**F O R M - V**
**(See Rule 14)**

**Environmental Statement for the financial year ending the 31st March, 2012**

**P A R T - A**

| | | |
|---|---|---|
| (I) | Name and address of the owner/occupier of the Industry,operation or process | **Rajendra Jain**<br>Executive President,<br>Grasim Industries Limited,<br>Grasilene Division,<br>**Kumarapatnam - 581 123**<br>Dist. Haveri., Karnataka. |
| (ii.) | Industry category Primary - (STC Code)<br>Secondary - (SIC Code) | |
| (iii) | Production capacity (Units) | 51,100 TPA of Viscose Staple Fibre |
| (iv) | Year of establishment | 1977 |
| (v) | Date of the last Environmental Statement submitted | 27th September, 2011 |

**P A R T - B**

**Water and Raw material consumption**

| | | | |
|---|---|---|---|
| (I) | Water Consumption | $m^3$/day | 10990 |
| | Process | " | 6558 |
| | Cooling | " | 4187 |
| | Domestic | " | 245 |

| Name of Products | **Process water consumption per unit of Product output** | |
|---|---|---|
| | During the previous financial year **2010 - 2011** | During the current financial year **2011 - 2012** |
| (1) Viscose Staple Fibre (Semi-Synthetic) | 78.5 $m^3$/Ton | 78.6 $m^3$/Ton |
| (2) - | | |
| (3) - | | |

(ii) Raw Material consumption

| * Name of raw materials | | Name of products | Consumption of raw material per unit of out put (T/T) | |
|---|---|---|---|---|
| | | | During the previous financial year **2010 - 2011** | During the current financial year **2011 - 2012** |
| a) | Rayon Grade Pulp | Staple Fibre | 1.005 | 1.005 |
| b) | Caustic Soda | " | 0.552 | 0.552 |
| c) | Sulphuric Acid | " | 0.726 | 0.726 |
| d) | Carbon-di-Sulphide | " | 0.151 | 0.151 |
| e) | Zinc | " | Nil | Nil |
| f) | Non-Ferric Alum | " | 0.0067 | 0.0061 |

* Industry may use codes if disclosing details of raw materials would violate contractual obligations, otherwise all Industries have to name the raw materials used.

**P A R T - C**

Pollution discharged to environment, unit of output
(Parameters as specified in the consent issued)

| (1) | Pollutants | Quantity of Pollutants discharged (Mass/day) | Concentrations of pollutants in discharges | Percentage of variations from prescribed standards with reasons |
|---|---|---|---|---|
| a) | Water | | Refer Annexure - I | |
| b) | Air | | Refer Annexure - II | |

**P A R T - D**

**Hazardous Wastes**

(as specified under hazardous Wastes/Management and Handling Rules, 1989)

| Hazardous Wastes | | Total Quantity (Kg) | |
|---|---|---|---|
| | | During the previous financial year **2010 - 2011** | During the current financial year **2011 - 2012** |
| a) | From Process - Used Oil | 1890 | 1620 |
| b) | From Pollution Control facilities | Nil | Nil |

## P A R T - E

## Solid Wastes

| | | Total Quantity (Kg) | |
|---|---|---|---|
| | | During the previous financial year **2010 - 2011** | During the current financial year **2011 - 2012** |
| a) | From Process | Nil | Nil |
| b) | From Pollution Control facilities | | |
| | - Fly Ash * | 65.0 Tons/day (Approx.) | 65.0 Tons/day (Approx.) |
| c) | 1) Quantity recycled or reutilised within Unit | 1.0 Ton/day | 1.0 Ton/day |
| | 2) Sold | - | |
| | 3) Disposed | 64.0 Tons/day (Approx.) | 64.0 Tons/day (Approx.) |

* The quantity includes Bottom ash also as per Fly Ash Notification S.O. 2804(E) dated 03.11.2009

## P A R T - F

Please specify the characterisations (in terms of composition and quantum of Hazardous as well as Solid Wastes and indicate disposal practice adopted for both these categories of wastes

**Refer Annexure - III**

## P A R T - G

Impact of the Pollution abatement measures taken on conservation of natural resources and on the cost of production

**Refer Annexure - IV**

## P A R T - H

Additional measures/investment proposal for environmental protection including abatement of pollution, prevention of pollution

**Refer Annexure - V**

## P A R T - I

Any other particulars for improving the quality of the Environment

**Refer Annexure - VI**

**G R A S I M**

**GRASILENE DIVISION : HARIHAR**

Annexure - 1

Ref.Part(C)1(a)

**Pollution discharged to environment, unit of output (Parameters as specified in the consent issued)**

| Sl. No. | Parameter | Unit | Limit Specified by KSPCB | Quantity of pollutants discharged (Tons/Day) | Conc. of Pollutants in mixed discharges | Percentage of variations from prescibed tolerance limits |
|---|---|---|---|---|---|---|
| 1. | Colour & Odour | - | All efforts should be made to remove colour & unpleasant odour as far as practicable | - | * | All parameters are maintained within the prescribed tolerance limits |
| 2. | Suspended Solids | mg/l | Max.100 | 2.82 | 71 | |
| 3. | Dissolved Solids (Inorganic) | " | Max.2100 | 73.32 | 1843 | |
| 4. | Temperature | °C | Shall not exceed 5°C above the receiving water temperature | - | 31.0 | |
| 5. | pH | - | 6.0 - 8.5 | - | 7.6 | |
| 6. | Oil and Grease | mg/l | Max. 10.0 | 0.005 | 0.13 | |
| 7. | Biochemical Oxygen Demand ( 3 days, 27°C) | " | Max.30.0 | 0.72 | 18 | |
| 8. | Chemical Oxygen Demand | " | Max.250.0 | 8.11 | 204 | |
| 9. | Mercury (as Hg) | " | Max. 0.01 | - | ND | |
| 10. | Total Chromium (as Cr) | " | Max.2.0 | - | ND | |
| 11. | Hexavalent Chromium (as $Cr^{+6}$) | " | Max.0.10 | - | ND | |
| 12. | Zinc (as Zn) | " | Less than 1.0 | Nil | Nil | |
| 13. | Sulphate (as $SO_4$) | " | Max.1000 | 32.50 | 817 | |
| 14. | Sulphide (as S) | " | Max.2.0 | 0.011 | 0.29 | |
| 15. | Phenolic Compound (as $C_6H_5OH$) | " | Max.1.0 | - | ND | |
| 16. | Bio - assay (as per IS 6582-1971) | % Surv-ival | Not less than 90 % of test animal shall survive in 96 Hrs. test.The test shall be conducted as per IS 6582-1971 | - | 100 % Survival in 100 % Effl. | |

* All possible efforts are made to remove colour and odour at source as far as possible.

ND Not Detectable

**G R A S I M**

**GRASILENE DIVISION : HARIHAR**

Annexure - II
Ref. Part (C) I(b)

**Pollution discharged to environment/unit of out put (Parameters as specified in the Consent issued**

| Sl. No. | Parameter | Unit | Limit Specified by KSPCB | Quantity of Pollutants discharged (Tons/Day) | Conc. of Pollutants in discharges | Percentage of variations from prescribed tolerance limits |
|---|---|---|---|---|---|---|
| 1. | **Process** | | | | | |
| | a. SPM | mg/Nm³ | 150 | 0.125 | 22 | Within the prescribed limits |
| | b. $CS_2$ | Kg/Ton | 101 | 13.75 | 98.1 | " |
| 2. | **$H_2SO_4$ Plant** | | | | | |
| | a. $SO_2$ | Kg/Ton | 2.0 | 0.183 | 1.77 | " |
| | b. Acid Mist | mg/Nm³ | 50.0 | 0.0062 | 31 | " |
| 3. | **Power Plant** | | | | | |
| | AFBC & IJT Boilers # II & III (Common Chimney ) | | | | | |
| | SPM | mg/Nm³ | 150 | 0.282 | 131 | " |

**G R A S I M**

**GRASILENE DIVISION : HARIHAR**

Annexure - III
Ref. Part (F)

**Characterisations (in terms of composition and quantum ) of Solid wastes and indicate disposal practice adopted for both these categories of wastes**

A Hazardous waste

| Source | Nature | Quantity kg/d (approx.) | Mode of Disposal |
|---|---|---|---|
| Used oil generated from industrial operations using oil as lubricants in hydarulic systems or other application. | Lubricating oil | 5.5-6.0 | Sold to authorised oil recycler |

B. Solid wastes

| Sl. No. | Source | Composition | Quantity t/d (approx.) | Mode of Disposal |
|---|---|---|---|---|
| 1 | Ash from Power Plant | Ash | 60-65 | Made available to cement manufacturers and brick manufacturers |
| 2 | CS2 Plant | Charcoal churi/ waste | 0.20-0.24 | Used as fuel in boilers |
| 3 | ETP sludge | Calorific value >3100 kcal/kg | 3.5-4.0 | Used as fuel in boilers after drying in sludge dryers |

**G R A S I M**

**GRASILENE DIVISION : HARIHAR**

Annexure - IV

Ref. Part (G)

**Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production**



| Sl. No. | Control measures adopted | Impact on conservation of resources |
|---|---|---|
| 1. | Reuse of Xanthator cleaning water | Water conservation and waste load reduction. |
| 2. | Continuous Filters in place of Plate & Frame Presses for viscose preparation. | Chemical conservation and waste load reduction. |
| 3. | Reuse of Pump Gland leakages in Soda Station. | Chemical conservation and waste load reduction. |
| 4. | Recycling of Sumpzone in Cutter Ventury. | Water and Steam conservation. |
| 5. | Condensate from sodium Sulphate Dryer reused in Spinning Cutter Ventury. | Water and Steam conservation. |
| 6. | Reuse of condensate, dryer condensate and PHE cooling water from Acid Plant in Aftertreatment. | Water and Steam conservation. |
| 7. | Use of Bleach wash in Desulph zone in Aftertreatment | Water conservation . |
| 8. | Introduction of Multi Stage Flash evaporators in place of Triple Effect Evaporators. | - Energy conservation.<br>- Enhanced sodium sulphate recovery |
| 9. | Introduction of Acid Absorption Crystallisers in place of Horizontal Continuous Crystallisers for recovery of Sodium Sulfate. | Energy conservation. |
| 10. | Introduction of mechanical seals in anhydrous circulation pumps, strong acid pumps and spin bath pumps to avoid gland leakages. | Chemical conservation. |
| 11. | Entrainment Separator in MSFE | Chemical conservation and waste load reduction. |
| 12. | Introduction of Settling & Pumping pit for Power Plant drain to reuse the wastewater for coal quenching and handling plant | - Water conservation.<br>- Reduction in effluent discharge |
| 13. | Reuse of CS2 condenser water for fibre wash in Aftertreatment section | - Water conservation.<br>- Reduction in effluent discharge |
| 14. | Installation of Plate and heat Exchanger ipo Trombone Cooler for acid cooling. The hot water generated used fro fibre washing in Aftertreatment | - Water conservation.<br>- Reduction in effluent discharge<br>- Reduction in steam consumption for producing hot water for fibre washing by means of waste heat recovery |
| 15. | Use of part of sumpzone (high acidity stream) i.p.o fresh water for tow washing | Reduction in<br>- Water consumption.<br>- Effluent discharge |

| | | |
|---|---|---|
| | | - SO4/TDS concentration in treated effluent. |

| Sl. No. | Control measures adopted | Impact on conservation of resources |
|---|---|---|
| 16. | Use of Multi Stage Flash Evaporator (MSFE) condensate for spin bath filter washing i.p.o fresh water. | - Water conservation.<br>- Reduction in effluent discharge |
| 17. | Replacement of small capacity Spinning viscose storage tanks (16 Nos.) with continuous spinning tanks with stirrer | Reduction in<br>- Cleaning frequency of tanks<br>- Water consumption for tank cleaning<br>- Organic load on ETP through reduced viscose loss |
| 18. | Recycling and reuse of treated effluent for<br>a) Washing of Tow.<br>b) Cleaning in CS2, H2SO4, ETP dept. etc.<br>c) Lime Slurry preparation in ETP.<br>d) Ash quenching in Power Plant.<br>e) Fire fighting. | Water conservation . |
| 19. | Replacement of M.S Aerator by S.S Aerator in Biological reactor | - Energy conservation |
| 20. | Condensing system for recovery of entrapped CS2 in Tow in Spinning department. | - Chemical conservation |
| 21. | Exhaust System in Spinning Hall and Spin Bath Section. | Improved work environment |
| 22. | Replacement of Maurer Sieve band Slurry Press by Twin Roll Slurry Press | - To avoid chemical spillages<br>- Reduction in waste load |
| 23. | Replacement of manual bin handling by Silo dumping system and pneumatic conveying instead of Belt conveying system | - Increased productivity from equipment<br>- Reduced alkali spillage<br>- Reduced load at influent itself |
| 24. | Modification of manual tightening type Viscose Plate & Frame Presses by hydraulically tightening system. | - Increased productivity.<br>- Reduced downtime<br>- Human intervention minimised<br>- Reduced leakage/spillage of viscose and hence reduced influent load |
| 25. | Replacement of loose pulp Double Belt Conveyor by Pneumatic Conveyor | - Increased productivity.<br>- Reduced pulp spillage<br>- Reduction in influent load |
| 26. | Addition of additives in alkcell for improved quality of alkcell | Better xanthation resulting in reduced CS2 consumption |
| 27. | Marginal increase in spinning machine speed to reduce $CS_2$ loss | Improved CS2 recovery |
| 28. | Use of water in place of steam in cutter funnel to reduce $CS_2$ loss | Improved CS2 recovery |
| 29. | Modified hole configuration with Hastelloy C pipes in place of lead pipes for better steam penetration & $CS_2$ expelling in Recovery Trough | Improved CS2 recovery |

| Sl. No. | Control measures adopted | Impact on conservation of resources |
|---|---|---|
| 30. | Modified scrubber for improving the vapour contact in $CS_2$ recovery system | Improved CS2 recovery |
| 31. | Bigger capacity first and second condenser with outer jacket in first condenser | Improved CS2 recovery |
| 32. | Installation of automatic temperature control system for $CS_2$ recovery | Improved CS2 recovery |
| 33. | Installation of efficient Atmospheric Fludised Bed Combustion (AFBC) Boiler with Distributed Control System (DCS) and better designed ESP | - Reduced SPM emission<br>- Natural resource conservation |
| 34. | Construction of 125 mtrs. New Spinning Plant Chimney (Main Stack) | For improved Ambient Air Quality. |
| 35. | Conversion of Single Conversion Single Absorption (SCSA) Acid Plant to Double Conversion Double Absorption (DCDA) system. | To reduce SO2 emission per ton of Acid produced. |
| 36. | Demister Pads in Acid Absorption Tower of Acid Plant. | To arrest Acid Mist. |
| 37. | Scrubbers for Acid Plant Chimney | SO2 emission per ton of Acid produced is less than the prescribed norms. |
| 38. | Klaus Kiln Sulphur Recovery Plant | To recover Sulphur from CS2 Plant tail gases. |
| 39. | Oil Scrubber system in $CS_2$ Refinery | To minimise the CS2 concentration in CS2 Plant tail gases. |
| 40. | Scrubber for Deashing gas for CS2 Furnaces. | Improved work environment. |
| 41. | Closed Calciner for Charcoal Calcination in place of Open Calciners. | Improved work environment. |
| 42. | Scrubbers for Exhaust air from salt Scrubber | Improved work environment. |
| 43. | Electro Static Precipitators for Power Plant Boilers | Low SPM emission. |
| 44. | Modified Ash handling system | Improved work environment. |
| 45 | Installation of Belt Press in place of Vacuum Belt Filter | Increasing the dry content of sludge |
| 46. | Dryers for ETP sludge | - Dried sludge used as fuel in boilers after mixing with coal. |
| | | - Elimination of conventional sludge disposal system |
| 47. | Usage of fly ash for brick and cement manufacturing | Reuse of solid waste |

Impact on Pollution Control measures on cost of production can not be exactly quantified as there are other steps being taken continuously like inpalnt improvements, close supervision, Wastage Control etc. which have bearing on cost of production.

# G R A S I M
## GRASILENE DIVISION : HARIHAR

Annexure - V
Ref. Part (H)

**Additional investment proposal for Environmental protection including abatement of Pollution, Prevention of Pollution**

| Sl. No. | Item | Additional Investment (Rs. In lacs.) approx. |
|---|---|---|
| 1. | Installation of VFD for Salt Dryer # 2 feed end and exit end blowers for energy saving | 5.89 |
| 2. | Installation of VFD for AAC Cooling Tower Fanfor energy saving | 2.53 |
| 3. | Lighting Transformer for Viscose & Spinning area for energy saving | 23.56 |

## Environment Pollution Control and Maintenance of Ecology Balance

Grasilene believes that Resource Conservation and Pollution Prevention go hand in hand. In this direction the unit has always emphasized on minimizing waste generation at source itself. Each and every outlet whether solid, liquid or gas is analyzed and priced. The trained employees focus their working to find out whether the waste could be recycled, reused or converted to a useful product. All suggestions, small or big are evaluated continuously. The Unit has kept pace with developments through literature survey, operating experience by visit to other Plants, advice from consultants and experts in the field and selecting the best available technology, material etc. suitable for the plant and moved into actual implementation.

The approach and results are as under:

- The manufacturing process is continuously upgraded with cleaner production practices to minimize generation of waste at source itself.

- The reliability of plant equipment and machinery was improved by installing equipments of higher intrinsic efficiency.

- The stability of plant operation was established by achieving self sufficiency in energy, improving quality of power supply. These could greatly minimize operational interruptions, inaccuracy in measurement and control, thereby reducing chemical losses.

- The recovery and recycling of chemicals increased continuously and end of the plant treatment facilities for solid, liquid and gaseous pollution strengthened to effectively treat and minimize discharge or emission.

Our prime concern has always been to protect and preserve environment and natural resources. In pursuit of clean environment and keeping in view posterity, we have also been continuously upgrading the effluent treatment facilities with the incorporation of new and more effective treatment techniques. Apart from this, we are continuously in pursuit of cleaner manufacturing techniques.

Grasilene has installed full fledged Effluent Treatment based on primary treatment of clarification and neutralization followed by secondary treatment designed on the principle of extended aeration activated sledge process. The treatment plant is functioning round the clock and treated effluents meet stipulated standards. These treated effluents before being discharged to the river pass through continuous bio monitoring system wherein fishes are active and healthy, which is one of its kinds in the world. The Unit has taken steps to control air pollution and provided several air pollution control systems viz. Electrostatic Precipitators, various Recovery systems, Scrubbing systems and Chimneys for meeting all stipulated standards.

The Unit is a trendsetter in incorporating environmentally benign technologies such as:

1. The unit is first of its kind to utilize its main raw material namely pulp in loose form with 50% moisture content in place of sheet pulp having 10% moisture. This has enabled to conserve fuel required for drying the pulp and has eliminated packing requirement.

2. In-house design and development of system for recovering Sodium Sulphate and saving cost of various chemicals from one of the effluent stream. The unit has achieved benchmark level of salt recovery among Fibre Plants in India.

3. Introduction of Continuous Automatic Filters for Viscose in place of conventional Plate and Frame Filter Press resulting in losses and effluent load.

4. Installation of Steam Efficient Multi Stage Flash Evaporators in place of inefficient triple effect evaporators for energy saving and reduced losses.

**Multi Stage Flash Evaporator (MSFE)**

5. Installation of triple effect efficient Anhydrous Evaporators in place of single and double effect evaporator for energy saving and reduced losses.

6. Introduction of Double Conversion Double Absorption system (DCDA) based Acid Plant with fibre bed mist eliminators, demister pads and scrubbers for high conversion efficiency, heat recovery, reduced emissions and raw material consumption reduction.

7. Introduction of scrubbing and condensation system for recovery of CS2 and reusing in the process.

8. Introduction of oil scrubbing system for recovery of CS2 from tail gases of CS2 furnaces and reusing in the process.

9. Introduction of Klaus Kin sulphur recovery plant along with scrubber for recovery of Sulphur from tail gases furnaces and reusing in the process.

10. Installation of Electrostatic Precipitators for boiler and vacuum based fly ash handling system in Power Plant for reducing emissions and work environment improvement.

11. Installation of Energy Efficient Acid absorption Crystallizers in place of steam based continuous crystallizers for recovery of Sodium Sulphate there by eliminating the use of steam for crystallization.

12. Efficient twin roll slurry presses in place of conventional Maurer sieve band slurry press for alk cell for improved operations, throughput and efficient productivity.

13. Pneumatic conveying system in place of Double Belt Conveyors to avoid pulp spillage. Distributed Control System (DCS) for filtration equipment in ripening room to minimize human errors and improving the accuracy thereby reducing water consumption.

14. Modified hole configuration with Hastelloy ‘C’ pipes in place of lead pipes for better steam penetration & CS2 expelling in recovery trough.

15. Distributed Control System (DCS) in the after treatment machine section for optimizing water consumption.

16. The hot water generated in sulphuric acid plant during the cooling of acid through plate heat exchanger is used for fibre washing in after treatment.

17. Use of power plant drain for coal quenching and ash handling plant after settling in pits.

18. Installation of efficient Atmospheric Fluidized Bed Combustion (AFBC) Boiler with Distributed Control System (DCS) and better designed ESP to reduce SPM emission and conservation natural resources.

As a result of these initiatives, specific consumptions of chemicals and energy have been continuously reduced.

**Strategies & techniques applied for continuous monitoring of environment and feedback mechanism for correcting/preventing any run-away operations for achieving stable operations**

Acidic, Alkaline and Neutral Streams are mixed together and pumped to Equalisation Tank. In overflow, lime slurry is added to get the required pH to neutralise acid. Then, it is mixed properly in Neutralisation Tank and fed to the Clarifier to settle the Suspended Matter. Overflow of the Clarifiers is fed to Biological Treatment System after addition of Nutrients. In Biological Reactor, Biomass is developed which reduces Biological Oxygen Demand (BOD). Dissolved Oxygen level is maintained as per requirement. The overflow of Biological Reactor goes to Secondary Clarifier (Underflow is recycled to Biological Reactor). The clear overflow goes to Polishing Pond.

In addition to the aforesaid foolproof arrangement the following in-plant measures help to control the operations for consistent quality of effluents and emissions –

1. The treated effluents are passed through a Bio-monitoring Pond containing fish obtained from the receiving water body i.e the river. The property of aquatic life to be sensitive to the surrounding environment is made use of as an early warning signal to notice any variation in the quality of effluents. Fish behavior is monitored round the clock and it serves as feed back mechanism to initiate corrective action much before the operations reach run-away stage. This is a unique approach addressing all the control parameters of significance.


2. All the influent streams to ETP are monitored round the clock for taking timely corrective action.
3. Alternate power supply is provided to Effluent Treatment Plant (ETP) so that in case of failure of one supply the stand by resumes automatically for the ETP. The similar arrangement is done for air pollution control equipment.
4. Stand by arrangements has been provided for all critical air and water pollution control equipments.
5. All equipments critical to environment are subjected to preventive maintenance and condition based on monitoring as per a pre-drawn schedule.
6. All process operating personnel have been trained to notice and inform any untoward incident that could lead to ‘out of control’ situation, to the operatives at the ETP so that the relevant stream can be diverted to a ‘guard pond’.
7. All input chemicals and raw materials are carefully and closely monitored against the preset norms per unit weight of product so that all wasteful practices that would result in emission to air and discharge to environment are eliminated.

## Other Particulars for Improving the Quality of Environment

1. The unit has aligned itself with Environment Management Systems and Occupational Health and Safety Management System in accordance with ISO 14001 and OHSAS 18000 Standards respectively.
2. The unit is continuing adoption of cleaner technologies as an ongoing exercise with several projects under formulation and implementation to further enhance its environmental quality.
3. World Class Manufacturing practices are being adopted and 6 Sigma quality concepts is being propagated for better process control and better quality of environment.
4. Staff and workmen are exposed to environmental awareness training by in-house faculty and external agencies. Seven of our staff members have completed Post Graduation Diploma in Ecology and Environment course, from Indian Institute of Ecology and Environment, New Delhi, an internally recognized institute.
5. All activities in the Unit, which have an interaction with the environment, have been identified. Aspects and impacts related to these activities are listed out. Based on this data, environmental objectives and targets have been set against the significant environmental impacts. Aspects and impacts are being reviewed and updated periodically.
6. Environment Day was celebrated in the unit to create awareness on prevention of environment among the employees.
7. Plantation activities have been taken up under the ‘Operation Green’ campaign. This activity will be a continuous exercise to improve the greenery in and around the industry.
8. Unit has developed a 70 acre plot to demonstrate use of treated effluent for agriculture. Around 70000 plantlets have been planted.
9. The unit encourages the development of greenery and gardens in the premises. Photography competitions on natural scenery, flowers and birds are conducted in colony for the residents on the occasion of World Environment Day. Drawing competitions on concepts such as global warming, ideal environment, environmental degradation etc are conducted in school to create awareness on environmental protection among school children.
10. Various varieties of birds and flower species in and around factory premises have been photographed to appreciate their presence, beauty and to protect these species as eco indicators. Lot of peacocks is found in the premises and special care is taken to protect them.