

Date:27.09.2024

EHS/APPCB/2024-099

To  
The Member Secretary,  
A.P. Pollution Control Board,  
D.No.33-26-14D/2, Near Sunrise Hospital,  
Pushpa Hotel Centre,  
Chalamalavari Street, Kasturibaipet,  
Vijayawada-520 010

RN541800070IN IVR:8278541800070  
RL MALKAPURAM S.O <530011>  
Counter No:1.27/09/2024.14:16  
To:THE MEMBER SE,APPCB VIJAYAWADA  
PIN:520010, Venkateswarapuram S.O  
From:EHS HOD COR.FORM 5 WHARF  
Wt:250gms,REG=17.0  
Amt:96.76,Tax:14.76,Amt.Paid:97.00(Cash)  
<Track on www.indiapost.gov.in>  
<Dial 18002666868> <Wear Masks. Stay Safe>

Sub: Submission of Environmental Statement in Form-V for the financial year 2023-24 as per the  
Environmental Protection Act -1986 reg.

Ref: 1. Consent Order No: APPCB/VSP/VSP/65/HO/CFO/2020 - 23/12/2020

Dear Sir,

We are enclosing herewith the Environment Statement for the financial year 2023-24 ending with  
31<sup>st</sup> March 2024 in prescribed Form-V with respect to Coromandel International Ltd. along with  
relevant annexures.

This is submitted as per the guidelines of Environment protection act -1986

Thanking you

Yours faithfully  
For Coromandel International Limited

  
M. Gnanasundaram  
VP & Head - Manufacturing

  
NAG

Encl: As above

Cc: 1. The Joint Chief Environmental Engineer, Zonal Office, APPCB, Visakhapatnam-18  
2. The Environmental Engineer, Regional Office, APPCB, Visakhapatnam-18



Date:27.09.2024

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To  
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VP & Head - Manufacturing

  
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Encl: As above

Cc: 1. The Joint Chief Environmental Engineer, Zonal Office, APPCB, Visakhapatnam-18  
2. The Environmental Engineer, Regional Office, APPCB, Visakhapatnam-18

**FORM – V**  
(See rule 14)

**Environmental Statement (Audit Report) 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. | Coromandel International Limited<br>(Sulphuric acid storage & handling facilities at Wharf Area), Post Box No. 1116, Sriharipuram, Malkapuram Post, Visakhapatnam-530 011<br>Occupier: Mr. Sankarasubramanian (Managing Director) |
| II  | Production Capacity   | 1.Storage and handling of Sulphuric Acid – 02 X 12500 MT – Total : 25000 MT<br>2.Unloading facilities from ship at Wharf area<br>3.Transfer pipelines from at Wharf area to the plant   |
| III | Year of Establishment   | 1967  |
| II) | Date of the last Environmental Audit Report submitted.                        | 28/09/2023  |

**PART – B**

**Water and Raw Material Consumption**

|    |  |   |  |
|----|--|---|--|
| I) | <b>Water consumption m<sup>3</sup>/d (average break-up) year 2023-24</b> |   |  |
|    | WATER : 02 KLD   |   |  |
|    |  | Water consumption per unit of products M <sup>3</sup> /MT |  |
|    | Name of products   | During the previous financial year                        | During the current financial year                      |
|    |  | NA  | NA   |
| II | <b>Raw material consumption</b>  |   |  |
|    | Name of raw materials  | Name of products  | Consumption of raw material per unit of output (MT/MT) |
|    |  |   | During the current financial year 2022-23              |
|    |  |   | During the current financial year 2023-24              |
|    | Ref: Annexure – 1  |   |  |

**PART – C**

**Pollution generated**

**(Parameters as specified in the consent issued)**

|    |                      |  |   |   |
|----|----------------------|--|---|---|
| I) | Pollutants           | Quantity of pollutants discharged (mass/day) | Concentrations of pollutants discharges (mass/Volume) | Percentages of variation from prescribed standards with reasons |
|    | (a) Water<br>(b) Air | Ref: Annexure – 2                            |   |   |

**PART – D**  
**Hazardous Wastes**  
**(As specified under hazardous wastes Management and Handling Rules, 1989 and amendment 2016)**

| Stream | Name of the Hazardous waste | Total Quantity                             |   |
|--------|-----------------------------|--|---|
|        |                             | During the previous financial year 2022-23 | During the current financial year 2023-24 |
| Nil    |                             |  |   |

**PART –E**  
**Solid Wastes**

|    |                                      | Total Quantity (MT)                        |   |
|----|--------------------------------------|--|---|
|    |                                      | During the previous financial year 2022-23 | During the current financial year 2023-24 |
| a) | From process                         | Not Applicable                             |   |
| b) | Process pollution control facilities |  |   |
| c) | Quantity recycled or re-utilized     |  |   |
|    | i) sold                              |  |   |
|    | ii) Disposed                         |  |   |

**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**

We are generating a very minimal quantity of used oil and tank bottom sludge. Whatever we do generate is sent to the main plant. The Hazardous Waste Annual Returns Form - IV has been submitted, including information from the main plant.

**Ref: Annexure – 3**

**PART – G**

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

This plant is used solely for raw material storage, there are no operations conducted here.



**PART – H**

**Additional investment proposal for environmental protection including abatement of pollution:**

Note : It is considered part of the main plant investments.

**Environment Improvement Measures Refer Annexure – 04.**

**PART – I**

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

A report covering various efforts made by Coromandel International Limited for control of environmental pollution along with details of processes adopted in various units is given in savings made by some other activities and savings through Energy Conservation.

**Refer Annexure - 05 & 06**

**Your faithfully,  
For Coromandel International Limited,**



**M. Gnanasundaram  
VP & Head – Manufacturing**



### Annexure-1

| Raw materials Consumption<br>2023-2024   |  |                     |               |
|--|--|---------------------|---------------|
| Name of the Raw material: Rock phosphate |  |                     |               |
| S. No                                    | Details of Description                       | Unit of measurement | Qty.          |
| 1  | Opening Stock on 01 <sup>st</sup> April 2023 | MT                  | 0             |
| 2  | Received Qty.                                | MT                  | 262019        |
| 3  | Consumption Qty.                             | MT                  | <b>262019</b> |
| 4  | Closing stock on 31 <sup>st</sup> March 2024 | MT                  | 0             |

| Raw materials Consumption<br>2023-2024   |  |                     |                 |
|--|--|---------------------|-----------------|
| Name of the Raw material: Sulphuric Acid |  |                     |                 |
| S. No                                    | Details of Description                       | Unit of measurement | Qty.            |
| 1  | Opening Stock on 01 <sup>st</sup> April 2023 | MT                  | 21057.985       |
| 2  | Received Qty.                                | MT                  | 433679.8        |
| 3  | Consumption Qty.                             | MT                  | <b>431165.8</b> |
| 4  | Closing stock on 31 <sup>st</sup> March 2024 | MT                  | 23571.971       |

| Raw materials Consumption<br>2023-2024   |  |                     |                 |
|--|--|---------------------|-----------------|
| Name of the Raw material: Molten sulphur |  |                     |                 |
| S. No                                    | Details of Description                       | Unit of measurement | Qty.            |
| 1  | Opening Stock on 01 <sup>st</sup> April 2023 | MT                  | 13446.697       |
| 2  | Received Qty.                                | MT                  | 83808           |
| 3  | Consumption Qty.                             | MT                  | <b>94910.02</b> |
| 4  | Closing stock on 31 <sup>st</sup> March 2024 | MT                  | 2344.677        |

| Raw materials Consumption<br>2023-2024 |  |                     |                |
|--|--|---------------------|----------------|
| Name of the Raw material: LSHS         |  |                     |                |
| S. No                                  | Details of Description                       | Unit of measurement | Qty.           |
| 1                                      | Opening Stock on 01 <sup>st</sup> April 2023 | MT                  | 20.07          |
| 2                                      | Received Qty.                                | MT                  | 576.718        |
| 3                                      | Consumption Qty.                             | MT                  | <b>585.328</b> |
| 4                                      | Closing stock on 31 <sup>st</sup> March 2024 | MT                  | 11.46          |

| Raw materials Consumption<br>2023-2024 |  |                     |             |
|--|--|---------------------|-------------|
| Name of the Raw material: LDO          |  |                     |             |
| S. No                                  | Details of Description                       | Unit of measurement | Qty.        |
| 1                                      | Opening Stock on 01 <sup>st</sup> April 2023 | Litres              | 9268        |
| 2                                      | Received Qty.                                | Litres              | 0           |
| 3                                      | Consumption Qty.                             | Litres              | <b>6626</b> |
| 4                                      | Closing stock on 31 <sup>st</sup> March 2024 | Litres              | 2642        |

## Annexure - 2

| Environment Quality Report |                     |  |   |                                |   |
|----------------------------|---------------------|--|---|--------------------------------|---|
| I)                         | Pollutants          | Quantity of pollutants discharged (mass/day) | Concentrations of pollutants discharges (mass/Volume) | APPCB limit mg / lt.           | Percentages of variation from prescribed standards with reasons |
|                            | <b>Air</b>          |  |   |                                |   |
|                            |                     | Emissions, TPA                               | Emissions, mg/Nm <sup>3</sup>                         | APPCB limit mg/Nm <sup>3</sup> | No Variation from Standards                                     |
| 1                          | <b>Wharf Boiler</b> |  |   |                                |   |
|                            | SPM                 | --   | 33.25   | 115                            |   |

### AAQMS Monitoring at Wharf

| PCB Limit         | AAQ-1 station at the Top of WHARF |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-------------------|-----------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                   | Limit 60                          | Limit 100         | Limit 80          | Limit 80          | Limit 0.4         | Limit             | Limit             | Limit             | Limit             | Limit             | Limit             | Limit             |
|                   | µg/m <sup>3</sup>                 | µg/m <sup>3</sup> | µg/m <sup>3</sup> | µg/m <sup>3</sup> | µg/m <sup>3</sup> | µg/m <sup>3</sup> | µg/m <sup>3</sup> | µg/m <sup>3</sup> | µg/m <sup>3</sup> | µg/m <sup>3</sup> | µg/m <sup>3</sup> | µg/m <sup>3</sup> |
| Parameters        | PM 2.5                            | PM 10             | SO2               | NOx               | NH3               | O3                | CO                | Pb                | C6H6              | B(a)P             | As                | Ni                |
| 2023 – 24 Average | 31.33                             | 70.04             | 14.95             | 14.67             | 0.03              | 21.33             | 0.28              | <0.5              | <0.5              | <0.5              | <0.5              | <0.5              |

**EHS/APPCB/2024-040**

**Date: 06.05.2024**

To  
The Environmental Engineer,  
A.P. Pollution Control Board,  
D.No. 33-26-14 D/2,  
Near Sunrise Hospital,  
Pushpa Hotel Centre,  
Chalamalavari Street,  
Kasturibaipet, Vijayawada – 520010

Dear Sir,

RN461132235IH IVR:8278461132235  
RL MALKAPURAM S.O <530011>  
Counter No:1.07/05/2024.10:33  
To:THE ENVIRONME.APPCB KASTURIBAI  
PIN:520010, Venkateswarapuram S.O  
From:COROMANDEL .EHS HOD MALKAPUR  
Wt:240gms.REG=17.0  
Amt:31.86(Cash)Tax:4.86  
<Track on www.indiapost.gov.in>  
<Dial 18002666868> <Wear Masks. Stay Safe>

**Sub: Coromandel International Limited- Visakhapatnam-Submission of Hazardous  
Waste Annual Returns in Form-4 – FY2023-2024 - Regarding.**

**Ref: Hazardous and Other Wastes (Management and Transboundary Movement) Rules,  
2016**

We are herewith furnishing annual returns (for the period April'23 to March'24) in Form-4 as per "Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016" and amendment thereof under E (P) Act, 1986.

Kindly acknowledge the receipt of same.

Thanking you,

Yours Truly,

**For COROMANDEL INTERNATIONAL LIMITED**



**Gnanasundaram M  
Vice President & Head Manufacturing.**



**Encl. As above**

**CC to: i) The Environmental Engineer, Regional Office, APPCB, Visakhapatnam.**

**EHS/APPCB/2024-040**

**Date: 06.05.2024**

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The Environmental Engineer,  
A.P. Pollution Control Board,  
D.No. 33-26-14 D/2,  
Near Sunrise Hospital,  
Pushpa Hotel Centre,  
Chalamalavari Street,  
Kasturibaipet, Vijayawada – 520010

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Yours Truly,

**For COROMANDEL INTERNATIONAL LIMITED**



**Gnanasundaram M**  
**Vice President & Head Manufacturing.**


  
NAG/DNR

Encl. As above

CC to: i) The Environmental Engineer, Regional Office, APPCB, Visakhapatnam.

| FORM-4   |   |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
|--|---|---|---|----------|-----------------------------|---------------------|---------------------------------------|-----------|----------------------------------|------------|--|-----------|-------------------------------------|-----------|--------------------------|---------------|-------------------------------------|-----------|---|------------|---------------|------------|--|----------|----------------|----------|--------------------|----------|
| [See rules 6(5), 13(8), 16(6) and 20(2)]   |   |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| FORM FOR FILING ANNUAL RETURNS   |   |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| (To be submitted to State Pollution Control Board by 30th day of June of every year for the preceding period April to March) |   |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 1  | Name and address of facility:   | Coromandel International Limited,<br>Sriharipuram, Malkapuram (PO), Visakhapatnam-530011, Andhra Pradesh, India.<br>Phone: 0891-2578400         |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 2  | Authorisation No. and Date of issue:  | Authorization no. APPCB/VSP/65/CFO/HO/1967<br>Issued date: 30.09.2022 Valid Upto 31.08.2027   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 3  | Name of the authorised person and full address with telephone, fax number and e-mail: | M. Gnanasundaram<br>VP-Head Manufacturing<br>Sriharipuram, Malkapuram (PO), Visakhapatnam-530011, Andhra Pradesh, India.<br>Phone: 0891-2578400 |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 4  | Production during the year (product wise), wherever applicable                        | : Complex plant<br>: Sulphuric acid<br>: Phosphoric acid  | 1165048<br>861859<br>370617   | MT/Annum |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| <b>Part A. To be filled by hazardous waste generators</b>  |   |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 1  | Total quantity of waste generated category wise                                       |   | <table border="1"> <thead> <tr> <th>Name of the Hazardous waste</th> <th>Quantity generated</th> </tr> </thead> <tbody> <tr> <td>1) Acid residues (Tank bottom sludge)</td> <td>25.000 MT</td> </tr> <tr> <td>2) Sulphur muck (Sulphur sludge)</td> <td>940.000 MT</td> </tr> <tr> <td>3) Spent Catalyst</td> <td>48.820 MT</td> </tr> <tr> <td>4) Used lubricating oil/drained oil</td> <td>13.620 KL</td> </tr> <tr> <td>5) Detoxified Containers</td> <td>2438.000 No's</td> </tr> <tr> <td>6) LSHS Sludge</td> <td>4.070 MT</td> </tr> <tr> <td>7) Scrubbing sludge</td> <td>395.000 MT</td> </tr> <tr> <td>8) ETP sludge</td> <td>490.000 MT</td> </tr> <tr> <td>9) Off specified ,expired chemicals &amp; lab chemicals etc.</td> <td>0.000 MT</td> </tr> <tr> <td>10) Glass wool</td> <td>0.000 MT</td> </tr> <tr> <td>11) Insulation Puf</td> <td>0.000 MT</td> </tr> </tbody> </table> |          | Name of the Hazardous waste | Quantity generated  | 1) Acid residues (Tank bottom sludge) | 25.000 MT | 2) Sulphur muck (Sulphur sludge) | 940.000 MT | 3) Spent Catalyst  | 48.820 MT | 4) Used lubricating oil/drained oil | 13.620 KL | 5) Detoxified Containers | 2438.000 No's | 6) LSHS Sludge                      | 4.070 MT  | 7) Scrubbing sludge                           | 395.000 MT | 8) ETP sludge | 490.000 MT | 9) Off specified ,expired chemicals & lab chemicals etc. | 0.000 MT | 10) Glass wool | 0.000 MT | 11) Insulation Puf | 0.000 MT |
| Name of the Hazardous waste  | Quantity generated  |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 1) Acid residues (Tank bottom sludge)  | 25.000 MT   |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 2) Sulphur muck (Sulphur sludge)   | 940.000 MT  |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 3) Spent Catalyst  | 48.820 MT   |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 4) Used lubricating oil/drained oil  | 13.620 KL   |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 5) Detoxified Containers   | 2438.000 No's   |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 6) LSHS Sludge   | 4.070 MT  |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 7) Scrubbing sludge  | 395.000 MT  |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 8) ETP sludge  | 490.000 MT  |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 9) Off specified ,expired chemicals & lab chemicals etc.   | 0.000 MT  |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 10) Glass wool   | 0.000 MT  |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 11) Insulation Puf   | 0.000 MT  |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 2  | Quantity dispatched   | (i) to disposal facility (Ramky)<br>(ii) to recycler or co-processors or pre-processor<br>(iii) Others  | <table border="1"> <thead> <tr> <th>Name of the Hazardous waste</th> <th>Quantity dispatched</th> </tr> </thead> <tbody> <tr> <td>1) Spent Catalyst</td> <td>33.820 MT</td> </tr> <tr> <td>2) LSHS Sludge</td> <td>6.770 MT</td> </tr> <tr> <td>3) Off specified ,expired chemicals &amp; lab chemicals etc.</td> <td>0 MT</td> </tr> <tr> <td>4) Glass wool</td> <td>0 MT</td> </tr> <tr> <td>5) Insulation Puf</td> <td>0 MT</td> </tr> <tr> <td>1) Used lubricating oil/drained oil</td> <td>14.020 KL</td> </tr> <tr> <td>2) Detoxified Containers and container liners</td> <td>2348 No's</td> </tr> <tr> <td>---</td> <td>---</td> </tr> </tbody> </table>  |          | Name of the Hazardous waste | Quantity dispatched | 1) Spent Catalyst                     | 33.820 MT | 2) LSHS Sludge                   | 6.770 MT   | 3) Off specified ,expired chemicals & lab chemicals etc. | 0 MT      | 4) Glass wool                       | 0 MT      | 5) Insulation Puf        | 0 MT          | 1) Used lubricating oil/drained oil | 14.020 KL | 2) Detoxified Containers and container liners | 2348 No's  | ---           | ---        |  |          |                |          |                    |          |
| Name of the Hazardous waste  | Quantity dispatched   |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 1) Spent Catalyst  | 33.820 MT   |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 2) LSHS Sludge   | 6.770 MT  |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 3) Off specified ,expired chemicals & lab chemicals etc.   | 0 MT  |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 4) Glass wool  | 0 MT  |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 5) Insulation Puf  | 0 MT  |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 1) Used lubricating oil/drained oil  | 14.020 KL   |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| 2) Detoxified Containers and container liners  | 2348 No's   |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |
| ---  | ---   |   |   |          |                             |                     |                                       |           |                                  |            |  |           |                                     |           |                          |               |                                     |           |   |            |               |            |  |          |                |          |                    |          |



| <b>FORM-4</b>  |  |  |                   |
|--|--|--|-------------------|
| <i>[See rules 6(5), 13(8), 16(6) and 20(2)]</i>  |  |  |                   |
| <b>FORM FOR FILING ANNUAL RETURNS</b>  |  |  |                   |
| [To be submitted to State Pollution Control Board by 30th day of June of every year for the preceding period April to March] |  |  |                   |
| 3  | Quantity utilised in-house, if any -                                 | Name of the Hazardous waste  | Quantity utilised |
|  |  | 1) Acid residues (Tank bottom sludge)  | 28 MT             |
|  |  | 2) Sulphur muck (Sulphur sludge)   | 995 MT            |
|  |  | 3) Scrubbing sludge  | 410 MT            |
|  |  | 3) ETP sludge  | 560 MT            |
| 4  | Quantity in storage at the end of the year -                         | Name of the Hazardous waste  | Quantity Storage  |
|  |  | 1) Acid residues (Tank bottom sludge)  | 0 MT              |
|  |  | 2) Sulphur muck (Sulphur sludge)   | 0 MT              |
|  |  | 3) Spent Catalyst  | 15 MT             |
|  |  | 4) Used lubricating oil/drain oil  | 0 KL              |
|  |  | 5) Detoxified Containers and container liners  | 90 No's           |
|  |  | 6) LSHS Sludge   | 0 MT              |
|  |  | 7) Scrubbing sludge  | 25 MT             |
|  |  | 8) ETP sludge  | 0 MT              |
|  |  | 9) Off specified ,expired chemicals & lab  | 0 MT              |
|  |  | 10) Glass wool   | 0 MT              |
|  |  | 11) Insulation Puf   | 0 MT              |
| <b>Part B. To be filled by Treatment, storage and disposal facility operators</b>  |  |  |                   |
| 1  | Total quantity received -  | :  |                   |
| 2  | Quantity in stock at the   | :  |                   |
| 3  | Quantity treated -   | :  |                   |
| 4  | Quantity disposed in landfills as such and after treatment -         | :  |                   |
| 5  | Quantity incinerated (if applicable) -                               | :  |                   |
| 6  | Quantity processed other than specified above -                      | :  |                   |
| 7  | Quantity in storage at the end of the year -                         | :  |                   |
| <b>Part C. To be filled by recyclers or co-processors or other users</b>   |  |  |                   |
| 1  | Quantity of waste received during the year -<br>(i) domestic sources | :  |                   |
| 2  | Quantity in stock at the beginning of the year -                     | :  |                   |
| 3  | Quantity recycled or co-processed or used -                          | :  |                   |
| 4  | Quantity of products dispatched (wherever applicable) -              | :  |                   |
| 5  | Quantity of waste generated -  | :  |                   |
| 6  | Quantity of waste disposed -   | :  |                   |
| 7  | Quantity re-exported (wherever applicable)-                          | :  |                   |
| 8  | Quantity in storage at the end of the year -                         | :  |                   |
| Date : 06.05.2024<br>Place: Visakhapatnam.   |  | <br><b>Signature of the Occupier or<br/>Operator of the disposal facility</b> |                   |

# COROMANDEL VIZAG

## Sustainability Measures

### SUB: Environmental – Energy Conservation

Name of the Project: 1650 MTPD Sulphuric Acid plant III

Problems faced before implementation of initiative:

- Higher energy consumption for 45 MT/Hr. steam Generation from Steaming coal

Brief Description: 1650 MTPD Sulphuric Acid Plant III installed, generating 87 MT / Hr., high pressure waste steam at 69kgf/cm<sup>2</sup>g 485 °C. High pressure & temperature steam turbine results in lower Specific Steam Consumption of 4.0 MT / MWH. Old Condensing turbine was medium pressure 31kgf/cm<sup>2</sup>g 315°C with 5.8 MT/MW Specific Steam Consumption. Innovation enabled higher power generation

Technology: Monsanto Enviro Chem Systems USA, Engineering – Thyssenkrupp Industrial Solutions, India.

Cost – Rs 4300 million      Annual Savings 72765000 kWh      Annual Savings Rs 466 million  
Payback 111 month      Completed Date Aug 2023

Challenges faced during the project:

1. Technical Know How for modern Energy Efficient Sulphuric Acid Plant
2. Availability of expertise for taking up modern technologies

Prevailing practice in the industry: Maximise deployment of Carbon free Energy.



# COROMANDEL VIZAG

## Sustainability Measures

### SUB: Environmental – Energy Conservation

Name of the Project: Installation of 11KV Automatic Power Factor controlling system

Problems faced before implementation of initiative:

- Grid power factor is at 0.970 lag and power factor to be maintained at unity for ideal conditions.
- Existing installed HT capacitor bank are not sufficient to meet the required capacitive load of the plant which is required to maintain unity power factor. This is due to the increase in plant loads subsequently.

Brief Description: Installation of Automatic Power Factor controlling panels comprising

1. 11 KV Limiting Reactors 2.12 MVAR – 3 no's
2. 100 Kvar, 440V, 3Ph, 50Hz, CLMD 83 Capacitor – 30 no's
3. 11kV, 2500kVAr APFC with 6% inrush current – 1 no.
4. 11kV, 2000kVAr APFC with 6% inrush current – 1 no.

New generation technology considered as an alternative to conventional technology / method to limit the short circuit levels at existing substations

Cost – Rs 29.5 million      Annual Savings 1703451 kWh      Annual Savings Rs 11 million  
Payback 32 month      Completed Date Jan 2024

Benefits: 1) After installing additional capacitor bank panels, power factor of around 0.995 lag at grid side is being achieved from Feb-24 which will reduce the losses and improve the power factor which will in turn give us power saving.

Challenges faced during the project:

- 1) Subsequent increase in Power capacity addition continuously.

Prevailing practice in the industry: Install capacitor banks whenever power load increases



# COROMANDEL VIZAG

## Sustainability Measures

### SUB: Environmental – Energy Conservation

Name of the Project: Replacement of age-old Air conditioner units with modern 3 Star Units

Problems faced before implementation of initiative:

- Higher Energy Consumption

Brief Description: 41 no's age-old Air conditioner units replaced by modern 3 Star Units.

Cost – Rs 2.384 million      Annual Savings 48441 kWh      Annual Savings Rs 0.1 million  
Payback 92 month      Completed Date Jan 2024

Benefits:

- 1) Improved Air Conditioning
- 2) Lower Energy Consumption

Challenges faced during the project: None.

Prevailing practice in the industry: Maximise deployment of modern 3 Star AC Units.



# COROMANDEL VIZAG

## Sustainability Measures – Kaizens – Zero cost Measures

### SUB: Environmental – Energy Conservation

Name of the Project: Installation of AC controls, closure to respective AC Units

Problems faced before implementation of initiative:

- Higher Energy Consumption
- II AC unit running even when not required, as its temperature control is not close by



Brief Description: Installed AC temperature control sensors closure to respective AC Units,

Cost – Rs NIL million      Annual Savings 21406 kWh      Annual Savings Rs 0.14 million  
Payback 0 month      Completed Date Nov 2023

Benefits:

- 1) Improved Air Conditioning
- 2) Lower Energy Consumption

Challenges faced during the project: None.

Prevailing practice in the industry: Installation of AC controls closure to place of use is a best practice.



# COROMANDEL VIZAG

## SUB: Environmental – Sea Water Solution to Raw Water needs.

Name of the Project: 6000 M<sup>3</sup>/Day Sea Water Reverse Osmosis Desalination Plant

Problems faced before implementation of initiative:

1. Limited availability of Raw water for plant expansion
2. Regular Line leaks along 10 Kilometer long TSR Water Pipeline.

Brief Description: Sea Water undergoes rapid floatation pretreatment, in Direct Air Floatation system for removal of Algae. Filtration of sea water is carried out by reverse osmosis, which involves forcing water at high pressure through a membrane that retains up to 99% of impurities. Desalinated Water is utilised in process plants as raw water, part of the desalinated water also undergoes post-treatment in mixed bed Ion Exchanger where it is demineralized.

Cost of Project: Coromandel: INR 30 Cr, INR Veolia – 40 Cr, Total INR 70 Cr

Benefits:

1. Support Plant expansion.
2. High purity demineralised water

Challenges faced during the project:

- Higher energy consumption for desalination by Reverse Osmosis 4.8 kWh/M3 Water

Prevailing practice in the industry:

Enabling and securing access to water resources at a permeate salinity / Total dissolved solids level of 200 ppm, by exploiting an inexhaustible natural resource with high salinity of 37000 ppm.



# COROMANDEL VIZAG

## SUB: Environmental – Nature Conservation - Greening within Fence

Name of the Project: **Greening within Fence - Miyawaki Plantation**

Problems faced before implementation of initiative:

1. Degraded land that has been used for construction and nonagricultural purposes.

Brief Description: Miyawaki Plantation involves plantation of trees, native to the area, with species that complement each other. As saplings receive sunlight from the top and grow upward, rather than sideways. It helps prevent growth of weeds, by avoiding sunlight reaching the soil.

| S.no. | Area Of plantation | No. of plants | Year    | Cost            |
|-------|--------------------|---------------|---------|-----------------|
| 1     | Phase - 1          | 3000          | 2021-22 | INR 7,61,607    |
| 2     | Phase - II         | 10000         | 2021-22 | INR 47,57,706   |
| 3     | Phase - III        | 10000         | 2022-23 | INR 50,00,000   |
| 4     | Phase - IV         | 25000         | 2023-24 | INR 1,24,00,000 |
| 5     | Phase - V          | 3500          | 2023-24 | INR 12,26,592   |

Greenery in more than 120 acres out of 320 acres industrial site (37.5%), adherence to better than regulatory norm.

Cost of the project: Rs. 136 Lakh Year 2023-24, No of Plants – 28500 no's

Benefits:

1. Creating Carbon sink in the area.
2. Control of fugitive emissions due to road traffic

Challenges faced during the project:

- Challenging sediment conditions, acidic soils necessitating laying of proper soil.



Prevailing practice in the industry:

Driving Compliance to APPCB order that 33% of industrial site around a factory is to be green.

# COROMANDEL VIZAG

## SUB: Environmental – Abating Noise

Name of the Project: **Modern Steam Vent Silencers**

Problems faced before implementation of initiative:

1. High noise during venting of high-pressure steam.

Brief Description: Performance of Vent Silencers is achieved by a 2-stage noise reduction approach.

Stage 1 –The inlet diffuser is effective in attenuating frequencies of sound and distributing the flow evenly to the 2nd stage.

Stage 2 – Sound reduction comprises of absorptive elements positioned within the silencer case thus absorbing acoustic energy out of the steam prior to exiting the atmosphere.

Benefits:

1. Noise-less steam venting.

Challenges faced during the project:

- Design Known how of modern steam vent silencers.

Prevailing practice in the industry:

Enabling Compliance to APPCB order that noise levels in the industry should be within 75 db during daytime and 70 db. during nighttime.





# COROMANDEL VIZAG

## SUB: Environmental – Dust Control during Solids Material Handling

Name of the Project: Steam, Air & Water Curtain for Dust Control during Solid Sulphur Handling

Problems faced before implementation of initiative:

1. Higher dust emissions during Solid Sulphur handling as the following existing measures have limited control of dust emissions.
  - a. Rubber & Canvas apron serves to contain dust, however, is limited due to access through several openings in the apron.
  - b. Bag filter creates a negative atmosphere and removes airborne dust, is limited due to dilution air entry through several openings and huge power consumption.

Brief Description: Low pressure smothering steam, Fine mist of Water and Air are released to create positive pressure around the emission points and act as a curtain, at various dust emission points during Solids Sulphur handling in Sulphuric Acid Plant – III.

Benefits:

1. Environment Compliance – Control of dust under positive pressure.
2. Better work place ambience

Challenges faced during the project:

- Fine mist of water and steam smothering increases acidity in solid sulphur
- Excessive load on Bag filters.

Prevailing practice in the industry:

Ensuring Compliance to APPCB order on fugitive Dust emissions < 50 mg/NM3



# COROMANDEL VIZAG

## SUB: Environmental – Effluent Control Better than regulatory norms

Name of the Project: Fresh Water Surface Condenser for Turbo Generator III

Problems faced before implementation of initiative:

1. Sea Water has worst Corrosion characteristics, hence special Cu: Ni 70:30 tubes used
2. Higher tube side Scaling due to sea water contaminants, requiring automatic cleaning using circulating rubber sponge balls.
3. Use of sodium hypochlorite, or chlorine, to ensure there is no marine growth on the pipes or the tubes. However, circulating water returning to the sea is affected.

Brief Description: Fresh Water Surface Condenser for Turbo Generator III, which rejects the heat from condensing steam in surface condenser to air in a cooling tower using fresh water as circulating heat transfer medium.

Benefits:

1. Better Environment –
  - a. Capacity of air environment to absorb heat is higher than heat rejection to water.
  - b. Heat of water needs to be released to air through water evaporation, hence direct discharge of heat to air is better option.
  - c. Marine environment is least effected.

Challenges faced during the project:

- Higher liberation of heat in factory premises
- Large quantity of fresh water consumed.

Prevailing practice in the industry:

Fresh Water Surface Condenser is a better option for condensing type-high pressure steam turbine.



# COROMANDEL VIZAG

SUB: Environmental – Effluent Control Better than regulatory norms

Name of the Project: **Zero Liquid Discharge Facility**

Problems faced before implementation of initiative:

1. Loss of containment
2. Poor Control of final effluent quality

Brief Description: Installation of Zero Liquid Discharge Systems

Technology used: The major sources of effluent are overflows and spillage of process drains of Sulphuric acid plant, cooling tower blow down and leachate water from Gypsum Pond. Installed water recovery pits along with agitators for water conservation by recovery and reuse.

Benefits:

1. Compliance to APPCB order.
2. Control on liquid effluents.

Challenges faced during the project:

Design and Installation of Gradient Floor for recovery, separate process and storm water drains and recovery pits.

Prevailing practice in the industry: Zero liquid discharge by installing process and storm water drains and recovery pits is well established. All new plants to be designed for ZLD



# COROMANDEL VIZAG

SUB: Environmental – Effluent Control Better than regulatory norms

Name of the Project: **Cooling Tower Water Conductivity meter for blowdown control**

Problems faced before implementation of initiative:

1. Lack of online control for blowdown
2. Excessive Water consumption

Brief Description: Installation of Conductivity meter on cooling tower water system, for controlling Blowdown

Benefits:

1. Control on liquid effluents.

Challenges faced during the project:

Letting management realize on the need to have online Conductivity meter for cooling tower blowdown control

Prevailing practice in the industry: Boiler Blowdown control by installing conductivity meter is good water conservation practice.



# COROMANDEL VIZAG

## SUB: Environmental – Dust Control Better than regulatory norms

Name of the Project: **Dust control while preparing lime solution**

Problems faced before implementation of initiative:

1. Dust generation during mixing of lime in Lime Slurry Preparation Tank

Brief Description: Installation of Air Operated Diaphragm Pump

Benefits:

1. Control on Dust generation.

Challenges faced during the project:

Know how on operation of Air Operated Diaphragm Pump and its applications.

Prevailing practice in the industry: Installation of Air Operated Diaphragm Pump is a best practice in Lime Addition to Lime Slurry Preparation Tank/



Lime Dust generation while dumping into Lime slurry Preparation Tank



Air Operated Diaphragm Pump



Lime Powder flow through hose without dust generation



# COROMANDEL VIZAG

## SUB: Environmental – Emission & Effluent Control measures

Name of the Project: **Installation of Continuous Emission Monitoring system**

Compliance to CPCB Guidelines: Use of CEMS to continuously collect, record & report emission data of SO<sub>2</sub> for monitoring compliance to Sulphuric Acid Plant emission standards.

Problems faced before implementation of initiative:

1. Heights of stacks, Corrosive environment & Stack structure conditions restrict regular maintenance work at height.

Brief Description: Installed Online stack emissions monitoring system The standard CEM system consists of a sample probe, filter, sample line (umbilical), gas conditioning system, calibration gas system, and a series of gas analyzers which reflect the parameters being monitored. A Data Acquisition and Handling System (DAHS) receives the signal output from each analyzer, which is then simultaneously transmitted live to CPCB / APPCB Servers in order to collect and record emissions data

Technology used:

- SO<sub>2</sub> measurement – Non-Dispersive Ultraviolet Absorption spectroscopy

Benefits: Self-regulation of Industry

Challenges faced during the project:

- Moisture in stack – availability of suitable material of construction

Prevailing practice in the industry:

Compliance to APPCB order



# COROMANDEL VIZAG

## SUB: Environmental – Emission & Effluent Control measures

Name of the Project: **Quality Assurance Laboratory Fumes Scrubber**

Problems faced before implementation of initiative:

- Quality Assurance Laboratory Fumes let to atmosphere.

Brief Description: Fumes Scrubber

Technology used: The scrubber system consists of a void tower crossflow Gas Scrubber with a Gas Scrubber Fan drawing gases from the various emission points of the Quality Assurance Laboratory and discharging them to the Stack.

The gases enter the gas scrubber through the bottom. They are washed with an aqueous solution. This solution circulates through the pumps. The make-up is done by process water. The bleed of the scrubber is pumped to ETP for treatment & reuse.

Benefits: Scrubbing of Gases for Fumes control

Challenges faced during the project:

- Water balance & effluent control of scrub liquor

Prevailing practice in the industry: Gas scrubbing ensures sustainable emission control.



# COROMANDEL VIZAG

## SUB: Environmental – Soil Rejuvenation

Name of the Project: **Garden Compost**

Problems faced before implementation of initiative:

- Lower Soil Nutrients in around Housing Colony.

Brief Description: Garden Compost

Technology used: Small Pits were dug in around each house in housing colony. is as simple as collecting yard waste or the organic materials in your trash (such as fruit and vegetable peels) to fill a pit. Over the course of a year or so, the material will decompose.

Benefits: The decomposed organic material is then added to soil to provide nutrients to sustain plant growth. Compost also helps to improve soil structure and supports soil microbes that are integral to plant health.

Challenges faced during the project: Some people believe learning how to compost is too complicated, it smells bad, and it's messy. This may be true if you compost the wrong way,

Prevailing practice in the industry: Compost is a natural alternative for Garden rejuvenation.





# COROMANDEL VIZAG

## SUB: Environmental – Monitoring

Name of the Project: **Ammonia Leak Detectors & Siren**

Problems faced before implementation of initiative:

- Non availability of information on Gas leak emissions to employees & Public

Brief Description: Siren and Ammonia Leak detectors installed at Mulagada village and at crossroad at Gate No 9, to alert Public on Ammonia Leak

Benefits: On Site Emergency Control.

Challenges faced during the project: Public unrest on Gas leaks in neighborhood villages.

Prevailing practice in the industry: Installation of leak detectors & Siren is a best practice.



# COROMANDEL VIZAG

## SUB: Environmental – Water Conservation

Name of the Project: **Sewage Treated Water for Gardening**

Problems faced before implementation of initiative:

- Fresh Water availability limited for Gardening.
- Utilisation of Sewage Treated Water in production process limited.

Brief Description: Installed Sewage Treated Water storage Tank, irrigation water lines for plantation at Harita Vanam

Benefits:

1. Water Conservation by avoiding freshwater use.
2. Ecological conservation by enabling zero effluent discharge.
3. Proper operation of Sewage Treatment Plant is ensured, else presence of pathogenic bacteria will harm Green plantation as well as contaminate groundwater.

Challenges faced during the project: A large percentage of domestic & industrial water users are afraid to use this technology to supply water (direct reuse) because of the potential presence of pathogenic organisms. However, most people are willing to accept reused wastewater for lawn irrigation and for cooling purposes in industrial processes.

Prevailing practice in the industry: Suitability of this technology, especially where there is a water deficit for several months of the year, implementation of wastewater recycling or reuse by industries can reduce demands for water of potable quality, and also reduce impacts on the environment.



# COROMANDEL VIZAG

## SUB: Environmental – Water Conservation

Name of the Project: **Rainwater Harvesting**

Problems faced before implementation of initiative:

- Fresh Water availability limited.

Brief Description: Installed Rainwater Harvesting System for Control Rooms

Benefits:

1. Water Conservation by avoiding freshwater use.

Challenges faced during the project:

1. Limited storage of rainwater.
2. Lot of dust accumulated in collection area, is washed away into rainwater collection system during rain, clogging drains as well as acidic & huge sediment water to plantation can harm plantation.

Prevailing practice in the industry: Rainwater harvesting is the viable technology used to conserve rainwater by collecting, storing, conveying, and purifying of rainwater that runs off from rooftops, parks, roads, open grounds, etc. for later use.



## SUB: Environmental – Water Conservation

Name of the Project: **Startup Tail Gas Scrubber**

Problems faced before implementation of initiative:

- High SO<sub>2</sub> emissions through stack during cold startup and process upsets.

Brief Description: Installed Start -up Tail Gas Scrubber where upward process gas flows is scrubbed by countercurrent Sodium Hydroxide solution in a packed Absorber, where SO<sub>2</sub> reacts with NaOH to form sulphite and sulphate salts (Na<sub>2</sub>SO<sub>3</sub> , NaHSO<sub>3</sub> , Na<sub>2</sub>SO<sub>4</sub>).

Scrubber operates with close pH control on absorbing solution.

Benefits:

1. SO<sub>2</sub> emission control.

Challenges faced during the project:

1. Density control – Higher density of absorbing solution causes clogging of absorber and leads to SPM carryover.
2. Low pH of Absorbing solution causes loss of Absorption.
3. Requires automatic process control.

Prevailing practice in the industry: Startup Tail Gas Scrubber for Sulphuric Acid Plant is as part of compliance to APPCB / CPCB guidelines.



**Annexure-5**

**Environmental Control Measures  
Coromandel International Limited  
Visakhapatnam**

| <b>s.no</b> | <b>EHS (2023-24)</b>   | <b>Rs. Lakhs</b> |
|-------------|--|------------------|
| 1           | Super heater replacement along with inlet & outlet ducts   | 650              |
| 2           | Procurement of Heat Exchanger for evaporators with Carbon fiber reinforced graphite tubes - 1 No | 150              |
| 3           | Dilution cooler - replacement  | 150              |
| 4           | Road Sweeping Machine  | 110              |
| 5           | Sulphuric acid piping in Complex-ABC Train replacement with Alloy 20                             | 80               |
| 6           | Lightening protection phase - 3  | 80               |
| 7           | B-Tr Dryer separator vessel & C-Tr Pre-scrubber vessel renewal                                   | 70               |
| 8           | Critical flow meters   | 60               |
| 9           | LECO sulphur analyzer  | 55               |
| 10          | Miyawaki plantation Phase - V  | 11               |
| 11          | SAP 1&2 cooling tower blowdown water recovery pumping system                                     | 25               |
| 12          | Desalination plant of 6 MLD Capacity   | 3000             |
|             | Total  | 4441             |

| <b>s.no</b> | <b>EHS (2022-23)</b>                      | <b>Rs. Lakhs</b> |
|-------------|---|------------------|
| 1           | Green Building                            | 20               |
| 2           | Solar Street lighting                     | 7.1              |
| 3           | LED lighting                              | 5                |
| 4           | Replacement of age-old Air conditioner    | 15               |
| 5           | Battery Operated Electric Automotive      | 10               |
| 6           | Haritha Vanam Red soil                    | 16               |
| 7           | Miyawaki Phase-III & IV                   | 174              |
| 8           | Evaporator - II Steam Condensate recovery | 33               |
| 9           | 2 km plant bypass road                    | 1370             |
| 10          | Anion Rinse Water Recovery system         | 61               |
| 11          | CAAQMS & OCEMS (New & O&M)                | 100              |
| 12          | STP Capacity Enhancement                  | 50               |
| 13          | ETP sludge storage shed                   | 150              |
| 14          | Digital Display Board                     | 3.0              |
| 15          | NOx Analyzer                              | 14               |

|  |              |               |
|--|--------------|---------------|
|  | <b>Total</b> | <b>2028.1</b> |
|--|--------------|---------------|

| <b>s.no</b> | <b>EHS (2021-22)</b>   | <b>Rs. Lakhs</b> |
|-------------|--|------------------|
| 1           | Water recovery by rainwater harvesting                         | 100              |
| 2           | Gypsum Pond Leachate Recovery System                           | 670              |
| 3           | Installation of impervious HDPE Geo permeable membrane liner   | 650              |
| 4           | Renovation of Online Continuous Emission Monitoring system     | 180              |
| 5           | Renovation of Continuous Ambient Air Quality Monitoring system | 70               |
| 6           | Harithavanam Grass Cover                                       | 24               |
| 7           | Miyawaki PH-II   | 45.6             |
| 8           | Prill Tower area Grass   | 12               |
| 9           | Colony Plantation  | 2                |
| 10          | Green Visakha  | 271              |
| 11          | Wharf plantation   | 2                |
|             | <b>Total</b>   | <b>2026.6</b>    |

| <b>s.no</b> | <b>EHS (2020-21)</b>                     | <b>Rs. Lakhs</b> |
|-------------|--|------------------|
| 1           | Green Visakha Plantation                 | 266              |
| 2           | CAAQMS at Garage location                | 49               |
| 3           | EPR Charges for Plastic Waste Management | 80               |
|             | <b>Total</b>                             | <b>395</b>       |

| <b>s.no</b> | <b>EHS (2019-20)</b>       | <b>Rs. Lakhs</b> |
|-------------|----------------------------|------------------|
| 1           | Green Visakha Plantation   | 140              |
| 2           | HDPE liner for Gypsum Pond | 1300             |
|             | <b>Total</b>               | <b>1440</b>      |

| <b>s.no</b> | <b>EHS (2018-19)</b>                      | <b>Rs. Lakhs</b> |
|-------------|---|------------------|
| 1           | Green Visakha Plantation                  | 100.0            |
| 2           | Gypsum Neutralization Unit                | 70.0             |
| 3           | Drains Improvement (PA Plant)             | 25.0             |
| 4           | Energy Efficient lighting at plants       | 20.0             |
| 5           | Grass plantation at gypsum Pond on trials | 5.0              |
|             | <b>Total</b>                              | <b>220.0</b>     |



| <b>s.no</b> | <b>EHS (2017-18)</b>                  | <b>Rs. Lakhs</b> |
|-------------|---------------------------------------|------------------|
| 1           | Oil Skimmer                           | 25.0             |
| 2           | Green Visakha Plantation              | 50.0             |
| 3           | PAP & remining stacks analysers       | 43.0             |
| 4           | Gypsum Neutralization Unit            | 1000.0           |
|             | Process Drains Improvement (PA Plant) | 130.0            |
|             | <b>Total</b>                          | <b>1248.0</b>    |

| <b>s.no</b> | <b>EHS (2016-17)</b>                                    | <b>Rs. Lakhs</b> |
|-------------|---|------------------|
| 1           | Oil spill recovery equipment                            | 46.0             |
| 2           | Sewage Treatment Plant                                  | 51.0             |
| 3           | A , B Train – Online monitoring & Closed Circuit Camera | 63 .0            |
|             | <b>Total</b>  | <b>160.0</b>     |

| <b>s.no</b> | <b>EHS (2015-16)</b>   | <b>Rs.Lakhs</b> |
|-------------|--|-----------------|
| 1           | Ambient Air Quality – 3 <sup>rd</sup> stations<br>( replacement to Cyclone damaged ) | 50.0            |
| 2           | Online Monitoring equipment<br>( Complex plant C train)                              | 18.0            |
| 3           | Plantation ( inside + outside )  | 54.0            |
| 4           | Improvements in Effluent Handling  | 55.0            |
|             | <b>Total</b>   | <b>177.0</b>    |

| <b>s.no</b> | <b>EHS (2014-15)</b>                                     | <b>Status</b> | <b>Rs.Lakhs</b> |
|-------------|--|---------------|-----------------|
| 1           | Replacement of damaged insulation due to HUd-Hud Cyclone | 2014-15       | 230             |
| 2           | Mechanical Plate exchanger replacement at SAP-I          | 2014-15       | 80              |
| 3           | Pre-scrubber tank replacement                            | 2014-15       | 18              |
| 4           | REPL. OF BME CANDLES FOR SAP-1 AND SAP-2                 | 2014-15       | 40              |
| 5           | Replacement of Dedusting system ay Ctrain Cyclone ducts  | 2014-15       | 32              |
|             | <b>Total, Rs/-</b>                                       |               | <b>400</b>      |

| <b>s.no</b> | <b>EHS (2013-14)</b>                          | <b>Status</b> | <b>Rs.Lakhs</b> |
|-------------|---|---------------|-----------------|
| 1           | Green Belt Development by TERI on Gypsum pond | 2013-14       | 250             |

|   |  |          |            |
|---|--|----------|------------|
| 2 | REPL. OF BME CANDLES FOR SAP-1 AND SAP-2 | April'13 | 62         |
|   | <b>Total,Rs/-</b>                        |          | <b>312</b> |

| <b>s.no</b> | <b>EHS (2012-13)</b>                     | <b>Status</b> | <b>Rs.Lakhs</b> |
|-------------|--|---------------|-----------------|
| 1           | 3 <sup>rd</sup> online AAQM station      | March'13      | 60              |
| 2           | Green Visakha -15000 saplings            | March'13      | 58              |
| 3           | A,B TRAIN COOLER CYCLONE DUCTING,RENEWAL | Nov'12        | 22              |
|             | <b>Total,Rs/-</b>                        |               | <b>140</b>      |

| <b>s.no</b> | <b>EHS (2011-12)</b>                 | <b>Status</b> | <b>Rs.Lakhs</b> |
|-------------|--------------------------------------|---------------|-----------------|
| 1           | Portable workplace monitoring system | May'12        | 10              |
| 2.          | Green Visakha at Air port            | March'13      | 50              |
|             | <b>Total,Rs/-</b>                    |               | <b>60</b>       |



|   | Capex -EHS(2010-11)                             | Status      | Rs. Lacs       |
|---|---|-------------|----------------|
| 1 | Effluent / Storm Water drains management        | Feb'2011    | 30.00          |
| 2 | Ambient Air Quality monitoring Station          | March'2011  | 60.00          |
| 3 | Effluent Treatment Plant(ETP)                   | August'2011 | 1600.00        |
| 4 | HDPE lining -Gypsum siding area (About 5 acres) | July'2010   | 150.00         |
| 5 | Telescopic chutes for Rock Go down              | Feb'2011    | 45.00          |
| 6 | Structural Stability                            | 2010-11     | 120.00         |
| 7 | Replacement of BME candles for FAT & DT         | March'2011  | 40.00          |
| 8 | AAQM Station at Mulagada village                | Nov'2010    | 22.00          |
|   | <b>Total(Lacs)</b>                              |             | <b>2067.00</b> |

| <b>2009-10</b> |   | <b>(Rupees lakhs)</b> |                       |
|----------------|---|-----------------------|-----------------------|
| <b>Sl. no.</b> | <b>Measure</b>  | <b>Year installed</b> | <b>Cost Rs. Lakhs</b> |
| 1.             | HDPE lining Gypsum area – 5 acres   | 2009                  | 100.00                |
| 2.             | Water Conservation  | 2009                  | 50.00                 |
| 3.             | Improvement to storm water drain system   | 2009                  | 30.00                 |
| 4.             | Greenbelt Development   | 2009                  | 17.00                 |
| 5.             | Start up Alkali Scrubber at 1400 MTPD sulfuric acid plant to reduce SO2 emissions | 2009                  | 135.00                |
| 6.             | Fire water system for AAST  | 2009                  | 30.00                 |
| 7.             | Ambient air monitoring station(AAQM)  | 2010                  | 75.0                  |
| 8.             | Study of scrubbing system at complex plant  | 2009                  | 10.00                 |
| 9.             | Filling of Black cotton soil at 7 <sup>th</sup> gate                              | 2010                  | 15.00                 |
|                | <b>TOTAL(Lacs)</b>  |                       | <b>462.00</b>         |

| Sl. no. | Measure  | Year installed | Cost Rs. Lakhs |
|---------|--|----------------|----------------|
| 10.     | Installed Dry gypsum Disposal system at Phosphoric acid plant  | April'2009     | 2900           |
| 11.     | BME candles for Final absorption tower of SAP-II   | 2008           | 10             |
| 12.     | Procured road sweeping machine to reduce dust emission during movement of vehicles inside the plant roads                                    | 2008           | 17             |
| 13.     | Installation of Alkali start-up scrubber for 300 MTPD sulfuric acid plant to reduce SO <sub>2</sub> emission during start-up                 | 2008           | 99             |
| 14.     | Installation of new bag-filter in place of existing bag-filter at wharf new silo for reduction of fugitive dust emissions                    | 2008           | 14             |
| 15.     | Replacement of bag-filter at old ball mill of rock-grinding unit   | 2007           | 18             |
| 16.     | Installation of Air Pre-heater in Trains 'B' & 'C' of complex plant  | 2006           | 320            |
| 17.     | Installation of Air Pre-heater in Train-A of complex plant   | 2006           | 165            |
| 18.     | Installation of Telescopic chute (2 Nos.) at Wharf New Silo  | 2006           | 13             |
| 19.     | Installation of pipe conveyor at wharf in place of cross conveyor.   | 2005           | 175            |
| 20.     | Hazardous waste handling and disposal system   | 2004           | 5              |
| 21.     | Installation of telescopic chute at rock phosphate storage godown.   | 2004           | 30             |
| 22.     | Replacement of fume gas scrubber at phosphoric acid plant.   | 2004           | 150            |
| 23.     | Installation of de-dusting system at rock phosphate unloading area.  | 2004           | 10             |
| 24.     | Installation of new Screw Unloader System in place of gantry grab bucket system and construction of silo and overhead pipe conveyor at wharf | 2003           | 2000           |
| 25.     | Installation of new bag filter for storage silo at wharf area in place of existing one.  | 2003           | 20             |
| 26.     | New SO <sub>2</sub> on-line analyser was installed at sulphuric acid plant.  | 2002           | 8              |

| Sl. no. | Measure  | Year installed | Cost Rs. Lakhs |
|---------|--|----------------|----------------|
| 27.     | Ground rock transfer system from rock grinding station to phosphoric acid plant modified from pneumatic system to pipe conveying system. | 2002           | 200            |
| 28.     | Bag-filter was installed on inclined conveyor at wharf area.   | 2002           | 2              |
| 29.     | Additional bag-filter at rock grinding unit  | 2001           | 5              |
| 30.     | New scrubbing system for train 'B'   | 2001           | 550            |
| 31.     | New scrubbing system for train 'A'   | 2000           | 550            |
| 32.     | Telescopic chutes (2 nos.)   | 2000           | 12             |
| 33.     | Pollution control equipment for new complex Train 'C'  | 2000           | 833            |
|         | <b>TOTAL Rs./ lakhs</b>  |                | <b>8106</b>    |

**BEFORE THE YEAR 2000**

|     |  |           |      |
|-----|--|-----------|------|
| 34. | Telescopic chute, emulsifier nozzles & bag filter at wharf area                        | 1999      | 10   |
| 35. | Renewal of bag filter at rock grinding   | 1998      | 15   |
| 36. | Molten sulfur handling facility  | 1997      | 1050 |
| 37. | Reinstallation of high capacity effluent pumps   | 1996      | 50   |
| 38. | Renewal of bag filter at phosphoric acid plant   | 1995      | 5    |
| 39. | Green-belt development   | -         | 20   |
| 40. | Revamping of sulfuric acid plant converter & use of high active ring shaped catalyst.  | 1994      | 450  |
| 41. | Modification of recirculation pumps in effluent treatment plant                        | 1994      | 35   |
| 42. | Fluorine recovery unit   | 1994      | 320  |
| 43. | LPG/Naphtha fumes monitor for leak detection   | 1993      | 4    |
| 44. | Installation of continuous pH meter for DT acid cooler exit water                      | 1993      | 2    |
| 45. | Replacement of cold heat exchanger   | 1992      | 80   |
| 46. | Fluoride analyser for effluent analysis  | 1992      | 4    |
| 47. | Installation of continuous SO <sub>2</sub> , analyser for stack in sulfuric acid plant | 1992      | 15   |
| 48. | Installation of dust control system in bagging plant                                   | 1992      | 12   |
| 49. | Installation dust control system at wharf silo   | 1992      | 13   |
| 50. | Monitoring equipment viz. High volume samplers, ammonia sensors.                       | 1990 & 91 | 5    |
| 51. | Effluent recycle scheme in complex plant   | 1989      | 12   |
| 52. | Construction of effluent treatment plant   | 1989      | 250  |
| 53. | Installation of bag filters in rock grinding plant                                     | 1989      | 12   |
| 54. | Construction of new F.A.T. in sulfuric acid plant                                      | 1989      | 20   |
| 55. | Extension of fume scrubber stack in phosphoric acid plant                              | 1988      | 6    |
| 56. | Installation of fumes scrubber in phosphoric acid plant                                | 1987      | 30   |
| 57. | Installation of mist eliminator candles in sulfuric acid plant                         | 1987      | 10   |
| 58. | Rinse water recovery scheme in utilities plant   | 1984      | 3    |

| <b><u>BEFORE THE YEAR 2000</u></b> |   |      |             |
|------------------------------------|---|------|-------------|
| 59.                                | Replacement of conventional catalyst to more active type (Ring) | 1980 | 60          |
| 60.                                | Conversion of sulfuric acid process to DCDA technology          | 1975 | 250         |
| 61.                                | High efficiency Venturi scrubbers in complex plant              | 1967 | 27          |
| 62.                                | Dust cyclones in complex plant                                  | 1967 | 6           |
| 63.                                | Installation of dust cyclones in phosphoric acid plant          | 1967 | 4           |
| <b>TOTAL Rs/ lakhs</b>             |   |      | <b>2796</b> |
|                                    |   |      |             |

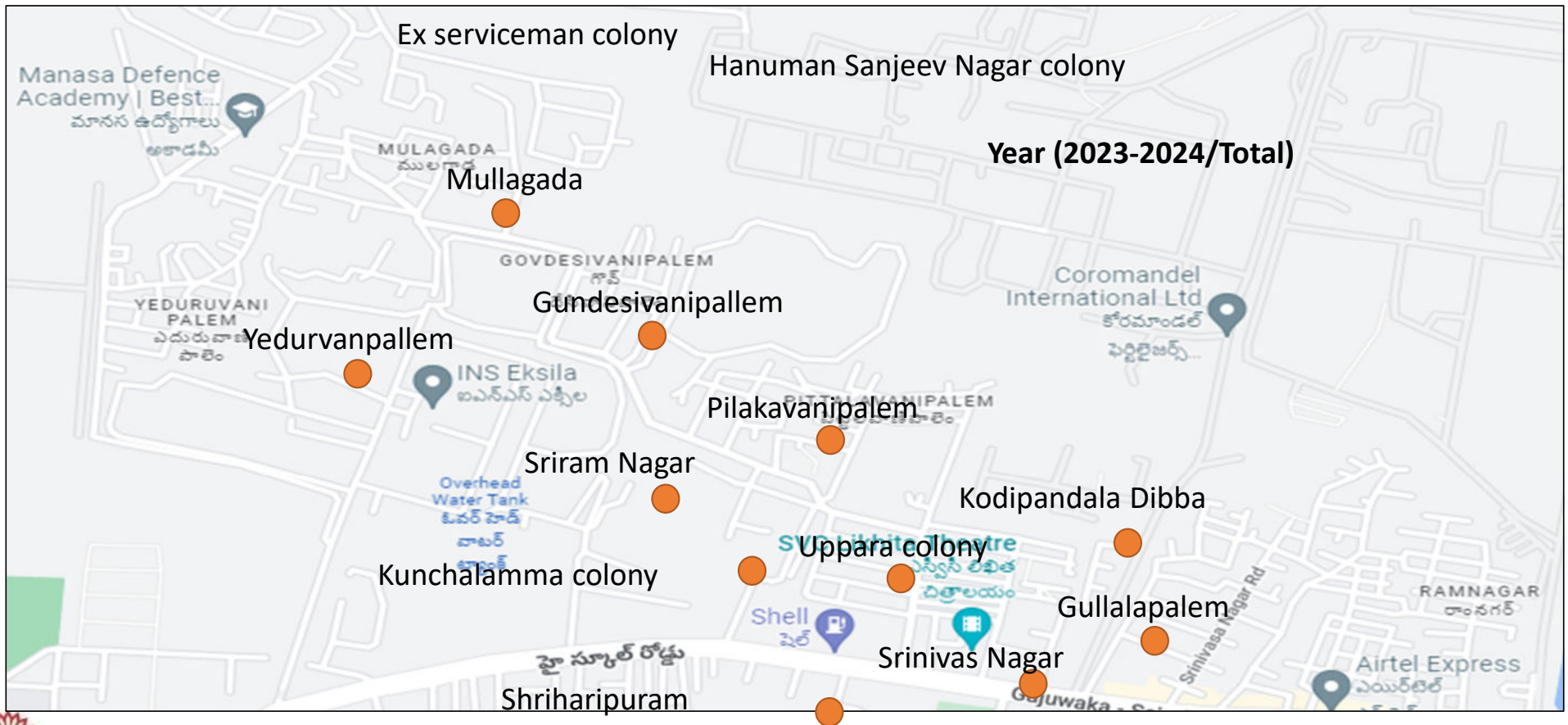
**Note: Total investment from 1967 to 2012-13 = 13631 lakhs**  
**Capital investment for 2013-14 = 312 lakhs**  
**Investments in 2014-15 = 400 lakhs**  
**In 2015-16 = 177 lakhs**  
**In 2016-17 = 160 lakhs**  
**In 2017-18 = 1248 lakhs**  
**In 2018-19 = 220 lakhs**  
**In 2019-20 = 1440 lakhs**  
**In 2020-21 = 395 lakhs**  
**In 2021-22 = 2026 lakhs**



**CSR**  
**Annual report 2023-2024**

**Vizag**

# Mapping villages-Total bEN -217134





## Approved Vs Spent– 23-24

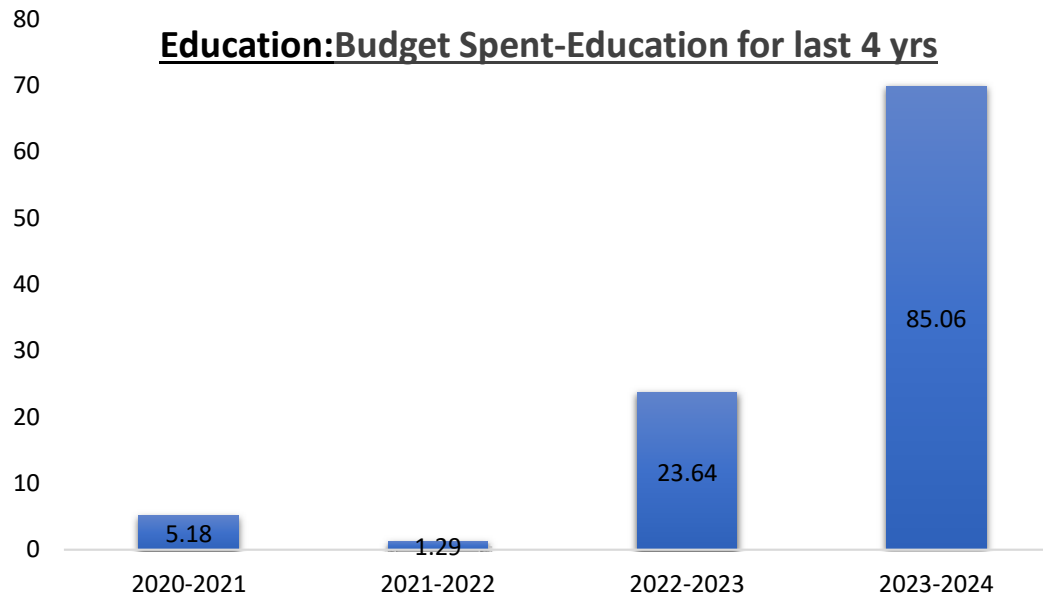
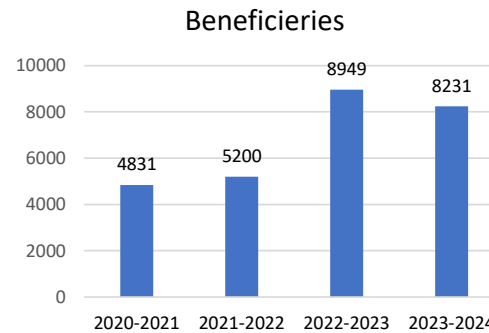
Spent  
Matrix

| S.No  | Domain                | Spent (Lacs) |
|-------|-----------------------|--------------|
| 1     | Community Development | 133.00       |
| 2     | Health                | 73.79        |
| 3     | Education             | 85.67        |
| Total |                       | 292.46       |

# CSR Initiative-Education

## Key Highlights of the Last 4 Year

- Chemistry its FUNdametals
- Renovated Social welfare Girls hostels
- Coromandel Girlchild scholarship
- Champs Life skill development to children
- Karadi path Magic English
- School infra

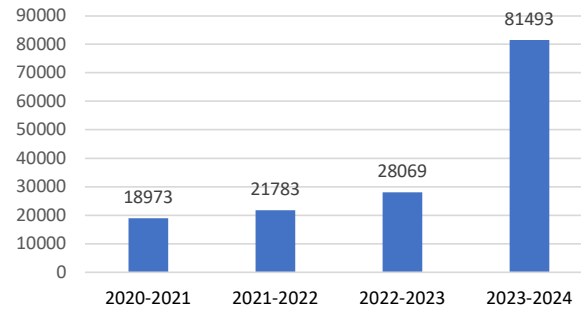


# CSR Initiative-Health

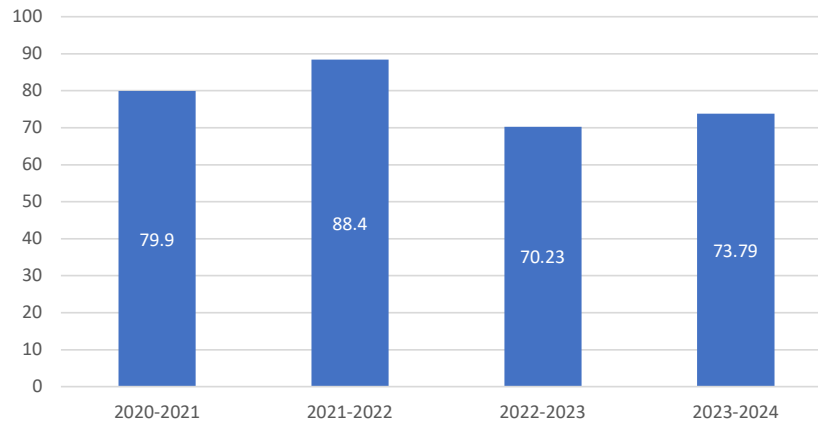
## Key Highlights of the last 4Years

- New Coromandel Medical centre
- IBCC
- Eye screening camp
- Women & Children Medical camp
- Anti-Larval & Fogging
- Health & Nutrition program

Beneficiaries



Health

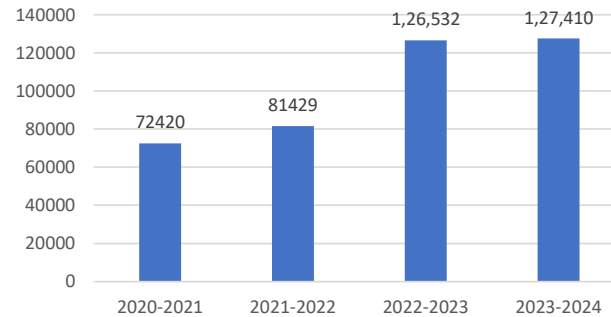


# CSR Initiative-Community development

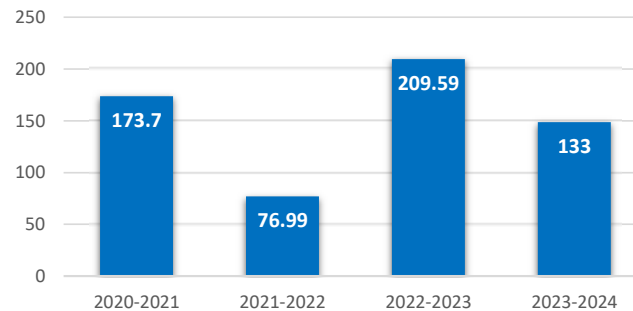
## Key Highlights of the Year

- Community infra
- Women livelihood –Ekka
- Community Bore Motor wells
- Community Open Gyms-
- Inter village sports for youth
- Women sports
- RO water plant
- World environment day
- Govt ITI Computer Lab
- Renovated Fire station

Beneficiaries



Annual Budget Expenditure  
Community Development







## Coromandel Prayog Utsav

- Coromandel Prayog Utsav (Mega Science Fair) on 29th Feb 2024.
- Mr. Husaian, Revenue Divisional Officer, Prof. Murthy garu, HoD of Journalism & Mass Communication & Dean Examinations of Andhra University, Mr. Rama Rao, Dy. Director of Social Welfare were the Chief Guests of the program.
- Total No of schools attended :29
- No of projects :150
- Total children attended :450

# Inauguration of Coromandel Science Laboratory @ Mindi High School

- Coromandel Science Laboratory was Inaugurated by Mr. Gudivada Amaranth, IT & Industrial Minister, Mr. Tippala Nagireddy, MLA of Gajuwaka at Govt High school Mindi on 26<sup>th</sup> June-2023.
- No. of Beneficiaries - 740







Coromandel Science Laboratory @ Malkapuram GVMC High School inaugurated by Mr. Arun Leslee George, President & CHRO of Coromandel International Limited

30<sup>th</sup> Aug'23

No. of Beneficiaries - 1190





## Coromandel Girl Child Scholarship Program

- Organized Coromandel Girl child Students success meet-2023.
- Coromandel Ladies Association recognized and encouraged 23 children who secured 510 marks and also state level rankers from Malkapuram GVMC High school
- Beneficiaries - 70 scholarship children
- Our scholarship- SSC children attended the examination out of 23 no's got 500 above marks

# Teacher training workshop

- Organized 2 days Teachers training workshop on 12<sup>th</sup> & 13<sup>th</sup> Oct 2023 at Our CRC
- To ensure teachers in these schools have access to tested teaching learning materials in both print and multimedia formats to empower the students improve their English Language proficiency
- To empower the Teachers, use audio and video tools in govt schools through the implementation of the Karadi path Program.
- Participated Mandel educational officer, cluster recourse person ,Govt school teachers and our HR dept





## New Coromandel Medical Centre Inauguration

- New Coromandel Medical Centre Inaugurated by Shri Nageswarao garu, DMHO along with 58<sup>th</sup> ward Corporator, Mr.Gnanasundaram-VP & Unit Head, Mr.Jayagopal- CSR Head , Mr.Srinivasrao, DGM-HR
- DMHO appreciated coromandel management for their support towards health care services to the community.



- Initiated on 15<sup>th</sup> Nov 2023





# Women & children Medical camp



- We Organized a dedicated Medical camp for Community Women & children (Up to 13years of age) at Gullalapalem & Mulagada villages and offered various services like ECG,RBS,LFT,HBSAg,CBC,ESR,THYROID PROFILE,BLOOD GROUP,URIC ACID,CERVICAL CANCER SCREENING etc.
- Provided Six services  
Gynaecology/Paediatric/Orthopaedic/Nutrition /Dentist/General physician.
- Total conducted 2 villages on 3rd & 10<sup>th</sup> Dec 2023 total 541 beneficiaries benefitted they're of the programme and expressed their gratitude to the coromandel management for Organized this camp at their villages. Peoples participated from Gullalapalem & Mulagada.



# World breast feeding week celebrations

- Coromandel International limited, is closely working around 5 Anganwades (Mulagada/Pilakavanipalem/Gullalapalem/Sriharipura m/Yeduruvanipalem) nearby plant surrounding areas. We have conducted World Breastfeeding Week celebrations supported with Integrated Child Development Services (ICDS)
- Total pregnant & Lactation women covered 180 Nos and we provided Nutrition kits and participated Local corporator/ICDS Project director/Anganwadi teachers



# Integrated Behavior Change Communication (IBCC)

- We have organised IBCC Project- Integrated Behavior Change communication to community.
- Health awareness/Hypertension/hand wash/Adolescent/Nutrition to community members.





## School Medical Camps

- Dental screening, Eye screening and Anemic screening camp 4 Govt primary and 4 High schools and total covered 9 Govt. Schools.
- As per requirement provided Dental kits & Anemic kits to school children.
- 3370 children in 8 Govt. Schools.





# Eye screening camp @ Community



We organized Eye screening camp Yeduruvanipalem and Pilakavanipalem villages and no of Benefitted 490

## Anti Larval & Fogging

- Anti-Larval & Fogging Sprayed to Project villages.
- To avoid & control the seasonal diseases like Dengue, Malaria- Anti-Larval & Fogging Spray to 11 major community villages.





# Diabetic awareness Run

- Every year Coromandel Employee We Organized Diabetic Awareness Programme.
- Participated 98 employees provided participate certificates





## Community Hall Inauguration- Gondesivanipalem (58<sup>th</sup> ward)

- 58<sup>th</sup> ward Community hall Inaugurated by Anand Kumar YSRCP in charge and MSME Chairman and 58<sup>th</sup> ward Corporator Mrs.Lavanya and community leaders on 14<sup>th</sup> Aug 2023
- 110 families benefitted & 600 peoples covered.







## Community Hall Inauguration-Hanuman Sanjivani colony (60<sup>th</sup> ward)

- Community hall Inaugurated by Mr. A Anandkumar MSME Chairman and west zone YSRCP in charge, 60<sup>th</sup> ward corporator Mr. Suresh and community leaders on 14<sup>th</sup> Aug 2023
- 320 families benefitted 1600 peoples covered.
- 2 community halls works under process



## 10 Community Borewells installed



- Established 10 community bore wells in 10 locations
- Borewells inaugurated by Mr.Adari Anand kumar YSRCP In charge west zone & MSME Chairperson and 58<sup>th</sup> ward Corporator.
- 2023-2024 we initiated 4 Motor bore wells four villages



## 4 Community Open Gyms Established

- Established 4 Community Open Gyms
  - Yeduruvanipalem
  - Pilakavanipalem
  - Gullalapalem
  - Ex servicemen colony





# Coromandel Inter-village Cricket Tournament 2023-24

- Coromandel encouraged youth and conducted Sports and games every year to create a healthy atmosphere among the community
- Organized Inter-village cricket tournament at Coromandel Cricket Ground
- 18 Teams participated in this event.
- Winners Yeduruvanipalem and Runners Pilakavanipalem



# World Environment day

- World Environment day celebrated and distributed the cloth bags to the Public and 30 Tree plantation at social welfare Girls hostels.
- Local Corporator, Police dept and local community members participated.





## Coromandel Ladies Association Initiatives

- World food day
- National Cancer day
- Printer, game kits, stationary support to Social welfare Girl hostel children
- Wheelchairs support
- Blanket supported to poor people
- Women's day celebration





## Skill Development for women

- We established 4 Skill development program.  
Each program batch consists of 30 women
  - Budget Rs. 5Lakhs x 4 = Rs.20.0 Lakhs
- 1.Maggam work
  - 2.Jute bag
  - 3.Handmade jewellery
  - 4.Beautician







murugappa



## Women's day celebrations

- 2023- Women's day celebrations, involving Community women members.
- 273 community women participated



# Beat Plastic Pollution



Distribution of cloth bags in presence of **District Collector (Dr. A.MALLIKHARJUNA)** and **Mr. Y.V. Subba Reddy (Chairman – TTD)**



# Mega Beach cleaning

- Every year Coromandel Employee volunteers participated in Mega beach cleaning event as a part of Social cause.
- Total - 40 Employee voluntarily engaged in the event.
- District Collector,GVMC Commissioner and IT Minister Mr.Amaranath



## Road Safety awareness to Govt schools

- Every year we ensure Road safety awareness to 8 Govt schools. Conducted the quiz competition provided Prizes
- Risk and property Reduced our surround plant area Govt schools





## Renovation of Social welfare Girls Hostels



Dayal Nagar Girls Hostel



Nadupuru Girls Hostel



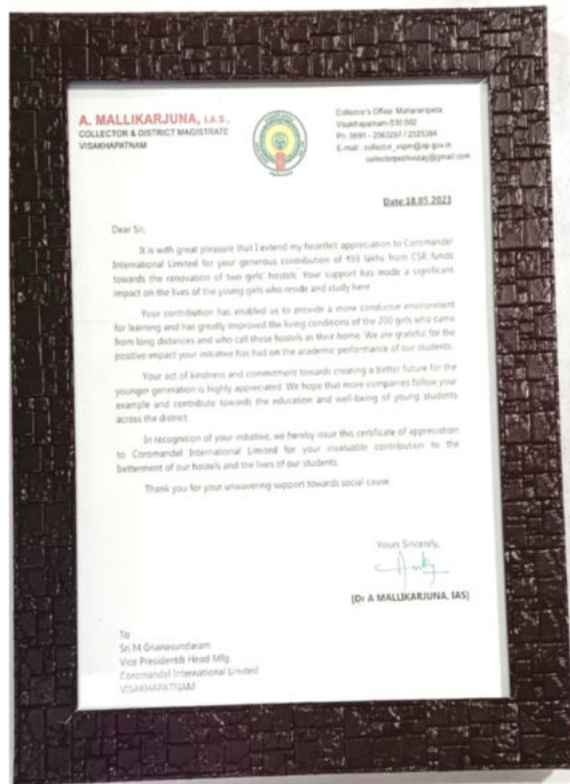
Social welfare Girls Hostels Inaugurated by District Collector







# Social welfare Girl's hostel report Hand overed to District collector



## Appreciation letter From District Collector



# Coromandel ladies Association

- Coromandel Ladies Association visited and interacted with Social welfare Girl Children at Nadupuru.
- Ladies Association Provided Stationery and Games kits to school children.
- Ladies Association conducted Health Hygiene awareness session to children.
- 30 tree Plantation carried out by the team.





## Coromandel Ladies Association visited to Social welfare Girls PG hostel Dayal Nagar

- Coromandel Ladies Association visited and interacted with Social welfare Girl PG students at Nadupuru.
- Ladies Association supported scanning printer to Hostel students.
- Awareness created on Personal Hygiene by Dr.Madhulatha.
- 30 tree Plantation carried out by the team.



## PRSI National CSR Award

- Received First Prize in best CSR Programme for promoting Science & Technology.
- Award presented by Mr. Rajiv Ranjan Misra, Dhruva Jyoti Patil.





## Malkapuram Police station Renovation

- Renovated Malkapuram Police station and it was inaugurated by Mr. Anand Reddy, DCP Zone 2, Mr. Gnanasundaram-Vice President & Mr. GSV Raja, AVP HR of Coromandel along with Mr. Demudu Babu garu, Station Officer of Malkapuram Police Station





150 Safety Barricades to Police & surrounding communities



## Fire Station Renovation jobs @ Pedagantyada

- Inaugurated by Mr.Niranjanreddy,  
Regional Fire officer, Mr. M.  
Gnanasundaram, Vice President of  
Coromandel along with Mr. Renukaiah,  
District Fire officer





**Thank You**