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PART-II

Statutory Notification (S.R.O)

GOVERNMENT OF PAKISTAN

MINISTRY OF ENVIRONMENT, LOCAL GOVERNMENT AND  
RURAL DEVELOPMENT

NOTIFICATION

Islamabad, the 8<sup>th</sup> August 2000

**S.R.O. 549 (I)/2000.**\_\_\_ In exercise of the powers conferred under clause (c) of sub-section (1) of section of 6 of the Pakistan environmental Protection Act. 1997 (XXXIV of 1997), the Pakistan Environmental Protection Agency, with the prior approval of the Pakistan Environmental Protection Council, is pleased to direct that the following further amendments shall be made in its Notification No. S.R.O. 742(I)/93, dated the 24<sup>th</sup> August, 1993, namely: \_\_\_

In the aforesaid Notification, in paragraph 2.\_\_\_\_\_

(1289)

[4138(2000)/Ex.GAZ]

Price : Rs. 5.00

(1) for Annex, I the following shall be substituted, namely: \_\_\_\_\_

**Annex-I**

**“NATIONAL ENVIRONMENTAL QUALITY STANDARDS FOR MUNICIPAL AND LIQUID INDUSTRIAL EFFLUENTS (mg/l, UNLESS OTHERWISE DEFINED)**

<u>S. No.</u>	<u>Parameter</u>	<u>Revised Standards</u>			
		Existing Standards	Into Inland Waters	Into Sewage Treatment <sup>(5)</sup>	Into Sea <sup>(1)</sup>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
1.	Temperature or Temperature Increase *	40 <sup>0</sup> C	≤3 <sup>0</sup> C	≤3 <sup>0</sup> C	≤3 <sup>0</sup> C
2.	pH value (H <sup>+</sup> ) .	6-10	6-9	6-9	6-9
3.	Biochemical Oxygen Demand (BOD) <sub>5</sub> at 20 <sup>0</sup> C <sup>(1)</sup>	80	80	250	80**
4.	Chemical Oxygen Demand (COD) <sup>(1)</sup> .. .. .	150	150	400	400
5.	Total Suspended Solids (TSS) .. .. .	150	200	400	200
6.	Total Dissolved Solids (TDS)	3500	3500	3500	3500
7.	Oil and Grease	10	10	10	10
8.	Phenolic compounds (as phenol)	0.1	0.1	0.3	0.3
9.	Chloride (as Cl <sup>-</sup> )	1000	1000	1000	SC***
10.	Fluoride (as F <sup>-</sup> )	20	10	10	10
11.	Cyanide (as CN <sup>-</sup> ) total ..	2	1.0	1.0	1.0
12.	An-ionic detergents (as MBAS) <sup>(2)</sup>	20	20	20	20
13.	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	600	600	1000	SC***
14.	Sulphide (S <sup>2-</sup> )	1.0	1.0	1.0	1.0
15.	Ammonia (NH <sub>3</sub> )	40	40	40	40
16.	Pesticides <sup>(3)</sup>	0.15	0.15	0.15	0.15

1	2	3	4	5	6
17.	Cadmium <sup>(4)</sup> .. ..	0.1	0.1	0.1	0.1
18.	Chromium (trivalent and hexavalent <sup>(4)</sup> .. ..	1.0	1.0	1.0	1.0
19.	Cooper <sup>(4)</sup> .. ..	1.0	1.0	1.0	1.0
20.	Lead <sup>(4)</sup> .. ..	0.5	0.5	0.5	0.5
21.	Mercury <sup>(4)</sup> .. ..	0.01	0.01	0.01	0.01
22.	Selenium <sup>(4)</sup> .. ..	0.5	0.5	0.5	0.5
23.	Nickel <sup>(4)</sup> .. ..	1.0	1.0	1.0	1.0
24.	Silver <sup>(4)</sup> .. ..	1.0	1.0	1.0	1.0
25.	Total toxic metals .. ..	2.0	2.0	2.0	2.0
26.	Zinc .. .. .	5.0	5.0	5.0	5.0
27.	Arsenic <sup>(4)</sup> .. ..	1.0	1.0	1.0	1.0
28.	Barium <sup>(4)</sup> .. ..	1.5	1.5	1.5	1.5
29.	Iron .. .. .	2.0	8.0	8.0	8.0
30.	Manganese .. ..	1.5	1.5	1.5	1.5
31.	Boron <sup>(4)</sup> .. ..	6.0	6.0	6.0	6.0
32.	Chlorine .. .. .	1.0	1.0	1.0	1.0

#### Explanations:

1. Assuming minimum dilution 1:10 on discharge, lower ratio would attract progressively stringent standards to be determined by the Federal Environmental Protection Agency. By 1:10 dilution means, for example that for each one cubic meter of treated effluent, the recipient water body should have 10 cubic meter of water for dilution of this effluent.
2. Methylene Blue Active Substances; assuming surfactant as biodegradable.
3. Pesticides include herbicides, fungicides, and insecticides.
4. Subject to total toxic metals discharge should not exceed level given at S. N. 25.
5. Applicable only when and where sewage treatment is operational and BOD<sub>5</sub>=80mg/l is achieved by the sewage treatment system.

6. Provided discharge is not at shore and not within 10 miles of mangrove or other important estuaries.

\* The effluent should not result in temperature increase of more than 3<sup>0</sup>C at the edge of the zone where initial mixing and dilution take place in the receiving body. In case zone is not defined, use 100 meters from the point of discharge.

\*\* The value for industry is 200 mg/l

\*\*\* Discharge concentration at or below sea concentration (SC).

Note: \_\_\_\_\_ 1. Dilution of liquid effluents to bring them to the NEQS limiting values is not permissible through fresh water mixing with the effluent before discharging into the environment.

2. The concentration of pollutants in water being used will be subtracted from the effluent for calculating the NEQS limits” and

(2) for Annex-II the following shall be substituted, namely: \_\_\_\_\_

**Annex-II**

**“NATIONAL ENVIRONMENTAL QUALITY STANDARDS FOR INDUSTRIAL GASEOUS EMISSION (mg/Nm<sup>3</sup>, UNLESS OTHERWISE DEFINED).”**

S. No.	Parameter	Source of Emission	Existing Standards	Revised Standards
1	2	3	4	5
1.	Smoke	Smoke opacity not to exceed	40% or 2 Ringlemann Scale	40% or 2 Ringlemann Scale or equivalent smoke number
2.	Particulate matter	(a) Boilers and Furnaces		
	(1)	(i) Oil fired	300	300
		(ii) Coal fired	500	500
		(iii) Cement Kilns	200	300
		(b) Grinding, crushing, Clinker coolers and Related processes, Metallurgical Processes, converter, blast furnaces and cupolas.	500	500
3.	Hydrogen Chloride	Any	400	400

1	2	3	4	5
4.	Chlorine	Any	150	150
5.	Hydrogen Fluoride	Any	150	150
6.	Hydrogen Sulphide	Any	10	10
7.	Sulphur Oxides <sup>(2)(3)</sup>	Sulfuric acid/Sulphonic acid plants		
		Other Plants except power Plants operating on oil and coal	400	1700
8.	Carbon Monoxide	Any	800	800
9.	Lead	Any	50	50
10.	Mercury	Any	10	10
11.	Cadmium	Any	20	20
12.	Arsenic	Any	20	20
13.	Copper	Any	50	50
14.	Antimony	Any	20	20
15.	Zinc	Any	200	200
16.	Oxides of Nitrogen	Nitric acid manufacturing unit.	400	3000
	(3)	Other plants except power plants operating on oil or coal:		
		Gas fired	400	400
		Oil fired	-	600
		Coal fired	-	1200

**Explanations:-**

1. Based on the assumption that the size of the particulate is 10 micron or more.
2. Based on 1 percent Sulphur content in fuel oil. Higher content of Sulphur will case standards to be pro-rated.
3. In respect of emissions of Sulphur dioxide and Nitrogen oxides, the power plants operating on oil and coal as fuel shall in addition to National Environmental Quality Standards (NEQS) specified above, comply with the following standards:-

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**A. Sulphur Dioxide**


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Sulphur Dioxide Background levels Micro-gram per cubic meter ( $\mu\text{g}/\text{m}^3$ ) Standards.

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Background Air Quality (SO <sub>2</sub> Basis)	Annual Average	Max. 24-hours Interval	Criterion I Max. SO <sub>2</sub> Emission (Tons per Day Per Plant)	Criterion II Max. Allowable ground level increment to ambient ( $\mu\text{g}/\text{m}^3$ ) (One year Average)
Unpolluted	<50	<200	500	50
Moderately Polluted*				
Low	50	200	500	50
High	100	400	100	10
Very Polluted**	>100	>400	100	10

\* For intermediate values between 50 and 100  $\mu\text{g}/\text{m}^3$  linear interpolations should be used.

\*\* No projects with Sulphur dioxide emissions will be recommended.

**B. Nitrogen Oxide**

Ambient air concentrations of Nitrogen oxides, expressed as NO<sub>x</sub> should not be exceed the following:-

Annual Arithmetic Mean	100 $\mu\text{g}/\text{m}^3$ (0.05 ppm)
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Emission level for stationary source discharge before missing with the atmosphere, should be maintained as follows:-

For fuel fired steam generators as Nanogram (10<sup>0</sup>-gram) per joule of heat input:

Liquid fossil fuel	..	..	..	130
Solid fossil fuel ..	..	..	..	300
Lignite fossil fuel	..	..	..	260

Note:- Dilution of gaseous emissions to bring them to the NEQS limiting value is not permissible through excess air mixing blowing before emitting into the environment.

[File No. 14(3)/98-TO-PEPC.]

**HAFIZ ABDULAH AWAN**  
**DEPUTY SECRETARY (ADMN)**