



29.09.2025

To,

Member Secretary,
Goa State Pollution Control Board,
Nr. Pilerne Industrial Estate,
Opp. Saligao Seminary,
Saligao-Bardez,
Goa 403511

Dear Madam,

Sub: Environmental Statement for the year 2024-25

Please find enclosed herewith the "Environmental Statement" for the year 2024-25 in Form – V in compliance with Rule-14 of the Environment (Protection) (Second Amendment) Rules, 1992. This is also in accordance with the general conditions of our Consent to Operate No. 12/2023-PCB/1948660/R00013712 dated 14/06/2024 issued to us by your office.

Hope the information provided meets your requirement.

Thanking you,

Yours faithfully,

For **Paradeep Phosphates Limited – Goa Unit.**



Suresh Pramanik

Chief Manufacturing Officer & Unit Head – Goa Plant

Encl.: as above

PARADEEP PHOSPHATES LIMITED

CIN No.: L24129OR1981PLC001020

Goa Unit : Jaikisaan Bhawan, Zuarinagar, Goa - 403 726

Tel: +0832 2592180, 2592181, 6752399

Registered Office: Bayan Bhawan, Pandit J.N. Marg, Bhubaneswar - 751 001

www.paradeepphosphates.com

PARADEEP PHOSPHATES LIMITED, ZUARINAGAR, GOA

FORM - V

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

PART – A

(i) Name and Address of the Owner / Occupier of the Industry, Operation or Process

Mr. Suresh Krishnan
Managing Director & CEO
Paradeep Phosphates Limited
Jai Kisaan Bhawan,
Zuarinagar,
Goa - 403726

(ii) Industry Category ----- Primary – (STC Code) / Secondary – (SIC Code)

Chemical Fertilizer Industry (Nitrogenous and Complex Grades)

(iii) Production Capacity – Units

Sr. No.	Product	Installed Production Capacity MT/ Year	Actual Production for 2024-25 (MT)
1	Ammonia *	346500	260755.500
2	Urea	495000	416597.925
3	Complex Fertilizers produced in NPK-A plant	500000	312627.600
4	Complex Fertilizers produced in NPK-B plant	500000	363752.600
5	Carbon Dioxide**	34400	Nil

(* Intermediate Product used for captive consumption)

(**By-Product)

(iv) Year of Establishment

1967 (Actual commercial production started in 1973)

(v) Date of the last Environmental Statement submitted

September 27, 2024

PART – B

Water and Raw Material Consumption

(i)

Water Consumption

M³ / Day

(Based on typical water balance at avg. plant loads)

Process	3470 *
Cooling	5630
Domestic	470
Total	9570 **

Industry Effluent generated – Nil (Zero Liquid Discharge)

(* includes Boiler feed water make up, Treated water etc.)

(**excludes Avg. colony water supply of about 400 M³ / Day)

Name of Products	Process water consumption per unit of product output	
	During the previous financial year 2023-24	During the current financial year 2024-25
Urea	8.010 M ³ /MT	7.790 M ³ /MT
Complex Grades in NPK-A plant	0.527 M ³ /MT	0.353 M ³ /MT
Complex Grades in NPK-B plant	0.587 M ³ /MT	0.299 M ³ /MT

(* Process water consumption requirement of NPK-A and NPK-B plants is met by recycling the effluent/ waste water from Effluent Treatment Plant)

(ii) **Raw Material Consumption**

Name of Raw Material *	Name of Products	Consumption of Raw Material per unit of Output (MT/MT)	
		During the previous financial year 2023-24	During the current financial year 2024-25
Natural Gas	Ammonia (Intermediate product for captive consumption)	0.4022	0.4157
Ammonia	Urea	0.58	0.58
CO ₂		0.756	0.757

Name of Raw Material *	Name of Products	Consumption of Raw Material per unit of Output (MT/MT)	
		During the previous financial year 2023-24	During the current financial year 2024-25
Ammonia	18:46:00 grade (Samrat)	0.2116	-
P ₂ O ₅		0.4661	-
H ₂ SO ₄		0.0300	-
Filler		0.0696	-
Urea		0.0210	-
Ammonia	10:26:26 grade (Samarth)	0.1230	0.1230
P ₂ O ₅		0.2656	0.2654
Potash		0.4423	0.4472
H ₂ SO ₄		0.0122	0.0089
Filler		0.0360	0.0251
Urea		0.0122	0.0030
Ammonia	12:32:16 grade (Sampatti)	0.1466	0.1469
P ₂ O ₅		0.3260	0.3268
Potash		0.2739	0.2740
H ₂ SO ₄		0.0094	0.0069
Filler		0.1062	0.0469
Urea		0.0042	0.0058
Ammonia	19:19:19 grade (Sampurna)	0.0861	0.0839
P ₂ O ₅		0.1957	0.1953
Potash		0.3266	0.3283
H ₂ SO ₄		0.0184	0.0183
Filler		0.0035	0.0099
Urea		0.2717	0.2745
Ammonia	24:24:00 grade (Sampanna)	0.1356	-
P ₂ O ₅		0.2465	-
H ₂ SO ₄		0.0714	-
Filler		0.1027	-
Urea		0.2913	-
Ammonia	20:20:00:13 grade (Navratna)	0.2362	0.2315
P ₂ O ₅		0.2060	0.2043
H ₂ SO ₄		0.4242	0.4102
Filler		0.0168	0.0102
Urea		0.0239	0.0272

Ammonia	28:28:00 grade (Uramphos)	0.1395	0.1348
P ₂ O ₅		0.2861	0.2864
H ₂ SO ₄		0.0398	0.0418
Filler		0.0050	0.0050
Urea		0.3710	0.3801
Ammonia	15:15:15:09 grade	0.1746	-
P ₂ O ₅		0.1547	-
Potash		0.2565	-
H ₂ SO ₄		0.3121	-
Urea		0.0222	-
Ammonia	14:35:14 grade	0.1735	0.1693
P ₂ O ₅		0.3560	0.3557
Potash		0.2400	0.2390
H ₂ SO ₄		0.0473	0.0402
Filler		0.0147	0.0182
Urea		-	0.0077

(* Industry may use codes if disclosing the details of raw materials would violate contractual obligations, otherwise all industries have to name the raw materials used)

PART – C

Pollution discharged to Environment / Unit of Output

(Parameters as specified in the consent issued)

Pollutants	Quantity of pollutants discharged (mass / day) Kg / Hr *	Concentration of pollutants in discharge (mass / vol.) mg / Nm3 *	Percentage of variation from prescribed standards with reasons
(a) Water	NIL	NIL	N. A
(b) Air			
i) Particulate Matter from Prilling Tower – Urea plant	---	87.22	Less by 41.85 %
ii) Particulate Matter from Dust Separator – Urea plant	---	67.14	Less by 55.24 %
iii) Ammonia from Fumes Stack – NPK-A plant	0.61	---	Less by 93.9 %
iv) Particulate Matter from Dryer Stack – NPK-A plant	---	58.31	Less by 61.11 %
v) Particulate Matter from Dedusting Stack – NPK-A plant	---	66.59	Less by 55.60 %
vi) Ammonia from NPK-B Stack	2.14	---	Less by 78.6 %
vii) Particulate Matter from NPK-B Stack	---	61.13	Less by 59.24 %
viii) SO ₂ from Boiler Stack	3.07	---	NA
ix) NO _x from Boiler Stack	---	182.78	NA
x) Particulate Matter from Boiler Stack	---	42.18	NA
xi) SO ₂ from DG Set stack	1.82	---	Less by 98.27 %
xii) Particulate Matter from DG Stack	---	43.14	Less by 71.24 %
xiii) NO _x from DG Stack	---	80.03 ppmv	Less by 92.72 %
xiv) NMHC from DG Stack	---	9.76	Less by 93.49 %
xv) CO from DG Stack	---	16.27	Less by 89.15 %

(* Annual average values expressed at 25 deg. Centigrade, Atm. Pr. & 0 % moisture)

PART – D
Hazardous Waste

[As specified under Hazardous Waste & Other Wastes (Mgt. & Transboundary Movement)
Rules, 2016]

Hazardous Waste	Total Quantity	
	During the previous financial year 2023-24	During the current financial Year 2024-25
(a) From Process		
(i) Used/Spent Oil under H.W. Category No.5.1	34.060 MT	45.310 MT
(ii) Spent Catalyst under H.W. Category No.18.1	Nil	71.510 MT
(iii) Tank residue and sludge containing oil H.W. Category No.3.1	41.670 MT	41.410 MT
(iv) Wastes or Residue containing oil H.W. Category No. 5.2	1.190 MT	3.820 MT
(v) Empty barrels/container/liner contaminated with hazardous chemicals H.W. Category No. 33.1	1.340 MT (75 Nos)	1.620 MT (75 Nos)
(vi) Sludge and filter contaminated with oil H.W. Category No. 3.3	0.460 MT	1.070 MT
(vii) Contaminated cotton rags or other cleaning material H.W. Category No. 33.2	0.610 MT	2.550 MT
(viii) Waste resin material from DM plant Category No. 35.2	Nil	5.090 MT
(b) From pollution control facilities		
(i) ETP sludge under H.W Category No. 35.3	42 MT	45 MT
(c) (1) Quantity recycled / reused within Unit	42 MT ETP Sludge	45 MT ETP Sludge
(2) Sold		
(i) to authorized recycler (Used/Spent Oil under HW Category No. 5.1)	34.060 MT	45.310 MT
(ii) to authorized recycler (Tank residue & Sludge containing oil under HW Cat. No. 3.1)	41.670 MT	41.410 MT
(iii) To authorized recycler (Empty barrels / container / liner contaminated with hazardous chemicals under HW Category No. 33.1)	1.340 MT (75 Nos)	1.620 MT (75 Nos)
(3) Disposed		
(a) to TSDF facility for Incineration		
(i) Wastes or Residue containing oil under HW Category No. 5.2	1.190 MT	3.820 MT

(ii) Sludge and filter contaminated with oil under H.W. Category No. 3.3	0.460 MT	1.070 MT
(iii) Contaminated cotton rags or other cleaning material under H.W. Category No. 33.2	0.610 MT	2.550 MT
(iv) Waste resin material from DM plant Category No. 35.2	Nil	5.090 MT
(b) to TSDF facility for Secured land fill	Nil	71.510 MT
(i) Spent Catalyst under HW Category No. 18.1		

PART – E

Solid Wastes

Solid Waste	Total Quantity	
	During the previous financial year 2023-24	During the current financial year 2024-25
(a) From Process		
(i) DM plant Resin material	3.8 MT	Nil
(ii) Sand from WTP filters	18 MT	17.0 MT
(iii) Activated carbon from WTP filters	7.0 MT	6.830 MT
(b) From pollution control facility		
(i) STP Sludge	Approx. 2 MT	Approx. 2 MT
(c) (i) Quantity recycled / re-utilized within unit	Approx. 23.8 MT (Resin, Sand & STP Sludge)	Approx. 19 MT (Sand & STP Sludge)
(ii) Quantity Sold	7.0 MT (Activated Carbon)	NIL
(iii) Disposed	NIL	6.830 MT (Activated Carbon)

PART – F

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

Waste	Composition	Disposal Practice adopted
Hazardous Waste		
Used / Spent Oil (HW Category 5.1)	Used Oil	Sold to recycler registered with CPCB and having valid authorization of SPCB.

Tank residue and sludge containing oil (HW Category 3.1)	Oil sludge & cleaning residue.	Sold to recycler registered with CPCB and having valid authorization of SPCB.
Spent Catalyst (HW Category 18.1)	Spent catalyst containing metals/oxides like Fe, etc.	Given to TSDF facility (Ponda Envocare Limited, Pissurlem Ind. Estate, Goa) for landfill.
ETP Sludge (HW Category 35.3)	Amm. /Urea nitrogen, Phosphate, Sulphate, KCl, Salts of Na, Ca, Mg & Suspended solids.	Recovered into process as recycle along with filler material in NPK-A and NPK-B plants.
Wastes or Residues containing oil (HW Category 5.2)	Cotton gloves/cloth/rags containing oil.	Given to TSDF facility (Ponda Envocare Limited, Pissurlem Ind. Estate Goa), for incineration.
Sludge and filter contaminated with oil. (HW Category 3.3)	Oil filters/Cleaning sludge contaminated with oil.	Given to TSDF facility (Ponda Envocare Limited, Pissurlem Ind. Estate Goa), for incineration.
Contaminated cotton rags or other cleaning material (HW Category 33.2)	Cotton rags/cleaning material	Given to TSDF facility (Ponda Envocare Limited, Pissurlem Ind. Estate Goa), for incineration.
Empty barrels/container/liner contaminated with hazardous chemicals (HW Category 33.1)	Discarded barrels/container/liner contaminated with hazardous chemicals	The empty drums after washing are given to GSPCB authorized recyclers.
DM plant resin material (HW Category 35.2)	Water insoluble co-polymers	Given to TSDF facility (Ponda Envocare Limited, Pissurlem Ind. Estate Goa), for incineration.
Solid Waste from Process		
Sand from filters		Used along with backfilling material for structure / building foundation, road construction etc.
Activated carbon from filters	Carbon material	Sold to recycler having valid authorization of SPCB./ Given to TSDF facility (Ponda Envocare Limited, Pissurlem Ind. Estate Goa), for incineration.
STP Sludge	Organic matter	Used as Bio-fertilizer for green belt.

PART – G

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

Pollution control measures are an integral part of our processes and every effort is made to minimise the amount of effluent/emission and waste generation in the manufacturing process & associated activities. This has resulted in reduction of consumption of water, raw materials and energy over a period of time. This has also resulted in reduction of effluent/emission generation at the source itself and in re-use/recycling/recovery of nutrients from the effluent/wastes.

In April 2014, with the implementation of new water supply agreement with Water Resources Department, Goa, PPL totally stopped the use of bore well water, conserving ground water resources.

In January 2024, Ammonia convertor basket changeover from two bed configuration to three bed configuration along with a new high pressure synloop boiler downstream of Ammonia convertor. Ammonia conversion per pass is increased by 3-3.5 % and heat generated due to increased conversion is utilised to produce high pressure Steam. The Specific Energy consumption of Ammonia is decreased by 0.3 Gcal/MT Ammonia. The Energy saved per day @860 MTPD ammonia load is 258 Gcal/Day.

Ultimately all these measures have certainly added to the conservation of natural resources and cost savings.

Additionally, PPL has replaced old LT motors with new energy-efficient motors to enhance operational efficiency and minimize energy consumption. This initiative has resulted in an electricity saving of **127,092 kWh**.

PART – H

Additional measures / Investment proposal for Environmental Protection including abatement of pollution, prevention of pollution

- (i) PPL has undertaken phase wise implementation of Energy saving projects aimed to reduce specific energy consumption and GHG emissions. The project is currently in the engineering phase and aims to reduce urea-specific energy consumption by 0.3 GCal/MT. This is expected to result in an estimated reduction of approximately 36,000 MT of GHG emissions per year.

- (ii) The Reverse Osmosis unit in our ETP provides enhanced treatment and recovery/recycle of treated water from the wastewater/effluent.
- (iii) The debottlenecking project for enhanced capacity of NPK plant-A and NPK plant-B along with product mix change is completed. The revamped Scrubbing Systems in the NPK-A and NPK-B Plants have been very effective such that the Ammonia emissions are well below the prescribed emission norms.
- (iv) Rain water harvesting for storage in the form of captive lake of 235 MG capacity already exists. In April 2014, with the new agreement of water supply with Water Resources Department, Goa, we have totally stopped utilizing the bore wells water.
- (v) During its operation for last five decades, Paradeep Phosphates Limited has already undertaken many eco-development measures like afforestation, creation and maintenance of green belt around the factory premises etc.
- (vi) The Company is maintaining a Vermi Compost unit in its premises for scientific Treatment of Garden Waste, and supply the organic manure for maintenance of Green Belt.
- (vii) The Company has undertaken several initiatives for environmental protection and community welfare, including:
 - PPL has signed MoU with the GSPCB, the Goa Waste Management Corporation (GWMC), and the Village Panchayat Sancoale, in addressing the waste management challenges faced by Sancoale Panchayat. The project is spread over a period of three years includes end to end waste management.
 - Awarding scholarships to meritorious students from economically weaker sections at High School level and for Engineering and Agriculture College students.
 - Provided smart boards, computers, and printers to local schools to improve education infrastructure.
 - Supplying safe drinking water to Bellam and Dando villages.
 - Constructed soak pits at Fabric Wada, Velsao for better wastewater management.
 - Conducted cleanliness drives at Velsao and supporting waste management initiatives at Sancoale.
 - Undertaken tree plantation programs at Zuarinagar to enhance green cover.
 - Provided a fogging machine to Velsao Village Panchayat for mosquito control.
 - Electrification of the playground at Zuarinagar to promote community sports and recreation.
 - Organized health check-up camps (Eye and Thyroid) at Zuarinagar, Sancoale, Fatrade, and Upasnagar.
- (viii) Continuous Ambient Air Quality Monitoring Station is present that continuously monitors PM10, PM2.5, NH3, SO₂ and NO₂. The station also provides weather data.

- (ix) The Company continues to maintain the Zero Liquid Discharge status. The final effluent discharge pipeline is being continuously monitored by means of provisions of a camera and a flow meter. The Monitoring is done on a "Real Time" basis as these are hooked up to the CPCB and GSPCB server/system.
- (x) The Company has also installed continuous stack emission monitoring system (CEMS) for Reformer stack of Ammonia plant for monitoring NO_x, DG stack for monitoring Particulate Matter and Fumes stack of NPK-A Plant & NPK-B stack for monitoring of Ammonia parameter. The data from Reformer stack, DG stack, NPK-A Fume stack and NPK-B stack has been linked to the GSPCB and CPCB server.
- (xi) PPL has set up a bio digester which processes about 150 kg of canteen food waste per day, diverting organic waste from landfills and reducing methane emissions. The system is generating approximately 10-12 kg of biogas, primarily composed of methane and carbon dioxide. The produced biogas is directly utilized in the canteen for cooking, reducing dependence on conventional LPG. Additionally, the nutrient-rich slurry, a by-product of the by-product of the bio digestion process, serve as an organic fertilizer for landscaping and agricultural applications.

PART – I

Any other particulars for improving the quality of Environment:

- (i) Regular monitoring of process stack emissions once in three months and regular monitoring of ambient air quality around the complex at four strategic CPCB identified locations twice a week by an accredited MoEF&CC recognized laboratory is being carried out. The results of stacks as well as ambient air quality monitoring are well within the standards prescribed by CPCB/SPCB. The monitored results are also displayed on electronic display boards located in public domain.
- (ii) Work zone environment monitoring for ammonia and noise at various locations inside the factory premises and the ambient noise level at different locations around factory premises is carried out. The results of monitoring conform to the limits prescribed.
- (iii) All the wastewater generated within the factory premises is given primary/secondary treatment and then recycled to NPK-A and NPK-B plants for process use or to cooling towers as part make up water. The domestic effluent is treated in Sewage Treatment Plant and the treated domestic effluent is totally recycled to cooling towers as make up. Paradeep Phosphates Limited continues to maintain Zero Liquid Discharge status.
- (iv) Every effort is made to reduce the generation of effluent/emission/wastes at the source itself and to explore the possibility of reusing/recycling of the wastes that are generated.

- (v) Hazardous Wastes like used/spent oil, LSHS tank sludge/cleaning residue and spent catalysts that are generated are stored separately and sold/disposed to only those vendors having Consents/Authorization from State Pollution Control Boards.
- (vi) We are disposing off our e-waste to the authorized recycler in compliance with The E-waste (Management) Rules, 2016 and amendment thereof.
- (vii) Bio-Medical Waste disposed of as per the Bio-Medical Waste Authorization obtained from GSPCB and disposal of Bio-Medical Waste is through vendor authorized by GSPCB.
- (viii) The Company is working with Waste Management Agency (WMA) that specializes in collection and aggregation of all kinds of packaging waste in a professional and organised manner backed by technology to fulfil our EPR (Extended Produced Responsibility) compliances under guidelines stipulated under PWM Rule 2016, amended 2018. Under our EPR Activity, the Company, in the FY 2024-2025 has diverted approximate 2491 tonnes of Post-Consumer Plastic Waste from landfills to recycling and thus contributing towards a greener and cleaner environment.
- (ix) Other solid materials like product spillages, off specification products, ETP sludge are recycled back to process directly or along with the filler material in NPK-A and NPK-B plants.
- (x) Efficient and effective management of cooling water quality control program for operating the cooling towers at higher cycles of concentration to reduce the generation of cooling tower blow-down effluent.
- (xi) Effluent storage ponds like acidic/alkali effluent ponds at Water Treatment Plant, Settling ponds/Holding pond/Guard pond at Effluent Treatment Plant are regularly cleaned, inspected, repaired if required and suitable internal lining measures have been adopted to make the ponds seepage proof.
- (xii) Natural Gas/Ammonia/Chlorine sensors are installed at strategic locations inside the plant premises for early detection of any leak and corrective measures. These sensors are regularly checked for proper functioning.
- (xiii) Regular generation of meteorological data like wind speed, wind direction, temperatures and wind rose diagrams by maintaining thermo-hydrograph and data logger.

- (xiv) As is the practice every year, tree plantation drive (Van Mahotsav) is carried out during monsoon. More area around the factory complex is being developed as green belt and saplings of various plants are distributed to the neighbouring villagers free of cost.
- (xv) Development and maintenance of approx. 50% of area around the factory complex as greenbelt to mitigate the effect of fugitive emissions and noise as per CPCB guidelines.
- (xvi) PPL has been in operation for over five decades and has established a full-fledged laboratory equipped with the necessary facilities for analysis and monitoring. The laboratory is NABL-accredited as a Quality Control Laboratory. Stack emission and ambient air quality monitoring is carried out by MoEF recognized external laboratory as stipulated by GSPCB. A person of General Manager Level is in-charge of overall environmental management functions and he is ably assisted by a dedicated team. Besides, environment management is also one of the mainstream functions of all the section heads who contribute in their own way.
- (xvii) Various activities such as workshop on world environment day, Environmental awareness for workers, pick & win contest, Elocution contest and Quiz competitions, etc. were held during World Environment Week to promote awareness and impart knowledge on various environmental issues.
- (xviii) Training on Environment Management Systems are regularly provided to employees and contract workers.
- (xix) Paradeep Phosphates Limited Goa Unit is certified for excellence in "PROTECT & SUSTAIN" stewardship by International Fertilizer Industry Association (IFA).
- (xx) The Company continues its environment, health and safety initiatives and has successfully implemented internationally recognized Standards and is an ISO 14001:2015 & ISO 45001:2018 certified organization. The Certification process was carried out by TUV Nord and is valid till May 2028.