**ENVIRONMENTAL STATEMENT FORM-V**
**(See rule 14)**

Environmental Statement for the financial year ending with 31st March 2022

**PART-A**

| | | |
|---|---|---|
| 1 | Name and address of the owner /occupier of the industry operation or process. | Sri.Sureshgouda S Patil, Director, Bilagi Sugar Mill Ltd, Badagandi Village, Bilagi Taluk,Bagalkot District. |
| 2 | Production capacity | Sugar Unit: 10000 TCD<br>Co-gen Unit: 60 MW |
| 3 | Year of establishment | November 2005 & October 2017 |
| 4 | Date of the last environmental statement submitted | 31.03.2018 |

**PART –B**

**a. Water and Raw Material Consumption $m^3$ /day**

| i) | **Water consumption $m^3$/ Day** | **During the Previous financial year 2020-21 $m^3$/ Day** | **During the current financial year 2021-22 $m^3$/ Day** |
|---|---|---|---|
| | 1. Boiler | 250 | 265 |
| | 2. Domestic | 7 | 4 |
| | 3. Process | 100 | 85 |
| | 4. Washing | 3 | 3 |
| | 5. Cooling | 850 | 950 |
| | 6. Others | 25 | 25 |
| | **Total Consumption/Day** | 1235 | 1332 |

*i.* Water consumption in $m^3$/day

Process : 85
Cooling : 950
Domestic : 4.0

| Name of Products | Process water consumption per unit of products | |
|---|---|---|
| | During the previous financial year 2020-21 | During the current Financial year 2021-22 |
| 1. Sugar m3/MT | 0.24 | 0.22 |
| 2. Power Lit/MW | 1200 | 900 |

*ii.* Raw material consumption

| Name of raw materials | Name of Products | Consumption of raw material per unit of output | |
|---|---|---|---|
| | | During the previous financial year 2020-21 | During the current Financial year 2021-22 |
| Sugar<br>Lime<br>Sulphur | Sugar<br>Sugar<br>Sugar | 10.50<br>0.0023<br>0.00057 | 10.80<br>0.0022<br>0.00054 |

**PART-C**

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

**A) <u>Water pollution</u>**

| **Sl No** | **Particulars** | During the previous financial year 2020-21 | During the current Financial year 2021-22 |
|---|---|---|---|
| 1 | Boiler | 50 | 45 |
| 2 | Domestic | 03 | 03 |
| 3 | Process | 435 | 425 |
| 4 | Washing | 03 | 03 |
| 5 | Cooling | Nil | Nil |
| 6 | Others | 10 | 10 |

**B) <u>Air pollution</u>**

**i) <u>Recent Analysis of Ambient Air Quality Monitoring Data</u>**

| Sl.No | Particulars | Near Admin Office | Near Main Gate | Near Chimney |
|---|---|---|---|---|
| 01 | RSPM µg/m3<br>i) $PM_{10}$<br>ii) $PM_{2.5}$ | <br>46-64<br>24-26 | <br>52-60<br>20-26 | <br>52-54<br>23-24 |
| 02 | Sulphur di oxide µg/m3 | 2.3 – 3.2 | 4.1-5.2 | 4.3-5.0 |
| 03 | Oxides Of Nitrogen µg/m3 | 10.1-11.2 | 10.4-10.8 | 10.3-10.6 |

**ii) Recent Analysis of Stack Monitoring Report**

| Sl. No | PARAMETERS | Results |
|---|---|---|
| 1 | Flue Gas Temperature $^{o}$C | 139 -142 |
| 2 | Ambient Temperature $^{o}$C | 31 - 36 |
| 3 | Flue Gas velocity m/sec | 4.8- 6.2 |
| 4 | Particulate Matter µg/Nm3 | 100 -128 |
| 5 | Sulphur dioxide µg/Nm3 | 7.2 - 8.1 |
| 6 | Oxides of Nitrogen µg/Nm3 | 12.1 - 12.4 |

## PART-D

## HAZARDOUS WASTES

[As specified under Hazardous waste (Management & Handling) & Tran boundary Movement Rules – 2003

| Hazardous Waste | Total Quantity (Lts) | |
|---|---|---|
| | During the previous year 2020-21 | During the current year 2021-22 |
| **a) From Process** | Nil | Nil |
| **b) From Pollution Control facilities** | Nil | Nil |
| **c) DG sets Waste Oil (Litrs)** | 80 | 60 |

## PART – E

## SOLID WASTES QUANTITY

| Source | Total Quantity (MT) | |
|---|---|---|
| | During the Previous year 2020- 21 (MT) | During the current year 2021- 22 (MT) |
| a) From Process (By Product)<br>1) Bagasse<br>2) Press mud<br>3) Molasses<br>4) Boiler Ash | <br>247675<br>30659<br>39805<br>4953 | <br>378433<br>47304<br>60819<br>7568 |
| **b) From Pollution control facility (ETP Sludge)** | 30 | 40 |
| c) Quantity recycled or reutilized within the unit<br>1) Bagasse as boiler fuel<br>2) Sold<br>i) Bagasse<br>ii) Press mud (Free of Cost)<br>iii) Molasses<br>iv) Boiler Ash<br>(Free of Cost) | <br>247675<br><br>Nil<br>30659<br>39805<br>4953 | <br>379400<br><br>Nil<br>47425<br>60975<br>6788 |

## PART – F

Please specify the characteristics (in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

The generation of hazardous waste is from DG sets of 750 KVA, 250 KVA.The used oil from DG sets can be classified as hazardous waste as per the hazardous waste(management and handling) rule amendments 2008. The category of the waste according to Schedule – I is 5.1. The quantity is 80 Liters during the current season. This is securely stored in sealed barrels.

Major by products (solid Waste) are press mud, bagasse, boiler ash, and molasses. By products viz press mud, boiler ash are rich in nutrients and contain Nitrogen, Phosphorus and Potassium and can be used as organic fertilizers. These byproducts are given to the farmers on free of cost. Because of their rich nutrient value, they act as soil conditioners and help in better yield of sugarcane.

All the molasses produced is sold to the distilleries as a raw material for manufacturing rectified spirit and potable alcohol.

## PART-G

Impact of the pollution control measures taken on conservation of natural resources and consequently on the cost of production.

With the conservation of resources upper most in the mind the industry has taken effective steps to educate the workers to use the water rationality and carefully. Domestic waste after treatment is used for gardening. Adopted solar water heater for water heaters for domestic use.

### (A) Impact of Pollution abatement on Conservation

The activities responsible for the same are as follows:

1. **Water Consumption**

Effluent generation in sugar industry is from milling plant ,sulphur house ,lime house etc. The consumption of fresh water is totally controlled by proper production planning, recirculation of cooling water and optimizing wash-water amount. The factory has installed water meters to assess exact consumption of fresh water going in for process, cooling & domestic purposes.

2. **Compliance with Effluent Discharge Standards**

The industry is achieving the discharge standards as prescribed by KSPCB by running the ETP efficiently. The industry spent Rs.25 Lakhs on the operation & maintenance of effluent treatment plant.

3. **Maintenance of Ambient Air Quality**

The wet scrubber installed for the boilers are helping in effectively maintaining the ambient air quality in the factory premises.

### (B) Impact Of pollution Abatement on the Cost of Production

The total expenditure incurred on the operation and maintenance of ETP & Air Pollution Control Measures in 20 lakhs.

**(C)** Around 15,000 tree plantation was done in and around the premises of the Plant and also we have done plantation near our factory villages.

## PART – H & I

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

**MISCELLANEOUS:**

Any other particulars in respect of environmental protection and abatement of pollution.

*ENVIRONMENT INVESTMENT AUDIT & MISCELLANEOUS*

### Cost of health, safety and pollution control monitoring

| Description | Total amount in (Rs) Lakhs |
|---|---|
| Pollution control like Air, Water and Noise (Installing of Wind Ventilators, Smoke Detector's, etc) | 35 |
| Safety, protective Providing personal equipment for employees | 20 |
| ETP Treatment Set up Analysis Fees | 30 |
| **GRAND TOTAL** | **85** |

**Any other particulars in respect of environment protection and abatement of pollution**

1. The tree plantation drive within the premises upto 13 acres
2. No generation of hazardous waste.
3. Proper monitoring of stacks and chimneys
4. Proper monitoring of water usage, etc.,
5. The industry is taking up various measures to educate member farmers to get a better yield of sugar cane

## SEASONAL WORKING OF THE FACTORY

| Sl.No | Particulars | During previous financial year (2020-21)(MT) | During Current financial year (2021-22)(MT) |
|---|---|---|---|
| 1 | Working days for the season | 114 | 156 |
| 2 | Total Sugarcane crushed during the season (MT) | 884556 | 1351548 |
| 3 | Total Sugar Produced(Qtls) | 929156 | 1518250 |
| 4 | Daily average of cane crushed(MT) | 7759 | 8663.77 |
| 5 | Daily average of sugar produced(Qtls) | 8150 | 9732.37 |

**Water Analysis Parameters**

| Sl. No | PARAMETERS | UNTREATED | TREATED |
|---|---|---|---|
| 1 | Colour and Odour | Light Brown & Sugary | Colourless & Odourless |
| 2 | pH | 4 - 5 | 6.8- 7.2 |
| 3 | Total dissolved solids mg/L | 600-700 | 422-564 |
| 4 | Total suspended solids mg/L | 1200-1700 | 72 - 83 |
| 5 | BOD mg/L | 2000-2800 | 68 - 92 |
| 6 | Oil and Grease mg/L | 12 - 16 | Not Detectable |

## Ambient Air Quality Monitoring Data

| Sl.No | Sampling Station | Near Time Office | Near can weigh bridge | Near ETP | In front of general office |
|---|---|---|---|---|---|
| 01 | Respirable suspendedparticulate matter µg/m3 | 42-44 | 38-44 | 32-40 | 36-46 |
| 02 | Sulphur di oxide µg/m3 | 4.7 – 6.2 | 4.2-5.5 | 4.4-4.2 | 3.1-5.3 |
| 03 | Oxides Of Nitrogen µg/m3 | 9.8 -10.4 | 9.6-10.5 | 9.8 -10.4 | 9.4-9.8 |

## Stack Monitoring Report

| Sl. No | PARAMETERS | Results |
|---|---|---|
| 1 | Flue Gas Temperature $^{o}$C | 130 -140 |
| 2 | Ambient Temperature $^{o}$C | 34 - 37 |
| 3 | Flue Gas velocity m/sec | 5.2- 6.2 |
| 4 | Particulate Matter µg/Nm3 | 84 -121 |
| 5 | Sulphur dioxide µg/Nm3 | 4.1 – 4.3 |
| 6 | Oxides of Nitrogen µg/Nm3 | 9.8 – 10.2 |

## Characteristics of Bagasse

| Sl. No | PARAMETERS | Results |
|---|---|---|
| 1 | pH | 2.2- 7.2 |
| 2 | Nitrogen (%) | 0.26 - 0.34 |
| 3 | Phosphorus(%) | 0.1 0.34 |
| 4 | Potassium (%) | 0.02 - 0.05 |
| 5 | Organic Carbon (%) | 32-35 |

**Characteristics of Press Mud**

| Sl. No | PARAMETERS | Results |
|---|---|---|
| 1 | pH | 5.2 - 6.4 |
| 2 | Available Nitrogen(N) | 1.42 -1.65 |
| 3 | Phosphorus (P2O5) | 2.36 - 3.42 |
| 4 | Potassium (K2O) | 0.48 - 0.75 |
| 5 | Organic Carbon | 33 - 44 |
| 6 | Wax | 7.1 - 8.3 |

**Characteristics of molasses**

| Sl. No | PARAMETERS | Results |
|---|---|---|
| 1 | Water | 16-18% |
| 2 | Colour | Dark Brown |
| 3 | Moisture | 27.6 |
| 4 | pH | 4.3 - 6.1% |
| 5 | Ash % | 11. 2 |
| 6 | Sucrose | 33% |
| 7 | Total Dissolved Solids | 80% |
| 8 | Cl | 0.3% |
| 9 | SO4 | 1.3% |
| 10 | Sulphated Ash | 15% |
| 11 | Available Nitrogen (N) % | 1.0% |
| 12 | Phosphorus P2O5 | 0.21 |
| 13 | Pottasium as K2O | 2.3% |

**G.Suresh**
**Dy General Manager (Water & Environment)**