**S.R.O.** 528 (1)/2001. - In exercise of the powers conferred by section 31 of the Pakistan Environmental Protection Act, 1997 (XXXIV of 1997), the Federal Government is pleased to make the following rules, namely: -

1. **Short title and commencement**. - (1) These rules may be called the National Environmental Quality Standards (Self-Monitoring and Reporting by Industry) Rule, 2001.

(2) They shall come into force at once.

2. **Definitions**. - **(1)** In these rules, unless there is anything repugnant in the subject or context, -

(a) **Act** means the Pakistan Environmental Protection Act, 1997 (XXXIV of 1997);

(b) **Associated Company** and associated undertaking, shall have the same meaning as defined in the Companies Ordinance, 1984 (XLVII of 1984);

(c) **Certified environmental laboratory** means an environmental laboratory which has been granted certification under the Pakistan Environmental Protection Agency (Certification of Environmental Laboratories) Regulations, 2000;

(d) **Director-General** means the Director-General of the Federal Agency;

(e) **Environmental monitoring** report means the report submitted by an industrial unit to the Federal Agency in respect of priority parameters;

(f) **industrial unit** means any legal entity carrying on industrial activity;

(g) **pollution level** means number of units per unit of production determined under the Pollution Charge for Industry (Calculation and Collection) Rules, 2001;

(h) **priority parameters** means those parameters of the National Environmental Quality Standards which have been selected for purposes of submission of Environmental Monitoring Reports to the Federal Agency by an industrial unit; and

(i) **Schedule** means the Schedule to these rules.

(2) All other words and expressions used in these rules but not defined herein shall have the same meanings as are assigned to them in the Act.

3. **Responsibility for reporting**. - All industrial units shall be responsible for correct and timely submission of Environmental Monitoring Reports to the Federal Agency.

4. **Classification of industrial units**. - On the basis of the pollution level of an industrial unit, the Director-General shall classify the unit into category "A", "B" or "C" for liquid effluents, and category "A" or "B" for gaseous emissions:

Provided that till such time as the pollution level of an industrial unit is determined, it shall be classified according to the type of industry to which it belongs, as shown in Schedule I for liquid effluents and in Schedule II for gaseous emissions.

5. **Category "A" industrial units**. - (1) An industrial unit in category "A" shall submit Environmental Monitoring Reports on monthly basis-

(a) in respect of liquid effluents, for priority parameters listed in column 3 of Table A of Schedule III:

Provided that during start-up or upset conditions, priority parameters mentioned in column 4 of Table A of Schedule III shall be recorded on hourly basis;

(b) in respect of gaseous emissions, for priority parameters listed in Table B of Schedule III.

(2) An industrial unit in category "A" shall maintain a record of the times during which start-up and upset conditions occur, and shall mention the total time elapsed in such conditions in its monthly Environmental Monitoring Report.

6. **Category "B" industrial units**.- An industrial unit in category "B" shall submit Environmental Monitoring Reports on quarterly basis-

(a) in respect of liquid effluents, for priority parameters listed in Table A of Schedule IV;

(b) in respect of gaseous emissions, for priority parameters listed in Table B of Schedule IV.

7. **Category "C" industrial units**. - An industrial unit in category "C" shall submit Environmental Monitoring Reports on biannual basis for priority parameters in respect of liquid effluents listed in Schedule V.

8. **Special Industries**. - (1) Without prejudice to the provisions of rule 4, the Director-General may classify a large industrial unit with very high pollution levels as "Special Industry".

(2) In addition to complying with the requirements of rule 5, a Special Industry shall submit Environmental Monitoring Reports for such parameters and at such frequency as the Director-General may require.

9. **Environmental Monitoring Report**. - (1) An Environmental Monitoring Report shall comprise a Liquid Effluents Monitoring Report, a Gaseous Emissions Monitoring Report and a Cover Sheet which shall be in the form as set out in Forms A, B and C, respectfully, of Schedule VI.

(2) All measurements of priority parameters contained in the Environmental Monitoring Report submitted by an industrial unit shall be based on test reports of a certified environmental laboratory, and attested copies of such results shall be attached with the Environmental Monitoring Report:

Provided that such certified environmental laboratories shall not be part of, or an associated company or associated undertaking of, the said industrial unit.

(3) The Gaseous Emissions Report shall cover the priority parameters listed in Schedule VII, and shall include, every two years, metal analysis of all gaseous emissions from the industrial unit.

10. **Sampling, testing and analysis**. - Sampling testing and analysis of effluents, gaseous emissions and waste shall be carried out in accordance with the Environmental Samples Rules, 2001.

11. **Monitoring conditions of EIA approval**. - The provisions of these rules shall be in addition to, and not in derogation of, the monitoring conditions laid down in an EIA approval.

12. **Compilation, analysis and management of data**. - The Federal Agency shall compile, analyze and manage the data contained in the Environmental Monitoring Reports with the objective, *inter alia,* of enforcing the National Environmental Quality Standards and developing an environmental database.

Schedule I
(*See* rule 4)
Classification of Industrial Units for Liquid Effluents

1. **Category "A"**

(1) Chlor-Alkali (Mercury Cell).
(2) Chlor-Alkali (Diaphram Cell).
(3) Metal finishing and electroplating.
(4) Nitrogenous fertilizer.
(5) Phosphate fertilizer.
(6) Pulp and paper.
(7) Pesticides formulation.
(8) Petroleum refining.
(9) Steel industry.
(10) Synthetic fiber.
(11) Tanning and leather finishing.
(12) Textile processing.
(13) Pigments and dyes.
(14) Thermal Power Plants (Oil Fired and Coal Fired).
(15) Rubber products.
(16) Paints, Varnishes and Lacquers.
(17) Pesticides.
(18) Printing.
(19) Industrial chemicals.
(20) Oil and Gas production.
(21) Petrochemicals.
(22) Combined effluent treatment.
(23) Any other industry to be specified by Federal or Provincial Agency.

2. **Category "B"**

(1) Dairy industry.
(2) Fruit and vegetable processing.
(3) Glass manufacturing.
(4) Sugar.
(5) Detergent.
(6) Photographic.
(7) Glue manufacture.
(8) Oil and Gas exploration.
(9) Thermal Power Plants (Gas Fired)
(10) Vegetable oil and ghee mills.
(11) Woolen mills.
(12) Plastic materials and products.
(13) Wood and cork products.

(14) Any other industry to be specified by federal or Provincial Agency.

3. **Category "C"**

(1) Pharmaceutical (Formulation) Industry.
(2) Marble Crushing.
(3) Cement.
(4) Any other industry to be specified by Federal or Provincial Agency

---

**Schedule II**
(*See* rule 4)
Classification of Industrial Units for Gaseous Emissions

**1. Category "A"**

(1) Cement.
(2) Glass manufacturing
(3) Iron and steel.
(4) Nitrogenous fertilizer.
(5) Phosphate fertilizer.
(6) Oil and Gas production.
(7) Petroleum refining.
(8) Pulp and paper.
(9) Thermal Power Plants (coal and oil based)
(10) Boilers, ovens, furnaces and kilns (coal and oil fired)
(11) Brick-Kilns (firewood and bagasse based)
(12) Any other industry to be specified by Federal or Provincial Agency.

**2. Category "B"**

(1) Sugar.
(2) Textile.
(3) Choloralkali plants.
(4) Dairy industry.
(5) Fruits and vegetables.
(6) Metal finishing and electroplating.
(7) Boilers, ovens, furnaces and kilns (gas-fired)
(8) Any other industry to be specified by Federal or Provincial Agency.

---

**Schedule III**
[See rule 5(1)(a) and (b)]
**Table A**
Category "A"
**Priority Parameters for Monitoring of Liquid Effluents**

| S.No. | Industry | Priority Parameters for Normal Plant Conditions to be Reported on a Monthly Basis[1] | Priority Parameters for Start-up and Upset Conditions to be Recorded on an Hourly Basis |
|---|---|---|---|
| 1. | Chlor-Alkali (Mercury Cell) | Effluent flow, Temperature, pH, TSS, Chlorine, Mercury, Chlorides | Effluent Flow. Temperature, pH, TSS, Mercury, Chlorides |
| 2. | Chlor-Alkali (Diaphragm Cell) | Effluent Flow, Temperature, pH, TSS, Chlorine, Chlorides | Effluent Flow, Temperature, pH, TSS, Chlorides |
| 3. | Metal Finishing and Electroplating[2] | Effluent Flow, Temperature, pH, TSS, Oil and Grease, Arsenic, Cadmium, Chromium (trivalent), Chromium (hexavalent), Lead, Nickel, Mercury, Silver Zinc, Flourides, Cyanides | Effluent Flow, Temperature, pH, TSS, |
| 4. | Nitrogenous Fertilizer | Effluent Flow Temperature, pH, TSS, Ammonia, COD | Effluent Flow, Temperature, pH, TSS, |
| 5. | Phosphate Fertilizer | Effluent Flow, Temperature pH, TSS, Cadmium, Flourides, COD | Effluent Flow, Temperature, pH, TSS, |
| 6. | Pulp and paper | Effluent Flow, Temperature, pH, COD, TSS, TDS Sulfides, BOD5 | Effluent Flow, Temperature, pH, TDS, TSS, |
| 7. | Pesticides Formulation | Effluent Flow, Pesticides | Effluent Flow, |
| 8. | Petroleum Refining | Effluent flow, Temperature,pH, COD, TSS, BOD5 Oil and Grease, phenolic compounds | Effluent Flow, Temperature, pH, TSS, |
| 9. | Steel Industry[2] | Effluent flow, Temperature, pH, COD, TSS, TDS, Chromium (trivalent), Iron, Oil and Grease, Cadium Copper. | Effluent Flow, Temperature, pH, TSS, |
| 10. | Synthetic Fiber | Effluent Flow, Temperature pH, COD TSS, BOD5, Oil and Grease, Sulfides | Effluent Flow, Temperature, pH, TSS, |
| 11. | Tanning and Leather Finishing | Effluent Flow, Temperature, pH, COD, TSS, BOD5, Sulfide, Oil and Grease, Chromium (trivalent). Chromium (hexavalent), TDS, phenolic compounds | Effluent Flow, Temperature, pH, TSS, |
| 12. | Textile Processing | Effluent Flow, Temperature, pH, COD, TSS, TDS, BOD5, Copper, Chromium | Effluent Flow Temperature, pH, TSS, |

| S.No. | Industry | Priority Parameters for Normal Plant Conditions to be Reported on a Monthly Basis, | Priority Parameters for Start-up and Upset Conditions to be Recorded on an Hourly Basis |
|---|---|---|---|
| 13. | Pigments and Dyes | Effluent Flow, pH, Temperature, COD, lead, Copper, Zinc. | Effluent Flow, Temperature, pH, |
| 14. | Thermal Power Plants (Oil fired and coal fired) | Effluent Flow, Temperature, pH, TSS, Oil and Grease | Effluent Flow, Temperature, pH, TSS |
| 15. | Rubber Products | COD, Cadmium TSS | TSS |
| 16. | Paints, Varnishes & Lacquers | PH, TSS, COD, Lead, Chromium, Cadmium, Zinc, Barium. | PH, TSS |
| 17. | Pesticides | COD, Mercury, Pesticides | COD, |
| 18. | Printing | COD, Lead | COD, |
| 19. | Industrial Chemicals | PH, COD, TDS, Phenolic Compounds, Cyanide, Ammonia, Cadmium*, Chromium*, Mercury*, Nickel*, Zinc*, Arsenic*, | PH, COD, TDS, |
| 20. | Oil and Gas Production | Effluent Flow, Temperature, pH, COD, TSS, TDS, Oil and Grease, Chloride, BOD5, Phenolic Compounds | Effluent Flow, Temperature, pH, TSS, TDS, |
| 21. | Petrochemicals | Effluent Flow, Temperature pH, COD TSS, TDS, Oil and Grease, BOD5, Phenolic Compounds | Effluent Flow, Temperature, pH, TSS, TDS, |

1. Industry using chromium in its cooling water system will also report chromium (trivalent, hexavalent) in addition to the stipulated priority parameters for each sector.

2. Steel Industry includes steel-re-rolling mills, electric furnaces, and foundries.

* Priority parameters will be limited to those occurring in chemicals and raw-materials used.

**Schedule IV**

[See rule 6(a) and (b)]

**Table A**

Category "B"

**Priority Parameters for Monitoring of Liquid Effluents**

| S. No. | Industry | Priority Parameters for Normal Plant Conditions to be Reported on a quarterly Basis[1] |
|---|---|---|
| 1. | Dairy Industry | Effluent Flow, Temperature, pH, $BOD_5$., TSS, TDS, Oil and Grease |
| 2. | Fruit and Vegetable Processing | Effluent Flow, Temperature, pH, $BOD_5$., TSS, COD |
| 3. | Glass Manufacturing | Effluent Flow, Temperature, pH, TSS, COD, Oil and Grease |
| 4. | Sugar | Effluent Flow, Temperature, pH, $BOD_5$., TSS, COD, Oil and Grease |
| 5. | Detergent | pH, COD, Oil and Grease, An-ionic Detergent |
| 6. | Photographic | pH, COD, Silver, Cyanide, Fluoride |
| 7. | Glue Manufacture | BOD, COD, pH. |
| 8. | Oil and Gas Exploration | Effluent Flow, Temperature, pH, COD, TSS, TDS, Oil and Grease, Chloride, $BOD_5$, Phenolic compounds |

1. Industry using chromium in its cooling water system will also report Chromium (trivalent, hexavalent) in addition to the stipulated priority parameters for each sector

**Table B**

Category "A"

**Priority Parameters for Monitoring of Gaseous Emissions**

| S. No. | Industry | Priority Parameters for Normal Plant Conditions to be reported on a Monthly basis | |
|---|---|---|---|
| | | **Process Emission** | **Emission from fired Equipment** |
| 1. | Cement | Particulates | CO,*SOx, NOx, Particulates |
| 2. | Glass Manufacturing | Particulates | CO, *SOx, NOx, Particulates |
| 3. | Iron and Steel | Particulates, Fluorides CO, NOx, SOx | |
| 4. | Nitrogenous Fertilizers | Ammonia, Particulates | CO, *SOx, NOx, Particulates |
| 5. | Phosphate Fertilizers | Ammonia, Flouride, Particulate | |
| 6. | Oil and Gas Production | CO, *Sox, NOx, $H_2s$ and Particulates. | |
| 7. | Petroleum Refining | H2S, NOx, SOx, Particulates | CO, *SOx, NOx, Particulates |
| 8. | Pulp and Paper | Chlorine, SOx | CO, *SOx, NOx, Particulates |
| 9. | Thermal Power Plants (Coal and Oil based) | | *SOx, NOx, CO, Heavy Metals and Particulates |
| 10. | Boilers, Ovens, Furnaces and Kilns (Coal and Oil fired) | | CO, NOx, *SOx, Particulates. |
| 11. | Brick Kilns (Firewood and Bagasse) | | CO, Particulates |

1. Metal analyses of all gaseous emission would be carried out once in two years.

*Only where fuel contains hydrogen sulphide (H2S) more than 20ppm

**Table B**
Category "B"
**Priority Parameters for Monitoring of Gaseous Emission**
Category "B"

| S. No. | Industry | Priority Parameters for Normal Plant Conditions to be reported on a Quarterly Basis[1] | |
|---|---|---|---|
| | | **Process Emission** | **Emission from fired Equipment** |
| 1. | Sugar | Particulates | CO,*SOx, NOx, Particulates |
| 2. | Taxtile | | CO, *SOx, NOx, Particulates |
| 3. | Chloralkali Plants | Chlorine | |
| 4. | Dairy Industry | | CO, NOx, *SOx, Particulates |
| 5. | Fruits and Vagetables | | CO, NOx, *SOx, Particulates |
| 6. | Metal Finishing and Electroplating | Particulates | |
| 7. | Boilers, Ovens, furnaces and Kilns (Gas–fired) | | CO, NOx |

1. Metal analyses of all gaseous emission would be carried out once in two years.
*Only where fuel contains hydrogen sulphide (H2S) more than 20ppm

**Schedule V**

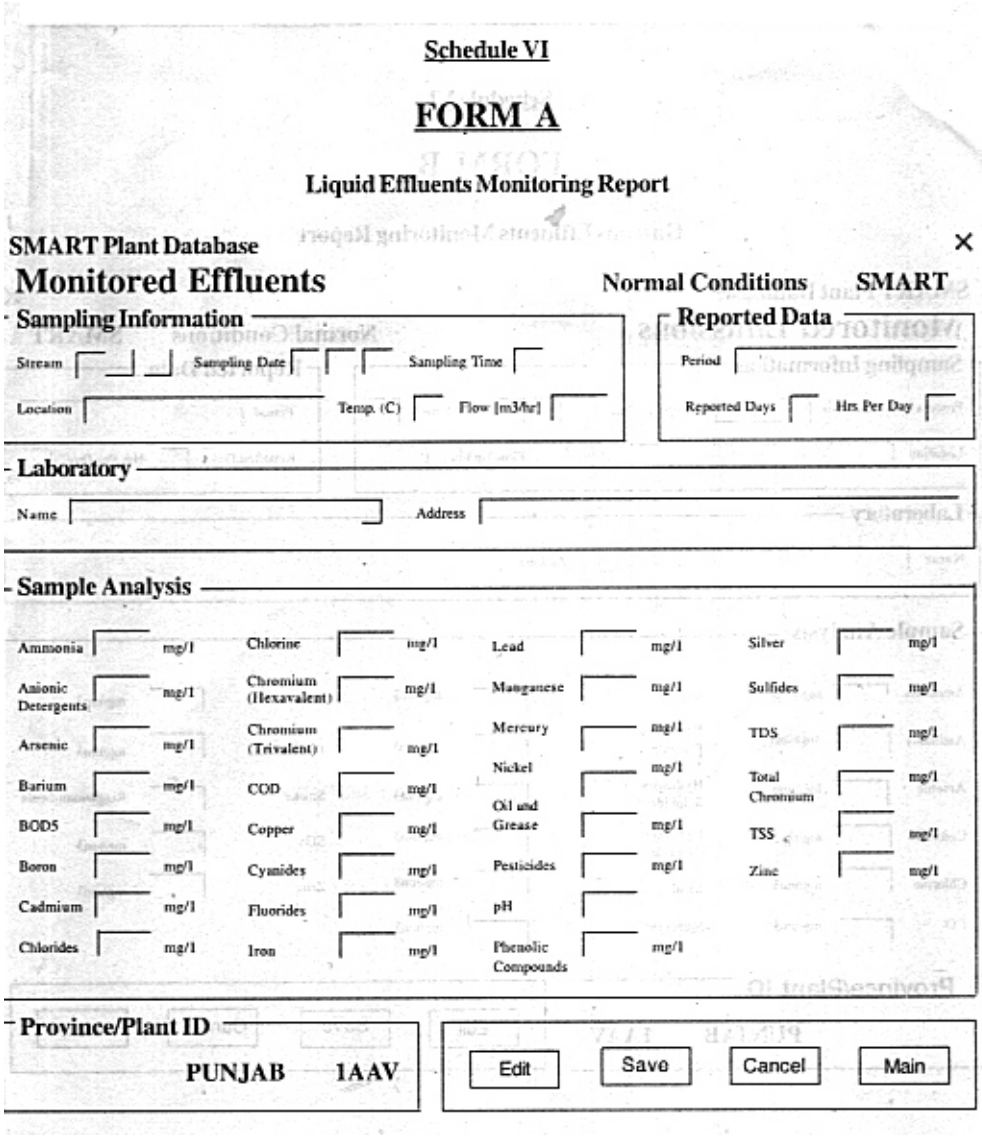
(See rule 7)

Category "C"

**Priority Parameters for Monitoring of Liquid Effluents**

| S. No. | Industry | Priority Parameters for Normal Plant Conditions to be Reported on a quarterly Basis[1] |
|---|---|---|
| 1. | Pharmaceutical (formulation industry, marble crushing, Cement, and any other industry as notifed by EPAs | Effluent Flow, Temperature, pH, COD, TSS, TDS, |

1. Industry using chromium in its cooling water system will aslo report chromium (trivalent, hexavalent) in addition to the stipulated priority parameters for each sector.



Schedule VI

FORM A

Liquid Effluents Monitoring Report

SMART Plant Database

Monitored Effluents

Normal Conditions SMART

Sampling Information

Stream | Sampling Date | Sampling Time

Location | Temp. (C) | Flow [m3/hr]

Reported Data

Period

Reported Days | Hrs Per Day

Laboratory

Name | Address

Sample Analysis

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Ammonia | mg/l | Chlorine | mg/l | Lead | mg/l | Silver | mg/l |
| Anionic Detergents | mg/l | Chromium (Hexavalent) | mg/l | Manganese | mg/l | Sulfides | mg/l |
| Arsenic | mg/l | Chromium (Trivalent) | mg/l | Mercury | mg/l | TDS | mg/l |
| Barium | mg/l | COD | mg/l | Nickel | mg/l | Total Chromium | mg/l |
| BOD5 | mg/l | Copper | mg/l | Oil and Grease | mg/l | TSS | mg/l |
| Boron | mg/l | Cyanides | mg/l | Pesticides | mg/l | Zinc | mg/l |
| Cadmium | mg/l | Fluorides | mg/l | pH | | | |
| Chlorides | mg/l | Iron | mg/l | Phenolic Compounds | mg/l | | |

Province/Plant ID

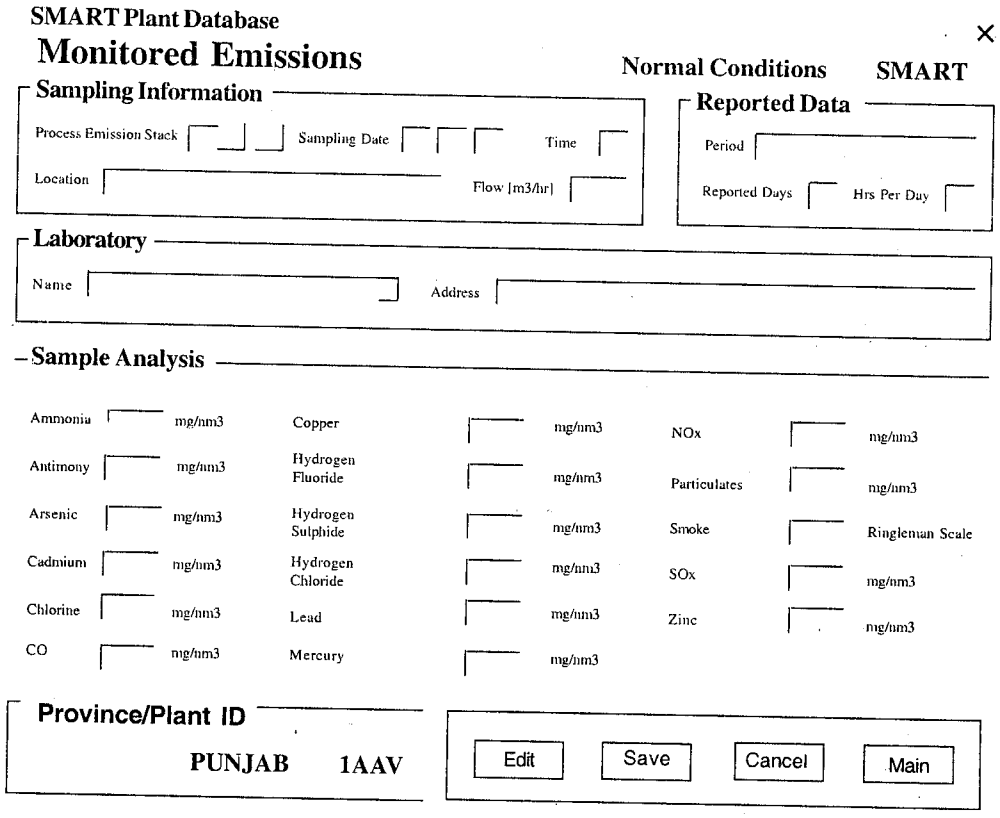
PUNJAB 1AAV

Edit | Save | Cancel | Main

## Schedule VI

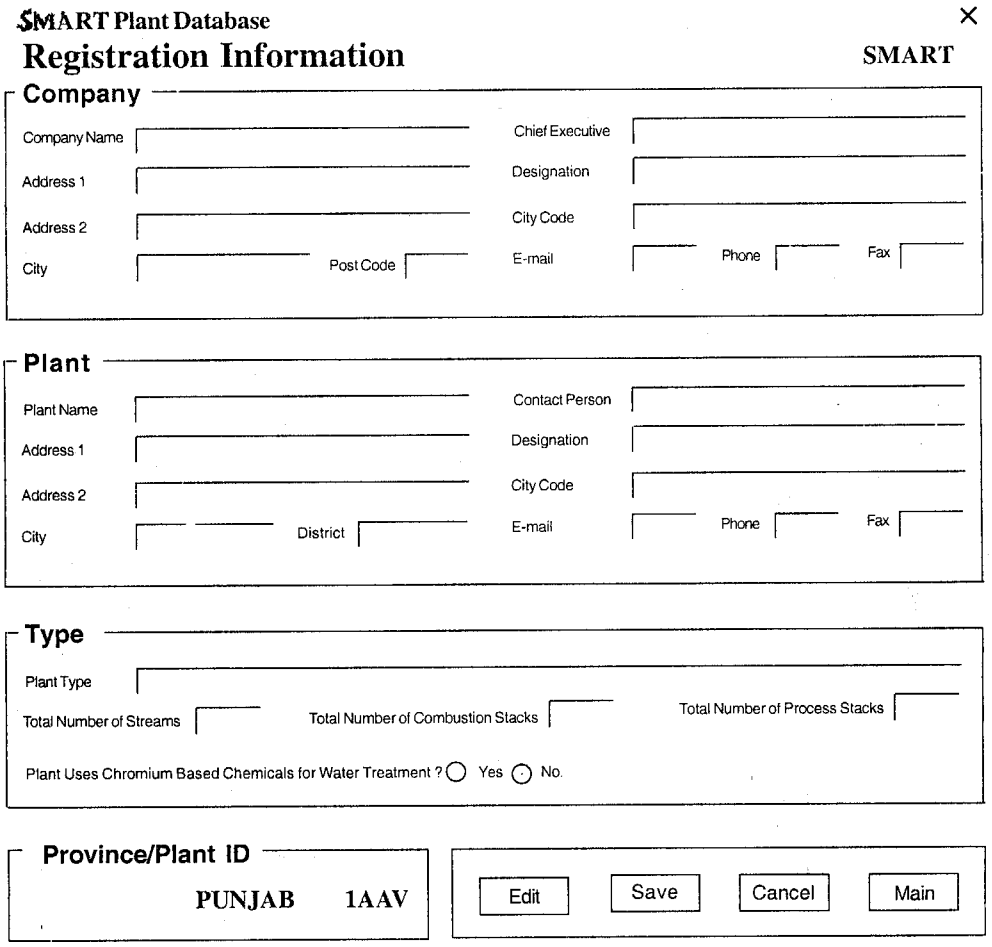
# FORM B

### Gaseons Effluents Monitoring Report



# FORM C

## Environmental Monitoring Report Cover Sheet



## Schedule VII

[See rule 9(3)

**Priority Parameters for Monitoring of Gaseous Emissions**

| S. No. | Emission source | Priority Parameters 2 for Reporting |
|---|---|---|
| 1. | Boiler, Ovens Furnaces and Kilns | |
| | Gas Fired | CO, NOx |
| | Oil Fired | CO, NOx, SOX, Particulates |
| | Coal | CO, NOx, SOX, Particulates |
| | Bagasee and Firewood | CO, Particulates |
| 2. | Brick Kilns | CO, NOx, SOX, Particulates |
| 3. | Thermal Power Plants | Sox, NOx, Particulates |
| 4. | Process Emission[1] | Particulates Ammonia, Chlorine, H2S, flouride, SOx, NOx, Co, Mercury*, Lead*, Zinc*, Cadmium*, Arsenic*, Antimony* |

1. Process emissions involving fuel combustion will also include parameters as for Boilers, Ovens, furnaces and Kilns.
2. Metal analyses of all gaseous emissions would be carried out once in two years.

* Priority parameters will be limited to those occurring in chemicals and raw-materials used.

F. No. 14 (3)/98-TO-PEPC

**(SAEED ATHAR)**
**Section Officer**

PRINTED BY THE MANAGER, PRINTING CORPORATION OF PAKISTAN PRESS, ISLAMABAD
PUBLISHED BY THE MANAGER OF PUBLICATIONS, KARACHI