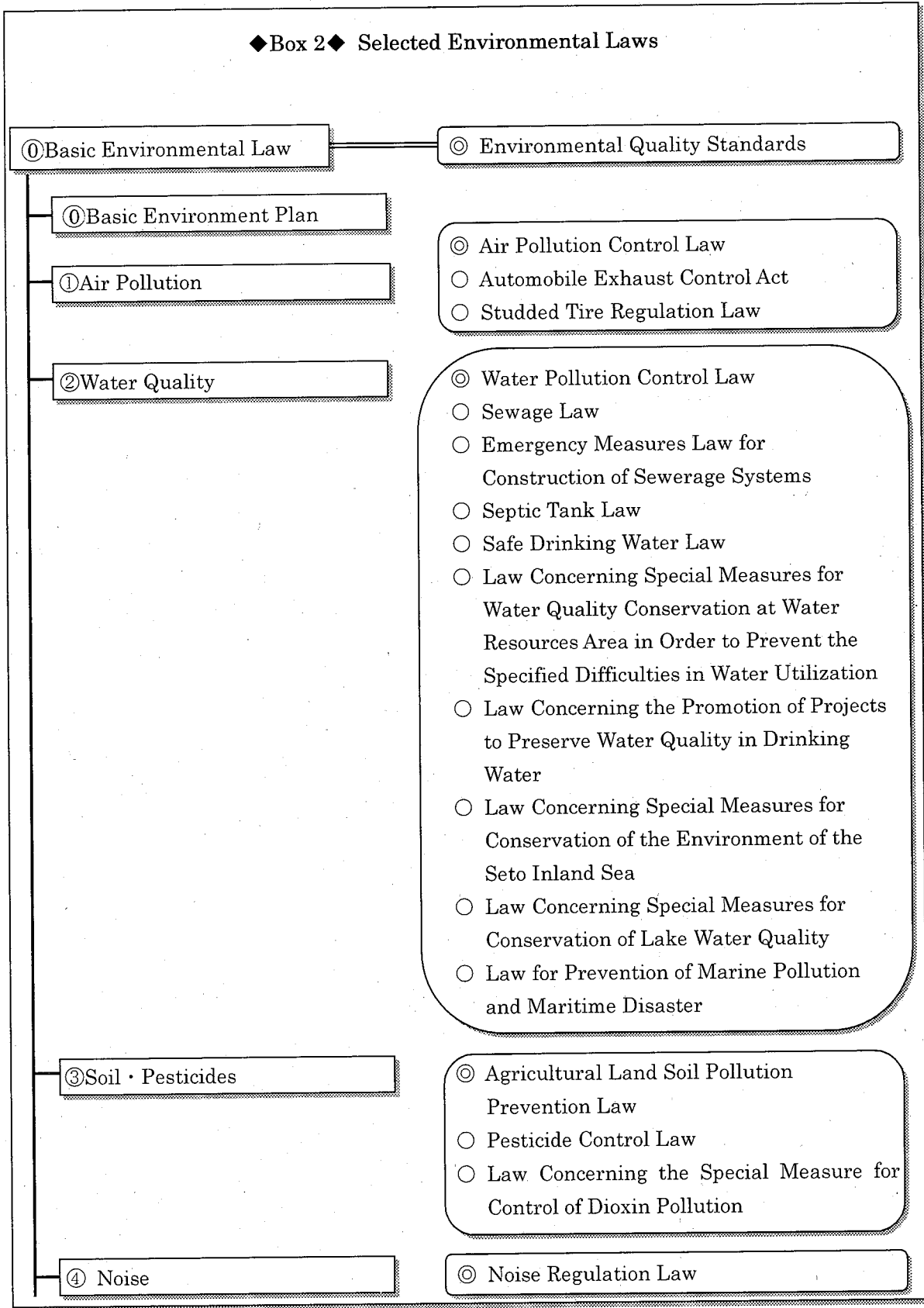
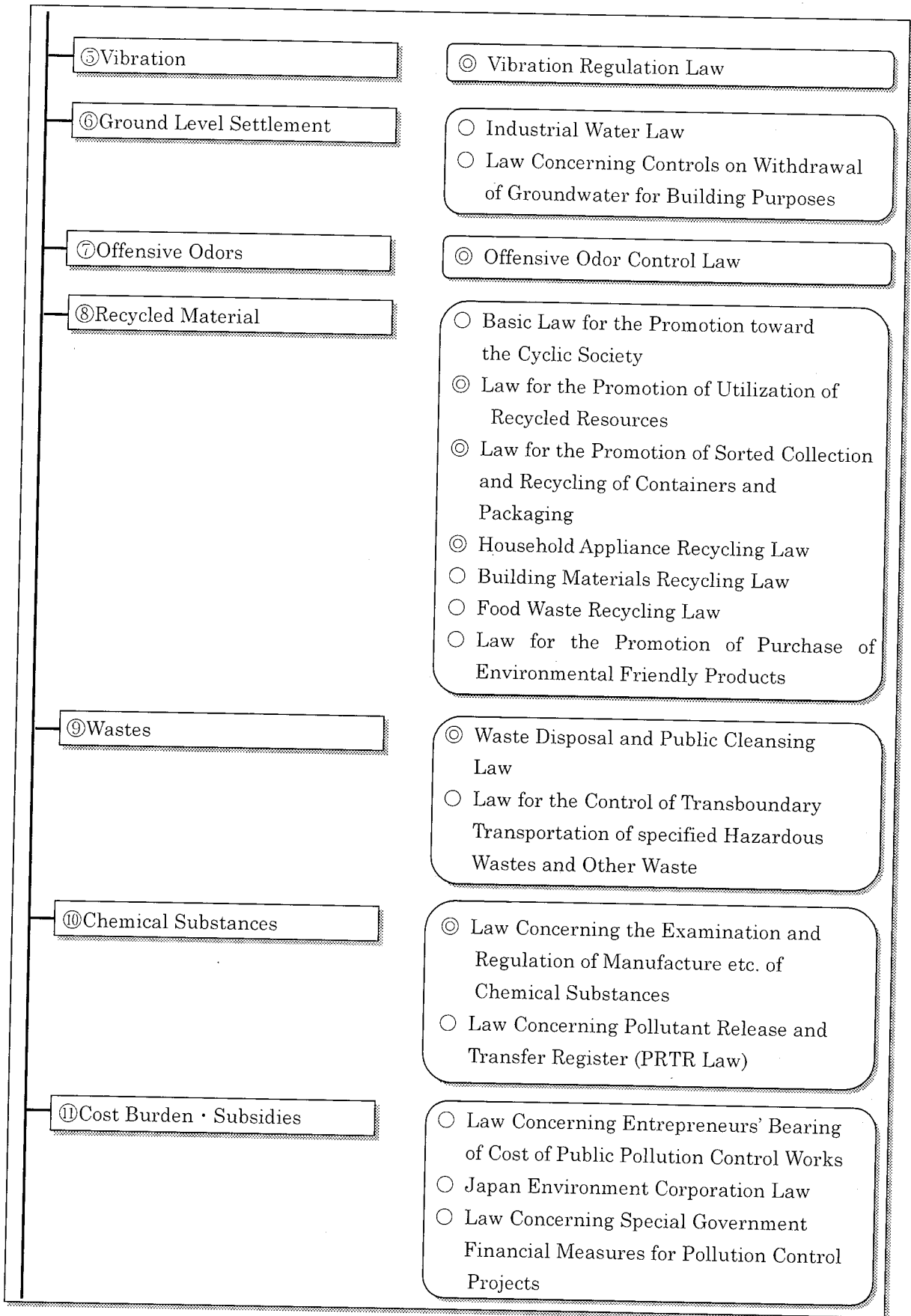
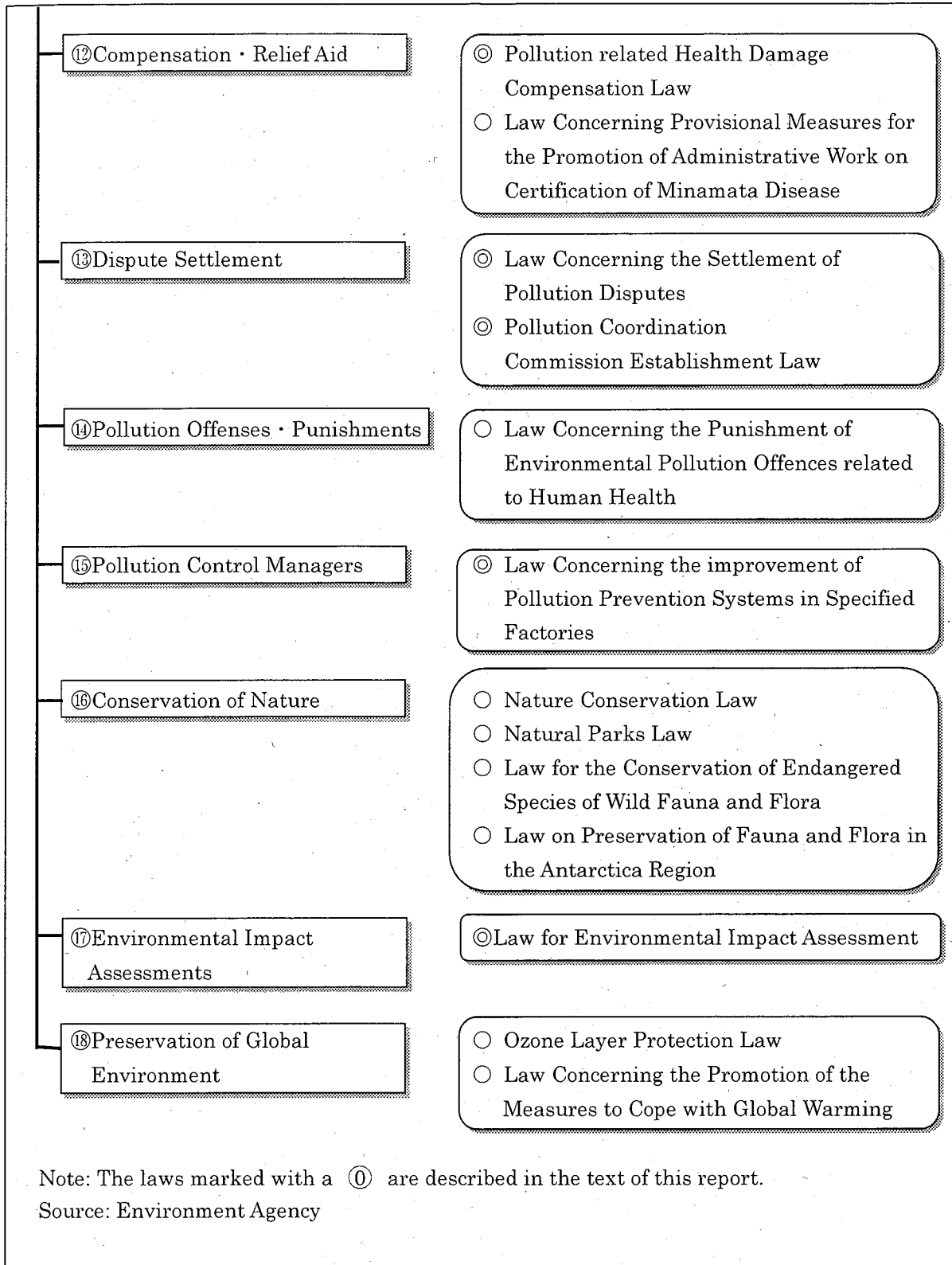


◆ Box 2 ◆ Selected Environmental Laws







## 2. Principal Environmental Laws and Environmental Standards

### 2.1 Basic Environmental Law

#### 2.1.1 Basic Environmental Law

##### (1) Background

Entering the 1980's, it was recognized that environmental protection could not be dealt with in an adequate manner with *ex post facto*, remedial measures for problems that were occurring one after another and that a significant shift of paradigm is necessary in regard to environmental policy. The Basic Environmental Law was enacted in 1993 basing on the government proposal in the 126th plenary session of the Diet and the 128th special session of the Diet. The Law indicates a new framework for environmental policy in the global age, having been based on the response by the Central Environment Council and the Nature Conservation Council to the question "How the System of Basic Environment Laws Should Be" made by the government.

Through the enactment of the Basic Environmental Law, the Basic Pollution Control Law, which had set the direction of basic policy in regard to pollution control over the past 25 year, was abolished. The Basic Environmental Law followed the Basic Pollution Control Law from a developmental standpoint, and there was continuation of regulations in regard to the Law for Environment Pollution Control as far as content and development was concerned.

##### (2) Basic Concepts and Implementation Guideline

The Basic Environmental Law established three concepts as basic concepts in regard to environmental protection, i.e., environmental favor and succession, creation of a society in which sustainable development is possible and the utmost promotion of global environmental protection through international cooperation. The Law also indicates the responsibility of the national government, local governments, business sectors and citizens in regard to the environmental protection.

The Basic Environmental Law also stipulates basic policies in regard to environmental protection such as guideline for establishment and implementation of those policies, environmental quality standards, pollution control plans, environmental considerations for national policies, advancement of environmental impact assessments, regulatory measures for the prevention of impediments to

environment, economic incentives and cost-sharing mechanisms for recovery, establishment of facilities, promotion of the utilization of equipment that contributes to initiatives to lighten the burden on the environment, environmental education, promotion of private autonomous activities, promotion of science and technology, international cooperation, cost sharing and mechanisms for finance sources.

◆Box 3◆ Environmental Policy System Under the Basic Environmental Law

- ◇Basic Environment Plan
- ◇Environmental Quality Standards ---- Environmental Quality standards for air, water, soil and noise.
- ◇Pollution Control Plan ----- Establishment of pollution control plans for 36 areas.
- ◇National Environmental Protection Policies
  - Considerations in Implementing -----Environmental considerations in implementing each National Policies respective plan.
  - Environmental Impact Assessments -----Implementation of environmental impact assessments.
  - Regulations
    - Emissions Regulations for Pollution Control ----Air Pollution Control Law, Water Pollution Control Law
    - Land Utilization & Facility Location -----Building Standard Law, Regulations Factory Location Law, Etc.
    - Development Activity Regulations For -----Nature Conservation Law, Natural Environment Natural Park Law, Etc.
    - Regulations for Conservation of Natural -----Wildlife Protection and Hunting Law Objects such as Wild Animals Hot Springs Law, etc.
    - Regulations Related to Both Pollution and -----Law Concerning Special Measures for Conservation Nature Conservation of Environment of the Seto Inland Sea
  - Economic Measures
    - Subsidiary Mechanisms -----Business that lend to environmental business groups, tax incentives, etc.
  - Establishment of Facilities and Other Projects---Provision of various public facilities and promotion of other projects.
  - Promotion of Utilization of Products, Etc. -----Law for the Promotion of Utilization of Recycled Resources and eco-mark businesses, etc.
  - Education, Training -----Preparation of materials, provision of facilities, securing of human resources, etc.
  - Promotion of Private, Autonomous Activities ----Subsidies through global environmental fund, etc. of Private Sector Groups, Etc.
  - Providing Information -----Making environmental monitoring data public, introduction of various case studies, etc.
  - Surveys -----Various pollution surveys, etc.
  - Establishment of Organization for -----Subsidy for costs for establishment of pollution Monitoring, Etc. monitoring facilities.
  - Promotion of Science and Technology -----Testing research at national environmental laboratory.
  - Dispute Resolution and Aid for Injured Parties --Law for the Settlement of Environmental Pollution Disputes
- ◇International Cooperation for Global Environmental Protection
  - International Cooperation for Global Environmental Protection
    - Implementation of environmental ODA, cooperation with international organizations, etc.
  - International Cooperation Related to Monitoring, Observation, Etc.
    - Mutual exchange of results of observations, etc. through international organization.
  - Promotion of Activities Such as Local Public Groups, Private Sector Groups
    - Provision of information, securing funding, etc.
  - Considerations for Implementation of International Cooperation, Etc.
    - Environmental Consideration Guidelines for International Cooperation Groups, etc.
- ◇Cost-Sharing and Fiscal Mechanisms
  - Polluter Pays ----- Pollution Control Public Works Cost Allocation Law, etc.
  - Beneficiary Pays ----- Nature Conservation Law, Natural Park Law, etc.
  - Fiscal Measures Related to ----- Law Concerning Special Government Financial Measures for Local Public Bodies Pollution Control Projects.
  - National or Local Public Corporations

Source: Environmental Laws and Interpretations

## 2.1.2 Environmental Quality Standards

## (1) Ambient Air Quality Standards

Substance	Standard values	Notes
Sulfur dioxide	Daily average of hourly values shall not exceed 0.04 ppm, and hourly values shall not exceed 0.1 ppm.	Environment Agency Notice No. 47
Carbon monoxide	Daily average of hourly values shall not exceed 10 ppm, and average of hourly values in eight consecutive hours shall not exceed 20ppm.	Environment Agency Notice No. 47
Suspended particulate matter <sup>1</sup>	Daily average of hourly values shall not exceed 0.10 mg/m <sup>3</sup> , and hourly values shall not exceed 0.20mg/m <sup>3</sup> .	Environment Agency Notice No. 47
Nitrogen dioxide <sup>2</sup>	Daily average of hourly values shall be within the rage between 0.04 ppm and 0.06 ppm or below.	Environment Agency Notice No. 38
Photochemical oxidants <sup>3</sup>	Hourly values shall not exceed 0.06 ppm.	Environment Agency Notice No. 47
Benzene	Yearly average values shall not exceed 0.003mg/m <sup>3</sup> .	Environment Agency Notice No. 4
Trichloroethylene	Yearly average values shall not exceed 0.2mg/m <sup>3</sup> .	Environment Agency Notice No. 4
Tetrachloroethylene	Yearly average values shall not exceed 0.2mg/m <sup>3</sup> .	Environment Agency Notice No. 4
PCDFs <sup>4</sup> , PCDDs <sup>5</sup> , Co-PCB <sup>6</sup>	Yearly average values shall not exceed 0.6pg-TEQ <sup>7</sup> /m <sup>3</sup> .	Environment Agency Notice No.68

Notes: 1. Suspended particulate matter shall mean airborne particles of 10 microns or less in diameter.

2. a) In an area where the daily average of hourly values exceeds 0.06 ppm, efforts should be made to achieve the level of 0.06 ppm by 1985.

b) In an area where the daily average of hourly values is within the range between 0.04 ppm and 0.06 ppm, efforts should be made so that the ambient concentration be maintained around the present level within the range or does not significantly exceed the present level.

3. Photochemical oxidants are oxidizing substances such as ozone and peroxyacetyl nitrate produced by photochemical reactions (only those capable of isolating iodine from neutral potassium iodide, excluding nitrogen dioxide).

4. Polychlorinated Dibenzofurans

5. Polychlorinated Dibenzo-p-Dioxins

6. Coplanar-Polychlorinated Biphenyl

7. TEQ expresses quantities converted into the equivalent quantity of the toxicity of 2, 3, 7, 8-Tetrachlorinated Dibenzo-p-Dioxins

Source: Quality of the Environment in Japan

## (2) Environmental Water Quality Standards

Unit:mg/l

Pollutants	Standard values	Notes
Cadmium	$\leq 0.01$	
Cyanide	ND	
Lead	$\leq 0.01$	
Hexavalent Chromium	$\leq 0.05$	
Arsenic	$\leq 0.01$	
Total mercury	$\leq 0.0005$	
Alkyl mercury	ND	
PCB	ND	
Dichloromethane	$\leq 0.02$	
Carbon Tetrachloride	$\leq 0.002$	
1,2-Dichloroethane	$\leq 0.004$	
1,1-Dichloroethylene	$\leq 0.02$	
cis-1,2-dichloroethylene	$\leq 0.04$	
1,1,1-Trichloroethane	$\leq 1$	
1,1,2- Trichloroethane	$\leq 0.006$	
Trichloroethylene	$\leq 0.03$	
Tetrachloroethylene	$\leq 0.01$	
1,3-Dichloropropane (D-D)	$\leq 0.002$	
Thiuram	$\leq 0.006$	
Simazine	$\leq 0.003$	
Benthiocarb	$\leq 0.02$	
Benzene	$\leq 0.01$	
Selenium	$\leq 0.01$	
Nitrate Nitrogen and Nitrite Nitrogen	$\leq 10$	
Fluorine	$\leq 0.8$	
Boron	$\leq 1$	
PCDFs <sup>1</sup> , PCDDs <sup>2</sup> , Co-PCB <sup>3</sup>	Yearly average values shall not exceed 1ppg-TEQ <sup>4</sup> /l.	Environment Agency Notice No. 68

Notes: 1. Polychlorinated Dibenzofurans

2. Polychlorinated Dibenzo-p-Dioxins

3. Coplanar-Polychlorinated Biphenyl

4. TEQ expresses quantities converted into the equivalent quantity of the toxicity of 2, 3, 7, 8-Tetrachlorinated Dibenzo-p-Dioxins

Environment Agency Notice No. 15

Source: Quality of the Environment in Japan

**【Standards related to the Conservation of the Living Environment】**

Rivers (excluding lakes and reservoirs)

Category	Standard values				
	pH	BOD	SS	DO	Number of Coliform Groups
AA	$6.5 \leq 8.5 \leq$	$\leq 1\text{mg/l}$	$\leq 25\text{mg/l}$	$\geq 7.5\text{mg/l}$	$\leq 50\text{MPN}/100\text{ml}$
A	$6.5 \leq 8.5 \leq$	$\leq 2\text{mg/l}$	$\leq 25\text{mg/l}$	$\geq 7.5\text{mg/l}$	$\leq 1,000\text{MPN}/100\text{ml}$
B	$6.5 \leq 8.5 \leq$	$\leq 3\text{mg/l}$	$\leq 25\text{mg/l}$	$\geq 5\text{mg/l}$	$\leq 5,000\text{MPN}/100\text{ml}$
C	$6.5 \leq 8.5 \leq$	$\leq 5\text{mg/l}$	$\leq 50\text{mg/l}$	$\geq 5\text{mg/l}$	—
D	$6.0 \leq 8.5 \leq$	$\leq 8\text{mg/l}$	$\leq 100\text{mg/l}$	$\geq 2\text{mg/l}$	—
E	$6.0 \leq 8.5 \leq$	$\leq 10\text{mg/l}$	—	$\geq 2\text{mg/l}$	—

Environment Agency Notice No. 15

Notes: AA Water supply: Class 1

A Water supply: Class 2, Fishery: Class 1

B Water supply: Class 3, Fishery: Class 2,

C Fishery: Class 3, Industrial water: Class 1

D Industrial water: Class 2, Agricultural water

E Industrial water: Class 3, Conservation of Environment

Source: Quality of the Environment in Japan

Lakes (natural lakes, and artificial reservoirs with 10 million cubic meters of water or above)

Category	Standard values				
	pH	BOD	SS	DO	Number of Coliform Groups
AA	$6.5 \leq 8.5 \leq$	$\leq 1\text{mg/l}$	$\leq 1\text{mg/l}$	$\geq 7.5\text{mg/l}$	$\leq 50\text{MPN}/100\text{ml}$
A	$6.5 \leq 8.5 \leq$	$\leq 3\text{mg/l}$	$\leq 5\text{mg/l}$	$\geq 7.5\text{mg/l}$	$\leq 1,000\text{MPN}/100\text{ml}$
B	$6.5 \leq 8.5 \leq$	$\leq 5\text{mg/l}$	$\leq 15\text{mg/l}$	$\geq 5\text{mg/l}$	—
C	$6.0 \leq 8.5 \leq$	$\leq 8\text{mg/l}$	—	$\geq 2\text{mg/l}$	—

Environment Agency Notice No. 15

Source: Quality of the Environment in Japan

Nitrogen and phosphorus in lakes and reservoirs

Category	Standard values	
	Total nitrogen	Total phosphorus
I	$\leq 0.1$ mg/l	$\leq 0.005$ mg/l
II	$\leq 0.2$ mg/l	$\leq 0.01$ mg/l
III	$\leq 0.4$ mg / l	$\leq 0.03$ mg/l
IV	$\leq 0.6$ mg/l	$\leq 0.05$ mg/l
V	$\leq 1$ mg/l	$\leq 0.1$ mg/l

Environment Agency Notice No. 15

Source: Quality of the Environment in Japan

 Coastal waters ①

Category	Standard values				
	pH	COD	DO	Number of Coliform Group	N-hexane Entrants
A	$7.8 \leq 8.3 \leq$	$\leq 2$ mg/l	$\geq 7.5$ mg/l	$\leq 1,000$ MPN/100 ml	ND
B	$7.8 \leq 8.3 \leq$	$\leq 3$ mg/l	$\geq 5$ mg/l	—	ND
C	$7.0 \leq 8.3 \leq$	$\leq 8$ mg/l	$\geq 2$ mg/l	—	—

Environment Agency Notice No. 15

Source: Quality of the Environment in Japan

 Nitrogen and phosphorus in coastal waters ②

Category	Standard values	
	Total nitrogen	Total phosphorus
I	$\leq 0.2$ mg/l	$\leq 0.02$ mg/l
II	$\leq 0.3$ mg/l	$\leq 0.03$ mg/l
III	$\leq 0.6$ mg/l	$\leq 0.05$ mg/l
IV	$\leq 1$ mg/l	$\leq 0.1$ mg/l

Environment Agency Notice No. 15

Source: Quality of the Environment in Japan

## (3) Environmental Quality Standards for Soil Contamination

Unit:mg/l

Pollutants	Standard values	Notes
Cadmium	$\leq 0.001\text{mg}$ , < 1mg/ 1kg of rice (agricultural land)	
Total Cyanides	ND	
Organic phosphorus compounds	ND	
Lead	$\leq 0.01\text{mg}$	
Hexavalent Chromium	$\leq 0.05\text{mg}$	
Arsenic	$\leq 0.01\text{mg}$ , < 15mg/1kg of soil (agricultural land)	
Total Mercury	0.0005mg	
Alkyl Mercury	ND	
PCB	ND	
Copper	< 125mg/1kg of soil (agricultural land)	
Dichloromethane	$\leq 0.02\text{mg}$	
Carbon Tetrachloride	$\leq 0.002\text{mg}$	
1,2-Dichloroethane	$\leq 0.004\text{mg}$	
1,1-Dichloroethane	$\leq 0.02\text{mg}$	
Cis-1,2-Dichloroethylene	$\leq 0.04\text{mg}$	
1,1,1-Trichloroethane	$\leq 1\text{mg}$	
1,1,2-Trichloroethane	$\leq 0.006\text{mg}$	
Trichloroethane	$\leq 0.03\text{mg}$	
Tetrachloroethylene	$\leq 0.01\text{mg}$	
1,3-Dichloropropane (D-D)	$\leq 0.002\text{mg}$	
Thiuram	$\leq 0.006\text{mg}$	
Simazine	$\leq 0.003\text{mg}$	
Benthiocarb	$\leq 0.02\text{mg}$	
Benzene	$\leq 0.01\text{mg}$	
Selenium	$\leq 0.01\text{mg}$	
Testing method	Leaching Test	
PCDFs <sup>1</sup> , PCDDs <sup>2</sup> , Co-PCB <sup>3</sup>	Yearly average values shall not exceed 1000pg-TEQ <sup>4</sup> /g.	Environment Agency Notice No. 68

Notes: 1. Polychlorinated Dibenzofurans

2. Polychlorinated Dibenzo-p-Dioxins

3. Coplanar-Polychlorinated Biphenyl

4. TEQ expresses quantities converted into the equivalent quantity of the toxicity of 2,3,7,8-Tetrachlorinated Dibenzo-p-Dioxins

Environment Agency Notice No.21

Source: Quality of the Environment in Japan

## (4) Environmental Quality Standards for Groundwater

Unit:mg/l

Pollutants	Standard values
Cadmium	$\leq 0.01$
Total Cyanides	ND
Lead	$\leq 0.01$
Hexavalent Chromium	$\leq 0.05$
Arsenic	$\leq 0.01$
Total Mercury	$\leq 0.0005$
Alkyl Mercury	ND
PCB	ND
Dichloromethane	$\leq 0.02$
Carbon Tetrachloride	$\leq 0.002$
1,2-Dichloroethane	$\leq 0.004$
1,1- Dichloroethylene	$\leq 0.02$
cis-1,2-Dichloroethylene	$\leq 0.04$
1,1,1-Trichloroethane	$\leq 1$
1,1,2- Trichloroethane	$\leq 0.006$
Trichloroethylene	$\leq 0.03$
Tetrachloroethylene	$\leq 0.01$
1,3-Dichloropropane (D-D)	$\leq 0.002$
Thiuram	$\leq 0.006$
Simazine	$\leq 0.003$
Benthocarb	$\leq 0.02$
Benzene	$\leq 0.01$
Selenium	$\leq 0.01$
Nitrate Nitrogen and Nitrite Nitrogen	$\leq 10$
Fluorine	$\leq 0.8$
Boron	$\leq 1$

Environment Agency Notice No.23

Note: Standard values are yearly average.

Cyanide's standard is highest value.

Source: Quality of the Environment in Japan

(5) Environmental Quality Standards for Noise

Unit:dB

Area category	Standard values	
	Daytime (6AM~10PM)	Nighttime (10PM~6AM)
AA	≦ 50	≦ 40
A and B	≦ 55	≦ 45
C	≦ 60	≦ 50

Environment Agency Notice No.64

Notes AA: Areas where quiet is specially required

A: Areas where are used exclusively for residential purposes

B: Areas where are used mainly for residential purposes

C: Areas where are used considerably for residential purposes and which are also used for commercial and industrial purposes

Source: Quality of the Environment in Japan

Unit:dB

Area category	Standard values	
	Daytime (6AM~10PM)	Nighttime (10PM~6AM)
A areas facing roads with 2 lines	≦ 60	≦ 55
B areas facing roads with more than 2 lanes and C areas facing	≦ 65	≦ 60
Space close to trunk lines	≦ 70	≦ 65
○Indoor standards	≦ 45	≦ 40

Environment Agency Notice No.64

Source: Quality of the Environment in Japan

(6) Environmental Quality Standards for Shinkansen Superexpress Railway Noise

Unit:dB

Area category	Standard values
Area for residential use	$\leq 70$
Area where normal living Conditions should be preserved	$\leq 75$

Environment Agency Notice No.46

Source: Quality of the Environment in Japan

(7) Environmental Quality Standards for Aircraft Noise

Unit:WECPNL

Area category	Standard values
Area for exclusively residential use	$\leq 70$
Area where normal living Conditions should be preserved	$\leq 75$

Environment Agency Notice No.91

Note:  $WECPNL = \overline{dB(A)} + 10\log_{10}N - 27$

Source: Quality of the Environment in Japan

## 【List of Projects Subject to EIA】

Item	Category 1 Projects	Category 2 Projects
1. Roads		
National Passenger Car Expressways	All	—————
Metropolitan Area Expressways	All (4 Lanes)	—————
Standard National Roads	Four Lanes 10km	7.5km ≤ 10km <
Large-Size, Forest Roads	Two Lanes 20km	15km ≤ 20km <
2. Rivers		
Dams	Water Surface Area 100ha	75ha ≤ 100ha <
Weirs	Water Surface Area 100ha	75ha ≤ 100ha <
Lakes and Marshes Water Level Governing Facility	Changed Water Surface 100ha	75ha ≤ 100ha <
Drainage Runoffs	Changed Water Surface 100ha	75ha ≤ 100ha <
3. Railroads		
Shinkansen Superexpress Railway	All	—————
Standard Railroads	10km ≤	7.5km ≤ 10km <
Tramways (Equivalent to Standard Railroads)	10km ≤	7.5km ≤ 10km <
4. Airfields	Length of runway 2,200m ≤	1,875m ≤ 2,500m ≤
5. Electric Power Generation Facilities		
Hydro-Electric Facilities	Output 30,000kW ≤	22,500 ≤ 30,000kW <
Fire-Powered Facilities (Other than thermal facilities)	Output 50,000kW ≤	112,500 ≤ 150,000kW <
Fire-Powered Facilities (Thermal Facilities)	Output 10,000kW ≤	7500 ≤ 10,000kW <
Nuclear Power Generation	All	
6. Final Waste Disposal Sites	30ha ≤	25ha ≤ 30ha <
7. Landfill or Reclamation of Public Surface Water	Over 50ha	40ha ≤ 50ha ≤
8. Land Subdivision Projects	100ha ≤	75ha ≤ 100ha <
9. New Residential Housing Development Projects	100ha ≤	75ha ≤ 100ha <
10. Industrial Park Preparation Projects	100ha ≤	75ha ≤ 100ha <
11. New Cities and Towns Base Preparation Projects	100ha ≤	75ha ≤ 100ha <
12. Distribution Centers Preparation Projects	100ha ≤	75ha ≤ 100ha <
13. Housing Site Preparation Projects (Housing sites include residential housing areas and areas zoned for industrial use.)		
Japan Environment Corporation	100ha ≤	75ha ≤ 100ha <
Urban Development Corporation	100ha ≤	75ha ≤ 100ha <
Japan Regional Development Corporation	100ha ≤	75ha ≤ 100ha <
○Harbor Planning	Landfilling · Digging Area 300ha ≤	

Source: Environmental Laws and Interpretations

## 2.2.2 Emission Standards

The pollutants that are subject to regulation by the Air Pollution Control Law are smoke, dust, automobile exhaust and designated materials.

## 【Smoke】

Substances	Description of Regulation
Sulfur oxides	1) The regulatory value (quantity) is set according to the height of the exhaust outlet (He) and the value of the constant, K, designated at each area. ○Permissible emission (Nm <sup>3</sup> /h) = K × 10 <sup>-4</sup> × He <sup>2</sup> ○General emission standard: K = 3.0 - 17.5 ○Special emission standard: K = 1.17 - 2.34 2) Fuel use standard ○Sulfur in fuel is set at each area ○Sulfur content: Under 0.5 ~ 1.2 % 3) Regulation of total emission It is set at each area/factory based on the total emission reduction plan.
Smoke	General standard for each facility/scale (concentration) ○General emission standard: 0.04 ~ 0.7 g/Nm <sup>3</sup> ○Special emission standard: 0.03 ~ 0.2 g/Nm <sup>3</sup>
Cadmium, Cadmium compounds	Emission standard for each facility ○1.0 mg/Nm <sup>3</sup>
Chlorine, Hydrogen Chloride	Emission standard for each facility ○Chlorine: 30 mg/Nm <sup>3</sup> ○Hydrogen chloride: 80,700 mg/Nm <sup>3</sup>
Fluorine, Hydrogen fluoride, etc.	Emission standard for each facility ○1.0 ~ 20 mg/Nm <sup>3</sup>
Lead, Lead compounds	Emission standard for each facility ○10 ~ 30 mg/Nm <sup>3</sup>
Nitrogen oxides	1) Emission standard for each facility/scale ○New facilities: 60 ~ 400 ppm ○Existing facilities: 130 ~ 600 ppm 2) Regulation of total emission It is set at each area/factory based on the total emission reduction plan.

Source: Environment Agency

**[Dust]**

Substances	Description of Regulation
General dust	Standard regarding the structure, mechanical treatment, accumulation at a sieve or an accumulation site
Designated dust (asbestos)	◇Comminution of asbestos◇ Site boundary standard at the business site ○Concentration 10 fibers/liter ◇Dismantling of building◇ Standard regarding removal, enclosure and containment at the time of dismantling the building

Source: Environment Agency

**[Designated Substances]**

Substances	Description of Regulation
28 substances such as ammonia, carbon monoxide, methanol	Specification of measures at the time of an accident

Source: Environment Agency

**[Harmful Pollutants]**

Substances	Description of Regulation
234 substances (groups) Of these, 22 substances are "substances to be tackled by priority."	Specification of duties for each subject such as the accumulation of knowledge ○ Voluntary tackling of companies such as the reduction of emission, the development of scientific knowledge by the national government, grasping the condition of pollution by local governments.
Benzene	Suppression standard for each facility/scale ○New facilities: 50 ~600 mg/Nm <sup>3</sup> ○Existing facilities: 100 ~1,500 mg/Nm <sup>3</sup>
Trichloroethylene	Suppression standard for each facility/scale ○New facilities: 150 ~300 mg/Nm <sup>3</sup> ○Existing facilities: 300 ~500 mg/Nm <sup>3</sup>
Tetrachloroethylene	Suppression standard for each facility/scale ○New facilities: 150 ~300 mg/Nm <sup>3</sup> ○Existing facilities: 300 ~500 mg/Nm <sup>3</sup>
Dioxins	Suppression standard for each facility/scale ○New facilities: 0.1 ~5 ng-TEQ/Nm <sup>3</sup> ○Existing facilities: 1.0 ~10 ng-TEQ/Nm <sup>3</sup>

Notes: 1. For smoke, dust and harmful pollutants, the prefectures can set stricter than those of the national standards by an ordinance.

2. For the above standards, it is necessary to make reconsideration at any time based on changes in condition of air pollution, the effect of measures, changes in the industrial structure and the sources of air pollution, the development/spread of anti-pollution technology, etc.

3. ppm = 10<sup>-6</sup>, ng = 10<sup>-9</sup>g

Source: Environment Agency

## [Automobile Exhaust Emission Standards]

Category			Mode	Components	Regulation		Remarks	
					Enforce- ment year	Standard value		
Gasoline and LPG motor vehicles	Passenger cars	4-cycled and 2-cycled	10-15M (g/km)	CO	1975	2.70 (2.10)	Currently 2- cycled passenger cars are not manufactured	
				HC	1975	0.39 (0.25)		
				NO <sub>x</sub>	1978	0.48 (0.25)		
			11M (g/test)	CO	1975	85.0 (60.0)		
				HC	1975	9.50 (7.00)		
				NO <sub>x</sub>	1978	6.00 (4.40)		
	Trucks and buses	4-cycled mini-sized motor vehicles	10-15M (g/km)	CO	1998	8.42 (6.50)		
				HC	1998	0.39 (0.25)		
				NO <sub>x</sub>	1998	0.48 (0.25)		
			11M (g/test)	CO	1998	104 (76)		
				HC	1998	9.50 (7.00)		
				NO <sub>x</sub>	1998	6.00 (4.40)		
2-cycled mini-sized motor vehicles		10-15M (g/km)	CO	1975	17.0 (13.0)	Currently these vehicles are not manufactured		
			HC	1975	15.0 (12.0)			
			NO <sub>x</sub>	1975	0.50 (0.30)			
		11M (g/test)	CO	1975	130 (100)			
			HC	1975	70.0 (50.0)			
			NO <sub>x</sub>	1975	4.00 (2.50)			
Light-duty vehicles (GVW ≤ 1.7t)	10-15M (g/km)	CO	1988	2.70 (2.10)				
		HC	1988	0.39 (0.25)				
		NO <sub>x</sub>	1988	0.48 (0.25)				
	11M (g/test)	CO	1988	85.0 (60.0)				
		HC	1988	9.50 (7.00)				
		NO <sub>x</sub>	1988	6.00 (4.40)				

Principal Environmental Laws and Environmental Standards

Gasoline and LPG motor vehicles	Trucks and buses	Medium-duty vehicles (1.7t < GVW ≤ 2.5t)	10·15M (g/km)	CO	1998	8.42 (6.50)			
				HC	1998	0.39 (0.25)			
				NOx	1994	0.63 (0.40)			
		11M (g/test)	CO	1998	104 (76)				
			HC	1998	9.50 (7.00)				
			NOx	1994	6.60 (5.00)				
	Heavy-duty vehicles (2.5t < GVW)	G13M (g/kWh)	CO	1998	68.0 (51.0)	LPG-fueled 105(76)			
			HC	1998	2.29 (1.80)				
			NOx	1995	5.90 (4.50)				
Diesel motor vehicles	Passenger cars	10·15M (g/km)	CO	1986	2.70 (2.10)				
			HC	1986	0.62 (0.40)				
			NOx	Small	1997		0.55 (0.40)		
				Medium	1998		0.55 (0.40)		
			PM	1997, 1998	0.14 (0.08)		Small 1997, Medium 1998		
		Light-duty vehicles (GVW ≤ 1.7t)	10·15M (g/km)	CO	1988	2.70 (2.10)			
				HC	1988	0.62 (0.40)			
				NOx	1997	0.55 (0.40)			
				PM	1997	0.14 (0.08)			
	Trucks and buses	Medium-duty vehicles (1.7t < GVW ≤ 2.5t)	10·15M (g/km)	CO	1993	2.70 (2.10)			
				HC	1993	0.62 (0.40)			
				NOx	1997, 1998	0.97 (0.70)		MTM 1997	
				PM	1997, 1998	0.18 (0.09)		ATM 1998	
		Heavy-duty vehicles (2.5t < GVW)	D13M (g/kWh)	CO	1994	9.20 (7.40)			
				HC	1994	3.80 (2.90)			
				NOx	DI	1997, 1998, 1999		5.80 (4.50)	GVW ≤ 3.5t, 1997
					IDI				
				PM	1997, 1998, 1999	0.49 (0.25)		≤ 12t, 1998 12t < GVW, 1999	

Air Pollution

Two-wheeled motor vehicles	4-cycled	Two-wheeled motor vehicles (g/km)	CO	1998, 1999	20.0 (13.0)	*
			HC	1998,1999	2.93 (2.00)	
			NO <sub>x</sub>	1998,1999	0.51 (0.30)	
	2-cycled	Two-wheeled motor vehicles (g/km)	CO	1998, 1999	14.4 (8.00)	
			HC	1998, 1999	5.26 (3.00)	
			NO <sub>x</sub>	1998, 1999	0.14 (0.10)	

Notes:

1. Carbon monoxide(CO), hydrocarbons(HC), nitrogen oxides(NO<sub>x</sub>), particulate matter(PM).
2. Standard value "2.70(2.10)" means that the maximum permissible limit per unit is 2.70 and the average permissible limit for each category of motor vehicle is 2.10.
3. 10·15M means 10·15-mode cycle which reflects an average driving pattern in cities. "11M" means 11-mode cycle which reflects a driving pattern of vehicles which make a cold start to drive to cities from outside cities.
4. As for diesel-powered passenger cars, "small" vehicle means a vehicle with equivalent initial weight (EIW) of 1.25t or less, "medium" vehicle means a vehicle with EIW of more than 1.25t.
5. "MTM" and "ATM" stand for manual transmission and automatic transmission respectively.
6. "ID" and "IDI" stand for direct injection and indirect injection respectively.

\*Enforcement year

- (i) 1998 for Class 1 motor-driven cycle and mini-sized two-wheeled motor vehicles
- (ii) 1999 for Class 2 motor-driven cycle and small-sized two-wheeled motor vehicles

Source: Quality of the Environment in Japan

## 2.3.2 Emission Standards

The following are standards for waste water.

## ① National Effluent Standards

## 【Substances related to the protection of Human Health】

unit:mg/l

Harmful substances	Permissible limits
Cadmium and its compounds	$\leq 0.1$
Cyanide compounds	$\leq 1$
Organic phosphorus compounds	$\leq 1$
Lead and its compounds	$\leq 0.1$
Hexavalent chrome compounds	$\leq 0.5$
Arsenic and its compounds	$\leq 0.1$
Total mercury	$\leq 0.005$
Alkyl mercury compounds	N.D.
PCB	$\leq 0.003$
Trichloroethylene	$\leq 0.3$
Tetrachloroethylene	$\leq 0.1$
Dichloromethane	$\leq 0.2$
Carbon Tetrachloride	$\leq 0.02$
1,2-Dichloroethane	$\leq 0.04$
1,1-Dichloroethylene	$\leq 0.2$
Cis-1,2-Dichloroethylene	$\leq 0.4$
1,1,1-Trichloroethane	$\leq 3$
1,1,2-Trichloroethane	$\leq 0.06$
1,3-Dichloropropane (D-D)	$\leq 0.02$
Thiuram	$\leq 0.06$
Simazine	$\leq 0.03$
Benthiocarb	$\leq 0.2$
Benzene	$\leq 0.1$
Selenium and its compounds	$\leq 0.1$

Prime Minister's Office Ordinance No. 56.

Source: Quality of the Environment in Japan

## 【Items related to the Protection of Living Environment】

Unit: mg/l

Pollutants	Permissible limits
PH	$5.8 \leq 8.6 \leq$
Total Chromium	$\leq 2$
Lead	$\leq 3$
Zinc	$\leq 5$
Phenols	$\leq 5$
n-Hex	$\leq 5$ (mineral oils)
Maganese	$\leq 10$
Iron	$\leq 10$
Fluoride	$\leq 15$
Phosphorus	$\leq 16$ (daily average 8)
n-Hex	$\leq 30$ (animal and vegetable oils and fats)
Nitrogen	$\leq 120$ (60)
COD	160 (daily average 120)
BOD	160 (daily average 120)
SS	200 (daily average 150)
Coliforms	3,000 items/cm <sup>2</sup> (daily average)

Note: Standards are applied to businesses that discharge more than 50m<sup>3</sup> of waste water (daily average).

Source: Environmental Quality in Japan

## ② Superseding and Additional Items Standards

Prefectures can enact ordinances to establish more rigorous standards than the national standards shown above, to add items other than the uniform items and to expand the application of the emission standards to the businesses that do not have special facilities.

## ③ Total Pollutant Load Control

Total pollutant load control is applied to businesses with special facilities adjacent to public bodies of water that reduces the burden to the aquatic environment of Tokyo Bay and Ise Bay.

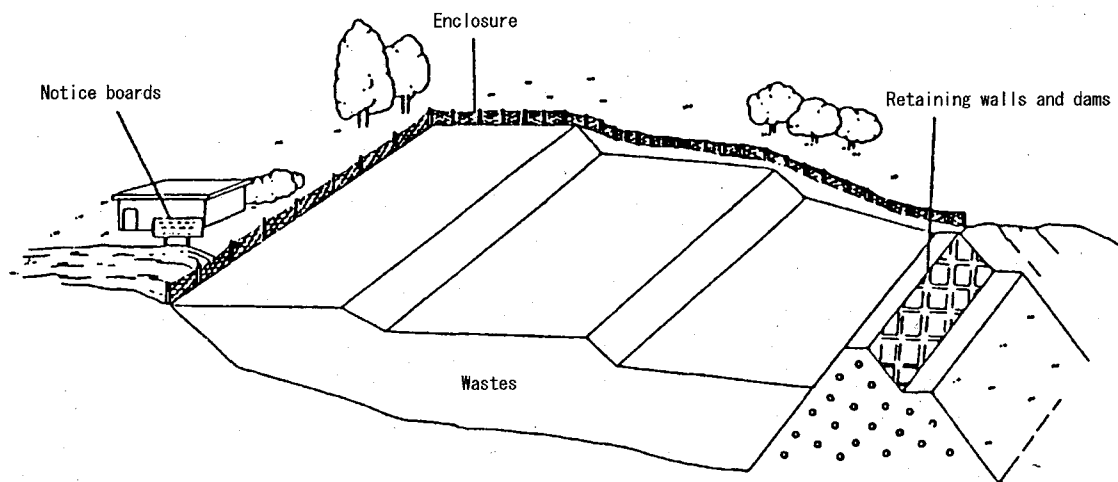
- ① Waste oil-reutilization treatment by incineration treatment, distillation equipment or by other facilities.
- ② Waste acid and waste alkaline-reutilization treatment by neutralization treatment, incineration treatment, etc.
- ③ Infectious wastes-incineration treatment, melting treatment, high-pressure steam or sterilization treatment.
- ④ Waste asbestos, melting treatment.

**【Landfill】**

- Landfill disposal of specially managed industrial waste and particulate matter, combustion residue and sludge that contain toxic heavy metal and others above standard levels shall be done at isolated landfills.
- Asbestos and other such material shall be disposed of on approval at controlled or isolated landfills after double packaging or solidifying.

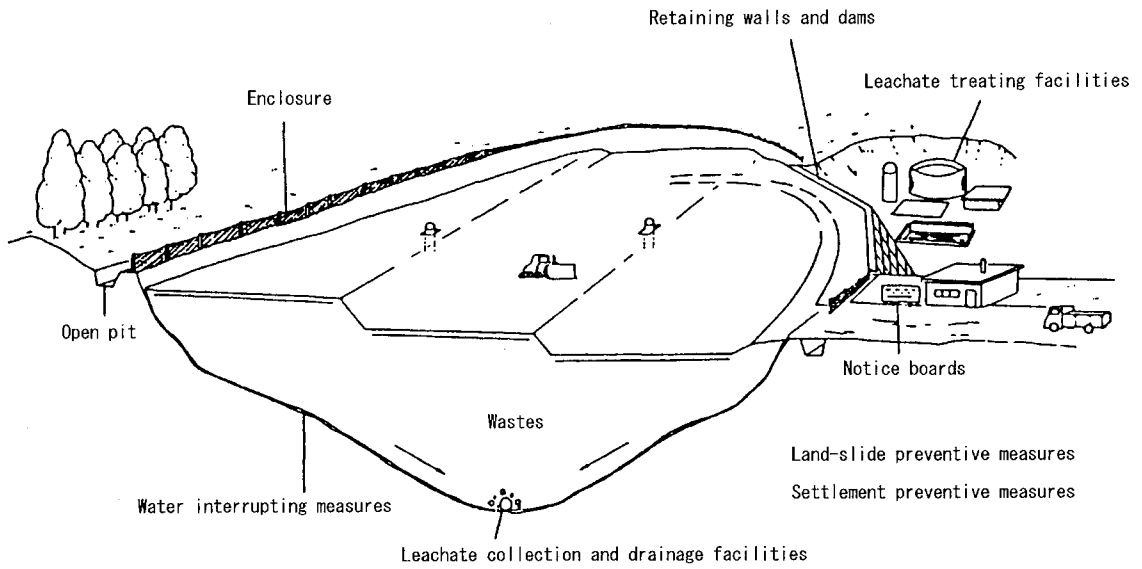
**(6) Types of Disposal Sites**

**【Sanitary Landfill】**



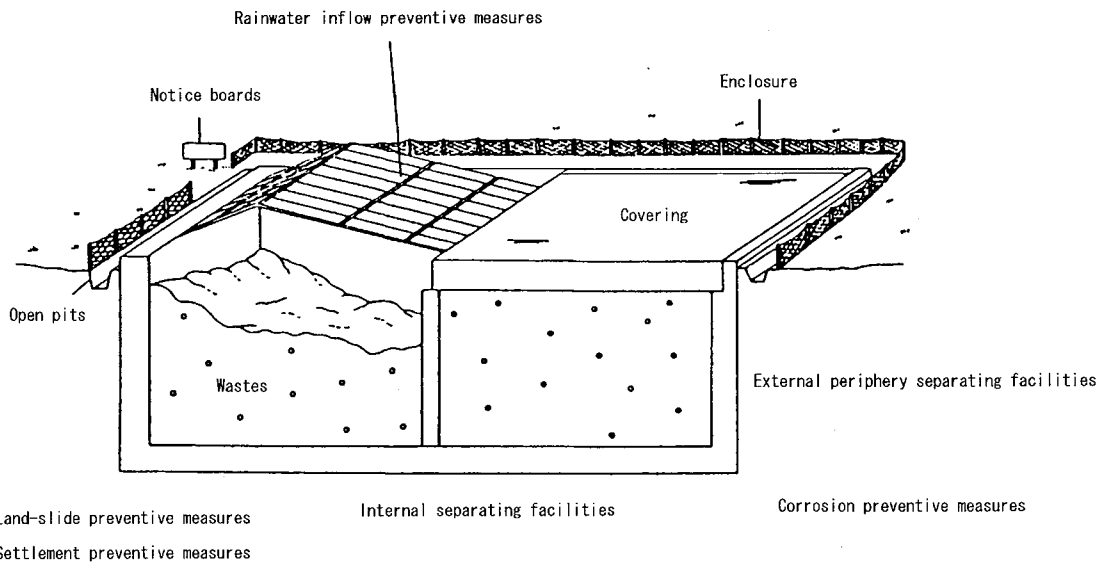
Source: JICA cited in Garbage Management in Japan

**[Controlled Landfill]**



Source: JICA cited in Garbage Management in Japan

**[Isolated Landfill]**



Source: JICA cited in Garbage Management in Japan

## 2.4.2 Judgment Standard for Specially Managed Industrial Wastes

Unit:ml/l

Heavy metals and chemicals	○dust ○cinder ○slag	○sludge ○wastes treated for disposal	○waste acid ○waste alkali
Alkyl Mercury Compounds	ND	ND	ND
Mercury or its Compounds	$\leq 0.005$	$\leq 0.005$	$\leq 0.05$
Cadmium or its Compounds	$\leq 0.3$	$\leq 0.3$	$\leq 1$
Lead or its Compounds	$\leq 0.3$	$\leq 0.3$	$\leq 1$
Arsenic or its Compounds	$\leq 0.3$	$\leq 0.3$	$\leq 1$
Organic Phosphorus Compounds		$\leq 1$	$\leq 1$
Hexavalent Chromium Compounds	$\leq 1.5$	$\leq 1.5$	$\leq 5$
Cyanic compounds		$\leq 1$	$\leq 1$
PCB		$\leq 0.003$	$\leq 0.03$
Trichloroethylene		$\leq 0.3$	$\leq 3$
Tetrachloroethylene		$\leq 0.1$	$\leq 1$
Dichloromethane		$\leq 0.2$	$\leq 2$
Carbon Tetrachloride		$\leq 0.02$	$\leq 0.2$
1,2-Dichloroethane		$\leq 0.04$	$\leq 0.4$
1,1-Dichloroethylene		$\leq 0.2$	$\leq 2$
cis-1,2- Dichloroethylene		$\leq 0.4$	$\leq 4$
1,1,1-Trichloroethane		$\leq 3$	$\leq 30$
1,1,2- Trichloroethane		$\leq 0.06$	$\leq 0.6$
1,3-Dichloropropane (D-D)		$\leq 0.02$	$\leq 0.2$
Benzene		$\leq 0.1$	$\leq 1$
Thiuram		$\leq 0.06$	$\leq 0.6$
Simazine (CAT)		$\leq 0.03$	$\leq 0.3$
Benthiocarb		$\leq 0.2$	$\leq 2$
Selenium and its compounds		$\leq 0.3$	$\leq 1$
Testing method	Leaching Test	Leaching Test	Volume Contained Test

No.3 Ordinance for Enforcement of Waste Management Law (Ministry of Health and Welfare)

Source: Environmental Laws and Interpretations

### 2.4.3 Judgment Standard for Disposal (Landfill) of Industrial Wastes Containing Heavy Metals, etc.

Unit:mg/l

Heavy metals chemicals	Judgment standards
Alkyl Mercury Compounds	ND
Mercury or its Compounds	$\leq 0.005$
Cadmium or its Compounds	$\leq 0.3$
Lead or its Compounds	$\leq 0.3$
Organic Phosphorus Compounds	$\leq 1$
Hexavalent Chromium Compounds	$\leq 1.5$
Arsenic or its Compounds	$\leq 0.3$
Cyanic compounds	$\leq 1$
PCB	$\leq 0.003$
Trichloroethylene	$\leq 0.3$
Tetrachloroethylene	$\leq 0.1$
Dichloromethane	$\leq 0.2$
Carbon Tetrachloride	$\leq 0.02$
1,2-Dichloroethane	$\leq 0.04$
1,1-Dichloroethylene	$\leq 0.2$
cis-1,2- Dichloroethylene	$\leq 0.4$
1,1,1-Trichloroethane	$\leq 3$
1,1,2- Trichloroethane	$\leq 0.06$
1,3-Dichloropropane (D-D)	$\leq 0.02$
Thiuram	$\leq 0.06$
Simazine (CAT)	$\leq 0.03$
Benthiocarb	$\leq 0.2$
Thiuram	$\leq 0.1$
Selenium and its Compounds	$\leq 0.3$
Testing method	Leaching Test

Prime Minister's Office Ordinance No.51

Source: Environmental Laws and Interpretations

## 2.6.2 Regulatory Standards

## (1) Concentration Regulation

【Leaked from the Overall Business Site】

Unit: ppm

Substances	Maximum Permissible Concentration
Methyl mercaptan	0.002~0.01
Dimethyl sulfide	0.01~0.2
Hydrogen sulfide	0.02~0.2
Trimethylamine	0.005~0.07
Anmonia	1~5
Dimethyl disulfide	0.009~0.1
Acetaldehyde	0.05~0.5
Styrene	0.4~2
Valeric acid	0.0009~0.004
Butyric acid	0.001~0.006
Isovaleric acid	0.001~0.01
Propionic acid	0.03~0.2
Isovaleraldehyde	0.003~0.01
Butyraldehyde	0.009~0.08
Valericaldehyde	0.009~0.05
Isobutyraldehyde	0.02~0.2
Propionaldehyde	0.05~0.5
Isobutyl alcohol	0.9~20
Xylene	1~5
Methyl Isobutyl Keton	1~6
Ethyl acetate	3~20
Toluene	10~60

Prime Minister's Ordinance No. 42

Source: Environment Agency

【Commingled in Pollution that is Discharged to Off-Site Locations  
by Factories, etc.】

With a substance density of 1.5m in waste water areas, apply regulatory standards for leakage from the overall business site.

## (2) Regulations by Odor Index

【Leaked from the Overall Business Site】

Calculate odor index that corresponds to the odor strength at the perimeters

being in the 2.5 ~ 3.5 range and apply regulatory standards.

**【Odor Intensity and Index Ranges】**

Odor intensity	Region	Odor index range
2.5	▲ Other region(2.5~3.0) ▼ Industrial region, etc.	10~15
3.0		12~18
3.5		14~21

Source: Environmental Laws and Interpretations

**【Released from Gaseous Discharge Equipment】**

The odor index is used for odor discharge strength of below 15m with discharge apertures 15m high or above.

**【Commingled in Pollution that is Discharged to Off-Site Locations by Factories, etc.】**

Apply regulatory standards for leakage from the overall business site. However, only four substances, i.e., methyl mercaptan, methyl sulfide, hydrogen sulfide and methyl disulfide, are subject to regulation.

## 2.7 Noise

### 2.7.1 Noise Regulation Law

#### (1) Background

Among pollution, there are more complaints about noise than any other type. However, because that harm is a local concern, initially, protection against noise is relied on local ordinances by local governments. However, the noise problem also came to be acknowledged as a common, national problem, and the Noise Regulation Law was enacted in 1968. The law has since been amended many times, and, along with the expansion of designated areas in which noise from the factories and construction works are regulated, tolerance levels for automobile traffic noise have also been established as an amendment.

#### (2) Areas and Business Sites Subject to Regulation

##### ① Designated Areas

This law does not apply to all areas, but applies to "designated areas" such as those below that the governors designates.

- Areas where residential housing has concentrated.
- Areas around hospitals and schools.
- Areas where it is recognized there is a need for the preservation of the living environment for residents. (Libraries, senior citizen homes, areas around childcare facilities, etc.)

##### ② Specified Equipment or Facilities

This law does not apply to all equipment or facilities that produces noise. The law establishes equipment or facilities that produce a significant amount of noise as "specified equipment or facilities" and makes such specified equipment or facilities subject to regulations.

- Equipment for processing metals.
- Air compressors and ventilation equipment (for prime movers of 3.75kw rated output or above).
- Gravel or mineral crushers, grinders, sifters and sorting equipment (for prime movers of 3.75 kw rated output or above).
- Weaving equipment (equipment that uses a prime mover).
- Construction materials manufacturing equipment.
- Milling equipment for grains (roller types with prime mover of 7.5 kw rated output or above).

- Lumber processing equipment.
- Paper-making equipment.
- Printing equipment (equipment that uses a prime mover).
- Synthetic resins ejector molding equipment.
- Mold manufacturing equipment (jolt-type equipment).

③ Specified Construction Work

This law establishes five types of work at or above a fixed level that make a significant amount of noise as “specified construction work.”

- Pile drivers
- Riveting machines
- Jackhammers
- Work that uses air compressors
- Work to set up a concrete plant or asphalt plant

2.7.2 Noise Standards

The term values for regulatory standards refers to tolerance levels for noise produced at the borders of business sites that construct special facilities. The governors may establish such standard values within limits for such standards established by the national government. Also, local governments can establish “superseding standards.”

**[National Standard]**

Unit: dB

Zone	Daytime	Morning and Evening	Nighttime	Qualifying Locality
Category 1	40 ~ 50	40 ~ 45	40 ~ 45	Zone where there is a particular need to maintain the tranquility of the area.
Category 2	50 ~ 60	45 ~ 50	40 ~ 50	Zone used for residential purposes.
Category 3	60 ~ 65	55 ~ 65	50 ~ 55	Residential, commercial, industrial zone.
Category 4	65 ~ 70	60 ~ 70	55 ~ 65	Zone used mainly for industrial purposes.

Note: The values can be reduced by 5dB in category 2 ~ 4 zones where there is a facility such as a hospital or a school within 50 meters.

Source: Environment Agency

## 2.8 Vibration

### 2.8.1 Vibration Regulation Law

#### (1) Background

The Noise Regulation Law was enacted in 1968. However, in regard to vibration, due to there having been many unsettled problems in a technical sense, such as methods to measure vibration, ways to decide on standards and measures to prevent vibration. As same as the regulation of noise, Vibration Regulation Law was enacted in 1976. Regulatory control by the Vibration Regulation Law is similar to that by the Noise Regulation Law.

#### (2) Areas and Business Sites Subject to Regulation

##### ① Designated Areas

The law does not apply to all areas, but applies to "designated areas" such as those below that the prefectural governors designates.

- Areas where residential housing has concentrated
- Areas around hospitals and schools
- Areas where it is recognized there is a need for the preservation of the living environment for residents. (Libraries, senior citizen homes, areas around childcare facilities, etc.)

##### ② Specified Equipment or Facilities

This law does not apply to all equipment or facilities that produces vibration. Instead, the law establishes equipment or facilities that produce a significant amount of vibration as "specified equipment or facilities" and makes such special equipment or facilities subject to regulations.

- Equipment for processing metals
- Compressors (for prime movers of 3.75 kw rated output or above)
- Gravel or mineral crushers, grinders, sifters and sorting equipment (for prime movers of 7.5 kw rated output or above)
- Weaving equipment (equipment that uses a prime mover)
- Concrete block machines (with total rated output of prime mover of 2.95 kw or above) as well as concrete block manufacturing equipment and concrete pole manufacturing equipment (with total rated output of prime mover of 10 kw or above.)
- Printing equipment (equipment that uses a prime mover of rated output of 2.2

kw or above)

- Rolling equipment for kneading rubber and synthetic resins (Equipment other than calendar roll equipment with rated prime mover output of 30 kw or above)
- Synthetic resins ejector molding equipment
- Mold manufacturing equipment (jolt-type equipment)

③ Businesses

A wide range of business sites within designated areas are subject to regulation by the law, including research facilities at colleges and universities, government agencies and buildings.

④ Specified Construction Work

This law establishes four types of work at or above a fixed level that make a significant amount of vibration as "special construction work."

- Pile drivers
- Building demolition work that uses a steel wrecking ball
- Work that uses interior renovation crushing equipment
- Work that uses breaker

### 2.8.2 Vibration Standards

The term values for regulatory standards refers to tolerance levels for vibration produced at the borders of business sites that construct specified facilities. The prefectural governors can establish such value standards within limits for such standards established by the national government. Also, local governments can establish "superseding standards."

## 【Vibration Standard】

Unit: dB

Zone	Daytime	Nighttime	Qualifying Locality
Category 1	60 ~ 65	55 ~ 60	<input type="radio"/> Zone where there is a particular need to maintain the tranquility of the area. <input type="radio"/> Zone where there is a need to maintain the tranquility of the area for residential purposes.
Category 2	65 ~ 70	60 ~ 65	<input type="radio"/> Zone used for residential, commercial, industrial purposes. <input type="radio"/> Zone used mainly for industrial purposes.

Notes: The value for factories located near facilities such as hospitals and schools is a value that has been reduced by 5 dB. Daylight hours are approximately from 5 ~ 8 a.m. to 7 ~ 10 p.m. Nighttime hours are approximately from 7 ~ 10 p.m. to 5 ~ 8 a.m. the following morning.

Source: Environment Agency

## 【Vibration Standard】

Unit: dB

Zone	Daytime	Nighttime	Qualifying Locality
Category 1	60 ~ 65	55 ~ 60	<input type="radio"/> Zone where there is a particular need to maintain the tranquility of the area. <input type="radio"/> Zone where there is a need to maintain the tranquility of the area for residential purposes.
Category 2	65 ~ 70	60 ~ 65	<input type="radio"/> Zone used for residential, commercial, industrial purposes. <input type="radio"/> Zone used mainly for industrial purposes.

Notes: The value for factories located near facilities such as hospitals and schools is a value that has been reduced by 5 dB. Daylight hours are approximately from 5 ~ 8 a.m. to 7 ~ 10 p.m. Nighttime hours are approximately from 7 ~ 10 p.m. to 5 ~ 8 a.m. the following morning.

Source: Environment Agency

## 【Specified facility】

Facilities	Description
Smoke emitting facility	① Factory in which any of the fourteen kinds of facilities generating a hazardous substance among the “smoke emitting facilities” provided in Air Pollution Control Law is installed ② Factory emitting 10,000 m <sup>3</sup> /h or more of as from all the “smoke emitting facilities” of the factory
Specified dust discharging facility	Any of the “specified dust discharging facilities” provided in Air Pollution Control Law
General dust discharging facility	Any of the “general dust discharging facilities” provided in Air Pollution Control Law
Waste water discharging facility	① Factory, in which any of 28 kinds of facilities emitting a hazardous substance is installed, ② Factory discharging 1,000 m <sup>3</sup> /day or more of waste water, respectively among the factories in which any of the “waste water discharging facilities” (seventy four kinds of facilities are specified) among the “specified facilities” provided in Water Pollution Control Law is installed
Noise generating facility	① Mechanical press ② Forging machine
Vibration generating facility	① Hydraulic press ② Mechanical press ③ forging machine

Source: Environmental Laws and Interpretations

## (3) Pollution Control Manager

The operator of the specified factories has to appoint 1) a pollution control supervisor 2) a chief manager of pollution control and 3) a pollution control manager. Appointment shall be reported to the prefectural governors within 30 days. Pollution control managers are selected and appointed in accordance with the scale of the factory, and different types of qualifications are required depending on the equipment. In cases such as factories have violated the regulations for environmental control or have caused harm to residents, the prefectural governors may issue orders to dismiss those pollution control managers. The prefectural governors may also request reports in regard to the status of the job and performance of those managers and inspect on-site.

**【Pollution Control Manager】**

Category of factory		Nominated
Specified factory having 21 or more employees constantly adopted		Supervisor of pollution control
Factory in which a smoke discharging facility and a waste water discharging facility are installed, and which emits 40.000Nm <sup>3</sup> /h or more of gas and discharges 10.000Nm <sup>3</sup> /day or more of waste water		Chief manager of pollution control
Category of factory		Qualification
Harmful substance discharging facility	Factory emitting 40.000 Nm <sup>3</sup> /h of gas	Air Class 1
	Factory emitting less than 40.000 Nm <sup>3</sup> /h of gas	Air Class 1 or 2
Smoke emitting facility other than the above	Factory emitting 40.000Nm <sup>3</sup> /h or more of gas	Air Class 1 or 3
	Factory emitting less than 40.000Nm <sup>3</sup> /h and 10.000 Nm <sup>3</sup> /day or more of gas	Air Class 1,2,3 or 4
Harmful substance discharging facility	Factory discharging 10.000 Nm <sup>3</sup> /day or more of waste water	Water Class 1
	Factory discharging less than 10.000 Nm <sup>3</sup> /day of waste water	Water Class 1 or 2
Factory infiltrating specified underground seepage water		
Waste water discharging facility other than the above	Factory discharging 10.000 Nm <sup>3</sup> /day or more of waste water	Water Class 1 or 3
	Factory discharging less than 10.000 Nm <sup>3</sup> /day and 1.000 Nm <sup>3</sup> /day or more of waste water	Water Class 1, 2, 3 or 4
Factory, in which a noise generating facility is installed, and which is located in a designated region		Noise qualification
Factory, in which any specified dust discharging facility is installed		Air Class, Specified dust Qualification
Factory, in which any general dust discharging facility is installed		Air Class 1,2,3,4, Specified dust qualification or general dust qualification
Factory, in which any vibration generating facility is installed		Vibration qualification

Source: Environmental Laws and Interpretations