

Ref.: S&E/E.8-I/24

Date: 29th May 2024

The Member Secretary  
Tamilnadu Pollution Control Board  
76, Mount Road  
Guindy  
Chennai – 600 032

Respected Sir,

**Sub: Environmental Statement for the year 2023 -2024 for Greenstar  
Fertilizers Limited Plants**

We are pleased to submit the Environmental Statement in Form-V pertaining to our Greenstar Fertilizer plants at Tuticorin for the year ending 31<sup>st</sup> March 2024.

Thanking you,

For "Greenstar Fertilizers Limited"



**P. Senthil Nayagam**

**Whole Time Director**

- cc.: 1.The District Environmental Engineer  
Tamilnadu Pollution Control Board  
C7 & C9, SIPCOT Industrial Complex  
Meelavittan, Tuticorin – 628 008
- 2.The Joint Chief Environmental Engineer  
Tamilnadu Pollution Control Board  
32, 33, A/3 Raja Rajeswari Nagar,  
Perumalpuram, Thirunelveli – 627007

## **Greenstar Fertilizers Limited**

CIN : U24100TN2010PLC077127

REGD OFFICE : "SPIC HOUSE", No. 88, Mount Road, Guindy, Chennai - 600 032, Tamilnadu, India.

FACTORY : Muthiahpuram Post, Tuticorin - 628 005, Tamilnadu, India.

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**Greenstar****ENVIRONMENT (PROTECTION) ACT 1986****ENVIRONMENT (PROTECTION) SECOND AMENDMENT RULES,  
1992****FORM-V**

(See Rule 14)

**Environmental statement for the financial year  
ending 31<sup>st</sup> March, 2024****PART-A**

- i) Name and address of the owner / occupier of the industry, operation or process : P. Senthil Nayagam  
Whole Time Director,  
SPIC nagar  
Tuticorin,628005.  
M/s Green Star Fertilizers Limited,  
SPIC Nagar, Tuticorin - 628 005.
- ii) Industry Category : Primary SIC No.2800  
(Chemicals and allied products)  
  
Secondary SIC No. 2874  
(Phosphatic Fertilizers)
- iii) Production Capacity (Reassessed capacity by MoEF)
- a) Di-Ammonium Phosphate (DAP) : 9,00,000 MT/annum  
b) Aluminium Fluoride : 10,000 MT/annum  
c) Single Super Phosphate/GSSP : 350 MT/day
- iv) Year of establishment : Sulphuric Acid Plant :1975  
Phosphoric Acid Plant:1976  
DAP Plant Train I:1977  
DAP Plant Train II: 1983  
Aluminium Fluoride Plant : 1987  
SSP : 2010  
GSSP: 2023
- v) Date of the last environmental report submitted : 16.06.2023

**PART - B****Water and Raw Material Consumption**

i)	Water consumption	:	Average M <sup>3</sup> /Day (Actual)
	Cooling	:	1277.3
	Process	:	229.3
	Domestic	:	145.6

Sl. No.	Name of Products	Water Consumption per unit of products (M <sup>3</sup> /MT)	
		During the Previous Financial year 2022 -2023	During the current Financial year 2023 -2024
1.	DAP	0.52	0.37
2.	Aluminium Fluoride	12.80	9.4
3.	SSP	0.15	0.31

## ii) Raw Material consumption

Sl. No.	Name of the Raw Material	Name of the Product	Consumption of raw material per unit of output	
			During the previous Financial year 2022 -2023	During the current Financial year 2023 -2024
1.	Sulphur	Sulphuric Acid	0.332	0.332
2.	Rock Phosphate	Phosphoric Acid	3.46	3.68
3.	Aluminium Hydroxide	AlF <sub>3</sub>	1.291	1.247
4.	Rock Phosphate	SSP	0.559	0.530

**PART – C****Pollution Generated**

(Parameters as specified in the consent issued)

Sl. No.	Pollutants	Quantity of Pollutants discharged mass/day	Concentration of pollutants discharged in mass/volume	Percentage of variation from prescribed standards with reasons
I	<b><u>WATER:</u></b>			
		No Effluent Generation		
II	<b><u>AIR:</u></b>			
1)	Sulphuric Acid Plant: SO <sub>2</sub>	298.81Kg/day	235.90mg/Nm <sup>3</sup>	No deviation from prescribed standards. The Sulphuric Acid plant is converted to DCDA Process.
	Acid Mist	7.694Kg/day	6.07mg/Nm <sup>3</sup>	No deviation from prescribed standards
3)	Phosphoric Acid Plant:			
	Fluoride -TCA III	6.10Kg/day	1.55mg/Nm <sup>3</sup>	No deviation from prescribed standards
	Fluoride HH Off Gas Stack	4.47Kg/day	3.33mg/Nm <sup>3</sup>	No deviation from prescribed standards
	RG Mill Particulate matter	19.8Kg/day	45.90 mg/Nm <sup>3</sup>	No deviation from prescribed standards
4)	DAP Plants:			
	Particulate Matter	270.03Kg/day	43.61mg/Nm <sup>3</sup>	No deviation from prescribed standards
	Fluoride	1.426 Kg/day	0.237 mg/Nm <sup>3</sup>	No deviation from prescribed standards
	Ammonia	254.073Kg/day	40.50mg/Nm <sup>3</sup>	No deviation from prescribed standards
5)	AIF <sub>3</sub> Plant			
	Particulate Matter	4.16Kg/day	43.36mg/Nm <sup>3</sup>	No deviation from prescribed standards
	SO <sub>2</sub>	6.2 Kg/day	284.64mg/Nm <sup>3</sup>	No deviation from prescribed standards

6)	SSP			
	Particulate Matter	16.24Kg/day	45.11mg/Nm <sup>3</sup>	No deviation from prescribed standards
	Fluoride	0.6084Kg/day	1.69mg/Nm <sup>3</sup>	No deviation from prescribed standards
7)	GSSP			
	Particulate Matter	102.60Kg/day	47.50mg/Nm <sup>3</sup>	No deviation from prescribed standards
	Fluoride	6.3828 Kg/day	2.96 mg/Nm <sup>3</sup>	No deviation from prescribed standards

**PART-D**  
**(Hazardous Wastes)**

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

Sl. No.	Hazardous Wastes	Total Quantity (MT)			Closing Stock & Mode of collection/ Treatment & Disposal
		Quantity generated during 2022 -2023	Quantity generated during 2023 -2024	Characteristics	
1.	<b>Solid spent Catalyst: (Sulphuric Acid Plant)</b>				
	HW Category 17.2 Sulphuric Acid Plant Converter Catalyst	3.5	3.070	V <sub>2</sub> O <sub>5</sub> - 3% w/w	7.86
2.	HW Category 17.1 Process acidic residue, filter cake, dust	28.6	21.88	Solid	Nil
3.	Used or Spent oil HW Category : 5.1	7.82 KL	25.94	Oil	12.690
4.	Empty barrels/containers/liners contaminated with hazardous chemicals /wastes HW Category : 33.1	-	7.004	Solid	7.004

HW Category 35.3-Chemical sludge from waste water treatment of M/s. SPIC of quantity 44.59 MT is reused in DAP plants as fillers.

**PART – E****BY PRODUCT**

S.No	BY PRODUCT	Total quantity (MT)	
		Generated during the previous financial year 2022 - 2023	Generated during the current financial year 2023 -2024
1.	<b>From Process:</b> Phosphogypsum generated from Phosphoric Acid Plant	1014180	901380
	Gypsum Sold	1032391	866229.8
2.	<b>From Process:</b> Silica generated from Aluminium Fluoride Plant and Phosphoric acid	5308.8	3701.324
	Silica sold	5140.73	3809.64
<b><u>SOLID WASTE : Nil</u></b>			

**PART – F**

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

As specified in PART D and PART E

We have become a member of **Industrial Waste Management Association- membership No; 1459.**

Hazardous waste authorization also obtained from TNPCB. Generated Hazardous waste is being disposed to authorized recyclers or to authorized TSDF.

**PART – G****Impact of the pollution control measures on conservation of natural resources and on the cost of production:**

Greenstar Fertilizers Limited firmly believes that industrial productivity and environmental protection are to co-exist. With the strong environmental concern and commitment, Greenstar Fertilizers Limited has taken great strides in prevention of pollution and protection of the precious environment. The various pollution control and monitoring measures have been helpful to bring about an overall improvement of the quality of water, air and land in the vicinity. We have implemented several measures for waste minimization / pollution prevention.



1. An ambient air quality has been monitored online and it has been displayed at the factory gate entrance area which shows the pollutant data for the general public.
2. SA plant stack SO<sub>2</sub> online continuous monitoring is done and transmitted to care air centre, TNPCB from May 2013. DAP I and II Plants Ammonia analyzers were lined up to care air centre from February 2016.
3. Startup scrubber commissioned and lined up with SO<sub>2</sub> Stack to reduce SO<sub>2</sub> emission to environment.
4. Major part of treated effluent from SPIC is reused in Greenstar Plant to conserve raw water.
5. Ambient HF was monitored through online analyzer and the connectivity was lined up to care air center, TNPCB from August 2018.
6. HF Analyzers were installed in DAP and PA Plant Stacks and Data is being transmitted to Care air Centre, TNPCB since December 2019.
7. Instalied Remote calibration facility for SA plant SO<sub>2</sub> Analyzer from July 2020 onwards.
8. We have obtained ISO 45001 and ISO 14001.
9. PM analyzers were installed in RG Mill Stack and Data is being transmitted to Care air Centre, TNPCB since November 2020.
10. HF analyzer was installed in SSP plant stack and Data is being transmitted to Care air Centre, TNPCB since February 2021.
11. PM analyzers were installed in DAP- I, DAP- II and SSP Plant Stacks and Data is being transmitted to Care air Centre, TNPCB since January 2021.
12. HF analyser was installed in DAP II plant and data is being transmitted to Care air Centre, TNPCB since 21.10.2021.
13. 1225 MT of Plastic Waste was recycled through PRO as part of EPR Obligation for 2023-24.
14. AIF3 plant effluents are reused in DAP plants for scrubbing.
15. 70% of captive solar power production is used in Greenstar Fertilizers Limited.
16. Dilution air was hooked up in sulphuric acid plant to improve SO<sub>2</sub> conversion thus reducing stack loss.
17. PM analyser was installed in GSSP plant at the cost of Rs.4.95 Lakhs and data is being transmitted to Care Air Centre, TNPCB since 5.02.2024
18. STP Continous effluent monitoring system was installed at the cost of Rs.17 iakhs and data is being transmitted to WQW TNPCB since 20.10.2023
19. All Emission monitoring analysers were validated by third party NABL accredited lab.

20. Ambient and stack survey analysis carried out in all the plants through NABL accredited lab.

21. New Ammonia Add-on HF analyzer was installed at the cost of Rs. 22 Lakhs in DAP plants.

5) Overall cost towards APC measures and statutory requirements towards environment protection was Rs. 93.551 Lakhs. The break-up details is given:

		<u>Rs.in Lakhs</u>
Direct	Chemicals for APC Measures	14.271
Indirect	Salary and Statutory Fees	79.2801
Total Cost of chemicals and statutory requirements		93.551

#### PART – H

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

1) We are maintaining the green belt more than 34.73% of all over area inside factory and nearby township. Totally 1810 trees have been planted in the year 2023 -2024.

Cost incurred for green belt development for the year 2023 -2024 is 3 lakhs.

2) We have incorporated the dry mode of gypsum conveying system instead of gypsum slurry mode to impervious gypsum dyke.

3) As per CPCB guidelines, Gypsum pond is converted into impervious lined pond at cost of 12crores.

4) Renovation of dedusting system in rock handling area at the cost of Rs. 1.96 Crores is in progress

5) It is proposed to install Natural Gas in DAP and Alf3 plant furnaces which lowers carbon footprint.



**PART - I****Miscellaneous**

Any other particulars in respect of environment protection and abatement of pollution till March 2024.

- 1) Green Belt Development Programme is continuously carried out to improve the quality of the environment. 1810 trees were planted during the year 2023-2024.
- 2) WORLD ENVIRONMENT DAY CELEBRATIONS:  
  
Environment Quiz and Essay, Environment Day Pledge, World Environment Day 2023 theme given by UNEP, "Beat Plastic Pollution" was circulated in intranet for the benefit of employees.  
  
**Plantation of New Saplings:**  
  
World Environment day was celebrated on June 5<sup>th</sup> and 150 saplings were planted and about 1810 trees were planted during the year 2023-2024.
- 3) World Water Day was celebrated on March 22<sup>nd</sup> and 25 tree saplings were planted around premises. World Earth Day was celebrated on April 22<sup>nd</sup> and 22 tree saplings were planted on that day. International day of biodiversity was celebrated on May 22<sup>nd</sup> and 10 tree saplings were planted.
- 4) Regular refresher training programme is conducted for employees on Safety and Environment. "Environment management in Greenstar Fertilizers Limited" is one of the topic in the above training Programme.
- 5) Monitoring of stack emission and ambient air and water quality is being done regularly.
- 6) Maintenance department is carrying out regular checking and scheduled maintenance of all the pollution control devices.
- 7) Production & Administration departments taking care of housekeeping.
- 8) Dedicated Horticulture section is taking care of tree plantation and green belt development. Every year we are growing new trees.
- 9) Part of treated effluent water generated from SPIC Ltd., is being used for Green Belt development inside the Factory premises.
- 10) Environment Monitoring were carried out around the Phosphogypsum stack by CVR labs and the reports were submitted to TNPCB.
- 11) 250 Conventional Bulbs were replaced with LED bulbs across factory premises at the cost of Rs. 60,000 as a part of energy reduction.
- 12) We have developed Miyawaki Forest by planting 500 saplings in land allocated by District authorities in Tuticorin.
- 13) Awareness created among school children and employees requesting to adopt "Mission LiFE" action points in their day to day life.

Signature :



Name and address of the person submitting the Environmental statement report :

**P. Senthil Nayagam  
Whole Time Director**

On behalf of Name and Address of the Unit :

M/s Greenstar Fertilizers Limited  
SPIC Nagar, Tuticorin 628 005.