## FORM No. V

**(See rule 14)**

Environmental Statement for the financial year ending the 31st March 2025

**PART-A**

| | | |
|---|---|---|
| i) | NAME AND ADDRESS OF THE OWNER / OCCUPIER OF THE INDUSTRY, OPERATION OR PROCESS. | MR. ABHAY BAIJAL<br>MANAGING DIRECTOR<br>CHAMBAL FERTILISERS AND CHEMICALS LTD.<br>P.O.GADEPAN, PIN 325 208<br>DISTT. KOTA (RAJ). |
| ii) | INDUSTRY CATEGORY<br>PRIMARY – STC CODE<br>SECONDARY – SIC CODE | RED CATEGORY. |
| iii) | PRODUCTION CAPACITY (UNITS-MT)<br># As per consent | |
| | AMMONIA: 6100 MTPD | AMMONIA-6100x365=2,226,500 TPA |
| | UREA: 10800 MTPD | UREA-10800x365= 3,942,000 TPA |
| | CAPTIVE POWER: 55 MWH | CAPTIVE POWER-55x24x365=481,800 MWA |
| | STEAM (HRSG): 240 TPH | STEAM (HRSG)-240x24x365= 2,102,400 TPA |
| | STEAM (BOILER) :320 TPH | STEAM (BOILER)-320x24x365= 2,803,200 TPA |
| | CTO (AMMONIA AND UREA FERTILISER PLANTS) Issued on 21/01/2022 | |
| iv) | YEAR OF ESTABLISHMENT (COMMERCIAL PRODUCTION DECLARED) | |
| | Phase –I | 01/01/1994 |
| | Phase-II | 20/10/1999 |
| | Stage-I revamp Gadepan-I Commissioned | 31/03/2009 |
| | Stage-I revamp Gadepan-II Commissioned | 28/04/2009 |
| | Phase-III | 01/01/2019 |
| v) | DATE OF THE LAST ENVIRONMENTAL STATEMENT SUBMITTED. | 17/07/2024(Combined for Phase-I,II,III) |

## PART –B
## WATER AND RAW MATERIAL CONSUMPTION

### 1. WATER CONSUMPTION M3/DAY

| Category | During the Financial Year 2023-2024 | During the Financial Year 2024-2025 |
|---|---|---|
| | M3/DAY | M3/DAY |
| PROCESS | 7573.4 | 7025.6 |
| COOLING | 30137.5 | 30708.5 |
| DOMESTIC | 655.7 | 604.8 |

| Name of Product | Water Consumption per MT of product output | |
|---|---|---|
| | During the Financial year 2023-2024 | During the Financial year 2024-2025 |
| Urea | 4.15 $M^3$ / MT | 4.04 $M^3$ / MT |

### 2. RAW MATERIAL CONSUMPTION

| Name of Raw Material | Name of Product | Consumption of Raw Material per MT of product output | |
|---|---|---|---|
| | | During the Financial Year 2023-2024 | During the Financial Year 2024-2025 |
| Natural Gas, SM3/MT of Urea | UREA | 628.614 | 618.435 |

## PART – C

**Pollutants discharged to environment / unit of output (Parameters as specified in the Consent issued)**

a) WATER POLLUTANTS - For details see table: 1A, 1 B
b) AIR POLLUTANTS - For details see table: 2 A, 2 B, 2C & 3

## PART-D

### HAZARDOUS WASTE

[As specified under Hazardous & Other wastes (Management and Transboundary Movement), Rules, 2016]

| | Total Quantity (Hazardous Waste ) | | | | |
|---|---|---|---|---|---|
| | During the Financial Year (FY 2023-2024) | | | | |
| | Used Oil (MT) | Spent Catalyst (MT) | Chemical sludge from wastewater treatment (MT) | Discarded container (Nos) | Contaminated Cotton rags or other cleaning materials (MT) |
| a) From Process | 26.928 MT | 75.00 MT | ~ | 102 Nos | 3.500 MT |
| b) From Pollution Control facilities (RO-ZLD Plant) | | | 2768.800 MT | | |
| | During the Financial (FY 2024-2025) | | | | |
| | Used Oil (MT) | Spent Catalyst (MT) | Chemical sludge from wastewater treatment (MT) | Discarded container (Nos) | Contaminated Cotton rags or other cleaning materials (MT) |
| a) From Process | 54.252 MT | 97.18MT | ~ | 130 Nos | 2.600 MT |
| b) From Pollution Control facilities (RO-ZLD Plant) | | | 2872.500 MT | | |

For details see Table -4

## PART – E

### SOLID WASTES

| | Total Quantity (MT) | |
|---|---|---|
| | During the Financial Year 2023-2024 | During the Financial Year 2024-2025 |
| **A) From Process** | | |
| 1-Sludge (Water Pre-Treatment clarifier) | 9.50 MT | 3.80 MT |
| 2-Used Resin (DM Plant) | 41.14 MT | 29.05 MT |
| 3-Sludge (Sewage treatment plant) | 3.0 MT | 1.0 MT |

| | | |
|---|---|---|
| **B ) From Pollution Control Facility** | NIL | NIL |
| 1-Quantity recycled or reutilized within the unit | 12.50 MT | 4.80 MT |
| 2-Sold | NIL | NIL |
| 3-Disposed | 41.14 MT | 27.68 MT |

## PART – F

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

1. **Hazardous Waste** :
2. **Solid Waste** :

} FOR DETAILS SEE TABLE : 4

## PART– G

**Impact of the Pollution abatement measures taken on conservation of Natural resources and the cost of production.**

Smooth operation of Pollution abatement measures has resulted in following impact in conservation of Natural resources and the cost of production.

a) Complete recycling of Ammonia and Urea Plant Process condensates after treatment in the plant itself resulting in recovery of Ammonia, CO2 and Urea and also serves as water conservation measure.

b) Complete recycle of Turbine and other steam condensates to conserve water and chemicals.

c) Due to Natural Draft Prilling Towers, the emission of Urea dust is very low, which conserves the natural resources and increases production.

d) Due to the use of clean fuel and state-of-the-art technology, emissions are minimized.

e) A proper schedule of preventive maintenance and centrifuging of oil on all critical machines is there to minimize used oil generation.

f) Reduction in Raw water consumption has been achieved by:
   (i) Maximum recycling of Service Water, Air Compressor Interstate Condensate etc., which were earlier being drained in surface drain.

   (ii) Using Service water from sample coolers in Ammonia, SPG and Urea Plant as recycle to Cooling Towers.

   (iii) Using surface drain water for Green Belt Development in different plant area like: Bagging, ETP & Cooling Towers by installing portable pumps.

(iv) Using Boiler blow downs as cooling tower make up.

(v) Using treated effluent for irrigation of green belt, lawns and demonstration farm.

(vi) Providing Push type cock valves instead of normal valves for washbasins in certain areas and sensor based flushing system in toilets.

(vii) Recycling backwash water from Sand filters to raw water reservoir in WPT plant.

(vii) Optimization of regeneration cycle of Ion-exchangers beds in DM plant to reduce effluent generation by modifying flow-measuring instruments.

g) Reduction of power consumption by LED electrical lights in plants by installing timers.

h) By proper collection of spilled urea & recycled back in process from different locations in bagging plant.

i) Running of Cooling towers on High cycle of concentration and reducing of water losses through blow down.

## PART – H

**Additional Measures / Investment proposal for environmental protection including abatement of Pollution, prevention of Pollution.**

Efficient measures for abatement of pollution were implemented under the original project in 1993 & 1999 for Phase-I & Phase-II respectively. These are working satisfactorily. However, following additional measures have been taken during Revamping of Phase-1 Plants for energy conservation during annual turn around in March 2009.

**Phase-I**

| Sr. No | SCHEMES |
|---|---|
| 1 | Installation of Variable Frequency Drive (VFD) for Ammonia Feed Pumps in 11-Unit of Urea-I plant |
| 2 | Installation of Variable Frequency Drive (VFD) in Lean & BFW Pumps in Lean Solution in Ammonia-I plant |
| 3 | Installation of Ammonia product heater in Ammonia-I plant |
| 4 | Up-rating of Synthesis gas compressor in Ammonia-I plant |
| 5 | Installation of additional cooling tower cell for Ammonia-I plant |
| 6 | Replacement of Low temperature shift converter and Methanator catalyst with new catalyst in Ammonia-I plant. |
| 7 | Modification of Methanator outlet nozzle to reduce the pressure drop across reactor in Ammonia -I plant |
| 8 | Complete overhauling of Gas turbine-II along with the replacement of rotor (upgraded) and 1st & 2nd |

| | |
|---|---|
| | stage buckets |
| 9 | Installation of KRES & New secondary reformer. |
| 10 | By bringing down flue gas temperature from 175°C to 122°C |
| | - Replacement of Combustion Air pre-heater. |
| | - Installation of Additional NG Feed & Fuel preheat coil. |
| 11 | Installation of Additional converter and Loop Boiler. |
| 12 | To increase the operating pressure of Process condensate stripper up to 0.9 Kg/cm$^2$g from 0.2 Kg/cm$^2$g and recover heat in DM water. |
| 13 | Measures to reduce pressure drop in Front End. |
| | - BFW Pre-heaters (E-211) configuration change from series to parallel. |
| | - Parallel line from methanator to Synthesis gas compressor for reducing Pressure drop |
| 14 | Variable frequency drive |
| | - Aux. Boiler FD fan in O&U |
| | - Cold Ammonia Pump (P-501) |
| | - Condensate export pump (P-13) |
| 15 | Replacement of wear rings of Cooling Tower pumps with non-metallic material (PEEK) |
| 16 | Usage of C-3 Off gasses as fuel in Ammonia-I plant |
| 17 | Installation of Pre-concentrator and MP Pre-decomposer. |
| 18 | Installation of Variable Frequency Drive (VFD) in Ammonia feed pumps in 21-Unit of Urea-I plant |
| 19 | Replacement of Ammonia converter basket from two bed basket to three bed basket in Ammonia-I plant. |
| 20 | Replacement of high pressure steam line insulation. |
| 21 | Installation of Light Emitting Diode (LED) lamps, tubes and lighting fixtures replacing conventional lights in Gadepan complex. |
| 22 | Replacement of Air Compressor 2nd & 3rd stage intercoolers in Ammonia-I |
| 23 | Installation of additional hydrolyzer preheater in Urea-I. |
| 24 | Installation of Vortex mixer in Urea-I '21' unit reactor. |
| 25 | Replacement of Cooling Water pumps in Gadepan-I plant |
| 26 | Energy saving schemes were implemented in Urea-I plant |
| 27 | Replacement of Induced Draft / Forced Draft fan turbines with motors in Ammonia-I plant |

| | |
|---|---|
| 28 | Replacement of Purge Gas Hydrogen Recovery Unit membranes in Ammonia-1 plant. |
| 29 | Uprating of Synthesis gas compressor Turbine in Ammonia-I along with suction cooling of Synthesis gas. |
| 30 | Installation of balance top seven super cup Urea reactor trays in each unit of Urea-I |
| 31 | Conversion of Low Pressure (LP) steam condensate stripper to Medium Pressure (MP) steam stripper in Ammonia-I |

**Phase-II**

| Sr. No. | SCHEMES |
|---|---|
| 1 | De-bottlenecking of cooling water network in Ammonia-II by installation of additional 36" cooling water pipeline along with additional pump. |
| 2 | Installation of additional cooling tower cell for Urea-II plant |
| 3 | FD fan suction duct replacement with new one to reduce the cycle variation in combustion air pressure in Ammonia-II plant |
| 4 | Installation of additional Converter and Loop Boiler in Ammonia-II Plant. |
| 5 | Replacement of bare tube bundles with finned tube bundles in Boiler Feed Water Pre-heaters in Ammonia-II Plant. |
| 6 | Re-passing of process air coils in convective section of Primary Reformer of Ammonia-II plant |
| 7 | Installation of low pressure decomposer Pre-heater in Urea-II Plant. |
| 8 | Installation of vapor absorption machine for suction air chilling of Process Air Compressor in Ammonia-II and CO2 chilling in Urea-II plant. |
| 9 | Installation of HT motor for Urea Cooling Tower pump in Gadepan-II. |
| 10 | Installation of additional cooling tower cell for Ammonia-II plant |
| 11 | Replacement of two fouled carbamate condensers in Urea-II plant. |
| 12 | Installation of additional quench water cooler in Ammonia-II. |
| 13 | Uprating of Synthesis Gas compressor Turbine in Ammonia-II. |
| 14 | Replacement of Synthesis gas converter basket with improved design in Ammonia-II along with new catalyst |

**PHASE-III**

| Sr. No. | SCHEMES |
|---|---|
| 1 | Efficient measures for abatement of pollution were implemented under the original project in 2019 for Phase-III. These are working satisfactorily |
| 2 | Replacement of Methanator Effluent Cooler in Ammonia-III |
| 3 | Installation of the thermo-compressor in Urea-3 'A' train |

## PART-I

**Any other particulars for improving the quality of the Environment.**

The possible areas of resource conservation and the source of Pollutants are identified, assessed and subsequently proper arrangements for their control are incorporated. Some actions taken in direction to improve the quality of Environment at CFCL are:

- Accredited ISO-14001:2015 [Environmental Management System] for both Phase-I, Phase-II & Phase-III plants and township.
- Accredited ISO-9001:2015 [Quality Management System] for both Phase-I, Phase-II & Phase-III.
- Accredited ISO-45001:2018 (Occupational Health and Safety Management System) for both Phase-I, Phase-II & Phase-III plants and township.
- Uttam Bandhan project as Socio-economic development of the villages to uplift the living standard of surrounding villagers.
- CFCL has a systematic program of developing flora, fauna and landscaping.
- CFCL has a systematic procedure for safe collection and storage of spent lubricating oil. Centrifuges are provided to all machines to reduce the spent oil generation. Oil drums are stored in main concreted and dyked area.
- CFCL is adopting a systematic procedure for Collection & Segregation of Solid waste. Separate bins have been provided for metallic / non-metallic waste, Combustible / non-combustible waste thus resulting into a better management of the same.
- Preparation of NADEP compost by recycling biodegradable horticulture waste
- Continuous development of flora & fauna by tree plantation and green belt development. More than 33% of land has already been covered under Green Belt Development, Gardens and Landscaping.
- Installation of Biogas Plant in the township for processing and treatment of Kitchen waste (biodegradable waste).
- The Company has installed roof top solar panels in Gadepan campus having capacity of 1000 kilo watt (AC) peak power as a step towards use of renewable energy. Roof top solar panels of 230 kilo watt (AC) peak power has been commissioned in FY 22-23 and remaining 770 kilo watt (AC) peak power commissioning has been commissioned in FY 23-24.

**CFCL has bagged various prestigious environment/Safety awards, as detailed below:**

- "FAI Award for Best Production Performance", runner up for year 2023-24.
- "FAI Award for Environment", runner up for year 2023-24.
- "Best Video Film Award" by Fertilizer Association of India in year 2023-24.
- "Bhamashah and Shiksha Vibhushan' award by Rajasthan Government in Year 2023-24.
- Certificate of Merit at the National Energy Conservation Award (2022-23)
- Best Video Film second prize at the Fertilizer Association of India Annual Seminar (2022-23)
- Rajasthan Government 'Bhamashah and Shiksha Vibhushan'award (2022-23)
- FICCI Award for commendable work in Education (CSR) – Appreciation(2022-23)
- Shiksha Vibhushan Bhamshah Award (CSR)-Winner(2022-23)
- 5th Indian Chamber of Commerce CSR Award (2022-23)
- FAI Award for Technical Innovation – Winner (2021-22)
- Rajasthan Energy Conservation Award – Winner (2021-22)
- FAI Award for Environment Protection – Runner up(2021-22)
- FAI Award for Best Production Performance – Runner up(2021-22)
- 4th Indian Chamber of Commerce CSR Award (2021-22)
- FAI Award for Best Technical Innovation (2020-21)
- FAI Award for Best Production Performance - GADEPAN-III Plant (2020-21)
- FAI Award for Excellence in Safety (2020-21)
- FAI Award for Best Video Film (2020-21)
- FAI Award for Environment Protection (2020-21)
- Employers Association of Rajasthan Award (2020-21)
- Rajasthan CSR Excellence Award 2019
- "Shiksha Vibhushan" State Bhamashah Award 2019
- ASSOCHAM Best NGO Award 2019 for Skill Development
- 2nd CII Energy Circle National Energy Efficiency Circle Competition" at New Delhi on 17-18 May 2018, "Winner" in the Best Energy Efficient Case Study category.
- "FIRST PRIZE" Rajasthan Energy Conservation Award 2018
- "Indywood CSR Excellence Award" in year 2018
- "Rajasthan Government CSR Excellence Award" in year 2018
- "Best Industry Partener in Skill Development" by Government of Rajasthan in year 2018.
- "Bhamashah Award" By Government of Rajasthan in year 2018.
- "Rajasthan Government CSR Excellence Award" in year 2018.
- "Environment Protection award" from Fertilizer Association of India (FAI) in yea 2017
- BSE Skoch Award for "Environment Management and CSR" 2017
- "Environment Protection award" SSP Plant for the year 2014-15 & 2015-16 from Fertilizer Association of India (FAI)
- "Rajasthan Energy Conservation Award-2015" by Govt. of Rajasthan, department of energy, Jaipur.
- "Environment Protection award" for the year 2013-14 from Fertilizer Association of India (FAI).

- CFCL won "National Award for Prevention of Pollution for the year 2010-11" under Fertilizer category, and awarded by Ministry of Environment & Forest (Govt. of India).
- CFCL won "FICCI Safety system Excellence award for Manufacturing 2013" by FICCI, New Delhi.
- "National Award for Excellence in Water Management 2012" by Confederation of Indian Industry (CII).
- "FAI Award for Best overall Performance of an operating fertilizer unit for nitrogen (Ammonia and Urea)" (Runners Up Award) for the year 2011-12 and 2017~18 from Fertilizer Association of India (FAI)
- "Environment Protection award" for the year 2011-12 from Fertilizer Association of India (FAI) (1st for third consecutive year)
- "Environment Protection award" for the year 2010-11 from Fertilizer Association of India (FAI).
- "FAI Award for Best overall Performance of an operating fertilizer unit for nitrogen (Ammonia and Urea)" (Runners Up Award) for the year 2010-11 from Fertilizer Association of India (FAI)
- "National Award for Excellence in Water Management 2011" by Confederation of Indian Industry (CII).
- "Special Commendation" for the Golden Peacock Award for Sustainability – 2011.
- "National Award for Excellence in Energy Managemet-2011" by Confederation of Indian Industry (CII), Hyderabad for Gadepan-II plant.
- "Golden Peacock Award for Corporate Social Responsibility" for the year 2009.
- "Environment Protection award" for the year 2009-10 from Fertilizer Association of India (FAI).
- "Best Technical Innovation Award" for the year 2009-10 from The Fertilizers Association of India (FAI).
- "2nd Best Video Film - Environment" for the year 2009-10 from The Fertilizers Association of India (FAI).
- "Greentech Environment Gold Award 2010" for outstanding achievement in Environment Management by Greentech Foundation, New Delhi.
- "Rajasthan Energy Conservation Award-2009" by Govt. of Rajasthan, department of energy, Jaipur for Gadepan-II plant.
- "IFA Green Leaf Trophy Award" for excellence in safety, health and environment. CFCL has been Ranked 4th for 2009 International Fertilizer Association's Green Leaf Trophy Award Laureate for excellence in safety, health and environment in fertilizer production.
- "Sword of Honour for the year 2008" by British Safety council for excellence in Occupational Health & Safety Management system.
- "Five Star Safety (Awarded with 5 - Star Rating)" – in the year 2008 by British Safety Council.
- CFCL has been awarded runner up in the category of Accident Free Year by NATIONAL SAFETY AWARDS (NSA) for the year 2006.
- "Greentech Safety Gold Award 2008" for the year 2007 from Greentech Foundation.
- "Good Green Governance (G3) Awards- 2007" – for the year 2007 from Srishti.
- 'Sword of honor for the year 2007" by British Safety Council.
- "Five Star Safety (Awarded with 5 - Star Rating with 92.9% Points)" – in the year 2007 by British Safety Council.

- "Greentech Environment Gold Award 2007" for the year 2006-07 from Greentech Foundation.
- "Good Green Governance (G3) Awards- 2006" – for the year 2006 from Srishti.
- "FAI Award for Best Performance among Nitrogenous fertiliser plants" (Runners Up Award) for the year 2005-06 from Fertiliser Association of India (FAI)
- "Golden Peacock Eco-Innovation Award (GPEIA)"– for the year 2006 from World Environment Foundation on "VRIKSHAMITRA".
- "Five Star Safety (Awarded with 5 - Star Rating with 95.2% Points)" – in the year 2006 by British Safety Council.
- "Golden Peacock Environment Management Award (GPEMA)"– for the year 2005 from World Environment Foundation.
- "Environment Protection award" for the year 2004-05 from Fertiliser Association of India (FAI).

## CHAMBAL FERTILIZER AND CHEMICALS LIMITED

### TABLE-1 A INDUSTRIAL TREATED EFFLUENT ANALYSIS

| Months | Parameters | Eff. Qty. | pH Range | TSS | O & G | Zinc | $PO_4$ as P | TAN as N | TKN as N | $NO_3$ as N | COD | BOD (3days at 27°C) | Free Ammonical Nitrogen | Total Iron as Fe |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (M3) | | mg/l | mg/l | mg/l | mg/l | mg/l | mg/l | mg/l | mg/l | mg/l | mg/l | mg/l |
| | | LIMIT | 6.5-8.5 | 100 | 10 mg/l | 1.0 mg/l | 5.0 mg/l | 50 mg/l | 75 mg/l | 10 mg/l | 250 mg/l | 30 mg/l | 2.0 mg/l | 1.0 mg/l |
| Apr-24 | a) Observed value | 136815 | 7.4~7.9 | 45.8 | 2.7 | 0.25 | 2.25 | 9.3 | 13.6 | 6.8 | 64.4 | 6.7 | 0.45 | 0.20 |
| | b) Qty. Kg/Day | ~ | | 208.9 | 12.4 | 1.1 | 10.3 | 42.4 | 61.8 | 30.9 | 293.6 | 30.5 | 2.1 | 0.9 |
| | c) % Variation ( * ) | ~ | | -54.2 | -90.0 | -75.4 | -55.0 | -81.4 | -81.9 | -32.2 | -74.2 | -77.7 | -77.5 | -80.2 |
| May-24 | a) Observed value | 146691 | 7.5~7.9 | 58.8 | 2.8 | 0.28 | 2.03 | 5.7 | 11.6 | 5.5 | 66.3 | 8.7 | 0.35 | 0.23 |
| | b) Qty. Kg/Day | ~ | ~ | 278.0 | 13.0 | 1.3 | 9.6 | 27.2 | 55.0 | 26.1 | 313.5 | 40.9 | 1.6 | 1.1 |
| | c) % Variation ( * ) | ~ | ~ | -41.3 | -90.0 | -71.8 | -59.4 | -88.5 | -84.5 | -44.8 | -73.5 | -71.2 | -82.7 | -77.3 |
| Jun-24 | a) Observed value | 122735 | 7.6~8.0 | 65.8 | 3.0 | 0.24 | 2.00 | 7.3 | 12.6 | 5.3 | 72.8 | 8.9 | 0.51 | 0.32 |
| | b) Qty. Kg/Day | ~ | ~ | 269.0 | 12.2 | 1.0 | 8.2 | 29.7 | 51.4 | 21.5 | 297.6 | 36.4 | 2.1 | 1.3 |
| | c) % Variation ( * ) | ~ | ~ | -34.3 | -90.0 | -75.8 | -60.0 | -85.5 | -83.2 | -47.5 | -70.9 | -70.3 | -74.6 | -68.5 |
| Jul-24 | a) Observed value | 161062 | 7.6~8.0 | 51.6 | 3.2 | 0.27 | 2.15 | 8.5 | 14.6 | 6.4 | 62.0 | 8.8 | 0.58 | 0.22 |
| | b) Qty. Kg/Day | ~ | ~ | 268.1 | 16.6 | 1.4 | 11.1 | 44.2 | 75.9 | 33.0 | 322.1 | 45.7 | 3.0 | 1.2 |
| | c) % Variation ( * ) | ~ | ~ | -48.4 | -90.0 | -73.0 | -57.1 | -83.0 | -80.5 | -36.4 | -75.2 | -70.7 | -71.2 | -77.8 |
| Aug-24 | a) Observed value | 163089 | 7.6~7.9 | 54.0 | 3.1 | 0.29 | 2.30 | 6.9 | 13.5 | 6.3 | 65.0 | 8.7 | 0.42 | 0.26 |
| | b) Qty. Kg/Day | ~ | ~ | 284.1 | 16.0 | 1.5 | 12.1 | 36.1 | 70.8 | 33.3 | 342.0 | 45.9 | 2.2 | 1.4 |
| | c) % Variation ( * ) | ~ | ~ | -46.0 | -90.0 | -71.5 | -54.1 | -86.3 | -82.1 | -36.8 | -74.0 | -70.9 | -79.1 | -73.8 |
| Sep-24 | a) Observed value | 127544 | 7.5~8.2 | 45.4 | 3.2 | 0.24 | 2.11 | 7.2 | 13.9 | 6.7 | 56.2 | 9.0 | 0.47 | 0.29 |
| | b) Qty. Kg/Day | ~ | ~ | 193.0 | 13.4 | 1.0 | 9.0 | 30.7 | 59.0 | 28.6 | 238.9 | 38.2 | 2.0 | 1.2 |
| | c) % Variation ( * ) | ~ | ~ | -54.6 | -90.0 | -75.6 | -57.8 | -85.6 | -81.5 | -32.8 | -77.5 | -70.1 | -76.4 | -71.0 |
| Oct-24 | a) Observed value | 115982 | 7.7~8.0 | 21.8 | 2.9 | 0.18 | 2.22 | 4.1 | 9.9 | 5.8 | 49.5 | 8.6 | 0.31 | 0.20 |
| | b) Qty. Kg/Day | ~ | ~ | 81.6 | 10.8 | 0.7 | 8.3 | 15.2 | 37.0 | 21.6 | 185.2 | 32.2 | 1.2 | 0.7 |
| | c) % Variation ( * ) | ~ | ~ | -78.2 | -90.0 | -82.0 | -55.6 | -91.9 | -86.8 | -42.3 | -80.2 | -71.3 | -84.6 | -80.3 |
| Nov-24 | a) Observed value | 126215 | 7.4~8.3 | 30.6 | 2.3 | 0.18 | 2.32 | 3.2 | 12.0 | 5.1 | 35.8 | 7.2 | 0.23 | 0.16 |
| | b) Qty. Kg/Day | ~ | ~ | 128.8 | 9.8 | 0.7 | 9.8 | 13.4 | 50.5 | 21.6 | 150.6 | 30.3 | 1.0 | 0.7 |
| | c) % Variation ( * ) | ~ | ~ | -69.4 | -90.0 | -82.3 | -53.6 | -93.6 | -84.0 | -48.8 | -85.7 | -76.0 | -88.5 | -84.0 |
| Dec-24 | a) Observed value | 131254 | 7.5~8.2 | 31.7 | 2.3 | 0.15 | 2.28 | 6.0 | 12.3 | 4.1 | 37.0 | 5.8 | 0.48 | 0.14 |
| | b) Qty. Kg/Day | ~ | ~ | 134.2 | 9.8 | 0.6 | 9.7 | 25.3 | 52.2 | 17.2 | 156.6 | 24.7 | 2.0 | 0.6 |
| | c) % Variation ( * ) | ~ | ~ | -68.3 | -90.0 | -84.8 | -54.4 | -88.0 | -83.5 | -59.4 | -85.2 | -80.5 | -76.1 | -86.0 |
| Jan-25 | a) Observed value | 128936 | 7.4~7.9 | 12.9 | 2.2 | 0.13 | 2.15 | 6.7 | 12.3 | 4.3 | 29.8 | 5.4 | 0.48 | 0.15 |
| | b) Qty. Kg/Day | ~ | ~ | 53.6 | 9.2 | 0.5 | 9.0 | 28.0 | 51.1 | 18.0 | 123.8 | 22.5 | 2.0 | 0.6 |
| | c) % Variation ( * ) | ~ | ~ | -87.1 | -90.0 | -87.0 | -57.0 | -86.6 | -83.6 | -56.8 | -88.1 | -82.0 | -76.1 | -84.8 |
| Feb-25 | a) Observed value | 120127 | 7.5~7.8 | 14.0 | 2.5 | 0.18 | 2.50 | 6.1 | 13.4 | 4.8 | 32.7 | 5.5 | 0.39 | 0.19 |
| | b) Qty. Kg/Day | ~ | ~ | 60.1 | 10.5 | 0.8 | 10.7 | 26.2 | 57.3 | 20.5 | 140.4 | 23.7 | 1.7 | 0.8 |
| | c) % Variation ( * ) | ~ | ~ | -86.0 | -90.0 | -82.5 | -50.0 | -87.8 | -82.2 | -52.3 | -86.9 | -81.6 | -80.4 | -81.3 |
| Mar-25 | a) Observed value | 130430 | 7.4~7.9 | 12.5 | 2.3 | 0.20 | 2.36 | 2.7 | 13.7 | 4.8 | 34.6 | 5.2 | 0.20 | 0.18 |
| | b) Qty. Kg/Day | ~ | ~ | 52.4 | 9.7 | 0.8 | 9.9 | 11.5 | 57.6 | 20.3 | 145.5 | 22.0 | 0.8 | 0.8 |
| | c) % Variation ( * ) | ~ | ~ | -87.5 | -90.0 | -80.2 | -52.9 | -94.5 | -81.7 | -51.6 | -86.2 | -82.5 | -90.2 | -81.8 |
| AVG. | a) Observed value | 134240 | 7.4~8.3 | 37.1 | 2.7 | 0.22 | 2.22 | 6.1 | 12.8 | 5.5 | 50.5 | 7.4 | 0.40 | 0.21 |
| | b) Qty. Kg/Day | ~ | ~ | 167.6 | 11.9 | 1.0 | 9.8 | 27.5 | 56.6 | 24.4 | 225.8 | 32.8 | 1.8 | 0.9 |
| | c) % Variation ( * ) | ~ | ~ | -62.9 | -90.0 | -78.5 | -55.6 | -87.7 | -83.0 | -45.1 | -79.8 | -75.4 | -79.8 | -78.9 |

**NOTE :-** **(a)** The parameters are analysed as per the Consent to Operate vide Letter No. F(Tech)/Kota(Digod)/6398(1)/2021-2022/5824-5826, Order No. 2021-2022/PDF/4053 dated Jan 21 2022 F(HSW)/Kota(Digod)/11(1)/2025-2026/229-231, Hazardous Waste Authorization No.RPCB/HWM/2025-2026/PDF/HSW/1 dated 30/04/2025

**(b)** Unit mg/l except pH, NT- Not Traceble, Heavy metals like Arsenic, Hexavalent Chromium, Total Chromium,Cyanide,Copper and Vanadium Below Detection Limit (BDL). Final treated effluent stored in open Holding Pond

**(c)** Phase-III plant is Zero Liquid Discharge plant. Ro permeate is being used in cooling water make-up

**(d)*** Negative values indicate better performance parameters over standards.

## CHAMBAL FERTILIZER AND CHEMICALS LIMITED

## TABLE- 1 B DOMESTIC TREATED EFFLUENT ANALYSIS

| Months | Parameters | Eff. Qty. | pH Range | TSS | FAC | O & G | $NO_3$ as N | BOD (3days at 27°C) |
|---|---|---|---|---|---|---|---|---|
| | | (M3) | | mg/l | mg/l | mg/l | mg/l | mg/l |
| | | LIMIT | 5.5-9.0 | 100 | 0.5 mg/l | 10 mg/l | 10 mg/l | 30 mg/l |
| Apr-24 | a) Observed value | 27719 | 7.1~7.8 | 36.5 | 0.35 | 1.9 | 2.8 | 3.4 |
| | b) Qty. Kg/Day | ~ | ~ | 33.7 | 0.33 | 1.8 | 2.6 | 3.2 |
| | c) % Variation ( * ) | ~ | ~ | -63.5 | -29.3 | -80.9 | -71.7 | -88.6 |
| May-24 | a) Observed value | 28963 | 7.0~7.8 | 36.8 | 0.34 | 2.1 | 3.3 | 4.6 |
| | b) Qty. Kg/Day | ~ | ~ | 34.3 | 0.32 | 1.9 | 3.0 | 4.3 |
| | c) % Variation ( * ) | ~ | ~ | -63.3 | -32.3 | -79.3 | -67.4 | -84.8 |
| Jun-24 | a) Observed value | 22574 | 7.1~7.9 | 32.7 | 0.31 | 2.5 | 4.1 | 4.4 |
| | b) Qty. Kg/Day | ~ | ~ | 24.6 | 0.23 | 1.9 | 3.1 | 3.3 |
| | c) % Variation ( * ) | ~ | ~ | -67.3 | -38.0 | -74.7 | -59.4 | -85.3 |
| Jul-24 | a) Observed value | 28234 | 7.1~7.7 | 10.3 | 0.36 | 2.8 | 4.3 | 4.9 |
| | b) Qty. Kg/Day | ~ | ~ | 9.4 | 0.33 | 2.6 | 3.9 | 4.5 |
| | c) % Variation ( * ) | ~ | ~ | -89.7 | -28.4 | -72.0 | -57.0 | -83.6 |
| Aug-24 | a) Observed value | 29975 | 7.1~7.8 | 8.9 | 0.43 | 3.0 | 3.7 | 4.5 |
| | b) Qty. Kg/Day | ~ | ~ | 8.6 | 0.41 | 2.9 | 3.6 | 4.3 |
| | c) % Variation ( * ) | ~ | ~ | -91.1 | -14.8 | -70.0 | -62.8 | -85.1 |
| Sep-24 | a) Observed value | 29750 | 7.1~7.9 | 9.1 | 0.36 | 2.8 | 3.5 | 4.9 |
| | b) Qty. Kg/Day | ~ | ~ | 9.0 | 0.36 | 2.7 | 3.5 | 4.8 |
| | c) % Variation ( * ) | ~ | ~ | -90.9 | -27.3 | -72.3 | -64.8 | -83.8 |
| Oct-24 | a) Observed value | 31149 | 7.0~8.0 | 8.4 | 0.40 | 2.5 | 3.2 | 3.8 |
| | b) Qty. Kg/Day | ~ | ~ | 8.5 | 0.40 | 2.5 | 3.2 | 3.8 |
| | c) % Variation ( * ) | ~ | ~ | -91.6 | -20.0 | -75.2 | -67.8 | -87.3 |
| Nov-24 | a) Observed value | 29556 | 7.2~7.6 | 9.7 | 0.43 | 2.3 | 3.5 | 2.7 |
| | b) Qty. Kg/Day | ~ | ~ | 9.6 | 0.42 | 2.3 | 3.5 | 2.7 |
| | c) % Variation ( * ) | ~ | ~ | -90.3 | -14.7 | -76.9 | -64.6 | -90.9 |
| Dec-24 | a) Observed value | 30372 | 7.0~7.9 | 8.8 | 0.45 | 1.8 | 2.8 | 2.5 |
| | b) Qty. Kg/Day | ~ | ~ | 8.6 | 0.45 | 1.8 | 2.8 | 2.5 |
| | c) % Variation ( * ) | ~ | ~ | -91.2 | -9.0 | -81.5 | -71.9 | -91.5 |
| Jan-25 | a) Observed value | 30705 | 7.0~7.9 | 7.5 | 0.44 | 1.9 | 3.0 | 2.7 |
| | b) Qty. Kg/Day | ~ | ~ | 7.4 | 0.44 | 1.8 | 2.9 | 2.6 |
| | c) % Variation ( * ) | ~ | ~ | -92.5 | -11.6 | -81.5 | -70.5 | -91.1 |
| Feb-25 | a) Observed value | 27602 | 7.2~7.8 | 8.5 | 0.43 | 1.9 | 2.8 | 2.2 |
| | b) Qty. Kg/Day | ~ | ~ | 8.4 | 0.42 | 1.8 | 2.8 | 2.2 |
| | c) % Variation ( * ) | ~ | ~ | -91.5 | -15.0 | -81.4 | -71.8 | -92.7 |
| Mar-25 | a) Observed value | 30555 | 7.1~7.9 | 9.9 | 0.41 | 1.8 | 2.4 | 2.5 |
| | b) Qty. Kg/Day | ~ | ~ | 9.8 | 0.40 | 1.8 | 2.4 | 2.5 |
| | c) % Variation ( * ) | ~ | ~ | -90.1 | -18.7 | -81.9 | -76.1 | -91.6 |
| AVG. | a) Observed value | 28930 | 7.0~8.0 | 15.6 | 0.39 | 2.3 | 3.3 | 3.6 |
| | b) Qty. Kg/Day | ~ | ~ | 14.3 | 0.37 | 2.2 | 3.1 | 3.4 |
| | c) % Variation ( * ) | ~ | ~ | -84.4 | -21.6 | -77.3 | -67.1 | -88.0 |

**NOTE :-** (a) The parameters are analysed as per the Consent to Operate vide Letter No. F(Tech)/Kota(Digod)/6398(1)/2021-2022/5824-5826, Order No. 2021-2022/PDF/4053 dated Jan 21 2022 F(HSW)/Kota(Digod)/11(1)/2025-2026/229-231, Hazardous Waste Authorization No.RPCB/HWM/2025-2026/PDF/HSW/1 dated 30/04/2025

(b)* Negative values indicate better performance parameters over standards.

(c) Unit mg/l except pH, Bioassay test complied.

(d) Colour & Odour: Colourless & Agreeable

## CHAMBAL FERTILISER AND CHEMICALS LIMITED

TABLE: 2A STACK MONITORING [UREA PLANT]

| Months | POLLUTANTS | | UREA PRILLING TOWER-I | | UREA PRILLING TOWER-II | | UREA PRILLING TOWER-III | |
|---|---|---|---|---|---|---|---|---|
| | | | UREA DUST | AMMONIA | UREA DUST | AMMONIA | UREA DUST | AMMONIA |
| | LIMIT | | 50 mg/ NM3 | 175 mg/NM3 | 50 mg/ NM3 | 175 mg/NM3 | 50 mg/ NM3 | 175 mg/NM3 |
| Apr-24 | a) Observed value | (mg/NM3) | 41.4 | 68.7 | 43.2 | 68.5 | 41.2 | 71.6 |
| | b) Qty. | (Kg/Day) | 996.5 | 1651.1 | 1166.4 | 1849.5 | 1530.8 | 2661.7 |
| | c) Variation * | (%) | -17.1 | -60.8 | -13.6 | -60.9 | -17.7 | -59.1 |
| May-24 | a) Observed value | (mg/NM3) | 44.2 | 73.7 | 44.2 | 73.5 | 43.8 | 77.1 |
| | b) Qty. | (Kg/Day) | 1062.9 | 1772.3 | 1193.9 | 1985.6 | 1630.1 | 2866.6 |
| | c) Variation * | (%) | -11.6 | -57.9 | -11.6 | -58.0 | -12.4 | -56.0 |
| Jun-24 | a) Observed value | (mg/NM3) | 42.9 | 74.8 | 42.9 | 77.2 | 43.2 | 81.6 |
| | b) Qty. | (Kg/Day) | 1031.7 | 1799.4 | 1158.3 | 2083.1 | 1606.1 | 3036.5 |
| | c) Variation * | (%) | -14.2 | -57.2 | -14.2 | -55.9 | -13.7 | -53.4 |
| Jul-24 | a) Observed value | (mg/NM3) | 43.6 | 75.3 | 44.0 | 77.5 | 42.0 | 79.9 |
| | b) Qty. | (Kg/Day) | 1048.5 | 1810.3 | 1188.7 | 2091.2 | 1561.5 | 2971.4 |
| | c) Variation * | (%) | -12.8 | -57.0 | -12.0 | -55.7 | -16.1 | -54.4 |
| Aug-24 | a) Observed value | (mg/NM3) | 42.3 | 73.8 | 42.1 | 76.6 | 42.9 | 80.6 |
| | b) Qty. | (Kg/Day) | 1017.8 | 1774.7 | 1135.6 | 2067.1 | 1595.1 | 2997.6 |
| | c) Variation * | (%) | -15.4 | -57.8 | -15.9 | -56.3 | -14.2 | -54.0 |
| Sep-24 | a) Observed value | (mg/NM3) | 41.8 | 77.9 | 41.8 | 80.0 | 42.7 | 84.5 |
| | b) Qty. | (Kg/Day) | 1005.2 | 1872.9 | 1127.3 | 2160.7 | 1589.4 | 3144.3 |
| | c) Variation * | (%) | -16.4 | -55.5 | -16.5 | -54.3 | -14.6 | -51.7 |
| Oct-24 | a) Observed value | (mg/NM3) | 43.6 | 76.4 | 42.2 | 74.1 | 42.2 | 78.1 |
| | b) Qty. | (Kg/Day) | 1047.3 | 1837.3 | 1138.7 | 2001.4 | 1569.1 | 2906.1 |
| | c) Variation * | (%) | -12.9 | -56.3 | -15.7 | -57.6 | -15.6 | -55.4 |
| Nov-24 | a) Observed value | (mg/NM3) | 42.3 | 67.0 | 42.1 | 65.9 | 42.6 | 66.5 |
| | b) Qty. | (Kg/Day) | 1016.6 | 1611.8 | 1137.2 | 1778.2 | 1584.7 | 2473.8 |
| | c) Variation * | (%) | -15.5 | -61.7 | -15.8 | -62.4 | -14.8 | -62.0 |
| Dec-24 | a) Observed value | (mg/NM3) | 41.4 | 65.1 | 40.6 | 64.8 | 41.6 | 66.3 |
| | b) Qty. | (Kg/Day) | 996.7 | 1564.6 | 1096.2 | 1749.6 | 1547.5 | 2467.3 |
| | c) Variation * | (%) | -17.1 | -62.8 | -18.8 | -63.0 | -16.8 | -62.1 |
| Jan-25 | a) Observed value | (mg/NM3) | 42.6 | 72.3 | 42.3 | 67.3 | 41.9 | 70.1 |
| | b) Qty. | (Kg/Day) | 1023.2 | 1739.3 | 1141.0 | 1818.2 | 1560.2 | 2609.2 |
| | c) Variation * | (%) | -14.9 | -58.7 | -15.5 | -61.5 | -16.1 | -59.9 |
| Feb-25 | a) Observed value | (mg/NM3) | 43.9 | 68.5 | 42.4 | 62.7 | 42.6 | 65.7 |
| | b) Qty. | (Kg/Day) | 1055.1 | 1647.3 | 1144.8 | 1692.2 | 1583.5 | 2444.0 |
| | c) Variation * | (%) | -12.3 | -60.9 | -15.2 | -64.2 | -14.9 | -62.5 |
| Mar-25 | a) Observed value | (mg/NM3) | 42.8 | 70.8 | 43.0 | 68.0 | NOP | NOP |
| | b) Qty. | (Kg/Day) | 1030.1 | 1702.6 | 1160.3 | 1835.3 | | |
| | c) Variation * | (%) | -14.3 | -59.5 | -14.1 | -61.2 | | |
| AVG. | a) Observed value | (mg/NM3) | 42.7 | 72.0 | 42.6 | 71.3 | 42.4 | 74.7 |
| | b) Qty. | (Kg/Day) | 1027.6 | 1732.0 | 1149.0 | 1926.0 | 1578.0 | 2779.9 |
| | c) Variation * | (%) | -14.5 | -58.8 | -14.9 | -59.2 | -15.2 | -57.3 |

NOTE : (a) NOP denotes for 'Not In Operation'.
(b) *Negative values indicate better performance results over standards.

## CHAMBAL FERTILISER AND CHEMICALS LIMITED

| TABLE: 2B | STACK MONITORING [STEAM & POWER GENERATION PLANT] | | | | | | |
|---|---|---|---|---|---|---|---|
| MONTHS | POLLUTANTS | | NOx | | | | |
| | | | AB-I | AB-II | AB-III | HRSG-I | HRSG-II | HRSG-III |
| | LIMIT | | 50 PPM | 50 PPM | 50 PPM | 100 PPM | 100 PPM | 100 PPM |
| Apr-24 | a) Observed value | (ppm) | 42.3 | 42.0 | 41.0 | 64.0 | NOP | 44.8 |
| | b) Qty. | (Kg/Day) | 290.9 | 288.8 | 259.7 | 1026.0 | | 743.5 |
| | c) Variation * | (%) | -15.4 | -16.0 | -18.0 | -36.1 | | -55.2 |
| May-24 | a) Observed value | (ppm) | 42.1 | 43.2 | 43.2 | 60.3 | 44.2 | 44.9 |
| | b) Qty. | (Kg/Day) | 289.1 | 297.3 | 273.9 | 967.8 | 709.1 | 744.4 |
| | c) Variation * | (%) | -15.9 | -13.5 | -13.5 | -39.7 | -55.8 | -55.2 |
| Jun-24 | a) Observed value | (ppm) | 42.2 | NOP | 41.9 | 62.7 | NOP | 43.7 |
| | b) Qty. | (Kg/Day) | 290.0 | | 265.3 | 1005.6 | | 724.9 |
| | c) Variation * | (%) | -15.7 | | -16.3 | -37.3 | | -56.3 |
| Jul-24 | a) Observed value | (ppm) | 40.5 | 42.2 | 42.0 | 63.0 | NOP | 47.4 |
| | b) Qty. | (Kg/Day) | 278.1 | 290.2 | 265.8 | 1010.1 | | 787.3 |
| | c) Variation * | (%) | -19.1 | -15.6 | -16.1 | -37.0 | | -52.6 |
| Aug-24 | a) Observed value | (ppm) | NOP | 41.1 | 42.0 | 60.0 | NOP | 47.8 |
| | b) Qty. | (Kg/Day) | | 282.3 | 266.2 | 962.2 | | 792.9 |
| | c) Variation * | (%) | | -17.9 | -16.0 | -40.0 | | -52.2 |
| Sep-24 | a) Observed value | (ppm) | NOP | 42.9 | 43.5 | 64.6 | NOP | 53.6 |
| | b) Qty. | (Kg/Day) | | 294.6 | 275.7 | 1036.4 | | 889.6 |
| | c) Variation * | (%) | | -14.3 | -13.0 | -35.4 | | -46.4 |
| Oct-24 | a) Observed value | (ppm) | NOP | 25.4 | 42.6 | 73.8 | NOP | 81.0 |
| | b) Qty. | (Kg/Day) | | 174.9 | 270.0 | 1183.7 | | 1344.3 |
| | c) Variation * | (%) | | -49.1 | -14.8 | -26.2 | | -19.0 |
| Nov-24 | a) Observed value | (ppm) | NOP | 27.2 | 42.1 | 78.7 | 82.0 | 77.8 |
| | b) Qty. | (Kg/Day) | | 187.2 | 266.9 | 1262.7 | 1315.6 | 1291.2 |
| | c) Variation * | (%) | | -45.6 | -15.8 | -21.3 | -18.0 | -22.2 |
| Dec-24 | a) Observed value | (ppm) | NOP | 31.8 | 43.4 | NOP | 65.1 | 88.1 |
| | b) Qty. | (Kg/Day) | | 218.3 | 274.8 | | 1044.9 | 1461.3 |
| | c) Variation * | (%) | | -36.5 | -13.3 | | -34.9 | -12.0 |
| Jan-25 | a) Observed value | (ppm) | NOP | 29.2 | 43.8 | NOP | 57.9 | 84.3 |
| | b) Qty. | (Kg/Day) | | 200.5 | 277.7 | | 928.6 | 1399.1 |
| | c) Variation * | (%) | | -41.7 | -12.3 | | -42.1 | -15.7 |
| Feb-25 | a) Observed value | (ppm) | 39.7 | 35.0 | 42.4 | NOP | 73.1 | 72.0 |
| | b) Qty. | (Kg/Day) | 273.2 | 240.4 | 268.4 | | 1172.8 | 1194.1 |
| | c) Variation * | (%) | -20.5 | -30.1 | -15.3 | | -26.9 | -28.1 |
| Mar-25 | a) Observed value | (ppm) | 39.4 | 39.5 | 42.6 | NOP | 77.0 | NOP |
| | b) Qty. | (Kg/Day) | 270.9 | 271.4 | 269.7 | | 1234.6 | |
| | c) Variation * | (%) | -21.2 | -21.1 | -14.9 | | -23.1 | |
| AVG. | a) Observed value | (ppm) | 41.0 | 36.3 | 42.5 | 65.9 | 66.5 | 62.3 |
| | b) Qty. | (Kg/Day) | 282.0 | 249.6 | 269.5 | 1056.8 | 1067.6 | 1033.9 |
| | c) Variation * | (%) | -18.0 | -27.4 | -14.9 | -34.1 | -33.5 | -37.7 |

NOTE : NOP denotes for 'Not In Operation'.
*Negative values indicate better performance results over standards.

## CHAMBAL FERTILISER AND CHEMICALS LIMITED

| TABLE: 2C | STACK MONITORING [PRIMARY REFORMER OF AMMONIA PLANTS] | | | | |
|---|---|---|---|---|---|
| MONTHS | POLLUTANTS | | NOx | | |
| | | | PRIMARY REFORMER-I | PRIMARY REFORMER-II | PRIMARY REFORMER-III |
| | LIMIT | | 400 MG/NM3 | 400 MG/NM3 | 400 MG/NM3 |
| Apr-24 | a) Observed value | (ppm) | 111.6 | 83.1 | 78.0 |
| | b) Observed value | (MG/NM3) | 213.2 | 158.8 | 148.9 |
| | c) Qty. | (Kg/Day) | 1352.0 | 1027.0 | 1555.1 |
| | d) Variation * | (%) | -46.7 | -60.3 | -62.8 |
| May-24 | a) Observed value | (ppm) | 105.5 | 85.4 | 83.7 |
| | b) Observed value | (MG/NM3) | 201.4 | 163.1 | 159.9 |
| | c) Qty. | (Kg/Day) | 1277.7 | 1055.0 | 1669.8 |
| | d) Variation * | (%) | -49.6 | -59.2 | -60.0 |
| Jun-24 | a) Observed value | (ppm) | 103.5 | 86.9 | 84.0 |
| | b) Observed value | (MG/NM3) | 197.6 | 166.0 | 160.4 |
| | c) Qty. | (Kg/Day) | 1253.6 | 1073.5 | 1675.8 |
| | d) Variation * | (%) | -50.6 | -58.5 | -59.9 |
| Jul-24 | a) Observed value | (ppm) | 89.8 | 92.1 | 105.7 |
| | b) Observed value | (MG/NM3) | 171.5 | 175.9 | 201.9 |
| | c) Qty. | (Kg/Day) | 1087.9 | 1137.5 | 2109.1 |
| | d) Variation * | (%) | -57.1 | -56.0 | -49.5 |
| Aug-24 | a) Observed value | (ppm) | 95.3 | 92.1 | 105.9 |
| | b) Observed value | (MG/NM3) | 182.0 | 176.0 | 202.2 |
| | c) Qty. | (Kg/Day) | 1154.6 | 1138.1 | 2112.2 |
| | d) Variation * | (%) | -54.5 | -56.0 | -49.4 |
| Sep-24 | a) Observed value | (ppm) | 92.8 | 93.0 | 107.9 |
| | b) Observed value | (MG/NM3) | 177.2 | 177.6 | 206.0 |
| | c) Qty. | (Kg/Day) | 1123.7 | 1148.9 | 2152.1 |
| | d) Variation * | (%) | -55.7 | -55.6 | -48.5 |
| Oct-24 | a) Observed value | (ppm) | 91.4 | 92.3 | 102.9 |
| | b) Observed value | (MG/NM3) | 174.7 | 176.4 | 196.6 |
| | c) Qty. | (Kg/Day) | 1107.8 | 1140.7 | 2053.7 |
| | d) Variation * | (%) | -56.3 | -55.9 | -50.8 |
| Nov-24 | a) Observed value | (ppm) | 88.8 | 93.5 | 105.8 |
| | b) Observed value | (MG/NM3) | 169.5 | 178.6 | 202.0 |
| | c) Qty. | (Kg/Day) | 1075.2 | 1155.1 | 2109.7 |
| | d) Variation * | (%) | -57.6 | -55.4 | -49.5 |
| Dec-24 | a) Observed value | (ppm) | 90.8 | 93.3 | 109.0 |
| | b) Observed value | (MG/NM3) | 173.3 | 178.2 | 208.1 |
| | c) Qty. | (Kg/Day) | 1099.4 | 1152.3 | 2174.1 |
| | d) Variation * | (%) | -56.7 | -55.5 | -48.0 |
| Jan-25 | a) Observed value | (ppm) | 120.1 | 62.9 | 58.0 |
| | b) Observed value | (MG/NM3) | 229.5 | 120.1 | 110.9 |
| | c) Qty. | (Kg/Day) | 1455.5 | 776.8 | 1157.9 |
| | d) Variation * | (%) | -42.6 | -70.0 | -72.3 |
| Feb-25 | a) Observed value | (ppm) | 63.2 | 67.7 | 67.1 |
| | b) Observed value | (MG/NM3) | 120.8 | 129.4 | 128.2 |
| | c) Qty. | (Kg/Day) | 766.0 | 836.8 | 1339.3 |
| | d) Variation * | (%) | -69.8 | -67.7 | -67.9 |
| Mar-25 | a) Observed value | (ppm) | 77.3 | 70.4 | NOP |
| | b) Observed value | (MG/NM3) | 147.5 | 134.5 | |
| | c) Qty. | (Kg/Day) | 935.9 | 869.7 | |
| | d) Variation * | (%) | -63.1 | -66.4 | |
| AVG. | a) Observed value | (ppm) | 94.2 | 84.4 | 91.6 |
| | b) Observed value | (MG/NM3) | 179.8 | 161.2 | 175.0 |
| | c) Qty. | (Kg/Day) | 1140.8 | 1042.6 | 1828.1 |
| | d) Variation * | (%) | -55.0 | -59.7 | -56.2 |

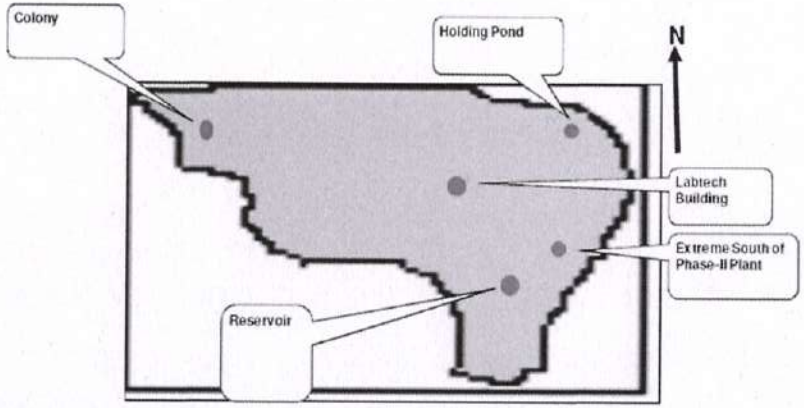
NOTE : NOP denotes for 'Not In Operation'.
*Negative values indicate better performance results over standards.

## CHAMBAL FERTILIZER AND CHEMICALS LIMITED

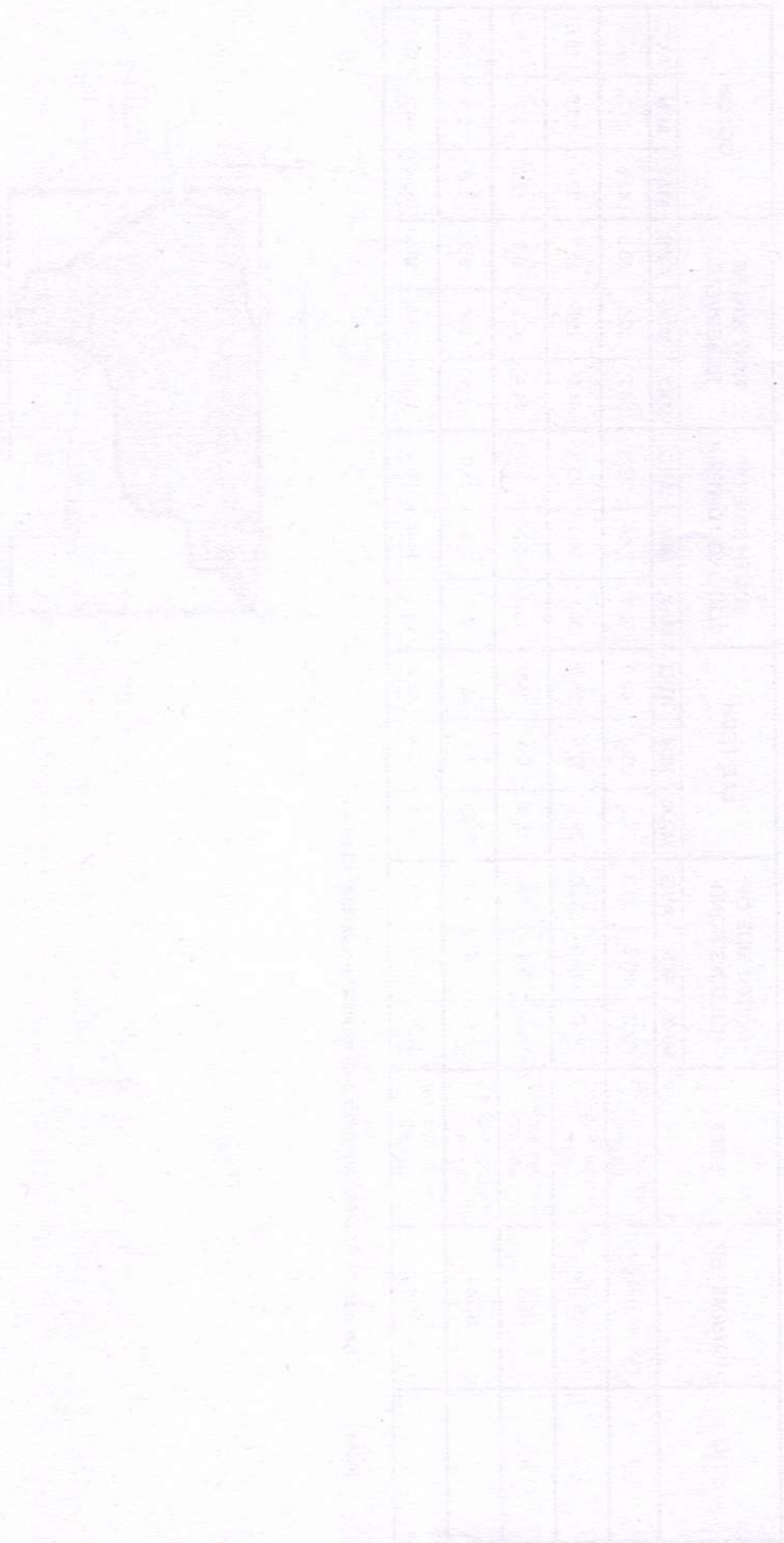
### TABLE: 3 AMBIENT AIR MONITORING FOR THE YEAR 2024-25

| S.NO | PARAMETER | LIMIT | NORTH SIDE OF HOLDING POND | | | LAB TECH | | | SOUTH SIDE OF COOLING TOWER-II | | | RAW WATER RESERVOIR | | | COLONY | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | MAX. | MIN. | AVG. | MAX. | MIN. | AVG. | MAX. | MIN. | AVG. | MAX. | MIN. | AVG. | MAX. | MIN. | AVG. |
| 1 | PM <10.0 Micron] | Annual. Avg. 60 µg / m3 | 52.2 | 28.6 | 39.3 | 57.3 | 29.8 | 42.0 | 53.2 | 22.5 | 38.8 | 58.2 | 30.5 | 38.5 | 42.8 | 17.3 | 26.9 |
| 2 | PM <2.5 Micron] | Annual. Avg. 40 µg / m3 | 36.8 | 14.5 | 23.6 | 39.5 | 17.6 | 25.2 | 39.8 | 14.3 | 23.4 | 44.9 | 15.6 | 23.7 | 32.6 | 12.5 | 18.6 |
| 3 | NOX | Annual. Avg. 40 µg / m3 | 14.3 | 6.1 | 9.6 | 15.6 | 5.4 | 9.1 | 13.3 | 5.2 | 8.5 | 14.4 | 6.1 | 9.0 | 12.0 | 3.7 | 7.3 |
| 4 | SOX | Annual. Avg. 50 µg / m3 | 8.8 | 3.4 | 5.4 | 7.2 | 3.1 | 5.1 | 7.2 | 2.5 | 5.0 | 7.8 | 3.2 | 5.2 | 5.8 | 2.8 | 4.2 |
| 5 | NH3 | Annual. Avg. 100 µg / m3 | 52.6 | 21.6 | 37.0 | 55.4 | 27.4 | 42.2 | 54.2 | 18.0 | 36.1 | 49.7 | 20.1 | 35.5 | 33.4 | 14.3 | 23.6 |

**Note :** Five nos. of AAQMS are functional inside the premises of CFCL.




**AMBIENT AIR MONITORING LOCATIONS AT CFCL [ NOT TO SCALE]**



## CHAMBAL FERTILIZER AND CHEMICALS LIMITED

**TABLE: 4** **GENERATION OF HAZARDOUS WASTE**

| HAZARDOUS WASTE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Financial Year 2023-2024 (Ammonia & Urea Plant Complex) | | | | | Financial Year 2024-2025 (Ammonia & Urea Plant Complex) | | | | |
| USED OIL | SPENT CATALYST | DISCARDED CONTAINER | CHEMICAL SLUDGE FROM WASTE WATER TREATMENT | CONTAMINATED COTTON RAGS OR OTHER CLEANING MATERIALS | USED OIL | SPENT CATALYST | DISCARDED CONTAINER | CHEMICAL SLUDGE FROM WASTE WATER TREATMENT | CONTAMINATED COTTON RAGS OR OTHER CLEANING MATERIALS |
| MT | MT | NOs | MT | MT | MT | MT | NOs | MT | MT |
| 26.928 | 75.00 | 102.0 | 2768.800 | 3.500 | 54.252 | 97.18 | 130.0 | 2872.500 | 2.600 |

-Combined Hazardous Waste Authorization No. RPCB/HWM/2020-2021/PDF/HSW/2, dated 07.12.2020 (for Ammonia & Urea Complex), is valid up to 31.03.2025.
-Authorization No. RPCB/HWM/2021-2022/PDF/HSW/6, dated 08.07.2021 (for chemical sludge from wastewater treatment), is valid up to 31.03.2025.
-Authorization No. RPCB/HWM/2023-2024/PDF/HSW/9, dated 19.07.2023 (for the transportation of hazardous wastes), is valid up to 30.06.2028.

**NOTE:-**

**[A] USED OIL**

**1.** The opening balance of used oil was NIL for the financial year 2024–25.

**2.** A total of 54.252 MT of used oil was generated from the CFCL Ammonia & Urea Complex during the financial year 2024–25.

**3.** A total of 44.550 MT of used oil was disposed of for reprocessing through CPCB/SPCB authorized parties during the financial year 2024–25.

**4.** The closing balance of used oil was 9.702 MT for the financial year 2024–25.

**5.** Used oil generated from various machines and recovered from the oil separator unit at the ETP is stored in drums. The used oil contains traces of moisture and sediments.

**[B] SPENT CATALYST**

**1.** The opening balance of spent catalyst was 25.000 MT for the financial year 2024–25.

**2.** A total of 97.180 MT of spent catalyst was generated from the CFCL Ammonia & Urea Complex during the financial year 2024–25.

**3.** A total of 122.180 MT of spent catalyst was disposed of to CPCB/SPCB-authorized recyclers during the financial year 2024–25.

**4.** The closing balance of spent catalyst was NIL for the financial year 2024–25.

**[C] DISCARDED CONTAINERS**

**1.** The opening balance of Discarded Containers was NIL for the financial year 2024–25.

**2.** A total of 130 Discarded Containers were generated from the CFCL Ammonia & Urea Complex during the financial year 2024–25.

**3.** A total of 130 Discarded Containers were disposed of to Rajasthan Waste Management Project, CTDF, Udaipur during the financial year 2024–25.

**4.** The closing balance of Discarded Containers was NIL for the financial year 2024–25.

**[D] CHEMICAL SLUDGE FROM WASTE WATER TREATMENT**

**1.** The opening balance of Chemical Sludge from wastewater treatment was NIL for the financial year 2024–25.

**2.** A total of 2,872.500 MT of Chemical Sludge from wastewater treatment was generated from the CFCL Ammonia & Urea Complex during the financial year 2024–25.

**3.** A total of 1,595.020 MT of Chemical Sludge was sent for co-processing to M/s ACC Ltd., Lakheri Cement Works, P.O. – Lakheri, District Bundi, during the financial year 2024–25.

**4.** A total of 307.160 MT of Chemical Sludge was sent for co-processing to M/s J.K. Cement Ltd., Nimbahera, District Chittorgarh, during the financial year 2024–25.

**5.** A total of 391.240 MT of Chemical Sludge was sent for co-processing to M/s Shree Cement Limited, Beawar, District Ajmer, during the financial year 2024–25.

**6.** A total of 166.420 MT of Chemical Sludge was sent for co-processing to M/s Mangalam Cement Limited, Adityanagar, Morak, District Kota, during the financial year 2024–25.

**7.** A total of 412.660 MT of Chemical Sludge was disposed of to Rajasthan Waste Management Project, CTDF, Udaipur during the financial year 2024–25.

**8.** The closing balance of Chemical Sludge from wastewater treatment was NIL for the financial year 2024–25.

**9.** The Chemical Sludge primarily contains calcium, magnesium, phosphate, sulfate, chloride, and other similar constituents.

## [E] CONTAMINATED COTTON RAGS OR OTHER CLEANING MATERIALS

**1.** The opening balance of Contaminated Cotton Rags or other cleaning materials was NIL for the financial year 2024-25.

**2.** A total of 2.600 MT of Contaminated Cotton Rags or other cleaning materials was generated from the CFCL Ammonia & Urea Complex during the financial year 2024-25.

**3.** A total of 2.600 MT of Contaminated Cotton Rags or other cleaning materials was sent for incineration to Rajasthan Waste Management Project, CTDF, Udaipur, during the financial year 2024-25.

**4.** The closing balance of Contaminated Cotton Rags or other cleaning materials was NIL for the financial year 2024-25

**TABLE: 4** **GENERATION OF SOLID WASTE**

| SOLID WASTE | | | | | |
|---|---|---|---|---|---|
| During Financial Year 2023-2024 | | | During Financial Year 2024-2025 | | |
| USED RESIN (DM PLANT) | RAW WATER & CLARIFIER SLUDGE | STP SLUDGE | USED RESIN (DM PLANT) | RAW WATER & CLARIFIER SLUDGE | STP SLUDGE |
| MT | MT | MT | MT | MT | MT |
| 41.14 | 9.5 | 3.0 | 29.05 | 3.8 | 1.0 |

**NOTE:-**

**1.** The formation of sludge in the clarifiers was low due to the low turbidity of raw water. The accumulated sludge is utilized as manure along with STP sludge for horticultural purposes.

**2.** Sand filter backwash and clarifier blowdown are recycled back to the raw water reservoir under the water-saving scheme.

**3.** Raw water sludge is accumulated and utilized as manure along with STP sludge.

**4.** Used resin is stored in a concrete-floored pit and subsequently sent to cement plants for co-processing.

**5.** A total of 27.68 MT of used resin was sent to M/s ACC Cement Ltd., Lakheri, District Bundi, for co-processing during the financial year 2024-25