Nickel carbonyl	13463-39-3	year	1.10E-02	1.80E+00	9.10E-02
Nickel chloride	7718-54-9	year	8.50E-03	1.40E+00	6.90E-02
Nickel hydroxide	12054-48-7	year	6.10E-03	9.90E-01	4.90E-02
Nickel nitrate hexahydrate	13478-00-7	year	1.90E-02	3.10E+00	1.50E-01
Nickel oxide (nickel monoxide, nickel(II) oxide)	1313-99-1	year	4.90E-03	7.90E-01	4.00E-02
Nickel oxide black (nickel sesquioxide, nickel(III) oxide)	1314-06-3	year	5.40E-03	8.80E-01	4.40E-02
Nickel refinery dust	—	year	4.20E-03	6.80E-01	3.40E-02
Nickel subsulfide	12035-72-2	year	2.10E-03	3.40E-01	1.70E-02
Nickel sulfate	7786-81-4	year	1.00E-02	1.60E+00	8.20E-02
Nickel sulfate hexahydrate	10101-97-0	year	1.70E-02	2.80E+00	1.40E-01
Nickel sulfide	11113-75-0	year	6.00E-03	9.70E-01	4.80E-02
Nickelocene	1271-28-9	year	1.20E-02	2.00E+00	1.00E-01
Nifurthiazole	3570-75-0	year	1.50E-03	2.50E-01	1.20E-02
Nitric acid	7697-37-2	1-hr	8.60E+01	1.60E-01	8.00E-03
Nitrilotriacetic acid	139-13-9	year	6.70E-01	1.10E+02	5.40E+00
Nitrilotriacetic acid, trisodium salt monohydrate	18662-53-8	year	3.40E-01	5.60E+01	2.80E+00
Nitrobenzene	98-95-3	year	2.50E-02	4.10E+00	2.00E-01
Nitrofen	1836-75-5	year	4.30E-02	7.10E+00	3.50E-01
2-Nitrofluorene	607-57-8	year	5.50E-02	8.90E+00	4.50E-01
Nitrofurazone	59-87-0	year	2.70E-03	4.40E-01	2.20E-02
1-[(5-Nitrofurfurylidene)-amino]-2-imidazolidinone	555-84-0	year	2.00E-03	3.20E-01	1.60E-02
N-[4-(5-nitro-2-furyl)-2-thiazolyl]-acetamide	531-82-8	year	2.30E-03	3.80E-01	1.90E-02
Nitrogen dioxide	10102-44-0	1-hr	4.70E+02	8.70E-01	4.60E-01
2-Nitropropane	79-46-9	24-hr	2.00E+01	1.50E+00	7.40E-02
1-Nitropyrene	5522-43-0	year	5.50E-03	8.90E-01	4.50E-02
4-Nitropyrene	57835-92-4	year	5.50E-03	8.90E-01	4.50E-02
5-Nitroacenaphthene	602-87-9	year	1.60E-02	2.60E+00	1.30E-01
6-Nitrochrysene	7496-02-8	year	5.50E-05	8.90E-03	4.50E-04
N-Nitrosodiethanolamine	1116-54-7	year	1.30E-03	2.00E-01	1.00E-02
N-Nitrosodiethylamine	55-18-5	year	6.00E-05	1.00E-02	4.90E-04
N-Nitrosodimethylamine	62-75-9	year	1.30E-04	2.10E-02	1.10E-03
N-Nitrosodi-N-butylamine	924-16-3	year	3.20E-04	5.20E-02	2.60E-03
N-Nitrosodi-N-propylamine	621-64-7	year	5.00E-04	8.10E-02	4.10E-03
N-Nitrosodiphenylamine	86-30-6	year	3.80E-01	6.20E+01	3.10E+00
p-Nitrosodiphenylamine	156-10-5	year	1.60E-01	2.60E+01	1.30E+00
N-Nitrosomorpholine	59-89-2	year	5.30E-04	8.50E-02	4.30E-03
N-Nitroso-N-ethylurea	759-73-9	year	7.80E-05	1.30E-02	6.40E-04
N-Nitroso-N-methylethylamine	10595-95-6	year	1.60E-04	2.60E-02	1.30E-03
N-Nitroso-N-methylurea	684-93-5	year	1.80E-05	2.90E-03	1.40E-04
N-Nitroso-N-methylurethane	615-53-2	year	3.20E-05	5.20E-03	2.60E-04
N-Nitrososarcosine	16543-55-8	year	2.50E-03	4.10E-01	2.00E-02
N-Nitrosopiperidine	100-75-4	year	3.70E-04	6.00E-02	3.00E-03
N-Nitrosopyrrolidine	930-55-2	year	1.70E-03	2.70E-01	1.40E-02
Oleum	8014-95-7	1-hr	1.20E+02	2.20E-01	1.10E-02
Ozone	10028-15-6	1-hr	1.80E+02	3.30E-01	2.00E-02

Parathion	56-38-2	24-hr	2.00E-05	1.50E-06	7.40E-08
Pentachlorophenol	87-86-5	year	2.20E-01	3.50E+01	1.80E+00
Perchloroethylene	127-18-4	year	1.60E-01	2.70E+01	1.30E+00
Phenacetin	62-44-2	year	1.60E+00	2.60E+02	1.30E+01
Phenazopyridine	94-78-0	year	2.00E-02	3.30E+00	1.70E-01
Phenazopyridine hydrochloride	136-40-3	year	2.30E-02	3.80E+00	1.90E-01
Phenesterin	3546-10-9	year	2.30E-05	3.80E-03	1.90E-04
Phenobarbital	50-06-6	year	7.70E-03	1.20E+00	6.20E-02
Phenol	108-95-2	24-hr	2.00E+02	1.50E+01	7.40E-01
Phenoxybenzamine	59-96-1	year	1.10E-03	1.80E-01	9.10E-03
Phenoxybenzamine hydrochloride	63-92-3	year	1.30E-03	2.10E-01	1.10E-02
o-Phenylphenate, sodium	132-27-4	year	1.20E+00	1.90E+02	9.40E+00
Phosgene	75-44-5	24-hr	3.00E-01	2.20E-02	1.10E-03
Phosphine	7803-51-2	24-hr	8.00E-01	5.90E-02	3.00E-03
Phosphoric acid	7664-38-2	24-hr	7.00E+00	5.20E-01	2.60E-02
Phosphorus	7723-14-0	24-hr	2.00E+01	1.50E+00	7.40E-02
Phosphorus, white	12185-10-3	24-hr	2.00E+01	1.50E+00	7.40E-02
Phthalic anhydride	85-44-9	24-hr	2.00E+01	1.50E+00	7.40E-02
Polybrominated biphenyls	—	year	1.20E-04	1.90E-02	9.40E-04
Polybrominated diphenyl ethers (PBDEs) [containing less than 10 bromine atoms]	—	24-hr	6.00E+00	4.40E-01	2.20E-02
Polychlorinated biphenyls (PCBs), NOS	1336-36-3	year	1.80E-03	2.80E-01	1.40E-02
PCB 77 (3,3',4,4'-tetrachlorobiphenyl)	32598-13-3	year	2.60E-04	4.30E-02	2.10E-03
PCB 81 (3,4,4',5-tetrachlorobiphenyl)	70362-50-4	year	9.10E-05	1.50E-02	7.40E-04
PCB 105 (2,3,3',4,4'-pentachlorobiphenyl)	32598-14-4	year	9.10E-04	1.50E-01	7.40E-03
PCB 114 (2,3,4,4',5-pentachlorobiphenyl)	74472-37-0	year	9.10E-04	1.50E-01	7.40E-03
PCB 118 (2,3',4,4',5-pentachlorobiphenyl)	31508-00-6	year	9.10E-04	1.50E-01	7.40E-03
PCB 123 (2,3',4,4',5'-pentachlorobiphenyl)	65510-44-3	year	9.10E-04	1.50E-01	7.40E-03
PCB 126 (3,3',4,4',5-pentachlorobiphenyl)	57465-28-8	year	2.60E-07	4.30E-05	2.10E-06
PCB 156 (2,3,3',4,4',5-hexachlorobiphenyl)	38380-08-4	year	9.10E-04	1.50E-01	7.40E-03
PCB 157 (2,3,3',4,4',5'-hexachlorobiphenyl)	69782-90-7	year	9.10E-04	1.50E-01	7.40E-03
PCB 167 (2,3',4,4',5,5'-hexachlorobiphenyl)	52663-72-6	year	9.10E-04	1.50E-01	7.40E-03
PCB 169 (3,3',4,4',5,5'-hexachlorobiphenyl)	32774-16-6	year	9.10E-07	1.50E-04	7.40E-06
PCB 189 (2,3,3',4,4',5,5'-heptachlorobiphenyl)	39635-31-9	year	9.10E-04	1.50E-01	7.40E-03
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	35822-46-9	year	2.60E-06	4.30E-04	2.10E-05
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	39227-28-6	year	2.60E-07	4.30E-05	2.10E-06
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	57653-85-7	year	2.60E-07	4.30E-05	2.10E-06
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	19408-74-3	year	2.60E-07	4.30E-05	2.10E-06
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	year	9.10E-05	1.50E-02	7.40E-04
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	40321-76-4	year	2.60E-08	4.30E-06	2.10E-07
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1746-01-6	year	2.60E-08	4.30E-06	2.10E-07
2,3,7,8-Tetrachlorodibenzo-p-dioxin & related compounds, NOS	—	year	2.60E-08	4.30E-06	2.10E-07
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	year	2.60E-06	4.30E-04	2.10E-05
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	year	2.60E-06	4.30E-04	2.10E-05
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	70648-26-9	year	2.60E-07	4.30E-05	2.10E-06
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	57117-44-9	year	2.60E-07	4.30E-05	2.10E-06
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	72918-21-9	year	2.60E-07	4.30E-05	2.10E-06
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	60851-34-5	year	2.60E-07	4.30E-05	2.10E-06
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0	year	9.10E-05	1.50E-02	7.40E-04
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	57117-41-6	year	9.10E-07	1.50E-04	7.40E-06
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	57117-31-4	year	9.10E-08	1.50E-05	7.40E-07
2,3,7,8-Tetrachlorodibenzofuran (TcDF)	51207-31-9	year	2.60E-07	4.30E-05	2.10E-06
Ponceau 3R	3564-09-8	year	2.20E-01	3.50E+01	1.80E+00
Ponceau MX	3761-53-3	year	7.70E-01	1.20E+02	6.20E+00
Potassium bromate	7758-01-2	year	7.10E-03	1.20E+00	5.80E-02
Procarbazine	671-16-9	year	2.50E-04	4.10E-02	2.00E-03
Procarbazine hydrochloride	366-70-1	year	2.90E-04	4.80E-02	2.40E-03
1,3-Propane sultone	1120-71-4	year	1.40E-03	2.40E-01	1.20E-02
Propionaldehyde	123-38-6	24-hr	8.00E+00	5.90E-01	3.00E-02
Propylene	115-07-1	24-hr	3.00E+03	2.20E+02	1.10E+01
Propylene glycol	57-55-6	24-hr	2.80E+01	2.10E+00	1.10E-01
Propylene glycol dinitrate	6423-43-4	24-hr	2.80E-01	2.10E-02	1.00E-03
Propylene glycol monomethyl ether	107-98-2	24-hr	7.00E+03	5.20E+02	2.60E+01
Propylene oxide	75-56-9	year	2.70E-01	4.40E+01	2.20E+00
Propylthiouracil	51-52-5	year	3.40E-03	5.60E-01	2.80E-02

Refractory ceramic fibers (fibers/cubic centimeter)	—	24-hr	3.00E-02	2.20E-03	1.10E-04
Reserpine	50-55-5	year	3.20E-04	5.20E-02	2.60E-03
Safrole	94-59-7	year	9.60E-03	1.60E+00	7.80E-02
Selenide, hydrogen	7783-07-5	1-hr	5.00E+00	9.30E-03	4.60E-04
Selenium & selenium compounds (other than hydrogen selenide)	7782-49-2	24-hr	2.00E+01	1.50E+00	7.40E-02
Silica, crystalline (respirable)	7631-86-9	24-hr	3.00E+00	2.20E-01	1.10E-02
Sodium hydroxide	1310-73-2	1-hr	8.00E+00	1.50E-02	7.40E-04
Sodium sulfate	7757-82-6	1-hr	1.20E+02	2.20E-01	1.10E-02
Sterigmatocystin	10048-13-2	year	1.00E-04	1.60E-02	8.10E-04
Streptozotocin	18883-66-4	year	3.20E-05	5.20E-03	2.60E-04
Styrene	100-42-5	24-hr	8.70E+02	6.50E+01	3.20E+00
Styrene oxide	96-09-3	year	2.20E-02	3.50E+00	1.80E-01
Sulfallate	95-06-7	year	1.90E-02	3.00E+00	1.50E-01
Sulfur dioxide	7446-09-05	1-hr	6.60E+02	1.20E+00	4.60E-01
Sulfur mustard	505-60-2	24-hr	2.00E-02	1.50E-03	7.40E-05
Sulfur trioxide	7446-11-9	1-hr	1.20E+02	2.20E-01	1.10E-02
Sulfuric acid	7664-93-9	24-hr	1.00E+00	7.40E-02	3.70E-03
Tertiary-butyl acetate	540-88-5	year	7.70E-01	1.20E+02	6.20E+00
1,1,1,2-Tetrachloroethane	630-20-6	year	1.40E-01	2.20E+01	1.10E+00
1,1,2,2-Tetrachloroethane	79-34-5	year	1.70E-02	2.80E+00	1.40E-01
1,1,1,2-Tetrafluoroethane	811-97-2	24-hr	8.00E+04	5.90E+03	3.00E+02
Tetrahydrofuran	109-99-9	24-hr	2.00E+03	1.50E+02	7.40E+00
Thioacetamide	62-55-5	year	5.90E-04	1.00E-01	4.80E-03
4,4-Thiodianiline	139-65-1	year	2.30E-04	3.80E-02	1.90E-03
Thiourea	62-56-6	year	4.80E-02	7.70E+00	3.90E-01
Titanium tetrachloride	7550-45-0	24-hr	1.00E-01	7.40E-03	3.70E-04
Toluene	108-88-3	24-hr	5.00E+03	3.70E+02	1.90E+01
Toluene diisocyanates (2,4- and 2,6-)	26471-62-5	24-hr	8.00E-03	5.90E-04	3.00E-05
Toluene-2,4-diisocyanate	584-84-9	24-hr	8.00E-03	5.90E-04	3.00E-05
Toluene-2,6-diisocyanate	91-08-7	24-hr	8.00E-03	5.90E-04	3.00E-05
o-Toluidine	95-53-4	year	2.00E-02	3.20E+00	1.60E-01
o-Toluidine hydrochloride	636-21-5	year	2.70E-02	4.40E+00	2.20E-01
Toxaphene (polychlorinated camphenes)	8001-35-2	year	2.90E-03	4.80E-01	2.40E-02
1,1,1-Trichloroethane (methyl chloroform)	71-55-6	24-hr	5.00E+03	3.70E+02	1.90E+01
1,1,2-Trichloroethane (vinyl trichloride)	79-00-5	year	6.30E-02	1.00E+01	5.10E-01
Trichloroethylene (TCE)	79-01-6	year	2.10E-01	3.40E+01	1.70E+00
2,4,6-Trichlorophenol	88-06-2	year	3.20E-01	5.20E+01	2.60E+00
1,2,3-Trichloropropane	96-18-4	24-hr	3.00E-01	2.20E-02	1.10E-03
Triethylamine	121-44-8	24-hr	2.00E+02	1.50E+01	7.40E-01
1,2,3-Trimethylbenzene	526-73-8	24-hr	6.00E+01	4.40E+00	2.20E-01
1,2,4-Trimethylbenzene	95-63-6	24-hr	6.00E+01	4.40E+00	2.20E-01
1,3,5-Trimethylbenzene	108-67-8	24-hr	6.00E+01	4.40E+00	2.20E-01
Tryptophan-P-1	62450-06-0	year	1.40E-04	2.20E-02	1.10E-03
Tryptophan-P-2	62450-07-1	year	1.10E-03	1.80E-01	8.90E-03
Uranium, insoluble compounds, NOS	—	24-hr	8.00E-01	5.90E-02	3.00E-03
Uranium, soluble salts, NOS	—	24-hr	4.00E-02	3.00E-03	1.50E-04
Vanadium (fume or dust)	7440-62-2	24-hr	1.00E-01	7.40E-03	3.70E-04
Vanadium pentoxide	1314-62-1	1-hr	3.00E+01	5.60E-02	2.80E-03
Vinyl acetate	108-05-4	24-hr	2.00E+02	1.50E+01	7.40E-01
Vinyl bromide	593-60-2	24-hr	3.00E+00	2.20E-01	1.10E-02
Vinyl chloride	75-01-4	year	1.10E-01	1.80E+01	9.20E-01
Xylene (mixture), including m-xylene, o-xylene, p-xylene	1330-20-7	24-hr	2.20E+02	1.60E+01	8.20E-01
m-Xylene	108-38-3	24-hr	2.20E+02	1.60E+01	8.20E-01
o-Xylene	95-47-6	24-hr	2.20E+02	1.60E+01	8.20E-01
p-Xylene	106-42-3	24-hr	2.20E+02	1.60E+01	8.20E-01