

MINISTRY OF ENVIRONMENT AND FORESTS NOTIFICATION
New Delhi, the 22nd April, 1993
{PART II, SECTION 3, SUB-SECTION (1)}

FORM – V
(See Rule 14)

Environmental Statement for the Financial Year Ending 31st March, 2023

PART – A

i)	Name and address of the Owner / Occupier of the Industry operation or process.	:	Shri. Krishnamoorthy Krishnan (R) 503 Jai Hari Kunj CHS Ltd., 12/13A, Shree Nagar Estate, Goregaon – West, Mumbai 400 062
ii)	Industry Category Primary (STC Code) Secondary (STC Code)	: : :	- RED
iii)	Production Capacity – Units	:	Please refer Annexure I
iv)	Year of Establishment	:	1959 / 2007 November Membrane cell plant
v)	Date of the last environmental statement submitted.	:	30/09/2022

PART – B

Water and Raw Material Consumption

i)	Water Consumption m ³ /day	:	
	Process	:	3415 m ³ /d
	Cooling	:	300 m ³ /d
	Domestic	:	30 m ³ /d

Sl. No.	Name of the Products	Process water consumption per unit of product output (M ³ /T)	
		During the previous financial year	During the current financial year
		2021 – 2022	2022 – 2023
		(1)	(2)
1.	CAUSTIC SODA	8.05	6.80
2.	HYDROCHLORIC ACID	4.47	3.62
3.	LIQUID CHLORINE	Nil	Nil
4.	TRICHLOROETHYLENE	20.75	19.92
5.	BENEFICIATED ILMENITE	5.70	6.59

(Please refer Annexure I A)

Contd...2

ii) Raw Material Consumption

*Name of raw materials	Name of Products	Consumption of raw material per unit of product out put	
		During the previous financial year 2021 – 2022	During the current financial year 2022 – 2023
Please refer Annexure II			

- Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials.

PART – C

Pollution discharged to environment / unit out put
(Parameter as specified in the consent issued)

Pollutants	Quantity of pollutants discharged (Mass / day)	Concentrations of pollutants in discharges (Mass / Volume)	Percentage of variation from prescribed standards with reasons
a) Water	Please Refer Annexure II A		
b) Air	For breakup details, please Refer Annexure II B Stack analysis report and Ambient Air Quality analysis reports furnished by Tamil Nadu Pollution Control Board are attached herewith – Please refer Annexure II C.		

PART - D**HAZARDOUS WASTES**

(As specified under Hazardous & Other Waste (Management & Transboundary Movement) Rules, 2016)

Hazardous Wastes	Total Quantity (in MTs)	
	During the previous financial year(2021-2022)	During the current financial year (2022-2023)
a) From Process	Nil	Nil
b) From Pollution Control facilities	1752.215 (ETP Sludge)	1166.508 (ETP Sludge)
c) Used Oil	0.357*	0.475*
d) Waste Containing Oil	0.060*	Nil

*Used Oil is transferred to CPP and Sold to authorized agency. Refer Annexure – VII.

PART – E**SOLID WASTES**

Non-Hazardous Wastes	Total Quantity (Kg)	
	During the previous financial year 2021 – 2022	During the current financial year 2022 – 2023
a) From Process – CALCIUM HYDROXIDE CALCIUM CHLORIDE	2230 MT 1970 MT	2402 MT 2100MT
From Membrane cell Caustic Soda Plant BRINE SLUDGE	4303.568 MT	4303.568 MT
b) From Pollution Control Facilities	Nil	Nil
c) 1) Quantity recycled or re-utilized within the Unit.	Calcium Hydroxide 1620 MT	Calcium Hydroxide 1746 MT
2) Sold	Calcium Chloride 1970 MT Calcium Hydroxide 610 MT	Calcium Chloride 2100 MT Calcium Hydroxide 656 MT
3) Disposed	Brine Sludge 4303.568 MT	Brine Sludge 3602.034 MT

For the details of solid waste generation from the process and from Pollution Control facility, please refer Annexure III-A and B

PART - F

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

Please refer Annexure IV

PART – G

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

Please refer Annexure V

Contd...4

PART - H

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

Please refer Annexure VI

PART - I

Any other particulars for improving the quality of the environment.

Please refer Annexure VI

Signature:

Name & Address of the person submitting the:
Environmental Statement

S. Suresh
VICE PRESIDENT (Manufacturing)
DCW LIMITED
SAHUPURAM PO 628229
THOOTHUKUDI DIST.

On behalf of Name and Address of the Unit :

DCW LIMITED
(CS DIVISION)
SAHUPURAM 628 229
THOOTHUKUDI DIST

DETAILS OF PRODUCTS MANUFACTURED

Sl. No.	Name of the Products	Consented Quantity in MT per month	Actual Quantity in MT per month (Avg.)
1.	CAUSTIC SODA	8,490	6668
2.	TRICHLOROETHYLENE	600	237
3.	BENEFICIATED ILMENITE (UGI)	6,000	3394
4.	LIQUID CHLORINE	3,000	1864
5.	HYDROCHLORIC ACID	7,500	4426
BY-PRODUCT			
1.	CALCIUM HYDROXIDE	450	200
2.	SODIUM HYPOCHLORITE (RECOVERED FROM CHLORINE EMISSION CONTROL)	450	267
3.	FERRIC CHLORIDE (RECOVERED FROM EFFLUENT)	1,000	216

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PART – A

- i) Name and address of the Owner / Occupier of the Industry operation or process. : Shri. Krishnamoorthy Krishnan
(R) 503 Jai Hari Kunj CHS Ltd.,
12/13A, Shree Nagar Estate,
Goregaon – West,
Mumbai 400 062
- ii) Industry Category
Primary (STC Code) : Orange
Secondary (STC Code) : -
- iii) Production Capacity - Units :

	Consented (TPA)	Actual (TPA)
PVC – 150000		96348
CPVC – 14400		10413
- iv) Year of Establishment : 1983 (Revamped) – Expanded capacity CTO obtained during 08.05.2017.
- v) Date of the last environmental statement submitted. : 30/09/2022

PART – B

Water and Raw Material Consumption

- i) Water Consumption m³ / Day
- | | |
|----------|-----------------------|
| Process | : 1019 m ³ |
| Cooling | : 1089 m ³ |
| Domestic | : 6 m ³ |

Sl. No.	Name of the Products	Process water consumption per unit of product out put	
		During the previous financial year 2021 - 2022	During the current financial year 2022 – 2023
		(1)	(2)
1.	Poly Vinyl Chloride	3.599 m3	3.847 m3
2.	Chlorinated Poly Vinyl Chloride	NA – (no process water consumption for the product manufactured)	NA – (no process water consumption for the product manufactured)

*Water Consumption includes recycled water.

ii) Raw Material Consumption

Name of raw materials	Name of Products	Consumption of raw material per unit of product out put	
		During the previous financial year 2021 - 2022	During the current financial year 2022 – 2023
1) VINYL CHLORIDE MONOMER	PVC RESIN	1.013	1.010
2) PVC Resin	Chlorinated Poly Vinyl Chloride	0.770	0.770
3) Chlorine	Chlorinated Poly Vinyl Chloride	0.560	0.580

PART – C

Pollution discharged to environment / unit out put
(Parameter as specified in the consent issued)

Pollutants	Quantity of pollutants discharged (Mass / day)	Concentrations of pollutants in discharges (Mass / Volume)	Percentage of variation from prescribed standards with reasons
a) Effluent Water	210 m ³ /day from the utility section and UF rejects & CT Bleed off from CPVC are settled, neutralized and used in ilmenite plant for product washing.	pH: 7.24 TSS: 4 mg/l TDS: 293 mg/l Chloride: 98 mg/l Sulphate: 33 mg/l Oil and Grease: <1.0 mg/l BOD: 8 mg/l COD: 38 mg/l	
b) Sewage	6.0 KLD	pH: 7.36 TSS: 6.3 mg/l BOD: 9.5 mg/l	After treatment from STP, it is used for milk of lime preparation.
c) Air			
Particulate Matter	10.93 kg/day	19.22 mg/Nm ³	- 87.2

Contd.. 3

PART - D
HAZARDOUS WASTES

As specified under Hazardous & Other Waste (Management & Transboundary Movement) Rules, 2016

Hazardous Wastes	Total Quantity	
	During the previous financial year (2021-2022)	During the current financial year (2022-2023)
a) From Process	Nil	Nil
b) From Pollution Control Facilities.	No hazardous waste from PVC Unit.	
c) Used Oil	1.447 MT	1.332 MT

PART - E
SOLID WASTES

Solid Wastes	Total Quantity (MT)	
	During the previous financial year 2021 - 2022	During the current financial year 2022- 2023
a) From Process	39.690	34.870
b) From Pollution Control Facilities	Nil	Nil
c) 1) Quantity recycled or re-utilized within the Unit.	Nil	Nil
2) Sold (as Off grade Resin)	39.690	34.870
3) Disposed	Nil	Nil

PART - F

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

S. No	Type of waste	Characterization	Mode of disposal
1	Hazardous waste Used oil	<u>Used Oil composition:</u> 1) Cadmium + Chromium + nickel (NI): 56.2 ppm 2) Arsenic : BDL (DL: <0.1 ppm) 3) Lead (as PB) : 10.3 ppm 4) Polychlorinated biphenyl (PCBs): BDL (DL:<1.0 mg/Kg)	Sold to authorized vendors
2	Solid waste Off grade resins	-	The quantity generated is sold.

Used oil of 1.332 MT fall under Category 5.1 is transferred to CPP and sold to authorized agency. Refer Annexure – 1.

Contd.. 4

PART – G

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

- We have already installed On-line system for VCM emission monitoring at ten vantage locations of the plant process, handling and storage areas, with an investment of around Rs.10 lakhs.
- The critical air quality parameter (VCM) is monitored continuously and the same is hooked up to Care Air Centre at the TNPCB HQ at Chennai.
- All dryers are provided with cyclone separators to control particulate matter emission and operated effectively.
- As water conservation efforts, we have carried out recycling and reuse of treated rejects for the product washing in the Ilmenite plant of our unit. The ultrafiltration system is provided for the effluent generated from the superdecantor and the permeate is completely reused in DM Plant.

PART - H

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

- We have already installed On-line system for VCM emission monitoring at ten vantage locations of the plant process, handling and storage areas, with an investment of around Rs.10 lakhs.
- The critical air quality parameter(VCM)is monitored continuously and the same is hooked up to Care Air Centre at the TNPCB HQ at Chennai.
- We have introduced advanced stripping tower system for the recovery of residual VCM from PVC slurry with an investment of about Rs.14 crores.
- Scrubbing system provided in the Fluidized Bed Dryer for effective dust control in the dryer vent.
- We have installed Continuous ambient air quality monitoring station to monitor PM10, PM2.5, VCM, SO2, NOx, CL2 & Ammonia) in Ambient surrounding the unit and the same has been connected to Care Air Centre, TNPCB from 28.07.2022 onwards.

PART - I

The CSR activities carried out during the period 2022-23 by the management to improve the environment, ensure environmental sustainability and rural developments are:

- Donation of 1700 tree saplings to nearby colleges, Panchayats, and religious organizations.
- “Career Guidance” program conducted to 10th & 12th standard school students to guide their higher studies in and around Sahupuram.
- Kailasanathar Temple, Sernthamangalam village Cart revamped.
- Civil aided works (cleaning of bushes & others) carried out at Thalaivanvadali village, Kayalpattinam village, Thannerpanthal village, Tiruchendur Municipality Play Ground, Aadhi Vinayagar Koil.
- Donation of RO Purifier to Al Ameen Nursury & Primary School, Kayalpattinam.
- Formation of Road at Singithurai village, Kayalpattinam.
- Donation of Nose Masks, Sanitizer, Ceiling Fan to nearby ESIC Hospital, Authoor.
- Donation of PVC barrel, SS drinking water drum to preserve sweet water nearby village temple and school.
- Yoga program conducted and 600 students were participated.
- Donation of Computer and com accessories system to Kamaraj Higher secondary School.
- Educational aid donation to underprivileged children's education for their better future.
- First Aid Medical Camp & providing refreshments for devotees of Tiruchendur temple.
- Desilting of Agricultural channel for get a better cultivation of paddy field at Nallur Village farmers, Authoor keel kulam farmers and Authoor kaspas farmers sangam.
- Contribution to Public Health Department for state level centenary celebration, Tuticorin.
- Contribution to CPI State conference.
- Donation of Bicycles to Nearby poor school children.
- Construction of a Fish Net fabrication yard to Punnakayal fishermen.

- Donation of Refrigerator to Primary Health Centre, Kayalpattinam.
- Providing High mass Light Tower at Pazhyakayal.

Signature:

Name & Address of the person submitting the:
Environmental Statement

S.SURESH
VICE PRESIDENT (Manufacturing)
DCW LIMITED
SAHUPURAM PO 628229
THOOTHUKUDI DIST.

On behalf of Name and Address of the Unit :

DCW LIMITED
(PVC DIVISION)
SAHUPURAM 628 229
THOOTHUKUDI DIST

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- ii) Industry Category
 Primary (STC Code) : RED
 Secondary (STC Code) : -
- iii) Production Capacity - Units : Consented – 58.27 MW (2 x 25 + 8.27)
 Actual Generation for 22-23 – 28.18 MW
- iv) Year of Establishment : June 2008 & Nov 2010
- v) Date of the last environmental statement submitted. : 30/09/2022

PART – B

Water and Raw Material Consumption

- i) Water Consumption m³/day
- Process : 505 m³/d
 Cooling : 1779 m³/d
 Domestic : 10 m³/d

Sl. No.	Name of the Products	Process water consumption per unit of product out put	
		During the previous financial year 2021 – 2022	During the current financial year 2022 – 2023
		(1)	(2)
1.	For Steam Generation	3.446 m ³ /Hr/MW	3.391 m ³ /Hr/MW

ii) Raw Material Consumption

Name of raw materials	Name of Products	Consumption of raw material per unit of product out put	
		During the previous financial year 2021 – 2022	During the current financial year 2022 – 2023
Coal	Power Generation	0.901 T/MW	0.887 T/MW

PART – C

Pollution discharged to environment / unit out put
(Parameter as specified in the consent issued)

Pollutants	Quantity of pollutants discharged (Mass / day)	Concentrations of pollutants in discharges (Mass / Volume)	Percentage of variation from prescribed standards with reasons
a) Water	<p>The average effluent generated in the plant is about 670 m³/day</p> <ul style="list-style-type: none"> RO permeate of about 402 m³/day is recycled for Cooling tower makeup RO reject of about 268 m³/day is used for ilmenite product washing, dust suppression and ash conditioning. 	<p>pH: 6.42 to 8.19 TSS: 2-31 mg/L TDS: 1820-2874 mg/L Chloride: 475-1210 mg/L Sulphate: 49-560 mg/L BOD: 3.01-49 mg/L COD: 32-128 mg/L</p>	-
b) Sewage	4.0 KLD - Treated in the Industrial STP and Treated sewage used for Milk of lime Preparation and meets the standard.	<p>pH: 7.02 – 7.98 TSS: 2 – 26.0 mg/l BOD: 2.8 – 15.65 mg/l</p>	-
c) Air			
Particulate Matter	79.0 kg/d	24.3 mg / m ³	-51.40 %
Sulphur Dioxide	224.36 kg/d	68.43 mg / m ³	-88.60 %
Oxides of Nitrogen	191.36 kg /d	61.18 mg / m ³	-86.40 %

PART - D**HAZARDOUS WASTES**

As specified under Hazardous & Other Waste (Management & Transboundary Movement) Rules, 2016

Hazardous Wastes	Total Quantity	
	During the previous financial year 2021-2022	During the current financial year 2022-2023
a) From Process – Used Oil	1.258 MT	1.196 MT
b) From Pollution Control Facilities.	Nil	Nil

PART – E**SOLID WASTES**

Solid Wastes	Total Quantity (MT)	
	During the previous financial year 2021 - 2022	During the current financial year 2022– 2023
a) From Process Bed Ash Fly Ash	1682.57 16021.28	2317.120 15953.708
b) From Pollution Control Facilities		
c) 1) Quantity recycled or re-utilised within the Unit. (Bed Ash)	1682.57	2317.120
2) Sold Fly Ash	16021.28	15953.708
3) Disposed Bed Ash	Nil	Nil

PART - F

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

In Cogen Plant, used oil is generated from Turbine bearing lubrication transferred to CPP and sold to authorized agency. Refer Annexure – 1.

The total ash quantity is maintained less than the consented quantity of 2500T/month.

S. No	Type of waste	Characterization	Mode of disposal
1	<u>Hazardous waste</u> Used oil:	<u>Used Oil composition:</u> 1) Cadmium + Chromium + nickel (NI): 56.2 ppm 2) Arsenic : BDL (DL: <0.1 ppm) 3) Lead (as PB) : 10.3 ppm 4) Polychlorinated biphenyl (PCBs): BDL (DL:<1.0 mg/Kg)	Used Oil is collected separately for sale to authorized parties along with Captive Power Plant used oil disposal
2	<u>Solid waste</u> Bed Ash Fly Ash	-	Fly ash is sold to cement units / Brick Manufacturers on daily basis. The Bed Ash generated is used for in-house purpose viz. bund strengthening, road formation inside premises.

PART – G

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

The boilers are attached with advanced Electrostatic precipitator with three field arrangements for effective containment of suspended particulate matter.

The net effluent generated from the cooling tower bleed off, DM water treatment RO system and mixed bed regenerating are collected in equalization tank, treated in a dedicated effluent treatment plant exclusively provided with RO system. The permeate is recycled for cooling tower makeup and the reject is used for Ilmenite product washing dust suppression, and ash conditioning in such a way that the net effluent generated is fully utilized within the plant.

The secondary water treatment for the effluent generated from the system conserves resource saving of about 980 m³ / day of river water.

PART - H

Additional measures / investment are proposed for environmental protection including abatement of pollution, prevention of pollution.

- Additional measures are taken for development of green belt by planting tree saplings with systematic and sustained efforts.
- The coal is stored in stacks not more than 5m height in closed storage yards of capacity 10000 MT.

- The coal from storage yards are transferred to the plant through closed conveyor systems.
- Manual as well as automatic water sprinkler systems are provided as dust suppression systems.
- The unit has an Online Continuous Emission/Effluent Monitoring System for Core Parameters Viz. SO₂, NO_x & PM furnaces for Emission and pH, TSS & Temperature for Effluent parameters and the same is continuously being uploaded to TNPCB & CPCB server.

PART - I

Any other particulars for improving the quality of the environment.

The CSR activities carried out during the period 2022-23 by the management to improve the environment, ensure environmental sustainability and rural developments are:

- Donation of 1700 tree saplings to nearby colleges, Panchayats, and religious organizations.
- "Career Guidance" program conducted to 10th & 12th standard school students to guide their higher studies in and around Sahupuram.
- Kailasanathar Temple, Sernthamangalam village Cart revamped.
- Civil aided works (cleaning of bushes & others) carried out at Thalaivanvadali village, Kayalpattinam village, Thannerpanthal village, Tiruchendur Municipality Play Ground, Aadhi Vinayagar Koil.
- Donation of RO Purifier to Al Ameen Nursury & Primary School, Kayalpattinam.
- Formation of Road at Singithurai village, Kayalpattinam.
- Donation of Nose Masks, Sanitizer, Ceiling Fan to nearby ESIC Hospital, Authoor.
- Donation of PVC barrel, SS drinking water drum to preserve sweet water nearby village temple and school.
- Yoga program conducted and 600 students were participated.
- Donation of Computer and com accessories system to Kamaraj Higher secondary School.
- Educational aid donation to underprivileged children's education for their better future.
- First Aid Medical Camp & providing refreshments for devotees of Tiruchendur temple.
- Desilting of Agricultural channel for get a better cultivation of paddy field at Nallur Village farmers, Authoor keel kulam farmers and Authoor kaspas farmers sangam. Contribution to Public Health Department for state level centenary celebration, Tuticorin.
- Contribution to CPI State conference.

- Donation of Bicycles to Nearby poor school children.
- Construction of a Fish Net fabrication yard to Punnakayal fishermen.
- Donation of Refrigerator to Primary Health Centre, Kayalpattinam.
- Providing High mass Light Tower at Pazhyakayal.

Signature:

Name & Address of the person submitting the:
Environmental Statement

S.SURESH
VICE PRESIDENT (Manufacturing)
DCW LIMITED
SAHUPURAM PO 628229
THOOTHUKUDI DIST.

On behalf of Name and Address of the Unit :

DCW LIMITED
(COGEN POWER PLANT
DIVISION)
SAHUPURAM 628 229
THOOTHUKUDI DIST