

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL**  
**SOUTHERN ZONE, CHENNAI**  
**Original Application No. 213 of 2024 (SZ)**

**IN THE MATTER OF:**

Dr. MGR-Janaki College of Arts & Science  
for women Alumni Association,  
Represented by its Secretary, Chennai.

..... Applicant(s)

*Vs*

The Tamil Nadu Pollution Control Board (TNPCB),  
Represented by its Member Secretary, Chennai and Ors.

...Respondent(s)

**INDEX**

S. No.	Particulars	Page No.
1	Reply Affidavit of Respondent No. 2 i.e. Central Pollution Control Board (CPCB) in OA No. 213 of 2024 (SZ)	1-8
2	<b>Annexure-I</b> : Copy of Hon'ble NGT (SZ) order dated 15.07.2024 in OA No. 213 of 2024 (SZ)	9-10
3	<b>Annexure-II</b> : Copy of CPCB directions dated 12.02.2025 under section 18(1)(b) of the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 to all SPCBs/PCCs for adoption and implementation of the Classification-2025.	11-118
4	<b>Annexure-III</b> : Copy of CPCB guidelines for Environmental management of Dairy Farms and Gaushalas issued in July, 2021	119-169
5	<b>Annexure-IV</b> : Copy of CPCB letters dated 02.08.2024 and 10.02.2025 to TNPCB seeking Action Taken Report.	170-175
6	<b>Annexure-V</b> : Copy of Action Taken Report of TNPCB dated 18.02.2025	176-178

Dated at Chennai on this Nineteenth day of March, 2025

Counsel for 2<sup>nd</sup> Respondent-  
CPCB



**H.D. VARALAXMI**  
Regional Director  
CENTRAL POLLUTION CONTROL BOARD  
Regional Directorate (Chennai)  
MoEF & CC, Govt. of India  
2nd Floor, 40-E, BSNL Building, TVK Industrial Estate,  
CIPET Road, Guindy, Chennai - 600032

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL  
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**REPLY ON BEHALF OF RESPONDENT NO. 2,  
CENTRAL POLLUTION CONTROL BOARD (CPCB)**

**PRELIMINARY SUBMISSIONS:**

1. That the Hon'ble National Green Tribunal, Southern Zone, Chennai (hereinafter referred to as "Hon'ble NGT") vide order dated 15.07.2024 directed the respondents to file their replies. The Central Pollution Control Board (hereinafter referred to as "CPCB") is the Respondent No. 2 in the matter. Thereby, the reply is made in succeeding paragraphs. A copy of the Hon'ble NGT order dated 15.07.2024 is annexed as **Annexure-I**.



*H.D. Varalaxmi*  
**H.D. VARALAXMI**  
Regional Director  
CENTRAL POLLUTION CONTROL BOARD  
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2. At the outset, this Answering Respondent no. 2 deny all claims, contentions, allegations and averments against Answering Respondent CPCB in the above Original Application (hereinafter referred to as "OA") contrary to anything stated or submitted in this reply. Nothing in the OA may be deemed to have been accepted or admitted by the Answering Respondent for want of a specific denial or on the ground of non-traverse, save and except any averment which has been expressly admitted hereinafter.
3. That CPCB is constituted under the Water (Prevention and Control of Pollution) Act, 1974 (hereinafter referred to as "Water Act, 1974"). It performs the functions under the Water Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981 (hereinafter referred to as "Air Act, 1981") and the Environment (Protection) Act, 1986 (hereinafter referred to as "E(P) Act, 1986").
4. That it is humbly submitted that as per the direction dated 10.07.2020 issued by CPCB under section 18 (1) (b) of the Water Act, 1974 and the Air Act, 1981 to all the State Pollution Control Boards/Pollution Control Committees (SPCBs/PCCs) "Dairy Farms" are categorized under "Orange Category" and required to obtain Consent to Establishment (hereinafter referred to as "CTE") and Consent to Operate (hereinafter referred to as "CTO") from the concerned SPCB/PCC.
5. That it is humbly submitted that CPCB has recently revised the methodology for classification and prepared "Report on Classification of Sectors into Red, Orange, Green, White and Blue Categories (A tool for progressive environmental management)" (hereinafter referred to as "Classification-2025"). In this regard, CPCB vide letter dated 12.02.2025 has issued directions under section 18(1) (b) of the Water Act, 1974 and the Air Act, 1981 to all the SPCBs/PCCs for adoption and implementation of revised classification-2025. A copy of said direction dated 12.02.2025 is annexed as **Annexure-II**.



  
**H.D. VARALAXMI**  
Regional Director  
CENTRAL POLLUTION CONTROL BOARD  
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6. That as per the revised Classification-2025, "Dairy farms" having more than 500 animals are classified under "Red Category", "Dairy farms" having 15 to 500 animals are classified under "Orange Category" are required to obtain CTE and CTO from the concerned SPCB/PCC.
7. That to address the environmental issues associated with Dairy farms, CPCB formulated revised "Guidelines for Environmental Management of Dairy farms and Gaushalas" in July, 2021 and circulated to all the SPCBs/PCCs for its implementation and compliance. The said guidelines stipulate the methods for solid waste management, waste water management, Air Quality management; siting policy and Regulatory/Monitoring mechanism for dairy farms and Gaushalas. A copy of the above said Guidelines is annexed at **Annexure-III**.
8. That CPCB through its Regional Directorate, Chennai vide letters dated 02.08.2024 and 10.02.2025 requested Tamil Nadu Pollution Control Board (hereinafter referred to as "TNPCB") to furnish the Action Taken Report (hereinafter referred to as "ATR") in the matter. In response, ATR received from TNPCB. As communicated by TNPCB, directions under the Water Act, 1974 and the Air Act, 1981 has been issued to the District Collector, Chennai to seal the dairy farm located inside the premises of Dr. MGR -Janaki College of Arts & Science for Women, based on the violations observed by TNPCB during their inspection on 29.07.2024. A copy of the CPCB letters and Action Taken Report received from TNPCB are annexed as **Annexure-IV and Annexure-V** respectively.

**Para wise Reply:**

9. That the averments made in Para nos. 1 and 2 of the OA are regarding illegal dairy farming inside the premises of the college, causing pollution and nuisance to the students. It is humbly submitted that submissions made in above Para nos. 4 to 7 of the Preliminary Submissions of this reply affidavit may please be considered and are not repeated herein for the sake of brevity.



  
**H.D. VARALAXMI**  
Regional Director  
CENTRAL POLLUTION CONTROL BOARD  
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10. That the averments made in Para nos. 3 and 4 of the OA are regarding the operation of Dairy farm without obtaining mandatory clearances and in violation of siting guidelines issued by CPCB. It is humbly submitted that submissions made in above Para nos. 4 to 7 of the Preliminary Submissions of this reply affidavit may please be considered and are not repeated herein for the sake of brevity. Further, it is humbly submitted that Section 5.1.4 of the aforesaid Environmental Guidelines issued by CPCB, stipulates the siting criteria applicable for new establishment. Existing establishments should take appropriate environment friendly practices as per the Guidelines.
11. That the averments made in Para nos. 5 and 6 of the OA, does not refer to this Answering Respondent, hence, need no reply from this Answering Respondent.
12. That the averments made in Para no. 7 of the OA are regarding the waste generated from dairy farm and being dumped in drain without any treatment. In this regard, it is humbly submitted that CPCB issued "Guidelines for Environmental Management of Dairy Farms and Gaushalas" in July 2021. The said guidelines stipulate the solid waste management, waste water management and Air Quality management practices to be followed in dairy farms.
13. That, the averments made in Para nos. 8 and 9 of the OA are regarding the guidelines issued by CPCB and need no reply from Answering Respondent being matter of record.
14. That the averments made in Para no. 10 of the OA are regarding the categorization of Dairy Farms and Gaushalas and require prior consent and approvals from concerned SPCBs/PCCs. In this regard, it is submitted that submissions made in above para nos. 4 to 6 of the Preliminary Submissions of this reply affidavit may please be considered and are not repeated herein for the sake of brevity.



*H.D. Varalaxmi*  
**H.D.VARALAXMI**  
Regional Director  
CENTRAL POLLUTION CONTROL BOARD  
Regional Directorate (Chennai)  
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15. That no comments are offered over the averments made in Para no. 11 of the OA being matter of record.
16. That the averments made in Para no. 12 of the OA are regarding the non-compliance of siting policy and waste management. In this regard, it is humbly submitted that submissions made at Para no. 7 of the Preliminary Submissions of this reply affidavit are re-iterated and not repeated herein for the sake of brevity.
17. That the averments made in Para nos. 13 and 14 of the OA are regarding the various orders passed by the Hon'ble NGT (PB) and hence need no reply from Answering Respondent being matter of record.
18. That, the averments made in Para nos. 15 to 16 of the OA are regarding the transfer of application and representations of applicant. It is humbly submitted that averments do not refer to this Answering Respondent, hence, need no reply from Answering Respondent.
19. That, the averments made in Para no. 17 of the OA are regarding the grounds for filing the application. It is humbly submitted that the Preliminary Submissions of this reply affidavit are re-iterated and not repeated herein for the sake of brevity.
20. That, in light of the above submission, it is respectfully submitted that this Answering Respondent, i.e. CPCB shall abide by any order(s) or direction(s) passed by this Hon'ble NGT in the instant OA and render justice.



**Counsel for Respondent No. 2,  
CENTRAL POLLUTION CONTROL BOARD (CPCB)**

**DEPONENT**  
**H.D.VARALAXMI**  
Regional Director  
CENTRAL POLLUTION CONTROL BOARD  
Regional Directorate (Chennai)  
MoEF & CC, Govt. of India  
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**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL  
SOUTHERN ZONE, CHENNAI**

**Original Application No. 213 of 2024 (SZ)**

**IN THE MATTER OF:**

Dr. MGR-Janaki College of Arts & Science  
for women Alumni Association,  
Represented by its Secretary, Chennai.

..... Applicant(s)

*Vs*

The Tamil Nadu Pollution Control Board (TNPCB),  
Represented by its Member Secretary, Chennai and Ors.

...Respondent(s)

**AFFIDAVIT**

I, H. D. Varalaxmi, D/o Shri H.S. Devaiah, Hindu, aged about 55 years currently working as Scientist 'E' and having office at the Regional Directorate - Chennai, in Central Pollution Control Board, 2<sup>nd</sup> Floor, 40-E, BSNL Building, TVK Industrial Estate, CIPET Road, Guindy, Chennai – 600 032, do hereby solemnly affirm, declare on oath and sincerely state as under: -

1. That the deponent is authorized representative to represent the Respondent CPCB in the present case, and as such, I am well conversant with the facts and circumstances of the present case on the basis of the information derived from the official records, and hence, I am competent and authorized to verify, sign and swear this affidavit on behalf of the Respondent CPCB.
2. That the accompanying reply may be read part and parcel of the present affidavit as I am competent to swear this affidavit.



*H.D. Varalaxmi*  
**H.D.VARALAXMI**  
Regional Director  
CENTRAL POLLUTION CONTROL BOARD  
Regional Directorate (Chennai)  
MoEF & CC, Govt. of India  
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3. That the accompanying reply has been drafted and filed under my instructions and authority the contents thereof are true and correct on the basis of the record maintained during ordinary course of business of CPCB and available records and documents and the contents of the same are read over and explained to me and are not repeated herein for the sake of brevity.



**VERIFICATION**

Verified at Chennai on this the Nineteenth day of March, 2025 that the contents of the above reply are correct and true on the basis of the records of the case as mentioned in the day-to-day affairs of the CPCB. Nothing has been concealed therefrom or mis-stated.

**DEPONENT**  
**H.D.VARALAXMI**  
Regional Director  
CENTRAL POLLUTION CONTROL BOARD  
Regional Directorate (Chennai)  
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**DEPONENT**  
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Regional Directorate (Chennai)  
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**Item No.02:**

**BEFORE THE NATIONAL GREEN TRIBUNAL  
SOUTHERN ZONE, CHENNAI**

(Through Video Conference)

**Original Application No.213 of 2024 (SZ)**

**IN THE MATTER OF:**

Dr. MGR-Janaki College of Arts & Science  
for Women Alumni Association,  
Represented by its Secretary,  
Chennai.

...Applicant(s)

The Tamil Nadu Pollution Control Board (TNPCCB),  
Represented by its Member Secretary,  
Chennai and Ors.

...Respondent(s)

**Date of hearing: 15.07.2024.**

**CORAM:**

**HON'BLE Smt. JUSTICE PUSHPA SATHYANARAYANA, JUDICIAL MEMBER**

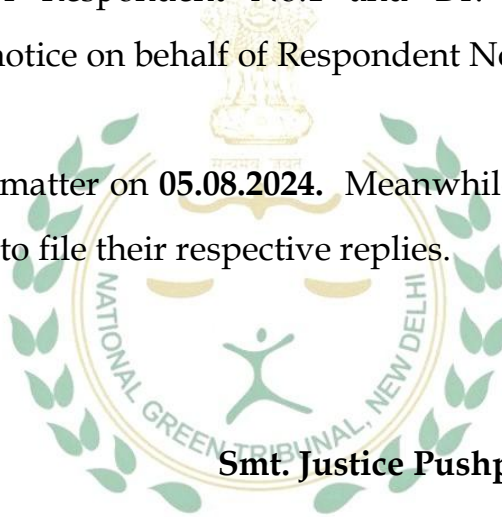
**HON'BLE Dr. SATYAGOPAL KORLAPATI, EXPERT MEMBER**

For Applicant(s): Mr. A. Yogeshwaran.

For Respondent(s): Mr. S. Sai Sathya Jith for R1.  
Dr. D. Shanmuganathan for R4.

**ORDER**

1. Considering the averments regarding the pollution caused by the private respondents by running the cattle farm and discharging the waste through the pipeline into the river Adyar and also creating an unhygienic environment within the educational institution, let notice be issued to the respondents through the Tribunal as well as privately.
2. The learned counsel Mr. S. Sai Sathya Jith accepts notice on behalf of Respondent No.1 and Dr. D. Shanmuganathan accepts notice on behalf of Respondent No.4.
3. Post the matter on **05.08.2024**. Meanwhile, the respondents are directed to file their respective replies.



Sd/-

**Smt. Justice Pushpa Sathyanarayana, JM**

Sd/-

**Dr. Satyagopal Korlapati, EM**

O.A. No.213/2024(SZ)  
15<sup>th</sup> July, 2024. AD.



केन्द्रीय प्रदूषण नियंत्रण बोर्ड  
CENTRAL POLLUTION CONTROL BOARD  
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार  
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE, GOVT. OF INDIA

CP-18/1/2023-IPC-VI-HO-CPCB-HO

Date: 12.02.2025

To

The Chairman

State Pollution Control Board/Pollution Control Committee

(As per the list)

**Sub: Directions under section 18(1)(b) of the Water (Prevention & Control of Pollution) Act, 1974 and the Air (Prevention & Control of Pollution) Act, 1981 regarding harmonization of classification of industrial sectors under Red, Orange, Green, White and Blue categories.**

WHEREAS, under section 16 (2)(b) of the Water (Prevention and Control of Pollution) Act, 1974 and under Section 16 (2)(c) of the Air (Prevention & Control of Pollution) Act, 1981, one of the functions of the Central Pollution Control Board (CPCB), constituted under the Water (Prevention and Control of Pollution) Act, 1974, is to coordinate activities of the State Pollution Control Boards (SPCBs) and Pollution Control Committees (PCCs); and

WHEREAS, under section 16 (2)(c) of the Water (Prevention and Control of Pollution) Act, 1974 and under Section 16 (2)(d) of the Air (Prevention & Control of Pollution) Act, 1981, one of the functions of the CPCB is to provide technical assistance and guidance to SPCBs and PCCs; and

WHEREAS, it was brought to the notice of CPCB, that different SPCBs/PCCs were following different criteria for the classification of industrial sectors under different categories. Therefore, in 2012, to have uniformity in classification throughout the country, CPCB vide letter no. B-29012/1/2012/ESS/1526-1563, dated 04.06.2012 issued directions under section 18(1)(b) of the Water Act, 1974 and the Air Act, 1981 to SPCBs/PCCs to adopt and implement standardized list of Red, Orange and Green categories of industries; and

WHEREAS, in 2016, the Central Pollution Control Board (CPCB) developed a scoring methodology based on the Pollution Index (PI) to harmonize the criteria for classification of industrial sectors. The PI is determined based on Precautionary Principle- by evaluating potential of water pollution, air pollution, and hazardous waste generation from particular sector. CPCB vide letter no. B-29012//ESS(CPA)/2015-16, dated 07.03.2016 issued directions under section 18(1)(b) of the Water Act, 1974 and the Air Act, 1981 to SPCBs/PCCs to adopt and implement revised classification. SPCBs/PCCs were also directed to categorize any new or left over sectors at their level by constituting a Committee and following the methodology prescribed by CPCB; and

Page 1 of 5

**‘परिवेश भवन’ पूर्वी अर्जुन नगर, दिल्ली-110032**

Parivesh Bhawan, East Arjun Nagar, New Delhi - 110032

दूरभाष/Tel: 43102030, 22305792, वेबसाइट/Website : [www.cpbc.nic.in](http://www.cpbc.nic.in)

(K)

WHEREAS, CPCB vide letter no. B-29016/ROGW/IPC-VI/2020-21, dated 30.04.2020, issued directions under section 18(1)(b) of the Water Act, 1974 and the Air Act, 1981 to SPCBs/PCCs regarding segregated list of non-industrial sectors (activities/ facilities/ infrastructure/ services) such as sewage treatment plants, healthcare facilities, hotels, building and construction projects, airports, highways etc. Further, CPCB also classified few additional sectors from time to time; and

WHEREAS, based on the experience gained over the years in Pollution Index calculation, use of cleaner fuels like PNG/CNG etc., adoption of cleaner technology resulting in reduced emission/wastewater generation, a need was felt to revisit the classification methodology of 2016; and

WHEREAS, during July 2023, CPCB prepared a “Draft Report on Classification of Industrial Sectors into Red, Orange, Green and White Categories: A Tool for Progressive Environmental Management” which was uploaded on CPCB website for seeking comments/suggestions of the stakeholders/public on the same. The draft report was also circulated to SPCBs/PCCs/MoEF&CC for comments; and

WHEREAS, CPCB vide office order dated 26.09.2023 constituted a committee to critically examine and analyse the comments/suggestions and to make recommendations for suitable incorporation in the finalizing the methodology and classification; and

WHEREAS, based on the stakeholders’ comments, a need was felt to promote/incentivize units for adopting measures resulting in better environmental performance. Additionally, a requirement was also felt for separate category – Blue Category- for essential environmental services for management of environmental pollution arising from domestic/household activities. Accordingly, CPCB prepared an “Addendum and substitution thereto in Draft Report on Classification of Sectors into Red, Orange, Green, White and Blue Categories”, which was shared with SPCBs/PCCs and also uploaded on CPCB website on 11.07.2024 for seeking inputs/comments; and

WHEREAS, the amendment in Section-21 of the Air (Prevention and Control of Pollution) Act, 1981 through the Jan Vishwas (Amendment of Provisions) Act, 2023 and amendment in Section-25 of the Water (Prevention and Control of Pollution) Act, 1974 through the Water (Prevention and Control of Pollution) Amendment Act, 2024, grant exemption to certain categories of industries, as notified by Central Government, for obtaining consent under these Acts; and

WHEREAS, the Ministry of Environment, Forest and Climate Change, Government of India vide notification no. G.S.R. 702(E), dated 12.11.2024 granted exemption of consent under the Water Act, 1974 and the Air Act, 1981 to exemption of Consent to Establish (CTE) and Consent to Operate (CTO) to all industrial plants having pollution index score upto 20 (at present total 39 industrial sectors under white categories as per 2016 methodology) subject to



condition that such plant shall inform in writing to the concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC); and

WHEREAS, the MoEF&CC vide letter no. Q-15012/2/2022/-CPW-Part (1)/e-240741, dated 14.11.2024 has issued Standard Operating Procedure for implementation of the said Notification dated 12.11.2024. The SOP includes the following provisions for White categories of industries:

- i. Industry to intimate to concerned SPCB/PCC about operations and self-declare the compliance with prevalent rules & regulations,
- ii. Concerned SPCB/PCC to maintain separate list of such industries/activities, and
- iii. Concerned SPCB/PCC to ensure that no activities other than those intimated, are carried out by exempted units.

WHEREAS, the Committee constituted by CPCB evaluated the comments, incorporated the suitable changes and finalized the revised methodology as well as classification of sectors. Final report in this regard titled as "Classification of sectors in to Red, Orange, Green, White and Blue Categories (A tool for progressive environmental management)" was submitted to Ministry of Environment, Forest and Climate Change (MoEF&CC) for concurrence. The MoEF&CC vide letter no. Q-16017-57-2015-CPA, dated 15.01.2025 granted concurrence to the revised classification; and

WHEREAS, as per the revised methodology, the category of the sector is decided based on the following ranges of Pollution Index:

- i. Red:  $PI \geq 80$ ,
- ii. Orange:  $55 \leq PI < 80$ ,
- iii. Green:  $25 \leq PI < 55$ ,
- iv. White:  $PI < 25$ ; and

WHEREAS, based on the revised methodology, CPCB has classified a total of 419 sectors and sub-sectors as under:

- i. The Red Category: 125
- ii. The Orange Category: 137
- iii. The Green Category: 94
- iv. The White Category: 54
- v. The Blue Category: 9; and

WHEREAS, the purpose of classification is to ensure that the industry is established in a manner consistent with the environmental objectives and also to prompt industrial sectors to adopt cleaner technologies, ultimately resulting in the generation of no or minimum pollutants. The revised classification system also defines criteria for incentivizing such industry. The industry may self-assess the PI score as per defined criteria and can submit application to respective SPCBs/PCCs for consideration; and



**NOW, THEREFORE**, in the exercise of the powers delegated under Section 18(1)(b) of the Water (Prevention & Control of Pollution) Act, 1974 and Section 18(1)(b) of the Air (Prevention & Control of Pollution), Act, 1981 the earlier directions dated 07.03.2016 and subsequent directions/letter in the context of categorization of industries are withdrawn with immediate effect and following '**Directions**' are hereby issued for compliance by all SPCBs and PCCs:

1. That SPCBs and PCCs shall immediately adopt the revised methodology for classification of sectors and list of 419 sectors/sub-sectors classified under Red, Orange, Green, White, and Blue categories as detailed in the **attached** report- "Classification of Sectors into Red, Orange, Green, White and Blue Categories (A tool for progressive environmental management)".
2. That all pending application for consideration of consent (CTE/CTO) and future such application shall be processed as per the revised classification. In case CTE granted before the revised classification, applicability of CTO will be as per revised classification.
3. That the revised sectors/subsectors classified under Red, Orange, Green, White, and Blue category of sectors as given in the attached document shall be used by the SPCBs and PCCs for consent management, inventorization of units under different categories, siting criteria, deciding environmental surveillance frequency, calculation of environmental compensation, etc., as per the guidelines issued from time to time.
4. That SPCBs and PCCs shall prepare the inventory of Red, Orange, Green, White and Blue categories of units operating in their jurisdictions, based on the revised classification. SPCBs and PCCs shall upload the category and sector-wise list of such units on their website. SPCBs and PCCs shall also forward such list to CPCB, latest by 30.06.2025 and thereafter updated list by 30th June every year.
5. That the classification of sectors shall not be linked to sanction of loans/finance of bank proceedings.
6. That any further addition of any new or left-out sector and their classification which is not listed in the revised list of Red, Orange, Green, and White categories, shall be done at the level of concerned SPCB /PCC by constituting a Committee and following revised criteria & guidelines as detailed in the attached report and no concurrence of CPCB shall normally be required. Intimation of same from time to time will suffice. However, addition in Blue Category Sectors-Essential Environmental Services for domestic waste management, will be done at the level of CPCB only. SPCBs/PCCs may forward their proposal, if any, to CPCB in this regard.
7. That SPCBs and PCCs are required to prepare and submit list of additional sector classified under white category to CPCB on annual basis, by 30<sup>th</sup> of June every year, in the prescribed format (Annexure-V) as given in the attached report, for further notification for exemption from consent as per the provisions of the Jan Vishwas (Amendment of Provisions) Act, 2023, the Water Act, and the Air Act as amended from time to time by MoEF&CC.
8. That SPCBs and PCCs shall constitute a committee as prescribed in the report to evaluate the applications of the units for incentives due to adopting measures resulting in better environmental performance and reduction in PI score. The SPCB/PCC shall

place the separate list of such units on their website and also submit list of such units to CPCB on Annual Basis by 30th June every year.

The SPCBs/PCCs shall acknowledge the receipt of directions and submit the "Action Taken Report" in compliance with these directions to CPCB before 20.02.2025.

**Encl.** As above.

**(Bharat Kumar Sharma)**  
Member Secretary

Copy to:

1. The Chief Secretary of all the States and UTs  
(As per the list)
2. The Secretary,  
Ministry of Micro, Small and Medium Entrepreneurs  
Udyog Bhawan, Rafi Marg, New Delhi - 110 011
3. The Secretary,  
Ministry of Heavy Industries  
Udyog Bhawan, Rafi Marg, New Delhi - 110 011
4. The Secretary,  
Ministry of New and Renewable Energy  
Block-14, CGO Complex,  
Lodhi Road, New Delhi-110 003
5. The Joint Secretary (CP Division)  
Ministry of Environment, Forests and Climate Change  
Indira Paryavaran Bhawan  
Jor Bagh Road, New Delhi - 110 003
6. All Regional Directorates, CPCB  
(As per the list)

**(Bharat Kumar Sharma)**  
Member Secretary

<b>Address List of The Chief Secretaries of States/UTs</b>	
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# **Classification of Sectors into Red, Orange, Green, White and Blue Categories**

(A tool for progressive environmental management)



**Central Pollution Control Board**

**“Parivesh Bhawan”, East Arjun Nagar**

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**(January 2025)**

तन्मय कुमार, भा.प्र.से.  
अध्यक्ष

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सत्यमेव जयते

FOREWORD

केन्द्रीय प्रदूषण नियंत्रण बोर्ड  
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The concept of classifying industries into different pollution categories originated in 1989 with the Doon Valley (Uttarakhand) Notification issued by Ministry of Environment and Forests. Subsequently the concept of pollution index was developed by Central Pollution Control Board (CPCB) during 2016 to classify the sectors into different category. The 2016 classification helped State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) in streamlining consent management, prioritizing regulatory oversight & environmental monitoring, taking decision related to siting of units, etc. However, necessity felt for refining the concept of calculating Pollution Index to overcome certain limitation and to bifurcate sub-sectors based on pollution load, scale of operation etc.

Accordingly, draft methodology was prepared and widely circulated for inputs/comments/suggestions by placing the same on CPCB website (public domain) as well as by inviting comments from MoEF&CC/SPCBs/PCCs. As of 11.08.2024, i.e. the extended date for receipt of suggestions, CPCB received 170 representations, comprising over 700 comments from PSUs, NGOs, industries, industrial associations, including feedback from SPCBs of Kerala, Nagaland, Tamil Nadu, Mizoram, West Bengal, Punjab and Lakshadweep. The report has been finalised after examining all the comments by a working committee.

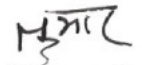
The 2025 classification methodology bifurcates sub-sectors based on pollution load, scale of operation, production technology, and type of fuel used into Red, Orange, Green, White and Blue categories. Red indicates the highest pollution potential, requiring stringent regulatory oversight, while White signifies minimal or no pollution, with much reduced compliance burden of merely intimation to the concerned SPCBs/PCCs. **A new Blue Category has also been introduced to distinguish the Essential Environmental Services** required for management of environmental concerns arising from anthropogenic pollution due to domestic/household activities which otherwise will have large littering potential. Additional 2 years validity for consent to operate (as per Pollution Index) is prescribed for the blue category.

This report also outlines the implementation pathway, which includes guidelines for State Pollution Control Boards/Pollution Control Committees to follow and implement the new classification system. Earlier classified 257 sectors have now been bifurcated and classified into 403 sectors (including sub sectors) and additionally, 16 new sectors have been introduced. Thus, the revised classification of 273 key sectors comprising of total 419 sectors/sub-sectors are further classified into Red Category (125 nos.), Orange Category (137 nos.), Green Category (94 nos.), White Category (54 nos.) and Blue Category (9 nos.). Progression between red, orange and green categories for the industrial sectors is also incorporated based on the use of less polluting available processes and technologies.

The report also comprises provisions for individual units to adopt cleaner technologies and practices resulting in reduction of pollution load in any sector. Incentives, such as extended validity for Consent to Operate (CTO) and reduced inspection frequencies, are outlined to encourage continual improvement of environmental performance. The incentive mechanism allowing progression between categories will thereby promote Ease of Doing Business by extended consent validity and enhance duration between inspections, thereby leading to reduced compliance burden.

To sum up, this report aims to create a more transparent, consistent, and incentivized regulatory mechanism for better environment management, promoting sustainable industrial development and better governance. I hope the report will be useful to all concerned in the field of industrial pollution control in the country and would incentivise the industries to switch over to cleaner process and technology leading to reduced air, water and soil pollution and also encourage setting up of blue category industries.

I would like to place on record my sincere appreciation for the hard work and valuable contributions by the CPCB team comprising of Shri Amit R. Thakkar, Add. Director, Shri Saubhagya Dixit, Scientist D, and Dr. Anantha N. S., SSA under the guidance of Shri Bharat Kumar Sharma, Member Secretary. I would also like to extend my thanks to Dr. Prashant Gargava, former Member Secretary, Shri P. K. Gupta, former Director and Shri Ajay Aggarwal, former Director, for their contribution. I would also express gratitude to the Working Committee, CPCB, MoEF&CC, SPCBs/PCCs and others for their contributions in the preparation of this report.

  
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## EXECUTIVE SUMMARY

The concept of classification of industrial sectors into red, orange, and green categories based on the size of operations and consumption of resources was first introduced in 1989 for Doon Valley, Uttarakhand. This classification aimed to aid decisions regarding siting of industries. Over the period of time, this concept was extended nationwide to manage consents and establish norms for surveillance and inspection of industry. In 2012, to have uniformity in classification throughout the country, the Central Pollution Control Board (CPCB) issued a standardized list of 244 sectors, classified under red (85 sectors), orange (73 sectors) and green (86 sectors) categories.

In 2016, the Central Pollution Control Board (CPCB) developed a scoring methodology based on the Pollution Index (PI) to harmonize the criteria for categorizing industries. This PI was determined by evaluating water pollution, air pollution, and hazardous waste generation. Using this methodology, CPCB classified 257 industrial sectors into four categories: Red (63 sectors), Orange (91 sectors), Green (65 sectors), and White (38 sectors). The White category was introduced for sectors considered "practically non-polluting" during 2016. Additionally, State Pollution Control Boards (SPCBs) and Pollution Control Committees (PCCs) were authorized to categorize any new or left over sectors according to the CPCB's 2016 methodology.

Further, based on the experience gained over the years, the increased use of cleaner fuels like PNG and bio-CNG, adoption of cleaner technology resulting into reduced wastewater generation, normalisation approach & different formula for calculating PI etc. a need was felt to revisit the classification methodology of 2016 for several such identified areas for improvement. Separate scoring for trade effluent and sewage effluent was also required due to differing characteristics and treatment methods.

Considering the scope of revision, CPCB published a draft report revising the methodology for calculating PI and accordingly classification of sectors into Red, Orange, Green, and White categories based on pollution index range was placed in the public domain for inputs/comments. Around 160 representations comprising more than 700 comments were received. Based on feedback/suggestions and examination of same by the working committee constituted for the purpose, the methodology was finalised. As per the final methodology, the scoring criteria for the following three major pollutant groups are as follows:

- i. Water Pollutant Score (PI<sub>W</sub>): Assesses the water pollution potential considering the oxygen demand of wastewater, other pollutants in the wastewater and quantity of wastewater generated.
- ii. Air Pollutant Score (PI<sub>A</sub>): Evaluates the potential air pollution due to process emissions (point source), work zone emissions (fugitive and odour) and type & quantity of fuel used.
- iii. Waste Pollutant Score (PI<sub>H</sub>): Considering the type and quantity of waste (which are hazardous/toxic/infectious/bulk in nature) generated.

Each pollutant group is scored out of 100, and the Cumulative Pollution Index is calculated. The category of the sector is decided based on the pollution index range, if  $PI \geq 80$  the category

of sector is Red, if PI ranges between  $55 \leq PI < 80$ , the category of sector is orange, similarly for the range of PI between  $25 \leq PI < 55$ , the category is Green and for  $PI < 25$ , the category of the sector is white.

Further, based on the stakeholders' comments, a need was felt to introduce a separate "blue category" for Essential Environmental Services (ESS) required for management of waste generated from domestic/household activities and, an incentive mechanism to promote units in a particular sector, taking measures resulting into better environmental performance. An addendum was prepared, shared and presented to all SPCBs/PCCs. The addendum was also placed in the CPCB Website on 11.07.2024 for inputs/comments. 09 representations were received in the addendum. All representations were examined, and classification based on revised methodology is finalised. Based on the revised methodology, CPCB has classified total 419 sectors and sub-sectors under Red (125), Orange (137), Green (94), White (54) and Blue (9) categories.

The report introduced incentive mechanism for the units in any sector that adopt environment friendly practices such as treatment and recovery of 100% wastewater, use of 100% cleaner fuel/renewal energy etc. and ensuring continuous compliance. These incentives are designed to encourage continuous improvement in environmental performance and to reward units that demonstrate proven implementation of sustainable practices and compliances.

Following are the salient features of the revised classification methodology:

- Methodology focusses on "Potential to pollute the environment" by the sector.
- Simplified single formula for Cumulative Pollution Index for all cases.
- Equal weightage to all three pollutant groups- Air, Water, and Waste.
- Cumulative PI based on weighted proportionate scores of pollutant groups.
- Separate scoring criteria for sectors generating sewage (such as Building & construction projects, STPs, Airports, etc.) and bio-medical waste (Health Care Facilities).
- Introduced Blue Category for 9 sectors under Essential Environmental Services required for management of waste generated from domestic/household activities.
- Appropriate weightage to scale of operations by introducing more slabs to bifurcates sub-sectors based on pollution load, scale of operation, production technology and type of fuel used.
- Introduction of sub-categories for sectors based on cleaner technologies, fuel types, integrated/segregated operations etc.
- Motivation to industries for progressive environmental management.
- A tool to assess the Cumulative Pollution Index and category based on revised method.

This report, prepared by the Central Pollution Control Board (CPCB), presents a revised methodology for classifying sectors based on their pollution potential. The classification aims to enhance environmental management and regulatory oversight by classifying sectors into red, orange, green, white, and blue categories. The report covers in detail about the genesis of

classification, need for the revision of 2016 methodology, scoring methodology for calculation of cumulative PI, etc.

The report also outlines guidelines for implementing the classification system. The classification may be used for consent management, inspection frequency, siting criteria, cluster development, pollution control plans, levying environmental compensation, promoting progressive environmental management, etc.

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## LIST OF ABBREVIATION

CBG: Compressed Biogas

CNG: Compressed Natural Gas

CPI: Cumulative Pollution Index

CPCB: Central Pollution Control Board

CTE: Consent to Establishment

CTO: Consent to Operate

EC: Environment Compensation

ETP: Effluent Treatment Plant

EES: Essential Environmental Services

Gen-Set: Generator Set

HAPs: Hazardous Air Pollutants

HCFs: Health Care Facilities

HW: Hazardous Waste

MoEF&CC: Ministry of Environment, Forest & Climate Change

LNG: Liquefied Natural Gas

LPG: Liquefied Petroleum Gas

NGT: National Green Tribunal

NOC: No Objection Certificate

OCEMS: Online Continuous Effluent/Emission Monitoring System

PCC: Pollution Control Committee

PM: Particulate Matter

PI: Pollution Index

PI<sub>A</sub>: Air pollutant score

PI<sub>H</sub>: Waste pollutant score

PI<sub>w</sub>: Water pollutant score

PNG: Piped Natural Gas

SPCB: State Pollution Control Board

TTZ: Taz Trapezium Zone

VOCs: Volatile Organic Compounds

## TABLE OF CONTENT

<b>CHAPTER-1: Genesis and Journey of Classification .....</b>	<b>1</b>
1.1 Introduction.....	1
<b>CHAPTER-2: Modified Methodology for Classification .....</b>	<b>3</b>
2.1 Need and scope for revision of methodology .....	3
2.2 Modified methodology for classification of industrial sectors .....	4
2.2.1 Scoring criteria for Water Pollutant “PI <sub>W</sub> ” .....	6
2.2.2 Scoring criteria for Air Pollutant “PI <sub>A</sub> ”: .....	8
2.2.3 Scoring criteria for Industrial Waste Generating Sector “PI <sub>H</sub> ” .....	10
2.3 Computation of Cumulative Pollution Index and criteria for deciding category of sector .....	12
<b>CHAPTER-3: Classification of Sectors as per Revised Methodology .....</b>	<b>15</b>
3.1 Types of sectors based on their activities .....	15
3.2. Usage of classification of sectors.....	17
3.3 Classification of left-out/new sectors.....	17
<b>CHAPTER-4: Incentives to units in a sector for adopting measures resulting to better environmental performance.....</b>	<b>19</b>
4.1 Eligibility Criteria .....	19
4.2. Evaluation Criteria .....	20
4.3. Re-assessment of Pollution Index (PI).....	22
4.4 Incentives to the units for better environmental management.....	23
<b>CHAPTER-5: Implementation pathway/guidelines .....</b>	<b>25</b>
<b>REFERENCES.....</b>	<b>28</b>
<b>ANNEXURE-I: List of Industrial Sectors .....</b>	<b>30</b>
<b>ANNEXURE-II: List of Essential Environmental Services .....</b>	<b>75</b>
<b>ANNEXURE-III: List of Service/Infrastructure Development Sectors .....</b>	<b>78</b>
<b>ANNEXURE-IV: List of Other/Special Category Sectors .....</b>	<b>84</b>
<b>ANNEXURE-V: Format for submission of information by SPCBs/PCCs regarding sectors classified under white category .....</b>	<b>86</b>

## LIST OF TABLES

<b>Table I: Scoring Criteria for Water Polluting Sector.....</b>	<b>7</b>
<b>Table II : Scoring criteria for air polluting sectors .....</b>	<b>9</b>
<b>Table III: Scoring criteria for waste generating Sectors.....</b>	<b>11</b>
<b>Table IV: Ranges of Cumulative Pollution Index for different categories.....</b>	<b>12</b>
<b>Table V: Number of sectors classified under different categories .....</b>	<b>16</b>
<b>Table VI: Structure of Committee to evaluate the request of units adopting measures resulting in better environmental performance .....</b>	<b>20</b>
<b>Table VII: Checks and balances to assess the adequacy of environment management measures.....</b>	<b>21</b>
<b>Table VIII: Nomenclature for revised category.....</b>	<b>23</b>
<b>Table IX: Incentives to units for better environmental performance.....</b>	<b>23</b>



## Genesis and Journey of Classification

### 1.1 Introduction

The notifications issued by the Ministry of Environment and Forest during 1989 for Doon Valley, Uttarakhand introduced the concept of classification of industries as red, orange, and green categories. The purpose of this classification was to facilitate decisions related to location of these industries. The criteria for classification of industries was primarily based on quantity of industrial effluent, quantity of fuel/coal, and the number of employees, and amount of waste generated. The notification included list of 129 sectors, classified under red (45), orange (35), and green (39) categories. The criteria used for Doon Valley Notification, 1989 is summarized in the **Figure I**.

Green	Orange	Red
<b>Permitted</b> <ul style="list-style-type: none"> <li>No discharge of industrial effluent</li> <li>Non-Obnoxious &amp; non-hazardous industries</li> <li>Employees up to 100</li> <li>Process does not involve- tanning, dyeing, pickling, pulping, etc.</li> <li>E.g. Toys, ice cream, candles, carpet weaving, etc.</li> </ul>	<b>Permitted after MoEF approval</b> <ul style="list-style-type: none"> <li>Liquid effluent up to 500 KLD which can be controlled with suitable proven technology</li> <li>Coal/fuel up to 24 TPD</li> <li>Employees up to 500</li> <li>E.g. Ceramics, tyres, soft-drinks, wire drawing, instant tea/coffee, petroleum storage, etc.</li> </ul>	<b>Not Permitted</b> <ul style="list-style-type: none"> <li>Liquid effluent &gt; 500 KLD which can not be controlled with suitable technology</li> <li>Coal/fuel &gt; 24 TPD</li> <li>Employees &gt; 500</li> <li>E.g. Cement, refinery, sugar, explosives, acid &amp; their salts, power plants fertilizers, etc.</li> </ul>

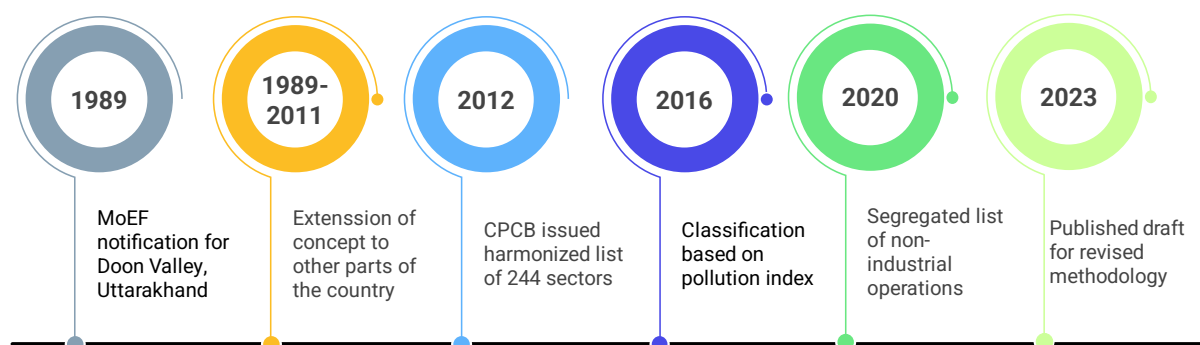
**Figure I: Criteria for classification of industries in Doon Valley Notification, 1989**

Subsequently, the application of this concept was extended to other parts of the country not only for the purpose of location of industries, but also for the purpose of consent management and formulation of norms related to surveillance/inspection of industries. As the State Pollution Control Boards (SPCBs) and Pollution Control Committees (PCCs) were following different



categorization of industries, to maintain the uniformity across the country, during 2012, CPCB issued a list of 244 sectors, classified under red (85), orange (73) and green (86) categories.

In order to harmonize the criteria for categorization, during the year 2016, CPCB developed the scoring methodology to classify the industries based on the Pollution Index (PI) which was a function of water pollution, air pollution and hazardous waste generation. Based on this methodology, CPCB has classified 257 sectors under red (63), orange (91), green (65) and white (38) categories and directed SPCBs/PCCs to adopt the same. During 2016, CPCB introduced white category as a new category for such sectors which are “practically non-polluting”. SPCBs/PCCs were also empowered to categorize any new/left-out sector at their own level, following the methodology prescribed by CPCB. Additionally, during 2020, CPCB also segregated the list of non-industrial operations/facilities. The overall journey of classification may be understood with the help of milestone chart shown in **Figure II**.



**Figure II: Genesis and journey of classification of sectors**

The concept of categorization is based on the “Precautionary Principle”, which focuses on potential of industries to pollute the environment. The purpose of categorization is to ensure that the industry is established in a manner consistent with the environmental objectives and to prompt industrial sectors to adopt cleaner technologies, ultimately resulting in generation of minimum pollutants.

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## 2

## Modified Methodology for Classification

### 2.1 Need and scope for revision of methodology

Based on the experience gained over the years, a need was felt to revisit the 2016 methodology for classification of sectors considering following scope of improvement:

#### i. Assessment of Pollution Index:

The category of any industrial sector depends on the Pollution Index (PI), which comprises of scores of three pollutant groups i.e., air pollution, water pollution and hazardous waste. The water and air pollutants were each assigned a weight of 40%. However, the hazardous waste generation was given 20% weightage in pollution index.

As per the classification methodology of 2016, in case of absence of any pollutant groups, pollution index was normalized to 100. As a result, different formulas were required to compute pollution index.

Further, the normalization method has certain limitations while comparing pollution potential among sectors having scores for all three pollutant groups verses score only for any one/two pollutant group(s). Moreover, it was also observed that in some sectors normalization involved subjectivity based on perception.

#### ii. Size of operations of industrial activities:

It was observed that, there was less variation in PI score of industry based on size of operation in same sector. Limited variables/slabs were considered for the quantity of wastewater discharge and fuel consumption. It was also observed that adequate weightage in the considered variables/slabs to account the variation in size of operations of industrial activities need to introduce.

**iii. Consideration to segregated industrial activities:**

Although there were differences in pollution potential of integrated and standalone units of a particular sector, the classification methodology (2016) classifies the integrated or standalone units in the same sector. For example, standalone cement grinding units will have less pollution potential than integrated cement plants, but both were classified under red category.

**iv. Consideration of type of fuel used:**

In industrial operations requiring fuels, the amount of emissions is governed by many factors such as the type of fuel and its calorific value, combustion efficiency, emission factors, etc. Use of biomass and cleaner gaseous fuels such as Piped Natural Gas (PNG), Liquefied Petroleum Gas (LPG), Compressed Natural Gas (CNG), bio-CNG etc. have increased significantly in recent years. It was observed that adequate weightage based on type of fuel used is required.

**v. Separate scoring for sewage and trade effluent:**

It is desirable to have separate wastewater scoring criteria for the sectors generating trade effluent and sewage effluent, as characteristics, treatment method and impact are different for trade effluent generated from industrial sectors and sewage effluent generated from infrastructure & development sectors.

**vi. Motivation to industries for progressive environmental management:**

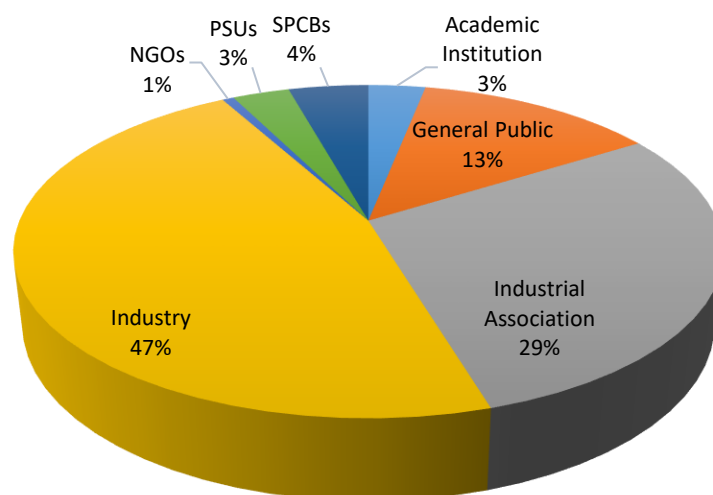
In the previous classification regime, there was no effective provision for change in category of industries based on the variation in pollution potential of a sector, even if the industries adopt cleaner technologies or switch over to cleaner raw material/cleaner fuel etc., resulting into reduction in pollution index.

**2.2 Modified methodology for classification of sectors**

Considering the scope of revision, CPCB prepared a draft report on “Classification of Industrial Sectors into Red, Orange, Green and White Categories: A Tool for Progressive Environmental Management”. As per the draft report, a revised methodology for the classification is proposed which incorporates, water pollutant score, air pollutant score and waste generation score, based on the pollution potential of a sector on the environment. Scores out of 100 were given to each three pollutant groups and formula for calculating cumulative score based on the impact pollutant is devised. These scores are used for computation of pollution index for deciding the

category of industrial sector. The cut-offs for deciding the category were based on the quartiles of pollution indices, pollution potential of sectors, etc. The draft report was placed on CPCB website in July 2023, for comments/feedback from stakeholders.

CPCB received 161 representations, comprising more than 700 comments from various State Pollution Control Boards, research and technical institutions, industrial associations, NGOs, individual industries, and the public. The stakeholder-wise representations are shown with the help of pie-chart in **Figure III**.



**Figure III: Stakeholder-wise representations received**

Subsequently, CPCB constituted a committee to critically examine and analyse the comments and to make recommendations for suitable incorporation in the final methodology and classification. After incorporating the feedback received from stakeholders, the Committee has finalized the basic methodology which can be used as a yardstick for classification of the sectors into Red, Orange, Green and White Categories.

Further, based on the stakeholders' comments, a need was felt to introduce a separate "blue category" for Essential Environmental Services (ESS) required for management of waste generated from domestic/household activities and, an incentive mechanism to promote units in a particular sector, taking measures resulting into better environmental performance. An addendum was prepared, shared and presented to all SPCBs/PCCs. The addendum was also placed in the CPCB Website on 11.07.2024 for inputs/comments. Till last date (i.e. 11.08.2024) 09 representations were received in the addendum. All representations were examined, and classification based on revised methodology is finalised.



It is worth to mention that to safeguard the environment, following the fundamental principle of classification i.e., “Precautionary Principle”, scope is always available for application of mind and collective wisdom. As per the precautionary principle, when human activities may lead to morally unacceptable harm that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm. Therefore, variation from methodology is possible in case of projects having high chances of damage to the environment/eco-system such as river mining, etc. or having associated accidental risk such as major accident hazards installations wherein risk is associated with industrial activities having potential in terms of operation or process, manufacturing, transportation, and storage of one or more hazardous chemicals as prescribed by the Manufacture, Storage, and Import of Hazardous Chemical Rules, 1989.

Considering the above issues, the classification methodology was modified based on the potential of three pollutant groups, namely, water pollutant, air pollutant and waste pollutant (which are hazardous/toxic/infectious/bulk in nature), which have been given scores out of 100, each. Slabs are assigned for selection of pollutant groups respectively for water, air, and waste. Score can be decided based on dominant pollutants in the pollutant groups and quantity as detailed in Table-I, Table-II and Table-III. These scores are used for computation of pollution index for deciding the category of sector. The scoring methodology is based on the pollution potential during generation and not at the end of pipe/ after treatment considering the fact that all pollutants need to be treated and disposed as per the provisions/rules notified under the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981 and the Environment (Protection) Act, 1986 and as amended.

The details of scoring criteria for  $PI_w$  for “water pollutant,”  $PI_A$  for “air pollutant” and  $PI_H$  for “waste generating sector” are as follows:

### **2.2.1 Scoring criteria for Water Pollutant “ $PI_w$ ”**

Water pollution score consider the potential water pollution load from any sector in terms of characteristics and quantity of untreated trade effluent (wastewater). The “trade effluent” includes any liquid, gaseous or solid substance which is discharged from any premises used for carrying on any [industry, operation or process, or treatment and disposal system], other than domestic sewage.

The water pollutant score ( $PI_w$ ) is the addition of three sub-scores which are based on organic content in terms of oxygen demand of wastewater (W1), potential of other pollutants (W2) and



quantum of wastewater (W3). The weightages of W1, W2 and W3 in the water pollution score are 35%, 30% and 35%, respectively.

Proportionate higher scores are assigned to the sectors generating trade effluent of high BOD and/or high COD, heavy metals/toxic compounds, and large volume of wastewater. The scores are assigned considering the potential for causing damage to the environment. It may be noted that for sectors generating industrial effluent, dominant quantity of trade effluent is considered in score W3 (W3-1 to W3-5). Whereas, for sectors generating huge volume of sewage effluent such as railway stations, STPs, residential building projects, airports etc., the separate scores W3 (W3-6 to W3-10) are assigned. The term used, “Sewage effluent” means effluent from any sewerage system or sewage disposal works and includes sullage from open drains. The scoring criteria for water polluting sectors are given in **Table-I**.

**Table I: Scoring Criteria for Water Polluting Sector**

Water Pollutant Group	Description	Score
<b>Score W1: Score based on the oxygen demand of wastewater</b> (Maximum of the following scores to be considered)		
W1-1	BOD $\geq$ 5,000 mg/l or COD $\geq$ 10,000 mg/l	35
W1-2	1000 $\leq$ BOD < 5,000 mg/l or 5000 $\leq$ COD < 10,000 mg/l	30
W1-3	500 $\leq$ BOD < 1,000 mg/l or 1000 $\leq$ COD < 5,000 mg/l	25
W1-4	100 $\leq$ BOD < 500 mg/l or 250 $\leq$ COD < 1,000 mg/l	20
W1-5	10 $\leq$ BOD < 100 mg/l or 50 $\leq$ COD < 250 mg/l	10
<b>Score W2: Score based on other pollutants in the wastewater</b> (Maximum of the following scores to be considered)		
W2-1	Pollutants like pesticides, heavy metals, and toxic compounds:  <i>(Aluminium, Anionic detergents, Barium, Chloramines, Copper, Fluoride, Total residual chlorine, Iron, Manganese, Mineral oil, Phenolic compounds, Selenium, Silver, Sulphide, Cadmium, Cyanide, Lead, Zinc, Mercury, Tin, Vanadium, Antimony, Benzene, Benzo-a-pyrene, Molybdenum, Nickel, Phosphates, Polychlorinated biphenyls, Polynuclear aromatic hydrocarbons, Arsenic, Total/Hexavalent Chromium, Trichloroethane, Trichloroethylene, Adsorbable Organic Halogens (AOx), Pesticides compounds, Residual antibiotic, Radioactive materials, etc.)</i>	30
W2-2	Pollutants like Nitrate Nitrogen, Nitrate, Ammonical Nitrogen, Total Kjeldahl Nitrogen (TKN), Oil & grease, pH < 5.5 or > 9	25
W2-3	Pollutants mainly in terms of inorganic dissolved solids and associated other impurities due to process e.g. wastewater generated from DM water rejects, boiler blowdowns, brine solution rejects, fresh-water RO rejects, etc.	20
W2-4	Pollutants mainly in terms of inorganic dissolved solids e.g. wastewater from cooling towers, cooling-re-circulation processes, etc.	15



<b>Score W3: Score based on quantity of wastewater generated</b>		
<b>A. For sectors generating Industrial Trade effluent (Maximum score to be considered)</b>		
W3-1	Wastewater $\geq$ 500 KLD	35
W3-2	100 KLD $\leq$ Wastewater $<$ 500 KLD	30
W3-3	50 KLD $\leq$ Wastewater $<$ 100 KLD	25
W3-4	10 KLD $\leq$ Wastewater $<$ 50 KLD	20
W3-5	Wastewater $<$ 10 KLD	15
<b>B. For sectors such as STPs, building projects, etc. generating/handling only high-volume Sewage (Maximum score to be considered)</b>		
W3-6	Sewage $\geq$ 5,000 KLD	35
W3-7	2,000 KLD $\leq$ Sewage $<$ 5,000 KLD	30
W3-8	500 KLD $\leq$ Sewage $<$ 2,000 KLD	25
W3-9	100 KLD $\leq$ Sewage $<$ 500 KLD	20
W3-10	Sewage $<$ 100 KLD	15
<b>Water Pollutant Score (PI<sub>w</sub>) = W1+W2+W3</b>		

### 2.2.2 Scoring criteria for Air Pollutant “PI<sub>A</sub>”:

Air pollution score consider the potential air pollution load from any sector in terms of characteristics of emissions and its quantum/scale in terms of quantity of fuel. The air pollutant score is based on generation of emission. The “air pollutant” means any solid, liquid, or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment.

The air pollution score (PI<sub>A</sub>) is the addition of three sub-scores which are based on the type of pollutants in emissions (A1), work zone emission/fugitive emissions & odour nuisance (A2), and fuel type & quantity (A3). The weightages of A1, A2 and A3 in air pollution score are 35%, 30% and 35%, respectively.

Proportionate higher scores are assigned to the sectors generating emissions with hazardous air pollutants, process-based fugitive emissions and using solid/liquid fuels, as such pollutants have higher potential to damage the environment.

The California Air Resources Board defines fugitive emissions as “Emissions not caught by a capture system which are often due to equipment leaks, evaporative processes and windblown disturbances.” The fugitive emissions from any process having acid mist, VOCs, etc. are given higher weightage (score A2=30) as compared to the fugitive emissions of inert material (score A2=25). Sectors having persistent foul odour issue, will get score A2=20. Sectors/units using solid/liquid fuel will get higher score-A3, compared to the sectors using cleaner gaseous fuel or electricity. The scoring criteria for air polluting sectors are given at **Table-II**.



Table II : Scoring criteria for air polluting sectors

Air Pollutant Group	Description	Score
<b>Score A1: Score based on Process emissions (point source)</b> (Maximum of the following scores to be considered)		
A1-1	Hazardous Air Pollutants (HAPs) and heavy metals: <i>HAPs (Phosgene, Benzene, Benzo(α)pyrene, Butadiene, Toluene Di-isocyanate, Methylene-di-phenyl Di-isocyanate, Ethylene Oxide, Ethylene Di Chloride, Acrylonitrile, Propylene Oxide), Dioxins &amp; Furans, Asbestos, Polycyclic Aromatic Hydrocarbons (PAHs), HCN, Cd, Th, Hg, Sb, As, Pb, Co, Cr, Cu, Mn, Ni, V, etc.</i>	35
A1-2	Halogens, acids, and pesticides-based pollutants: <i>H<sub>2</sub>S, HF, HBr, P<sub>2</sub>O<sub>5</sub> as H<sub>3</sub>PO<sub>4</sub>, NH<sub>3</sub>, TOC, Cl, HCl, SO<sub>3</sub>, CH<sub>3</sub>Cl, Total Fluoride, PM having pesticide compounds/other organic compounds, Acid mist, etc.</i>	30
A1-3	Pollutants due to combustion of fuel or due to process: <i>PM, CO<sub>2</sub>, CO, NO<sub>x</sub>, SO<sub>2</sub>, etc.</i>	25
A1-4	Volatile Organic Compounds (VOCs): <i>Ethyl benzene, Styrene, Toluene, Xylene, Aromatics, Propylene Glycol, Ethylene Glycol, etc.</i>	20
<b>Score A2: Score based on fugitive emissions and odour nuisance</b> (Maximum of the following scores to be considered)		
A2-1	Fugitive emissions of Particulate Matter (PM), acid mist, VOCs, etc. from process	30
A2-2	Fugitive emissions of Particulate Matter (PM), acid mist, VOCs, etc. due to storage and handling, etc.	25
A2-3	Odour nuisance, including odour due to the use of binding gums, cements, adhesives, enamels etc.	20
<b>Score A3: Score based on quantity of fuel</b> (Maximum of the following scores to be considered)		
<b>Coal or liquid fuels</b>		
A3-1	Fuel consumption $\geq$ 24 TPD	35
A3-2	12 TPD $\leq$ Fuel consumption < 24 TPD	30
A3-3	Fuel consumption < 12 TPD	25
<b>Biomass-based fuels</b>		
A3-4	Fuel consumption $\geq$ 48 TPD	25
A3-5	24 TPD $\leq$ Fuel consumption < 48 TPD	20
A3-6	Fuel consumption < 24 TPD	15
<b>Cleaner/gaseous fuels, such as, PNG, CNG, LPG, Compressed Biogas (CBG), propane, butane etc.</b>		
A3-7	Fuel consumption $\geq$ 120 TPD	20
A3-8	60 TPD $\leq$ Fuel consumption < 120 TPD	15
A3-9	Fuel consumption < 60 TPD	10
A3-10	Electricity	0
<b>Air Pollutant Score (PI<sub>A</sub>) = A1+A2+A3</b>		
<b>Note:</b> In case, any sector/unit is using more than one type of fuel, the most polluting fuel category, will be considered.		



### 2.2.3 Scoring criteria for Industrial Waste Generating Sector “PI<sub>H</sub>”

Industrial waste generating sectors are considered based on the generation of hazardous waste/high volume low effect waste. As per the Hazardous and Other Wastes (Management & Trans-boundary Movement) Rules, 2016, the “hazardous waste” means any waste which by reason of characteristics such as physical, chemical, biological, reactive, toxic, flammable, explosive or corrosive, causes danger or is likely to cause danger to health or environment, whether alone or in contact with other wastes or substances and shall include waste as per the Schedule I, Schedule II and Schedule III of the rule. Further, scores are also assigned to the high-volume low effect wastes such as fly ash, phosphogypsum, red mud, jarosite, slags from pyro-metallurgical operations, mine tailings and ore beneficiation rejects.

The score for waste comprises of two sub-scores H1 and H2. The H1 score is based on the different type of hazardous waste which are generated during the process, and which required to be managed/disposed through common facility OR based on the generation of high-volume low effect waste/ HW like contaminated bags/ drums etc. The H2 score is based on the total quantum of waste generated.

The desirable disposal method such as incineration, landfill after treatment, landfill etc. signifies the potency of hazardous waste. In recent time, the utilization of hazardous waste as per the Rule-9 of Hazardous and Other Wastes (Management & Trans-boundary Movement) Rules, 2016, as alternate fuel and raw material in cement kilns, as recyclable hazardous waste etc. has increased. The classification is based on the pollution potential due to generation of such types of hazardous waste from any sector. The score for the quantum of hazardous waste is total potential of generation of such hazardous waste by any sector., Score H1: Based on potency of hazardous waste and score H2: Based on quantum of hazardous waste, are given weightage of 30% and 70%, respectively. Considering the higher risk due to amount of hazardous waste generated rather than its disposal method, more weightage is given to the quantity. Overall waste generation score in case of waste generating sector will be  $PI_H = H1 + H2$ . The scoring criteria for hazardous waste generating sectors are given at **Table-III**.

A separate scoring criterion has been included for sectors generating bio-medical waste. Bio-medical waste means any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or research activities pertaining thereto or in the production or testing of biological or in health camps, including the categories mentioned in Schedule-I appended to the Bio-Medical Waste Management Rules, 2016. As any Health Care



Facilities (HCFs) generates all types of bio-medical waste (red, yellow, blue, and white) and quantities of such wastes may vary considerably based on the type of facility/location of facility (rural/urban), and other such factors. Therefore, scoring based on number of beds in a healthcare facility is considered as sole criteria for assigning waste score (H: B-1 to B-7) as tabulated in **Table-III**.

Least score of 25 is given to non-bedded healthcare facilities and maximum score of 100 is given to facilities having more than 1,000 beds. Overall waste generation score in case of bio-medical waste generating sector will be  $PI_H$ .

**Table III: Scoring criteria for waste generating Sectors**

Waste Pollutant Group	Description	Score
<b>A. Score for sectors generating hazardous waste</b>		
<b>Score H1: Score based on the hazardous waste management/disposal method.</b> (Maximum of the following scores to be considered)		
H1-1	Hazardous wastes which are flammable, ignitable, corrosive, oxidizing toxic, etc. and requiring disposal through incineration	30
H1-2	Hazardous wastes which are reactive, capable of yielding another material post disposal, etc. and requiring disposal in secured landfill after stabilization/treatment	25
H1-3	Hazardous wastes which are requiring direct disposal in secured landfill without stabilization	20
H1-4	High volume and low effect wastes, contaminated bags/ drums/ containers etc.	10
<b>Score H2: Score based on quantity of hazardous waste generation.</b> (Maximum of the following scores to be considered)		
H2-1	Hazardous Waste $\geq 5000$ TPA	70
H2-2	$1000 \text{ TPA} \leq \text{Hazardous Waste} < 5000 \text{ TPA}$	50
H2-3	$200 \text{ TPA} \leq \text{Hazardous Waste} < 1000 \text{ TPA}$	30
H2-4	$10 \text{ TPA} \leq \text{Hazardous Waste} < 200 \text{ TPA}$	20
H2-5	Hazardous Waste $< 10$ TPA	10
<b>B. Scores for the sectors generating bio-medical waste</b>		
B-1	No. of beds $\geq 1,000$	100
B-2	$500 \leq \text{No. of beds} < 1,000$	80
B-3	$200 \leq \text{No. of beds} < 500$	60
B-4	$50 \leq \text{No. of beds} < 200$	50
B-5	$10 \leq \text{No. of beds} < 50$	40
B-6	No. of beds $< 10$	30
B-7	Non-bedded facility	25
<b>For sectors generating hazardous waste <math>PI_H = H1+H2</math></b> <b>For sectors generating bio-medical waste <math>PI_H = B</math></b>		



### 2.3 Computation of Cumulative Pollution Index and criteria for deciding category of sector

In the revised methodology of classification (2025), all three pollutant scores due to water, air and industrial waste generation are taken into account while computing pollution index. The formula for computing cumulative pollution index (PI) is as follows:

$$PI = i_{max} + (100 - i_{max}) \left( \frac{i_2 + i_3}{200} \right)$$

Where,  $i_{max}$ , is the maximum score among Water ( $PI_W$ ), Air ( $PI_A$ ), and Waste ( $PI_H$ ) pollutant scores and  $i_2$  &  $i_3$  are the remaining pollutant scores.

The category of the sector will be decided based on the pollution index ranges given at **Table-IV**.

**Table IV: Ranges of Cumulative Pollution Index for different categories**

Cumulative Pollution Index (PI)	Category of industrial sector
$PI \geq 80$	Red
$55 \leq PI < 80$	Orange
$25 \leq PI < 55$	Green
$PI < 25$	White

The purpose of classification is to have uniform consent mechanism, defined routine monitoring frequency by concerned SPCB/PCC, environmental protection plans etc. Modified methodology also considers the variation in pollution potential due to various type of activities and operations in a particular sector.

The scores/pollution index/category of any two sectors may be same, however, comparing two different sectors based on the category or pollution index is not desirable as the cumulative PI is a function of air pollutant, water pollutant, and waste pollutant and the cumulative score is arithmetically relates the maximum score of one pollutant with the remaining other two pollutants. Hence, PI/category of sectors may be same but may have different impact on environment.



## **2.4 Blue Category Projects- Essential Environmental Services for management of environmental pollution arising from domestic/household activities**

Essential Environmental Services may be defined as those facilities which are essential to control, abate and mitigate pollution generated from Domestic and Industrial activities. Such Essential environment services for Industrial Activity includes CETP, CHWT/SDF, Effluent conveying system etc. and essential environment services for domestic activities includes STP, MSW etc. Both the type of EES plays a vital role in Environment Management. However, during the treatment of waste, some EES generates/handle hazardous waste/infectious waste. The EES which do not generate Hazardous Waste, and which otherwise have large littering potential can be categorised as Blue Category Projects. Further, there are past legal references wherein Hon'ble Apex court has also considered the importance and requirement of such Essential Environment Services.

Human settlements whether located in rural/urban/eco-sensitive area generate sewage, solid waste, and C&D waste, which are required to be managed to prevent adverse impact on environment and human health. Basic environment management facilities are required to be set-up to manage such waste which includes STP, C&D waste processing facility, MSW management facility like sanitary landfill, material recovery facility & waste processing units, bio-methanation, bio-composting, waste to energy, etc.

These facilities are basically essential environment services which play a vital role in protecting environment and human health. These facilities may also bring value addition by producing various by-products such as secondary raw material, compost, energy, etc. and promotes circular economy and sustainable development by converting waste into wealth. Moreover, these categories do not generate hazardous or infectious wastes.

As the role and importance of these facilities is different in nature as compared to other activities and industries in the sense that they are primarily set-up for prevention, control and abatement of soil, water and air pollution. It is more appropriate to have a separate colour category-Blue Category for essential environmental services facilities related to environmental pollution arising from domestic/household activities. These activities are required to meet all the prescribed environmental norms/rules notified from time to time and the pollution index for such Essential Environmental Services (EES) shall continue to be calculated as per the formula and consent to operate will be governed based on the pollution index. However, the



category of the EES will be termed “Blue Category sector” and as an incentive for the essential services, additional 2 years validity for consent to operate (as per PI) will be provided.

The list of EES facilities is given at [Annexure-II](#).

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## 3

## **Classification of Sectors as per Revised Methodology**

### **3.1 Types of sectors based on their activities**

The revised methodology of classification will be applicable to all industries which may have potential for generation of environmental pollutants. As per the Section 2(j) of the Industrial Disputes Act, 1947, “Industry” means any business, trade, undertaking, manufacture, or calling of employers and includes any calling, service, employment, handicraft or industrial occupation or avocation of workman”, however, based on type of operational activities, the industries are divided into following four sectors:

- i. Industrial Sectors
- ii. Essential Environmental Services (EES)
  - a. EES for Industrial Waste
  - b. EES for Domestic Waste (Blue Category Sector)
- iii. Service/Infrastructure Development Sectors
- iv. Others/Special Category Sectors

The sectors which are involved in production of goods, products, etc. are considered under “Industrial Sectors”. The sectors covered under “Essential Environmental Services (EES)” are those facilities which are essential to control, abate and mitigate pollution generated from Domestic and Industrial activities. These services are essential facilities which are required to reduce pollution load on the environment, such as sewage treatment plants, common bio-medical waste treatment facilities, construction & demolition waste processing plants, etc. Essential Environmental Services Sectors are sub classified as “EES for industrial waste” and “EES for domestic waste (Blue category sectors which do not handle or generate infectious or hazardous waste)”. On the other hand, sectors which carry out service-related activities such as infrastructure projects, railways, airports, hospitals, etc. are covered under “Service/infrastructure development sectors”.



“Other/special category sectors” include those projects which cannot be classified based on the scoring methodology of pollution index but require classification based on precautionary principle and considering the potential of ecological damage/ health and environment related risk, etc. Few such sectors are sand mining, hydel power plants, etc.

The revised methodology of classification, sub-categorises the main sector based on the usage of cleaner technology/cleaner production/cleaner fuel which has proven reduction in trade effluent generation, emissions, waste, etc., for better environmental management, resulting into overall reduction of pollution index compared to main sector. For example, if coffee seeds processing industries use eco-pulping technology, which generates less water pollution, the pollution index of the said sector gets reduced and category changes from orange to green. Similarly, variation in type/scale of activities in a particular sector is also considered for classification of sub-sectors.

The methodology and scores have been screened through stakeholder feedback/consultation and public opinion. Available standard literature, various documents and guidelines, inspection reports, etc. were also referred, while assessing the scores for water pollution, air pollution, and waste generation for classification of sectors. Based on the modified methodology, the list of sectors and sector specific sub-classification is given at [Annexure-I](#) to [Annexure-IV](#). Summary of classified sectors is given in **Table-V**.

**Table V: Number of sectors classified under different categories**

Sl. No.	Type of sector	Total number of sectors/sub-sectors	Red	Orange	Green	White	Blue
1.	Industrial Sectors	359	107	120	81	51	-
2.	Essential Environmental Services (ESS)						
2.a.	ESS for domestic waste	9	-	-	-	-	9
2.b.	ESS for industrial waste	9	9	-	-	-	-
3.	Service/Infrastructure Development Sectors	37	7	15	13	2	-
4.	Others/Special Category Sectors	5	2	2	-	1	-
	<b>Total</b>	<b>419</b>	<b>125</b>	<b>137</b>	<b>94</b>	<b>54</b>	<b>9</b>



### 3.2. Usage of classification of sectors

The classification of sectors may be used for the following purposes:

- i. **Consent management:** SPCBs/PCCs may grant Consent to Operate (CTO) to red, orange, and green categories of industries for validity up to 5 years, 10 years, and 15 years, respectively as per existing provisions which would be later governed as per the provisions/guidelines under Jan Vishwas (Amendment of Provisions) Act, 2023/Water Act, as amended. The validity of blue category sectors will be 2 years more than the category based on PI.
- ii. **Inspection frequency:** SPCBs/PCCs may prioritize their environmental surveillance programs based on the categories of sectors. SPCBs/PCCs are required to ensure inspection of red, orange, and green category of industries at least once in six-months, one-year, and two-years, respectively. Common facilities and 17 categories of industries are to be inspected at least once in every three-months.
- iii. **Siting criteria:** The categorization may be used as a tool for deciding the location/siting of an industry in a particular location.
- iv. **Development of cluster:** The classification will help in planning of sector specific cluster, based on scoring of various pollutants and development of adequate environment management infrastructure facility, accordingly.
- v. **Sector specific plans for pollution control:** The plans for control of pollution may be prepared and implemented on priority for the sectors having higher pollution index and overall higher pollution load.
- vi. **Levying environmental compensation:** Pollution index may be used for determining and levying environmental compensation on industries violating the environmental norms.
- vii. **A tool for progressive environmental management:** Industrial units may adopt cleaner technologies, cleaner fuels, etc. which may result in reduction of pollution index, thus, moving to lower pollution potential category. It will provide incentives to industries in terms of less consent renewal fees, less environmental surveillance/compliance burden, more validity period for consents/authorizations, etc.

### 3.3 Classification of left-out/new sectors

The revised methodology of classification (2025) and list of sectors classified by CPCB is required to be adopted and implemented by all SPCBs/PCCs. In case of any new or left-out



sector, the SPCB/PCC may categorize the sector at its own level. For this purpose, a committee headed by the Member Secretary, SPCB/PCC and comprising of at least two senior cadre engineers/scientists of the SPCB/PCC (as nominated by the Member secretary of the concerned SPCB/PCC) may be constituted to examine the matter and classify the sector in accordance with the methodology prescribed by CPCB. The State Level Committee may also co-opt subject experts, industrial association representative, etc., as member, as per requirement. CPCB has also developed a tool to assess the Cumulative Pollution Index and category of any sector, which is available on CPCB website (<https://cpcb.nic.in/categorization-of-industrial-sectors/>).

In addition, all SPCBs/PCCs are required to submit list of all such sector classified under white category to CPCB in the prescribed format (**Annexure-V**), for notification as per provisions of Jan Vishwas (Amendment of Provisions) Act, 2023.

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## **Incentives to unit in a sector for adopting measures resulting to better environmental performance**

A methodology has been strategized to provide incentives to the unit in a sector which are dedicated to reduce environmental impacts from their operations/process. The objective can be achieved by 100% treatment and reuse of wastewater generated, having complete dependency on cleaner fuel alternatives (such as PNG, LPG, compressed biogas, propane, butane, electricity etc. for meeting energy requirement), implementation & achievements of targets of sector-specific charters of CPCB/SPCB for environmental management, EPR obligations and use of cleaner process/cleaner technology to eliminate generation of toxic/hazardous pollutants.

The units fulfilling the following eligibility criteria may submit their formal proposal to the concerned SPCB/PCC for consideration:

### **4.1 Eligibility Criteria**

- The unit should have completed at least one year of completion of production/operations with demonstrated, verifiable steps and submitted audit report from institute of repute for considering the unit for the purpose by concerned SPCB/PCC. To facilitate verification, the unit must have properly maintained logbooks/bills for production, electricity consumption, fuel, water consumption, wastewater treatment and use of treated wastewater.
- The unit should be located in conforming area with applicable Environment Clearance, Consent to Establishment (CTE) and Consent to Operate (CTO) and hazardous/bio-medical waste authorization from SPCB/PCC.
- Unit should comply with all the norms/conditions stipulated under EC, CTO and Guidelines/Rules issued by CPCB.



- In case, unit using ground water resource, it should have valid permission/NOC and also required to install electronic flowmeter.
- No penalty or legal obligation is imposed/pending against unit for violation of environmental norms. Records for last 5 years may be verified. In case establishment period of the unit is less than 5 years, the past records since the start of production may be verified.
- Unit should not be involved in any sort of accident/incident resulting into emission /discharge into the environment. Records for last 5 years may be verified.

All such units, interested in availing incentives are required to demonstrate and prove their initiatives to the Committee (to be constituted at the level of concerned SPCB/PCC), comprising of members as mentioned in **Table VI**.

**Table VI: Structure of Committee to evaluate the request of units adopting measures resulting in better environmental performance**

Sl. No.	Members	Role
1	Member Secretary, SPCB/PCC	Chairman
2	Subject expert from Indian Institute of Technologies (IITs) or National Institute of Technologies (NITs) or any other institute/university of repute.	Member
3	Expert from CSIR institute/laboratories, having expertise in industrial process and pollution control technologies/ environmental management	Member
4	Two officials of concerned SPCB/PCC, as nominated by the Member Secretary, SPCB/PCC	Member

#### 4.2. Evaluation Criteria

The committee shall scrutinize the proposals based on the eligibility criteria. The basis of evaluation will be- (i) Measures taken for treatment and reuse of wastewater to reduce freshwater consumption, (ii) Use of alternative cleaner fuel to reduce emissions, and (iii) Use of cleaner technology/ cleaner production which results in reduction in pollution/hazardous waste generation (iv) Recycling units identified for EPR obligations and has fulfilled all requirement including Environmentally Sound Management Facility for recycling.



The unit is required to demonstrate the successful implementation of measures by annual submission of third-party audit report (through institute of repute) regarding performance of environmental management measures. The Committee members may also inspect unit, collect samples, and get it analysed, check logbooks, electricity/water bills, examine system feasibility through mass-balances, ensure real-time submission of environment data to SPCB/PCC server, etc. The check and balances to examine the industry claims are summarized in **Table VII**.

**Table VII: Checks and balances to assess the adequacy of environment management measures**

Criteria	Checks and balances
<b>I. Wastewater Management</b>	
Installation of wastewater recovery system resulting into treatment and 100% reuse of treated wastewater in industrial process.	<ul style="list-style-type: none"> <li>• Unit must have adequate operational Effluent Treatment Plant (ETP). The freshwater requirement of the unit has shown proportionate reduction.</li> <li>• There should not be any flow/ponding of wastewater inside the premises or discharge outside from the premises. Further, there should not be any by-pass.</li> <li>• Electronic flowmeters and Pan-tilt-zoom (PTZ) camera should have been installed with connectivity for continuous transmission of data to SPCB/PCC and CPCB servers (as applicable).</li> <li>• Recirculation system should be clearly mapped and visible for inspection and flow meter should be installed at required locations with records.</li> <li>• Mass/water balance based on actual production need to be checked. The claim regarding reduction in freshwater consumption should have concurrency with the readings of flow meters, water bill, log-books, etc.</li> <li>• Treated wastewater should not be used for horticulture or agriculture purposes.</li> <li>• Sludge generated from treatment of wastewater should be managed properly as per the authorization issued by the concerned SPCB/PCC and timely submission of Form-IV as per the requirement of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.</li> </ul>
<b>II. Air Pollution Management</b>	
100% fuel dependency on cleaner fuels, such as- Piped Natural Gas (PNG), Compressed Natural Gas (CNG), Liquefied Natural Gas (LNG) Liquefied Petroleum Gas (LPG), Compressed	<ul style="list-style-type: none"> <li>• No other fuel (coal, pet-coke, furnace oil, etc.) should be stored/used in the unit premises. Diesel for Gensets (as an auxiliary power source) may be allowed. Preference may be given to the units using gas based Gensets.</li> <li>• Adequate facility for stack monitoring (port holes, zig-zag ladder etc.) should be available with provision of OCEMS (as applicable).</li> </ul>



Biogas (CBG), propane, butane, etc.	<ul style="list-style-type: none"> <li>• Use of upgraded air pollution control devices with higher efficiency for the reduction of emissions.</li> <li>• Adoption of cleaner technology, advanced pollution control systems etc. to control fugitive/emissions</li> <li>• Use of alternate cleaner raw material for generation of less pollution.</li> <li>• Use of renewable energy as an alternate to conventional fuel/power should be considered.</li> </ul>
<b>III. Waste Management</b>	
The unit has adopted cleaner technology/ cleaner production which results in reduction in pollution/hazardous waste generation	<ul style="list-style-type: none"> <li>• Reduction in generation of pollution/waste due to adoption of cleaner technology/change in raw material etc.</li> <li>• Mass balance based on actual production need to be checked. There should be concurrency in generation of hazardous waste, utilization, disposal, etc. with respect to net reduction in generation.</li> </ul>
<b>IV. EPR Targets (for recycling facilities)</b>	
Recycling units identified for EPR obligations and has fulfilled all requirement including Environmentally Sound Management Facility for recycling.	<ul style="list-style-type: none"> <li>• Complying with the requirement of EPR obligation identified by CPCB from time to time.</li> </ul>

### 4.3. Re-assessment of Pollution Index (PI)

The purpose of giving star category is to classify the unit in the sector as star performing units.

The category of the unit may be re-assessed as detailed below:

#### A. For Industries, Service/Infrastructure facilities and Essential Environmental Services Sectors for management of waste.

The pollution index of the units in any sector which have proven reduction in trade effluent generation and/or air pollution management and/or waste management measures, can be calculated based on submission of same with the supporting documents for considering the modified score based on the same methodology.

The revised cumulative pollution index (PI) will be calculated with modified air/water/waste scores as discussed in the methodology given in previous section. If revised, cumulative PI results to change in the category of unit in the sector, the nomenclature for revised category will be as per the **Table VIII**.

**Table VIII: Nomenclature for revised category**

Change in category	Nomenclature of revised category
Red to Orange	Red*
Orange to Green	Orange*
Green to White	Green*

### **B. Essential Environmental Service Sectors for Domestic/Household Waste- “Blue Category Sectors”:**

Units under Blue Category are required to reduce their existing PI score by 25%, by meeting evaluation criteria/check and balances, as mentioned in **Table III** to qualify for change in category to Blue\*.

#### **4.4 Incentives to the units for better environmental management**

Units which have demonstrated the successful implementation of environmental management measures and verified by the Committee, shall be eligible for the incentives, as listed in the **Table IX**.

**Table IX: Incentives to units for better environmental performance**

Category	Incentives
Red*	<ul style="list-style-type: none"> <li>• CTO may be granted for the validity of max. 10 years.</li> <li>• Prescribed random environmental surveillance inspection frequency may be once a year, considering the change in category.</li> </ul>
Orange*	<ul style="list-style-type: none"> <li>• CTO may be granted for the validity of max. 15 years.</li> <li>• Prescribed random environmental surveillance inspection frequency may be once in two years, considering the change in category.</li> </ul>
Green*	<ul style="list-style-type: none"> <li>• CTO may be granted for the validity of max. 20 years.</li> <li>• Prescribed random environmental surveillance inspection frequency may be once in four years, considering the change in category and given incentives twice the original category.</li> </ul>
Blue*	<ul style="list-style-type: none"> <li>• CTO may be granted with additional 3 years validity period.</li> <li>• Prescribed random environmental surveillance inspection frequency may be once in 3 months.</li> </ul>



In case of non-compliance(s) observed in future, the State Board can remove the star status and for calculation of EC, the PI of original category shall be considered.

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# 5

## **Implementation pathway/guidelines**

The revised methodology and classification of sectors will be implemented in prospective manner. For this purpose, following guidelines may be referred:

- i. All pending application for consideration of CTE/CTO and future such application shall be processed as per the revised methodology of classification. In case CTE granted before the revised classification, applicability of CTO will be as per new classification.
- ii. New classification will be applicable to existing units at the time of renewal of CTO or within one year from the date of directions issued by CPCB regarding implementation of revised classification, whichever is earlier. The annual fees or cumulative fees for the remaining period shall be as per the revised category.
- iii. SPCBs/PCCs may grant Consent to Operate (CTO) to units under red, orange, and green categories for maximum validity up to 5 years, 10 years, and 15 years, respectively as per existing provisions which would be later governed as per the provisions/guidelines under Jan Vishwas (Amendment of Provisions) Act, 2023/Water Act, as amended. SPCBs/PCCs may grant Consent to Operate (CTO) to units under Blue Category sectors with additional 2 years validity, considering their role as Essential Environmental Services for management of waste generated from domestic/household activities.
- iv. Requirement of intimation/consent for white category of industries, shall be governed as per the provisions/guidelines under Jan Vishwas (Amendment of Provisions) Act, 2023//Water Act, as amended.
- v. All sectors irrespective of category shall follow guidelines for pollution control, if any, issued by SPCB/PCC/CPCB time to time.



- vi. Siting of units shall be only in the conforming area as per the guidelines of CPCB/SPCB/PCC. Further, as per the Section 17(1)(n) of the Water Act, 1974 and the Section 17(1)(h) of the Air Act, 1981, SPCB/PCC may also frame policies/advisory with respect to the location of any industry/operations, the carrying on of which is likely to cause air/water pollution, considering the scale/type of industries and sensitivity of area. Siting of units in eco-sensitive area will be governed by their respective notifications.
- vii. The classification of sectors shall not be linked to sanction of loans/finance of bank proceedings.
- viii. In the matter of Taz Trapezium Zone (TTZ), for air pollution scores of 10 and 20 (as per 2016 methodology), equivalent scores of 30 and 60 (as per 2025 methodology), respectively, may be considered for sectoral guidelines/opinion from NEERI (Ref: Order dated 08.12.2021, in the matter of M.C. Mehta v/s Union of India, Writ Petition (Civil) No.13381/1984, before Hon'ble Supreme Court).
- ix. As per CPCB directions dated 12.12.2019, issued under Section 18(1)(b) of the Water Act, 1974 and the Air Act, 1981, SPCBs/PCCs are required to ensure inspection of red, orange, and green category of industries at least once in six-months, one-year, and two-years, respectively. Common waste treatment facilities and 17 categories of industries are to be inspected at least once in every three-months. (Ref: Order dated 05.11.2019, in the matter of Shailesh Singh v/s State of Haryana & Ors., OA No.639/2018, before Hon'ble National Green Tribunal, Principal Bench).
- x. The sectors which are classified under white or green category and if such sectors have installed Genset(s) of higher capacity which are classified under orange/green category, then such sector will be considered under higher category.
- xi. All Industrial units are encouraged to adopt measures such as cleaner technology/cleaner production, cleaner raw material, cleaner fuel etc., for better environmental management. If such measures result into overall reduction of pollution



index, request regarding change in category of such sectors/units may be made to concerned SPCB/PCC as detailed under Section 8 of this report.

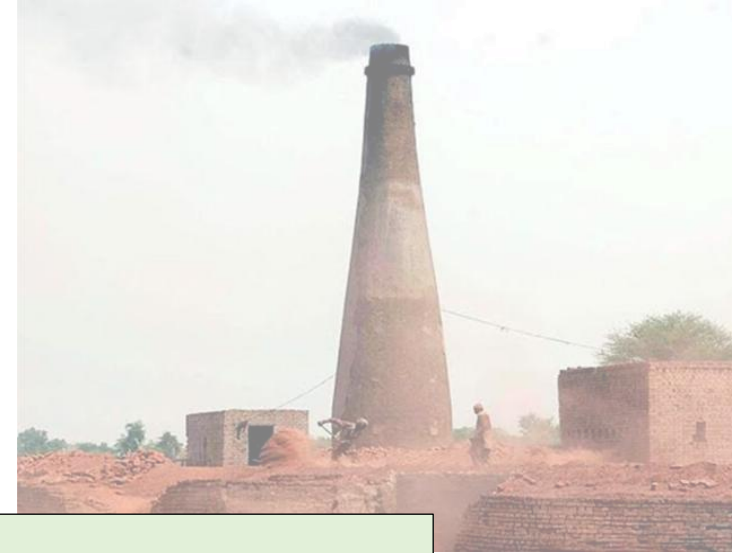
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**ANNEXURE-I**  
**(LIST OF INDUSTRIAL SECTORS CLASSIFIED UNDER RED, ORANGE, GREEN, AND WHITE CATEGORIES)**



**LIST OF INDUSTRIAL SECTORS**

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
~A~																
1	Manufacturing of <b>Automobiles</b> (integrated facilities)	20	30	25	75	0	25	0	25	25	20	45	83.8	Red	i. Such types of plants are having either one or combinations of polluting activities viz. washing, metal surface finishing operations, pickling, plating, electro-plating, phosphating, painting, heat treatment etc.  ii. Some of such plants may outsource some /all of the polluting activities or may have stand-alone units. In such cases, after thorough inspection of such units by concerned SPCB, re-categorization of the industry shall be made accordingly.	IPC-V
2	<b>Asbestos</b> and asbestos based industries	10	30	25	65	35	30	30	95	25	30	55	98	Red	Asbestos is carcinogenic and banned in many countries.	IPC-II
3	<b>Almirah</b> , Grill Manufacturing (Dry Mechanical Process)	0	0	0	0	0	30	0	30	0	0	0	30	Green		IPC-V
~B~																
<b>4.0</b>	<b>BAKERY, CONFECTIONERY AND SWEETS PRODUCTS</b>															
4.1	Bakery, confectionery, sweets with production capacity $\geq 1$ TPD	25	0	20	45	25	0	25	50	0	0	0	61.3	Orange		IPC-III

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
4.2	Bakery, confectionery, sweets with production capacity $\geq$ 1 TPD. (using cleaner/gaseous fuel)	25	0	20	45	25	0	10	35	0	0	0	54.6	Green		IPC-III
<b>5.0</b>	<b>BRICK MANUFACTURING</b>															
5.1	Brick kilns using coal as fuel	0	0	0	0	25	25	25	75	0	0	0	75	Orange		IPC-V
5.2	Brick kilns using biomass as fuel	0	0	0	0	25	25	15	65	0	0	0	65	Orange		IPC-V
5.3	Tunnel brick kilns (gas fired)	0	0	0	0	25	25	10	60	0	0	0	60	Orange		IPC-V
<b>6.0</b>	<b>MANUFACTURING OF AUTOCLAVED AERATED CONCRETE (AAC) BRICKS/BLOCKS.</b>															
6.1	AAC bricks/blocks manufacturing using coal as fuel (12 TPD and above)	0	0	0	0	25	25	30	80	0	0	0	80	Red		IPC-V
6.2	AAC bricks/blocks manufacturing using coal as fuel (less than 12 TPD)	0	0	0	0	25	25	25	75	0	0	0	75	Orange		IPC-V
6.3	AAC bricks/blocks manufacturing using biomass as fuel	0	0	0	0	25	25	20	70	0	0	0	70	Orange		IPC-V
6.4	AAC bricks/blocks manufacturing using gas as fuel	0	0	0	0	25	25	15	65	0	0	0	65	Orange		IPC-V
<b>7.0</b>	<b>FLY ASH BRICKS / BLOCK MANUFACTURING</b>															
7.1	Fly ash bricks/ block manufacturing (with boiler)	0	0	0	0	25	25	25	75	0	0	0	75	Orange		IPC-V
7.2	Fly ash bricks/ block manufacturing (without boiler)	0	0	0	0	0	25	0	25	0	0	0	25	Green		IPC-V
<b>8.0</b>	<b>MANUFACTURING OF NON-ALCOHOLIC BEVERAGES</b>															
8.1	Wastewater generation $\geq$ 100 KLD	25	20	30	75	25	0	25	50	0	0	0	81.3	Red		IPC-III
8.2	Wastewater generation < 100 KLD	25	20	25	70	25	0	25	50	0	0	0	77.5	Orange		IPC-III

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division	
<b>9.0</b>	<b>BATTERY MANUFACTURING</b>																
9.1	Lead-acid <b>Battery</b> manufacturing (excluding assembling and charging of lead acid <b>Battery</b> in micro-scale)	0	30	20	<b>50</b>	35	30	25	<b>90</b>	25	10	<b>35</b>	94.3	Red		IPC-V	
9.2	Dry cell <b>Battery</b> (excluding manufacturing of electrodes) and assembling & charging of acid lead battery on micro scale	0	30	15	<b>45</b>	25	25	10	<b>60</b>	25	10	<b>35</b>	76	Orange		IPC-V	
9.3	<b>Battery</b> manufacturing without boiler (excluding lead acid battery)	0	0	0	<b>0</b>	0	25	0	<b>25</b>	25	10	<b>35</b>	43.1	Green		IPC-V	
10	<b>Briquette</b> manufacturing (coal/biomass/coke)	0	0	0	<b>0</b>	0	30	0	<b>30</b>	0	0	<b>0</b>	30	Green	The process involves mixing, mechanized compression and drying.	IPC-II	
11	Assembly of <b>Bicycles</b> , <b>Baby</b> carriages and other small non motorizing vehicles	0	0	0	<b>0</b>	0	0	0	<b>0</b>	0	0	<b>0</b>	0	White		IPC-V	
12	<b>Bailing</b> (hydraulic press) of waste papers	0	0	0	<b>0</b>	0	0	0	<b>0</b>	0	0	<b>0</b>	0	White		IPC-V	
13	<b>Bio fertilizer</b> and bio-pesticides without using inorganic chemicals	0	0	0	<b>0</b>	0	20	0	<b>20</b>	0	0	<b>0</b>	20	White		IPC-V	
14	<b>Block</b> making of printing without foundry (excluding wooden block making)	0	0	0	<b>0</b>	0	0	0	<b>0</b>	0	0	<b>0</b>	0	White		IPC-V	

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
15	Flavoured <b>Betel</b> nuts production/ grinding (completely dry mechanical operations)	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
16	Manufacturing of shoe <b>Brush</b> and wire <b>Brush</b>	0	0	0	0	0	20	0	20	0	0	0	20	White		IPC-V
~C~																
<b>17.0</b>	<b>MANUFACTURING OF INDUSTRIAL CARBON INCLUDING ELECTRODES AND GRAPHITE BLOCKS, ACTIVATED CARBON, CARBON BLACK</b>															
17.1	Carbon black manufacturing	20	15	20	55	25	30	30	85	30	20	50	92.9	Red		IPC-I
17.2	Industrial carbon including electrodes & graphite blocks and calcined pet coke	20	15	20	55	25	25	25	75	30	10	40	86.9	Red		IPC-II
17.3	Activated carbon manufacturing (with steam activation)	20	15	20	55	25	25	15	65	0	0	0	74.6	Orange		IPC-V
<b>18.0</b>	<b>INORGANIC CHEMICALS</b>															
18.1	Basic inorganic chemicals and electro chemicals and its derivatives including manufacturing of acid	10	30	25	65	30	30	20	80	20	20	40	90.5	Red		IPC-I
18.2	Phosphorous and its compounds, including phosphorous rock processing	20	30	20	70	35	25	10	70	10	30	40	86.5	Red		IPC-I
18.3	Chlorates, per-chlorates & peroxides	20	30	20	70	30	20	25	75	20	20	40	88.8	Red		IPC-I
18.4	Chlorine, fluorine, bromine, iodine, and their compounds	10	30	25	65	35	20	10	65	20	20	40	83.4	Red		IPC-I
19	Coke oven plant, coal liquefaction, coal tar distillation and fuel gas-making	30	30	30	90	25	30	35	90	25	50	75	98.3	Red		IPC-II
<b>20.0</b>	<b>CEMENT PLANTS</b>															

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
20.1	With co-processing with CPP (Captive Power Plant)	20	25	35	80	35	30	35	100	10	50	60	100	Red		IPC-II
20.2	With co-processing without CPP	20	0	20	40	35	30	35	100	30	20	50	100	Red		IPC-II
20.3	Without co-processing with CPP	10	25	35	70	35	30	35	100	10	50	60	100	Red		IPC-II
20.4	Without co-processing without CPP	0	0	0	0	25	30	35	90	30	10	40	92	Red		IPC-II
20.5	Stand-alone grinding units with CPP	20	25	35	80	25	30	35	90	10	50	60	97	Red		IPC-II
20.6	Stand-alone grinding units without CPP	0	0	0	0	25	30	0	55	30	10	40	64	Orange		IPC-II
20.7	Bulk terminals for storage and packaging of cement	0	0	0	0	0	30	0	30	0	0	0	30	Green		IPC-II
<b>21.0</b>	<b>CHLOR ALKALI</b>															
21.1	Chlor alkali	10	20	25	55	30	25	25	80	20	20	40	89.5	Red		IPC-I
21.2	Chlor alkali using washed salt	10	20	15	45	30	25	25	80	20	10	30	87.5	Red		IPC-I
21.3	Chlor alkali using cleaner/gaseous fuel	10	20	25	55	30	25	10	65	20	20	40	81.6	Red		IPC-I
21.4	Chlor alkali using cleaner/gaseous fuel and washed salt	10	20	15	45	30	25	10	65	20	10	30	78.1	Orange		IPC-I
22	Manufacturing of Compact disc Computer (CD/DVD) / cassette manufacturing / reel manufacturing	0	15	15	30	30	0	0	30	20	10	30	51	Green		IPC-V
<b>23.0</b>	<b>MANUFACTURING OF COIR/COIR PITH AND COIR PRODUCTS</b>															
23.1	Coir bleaching and dyeing/printing units	25	0	25	50	25	25	20	70	0	0	0	77.5	Orange		IPC-V
23.2	Coir fibre/pith processing units generating effluent	25	0	20	45	0	25	0	25	0	0	0	51.9	Green		IPC-V

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
23.3	Coir fibre/pith processing and/or Manufacturing of coir products from coir (only dry process)	0	0	0	0	0	20	0	20	0	0	0	20	White		IPC-V
<b>24.0</b>	<b>CERAMICS</b>															
24.1	Ceramics/ Glass /Earthen potteries and tile manufacturing using coal/oil fired kilns (fuel consumption: 12 TPD and above)	0	0	0	0	25	25	30	80	0	0	0	80	Red		IPC-V
24.2	Ceramics/ Glass /Earthen potteries and tile manufacturing using coal/oil fired kilns (fuel consumption: less than 12 TPD)	0	0	0	0	25	25	25	75	0	0	0	75	Orange		IPC-V
24.3	Ceramics/ Glass /Earthen potteries and tile manufacturing (using gas fired kilns)/tunnel kiln	0	0	0	0	25	25	10	60	0	0	0	60	Orange		IPC-V
24.4	Ceramics/ Glass /Earthen potteries and tile manufacturing (using only electrical kiln)	0	0	0	0	0	25	0	25	0	0	0	25	Green		IPC-V
25	<b>Coal Washeries</b>	20	25	30	75	0	25	0	25	0	0	0	78.1	Orange		IPC-II
26	Liquid floor <b>Cleaner</b> , black phenyl, liquid soap, glycerol mono-stearate manufacturing	25	25	15	65	0	20	0	20	0	0	0	68.5	Orange		IPC-V
27	Phenyl/toilet <b>Cleaner</b> formulation and bottling	10	0	15	25	0	20	0	20	0	0	0	32.5	Green		IPC-V

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
28	Cashew nut processing	20	0	15	35	25	20	15	60	0	0	0	67	Orange		IPC-III
<b>29.0</b>	<b>COFFEE SEEDS PROCESSING INDUSTRY</b>															
29.1	Coffee seeds processing (wet process)	35	0	20	55	25	0	15	40	0	0	0	64	Orange		IPC-III
29.2	Coffee seeds processing with eco-pulper	20	0	15	35	25	0	15	40	0	0	0	50.5	Green		IPC-III
<b>30</b>	<b>Manufacturing of Candy</b>															
30	Manufacturing of Candy	10	0	15	25	0	0	0	0	0	0	0	25	Green		IPC-V
<b>31</b>	<b>Cardboard or corrugated box and paper products (excluding paper or pulp manufacturing and without using boilers)</b>															
31	Cardboard or corrugated box and paper products (excluding paper or pulp manufacturing and without using boilers)	0	0	0	0	0	20	0	20	0	0	0	20	White		IPC-V
<b>32</b>	<b>Manufacturing of precast Cement products (without using asbestos/ boiler / steam curing) like pipe ,pillar, jafri, well ring, block/tiles etc.(should be done in closed covered shed to control fugitive emissions)</b>															
32	Manufacturing of precast Cement products (without using asbestos/ boiler / steam curing) like pipe ,pillar, jafri, well ring, block/tiles etc.(should be done in closed covered shed to control fugitive emissions)	0	0	15	15	0	25	0	25	0	0	0	30.6	Green		IPC-V
<b>33</b>	<b>Manufacturing of Ceramic Colour by mixing &amp; blending only (not using boiler and wastewater recycling process)</b>															
33	Manufacturing of Ceramic Colour by mixing & blending only (not using boiler and wastewater recycling process)	0	0	0	0	0	25	0	25	0	0	0	25	Green		IPC-V
<b>34.0</b>	<b>CHILLING PLANT, COLD STORAGE AND ICE-MAKING</b>															
34.1	Chilling plant	20	15	15	50	0	0	0	0	0	0	0	50	Green		IPC-IV
34.2	Cold storage	0	15	15	30	0	0	0	0	0	0	0	30	Green		IPC-V
34.3	Ice Making	0	20	15	35	0	0	0	0	0	0	0	35	Green		IPC-V

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
35	Decoration of <b>Ceramic Cups</b> and plates by electric furnace	0	0	0	0	0	25	0	25	0	0	0	25	Green		IPC-V
36	Ready mix <b>Cement Concrete</b>	0	0	0	0	0	30	0	30	0	0	0	30	Green		IPC-V
37	<b>CO2</b> recovery plant	0	0	0	0	0	0	0	0	20	10	30	30	Green	Exhausted molecular sieves are generated as hazardous waste.	IPC-V
38	Assembly of air <b>Coolers/Conditioners</b> , repairing and servicing	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
39	<b>Chalk</b> making from plaster of Paris ( only casting without boilers etc.(sun drying / electrical oven)	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
40	Standalone manufacturing of <b>Concrete</b> admixtures up to 1000 MT per Month capacity by physical mixing (without boiler and reactor and no generation of wastewater)	0	0	0	0	0	0	0	0	10	10	20	20	White	The sector may become green category if it generates wastewater. The unit needs to be re-classified as per the methodology in case the capacity exceeds 1000 MT per Month.	IPC-V
41	Used <b>Cooking</b> oil (UCO) collection centers	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
~D~																
<b>42.0</b>	<b>DYES, DYE INTERMEDIATES AND PIGMENT PRODUCTIONS</b>															
42.1	Dyes, Dye Intermediates and Pigments produced by chemical synthesis	35	30	25	90	30	20	25	75	30	20	50	96.3	Red		IPC-I
42.2	Natural Dye and Pigments requiring acidic/ alkaline/ solvent extraction	30	30	20	80	25	20	25	70	20	10	30	90	Red		IPC-I
42.3	Natural Dye and Pigments not require acidic/ alkaline/ solvent extraction	30	20	20	70	25	0	25	50	0	0	0	77.5	Orange		IPC-I
<b>43.0</b>	<b>SYNTHETIC DETERGENT AND SOAPS</b>															
43.1	Synthetic detergents and soaps (wastewater generation ≥ 100 KLD)	20	20	30	70	25	0	25	50	25	10	35	82.8	Red		IPC-I
43.2	Synthetic detergents and soaps (wastewater generation < 100 KLD)	20	20	25	65	25	0	25	50	25	10	35	79.9	Orange		IPC-I
43.3	Synthetic detergents and soaps (only formulation)	0	0	0	0	25	0	25	50	0	0	0	50	Green		IPC-I
43.4	Soap manufacturing (handmade -without steam boiling / boiler)	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
<b>DISTILLERIES AND FERMENTATION SECTORS</b>																
<b>44.0</b>	<b>DISTILLERIES AND FERMENTATION INDUSTRIES</b>															
44.1	Distillery (Molasses based)	35	25	35	95	25	25	35	85	0	0	0	97.1	Red		IPC-III
44.2	Distillery (Grain based)	35	25	30	90	25	25	25	75	0	0	0	93.8	Red		IPC-III
44.3	Distillery (Grain based) with Distiller's Dried Grains with Soluble (DDGS) as by-product	25	25	20	70	25	25	25	75	0	0	0	83.8	Red		IPC-III
44.4	Standalone yeast manufacturing units	35	25	35	95	25	20	25	70	0	0	0	96.8	Red		IPC-III

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
44.5	Breweries and malteries industry (with fermentation)- Wastewater generation ≥ 100 KLD	30	15	30	75	25	0	25	50	0	0	0	81.3	Red		IPC-III
44.6	Breweries and malteries industry (with fermentation)- Wastewater generation < 100 KLD	30	15	25	70	25	0	25	50	0	0	0	77.5	Orange		IPC-III
44.7	Potable alcohol by blending, bottling of alcohol products	20	0	25	45	0	0	0	0	0	0	0	45	Green		IPC-III
45	Diesel pump repairing and servicing (complete mechanical dry process)	0	0	0	0	0	0	0	0	10	10	20	20	White		IPC-V
~E~																
46	Manufacturing of <b>Explosives</b> , detonators, fuses, etc.	25	30	15	70	0	30	0	30	30	10	40	80.5	Red	Explosives manufacture contribute to release of hazardous pollutants, including generation of other toxic chemicals. Accident/safety hazard is also associated with such sector during manufacturing and usages.	IPC-I
47	Manufacturing of coated <b>Electrode</b>	0	15	15	30	0	25	0	25	0	0	0	38.8	Green	Process involves preparation of core wire / rod, preparation of dry mix, preparation of wet mix, application of coating by extrusion, baking of coated electrodes.	IPC-V
48	<b>Emery</b> powder (fine dust of sand) manufacturing	0	0	0	0	0	30	0	30	0	0	0	30	Green	Fugitive emissions from grinding operations.	IPC-V

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
49	Electric lamp (bulb) and CFL manufacturing by assembling only	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
50	Electrical and electronic item assembling (completely dry process)	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
51	Engineering and fabrication units (dry process without any heat treatment / metal surface finishing operations / painting)	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
~F~																
<b>52.0</b>	<b>FIBRE GLASS (FIBRE REINFORCED PLASTIC) PRODUCTION</b>															
52.1	Fibre glass (containing lead) production and processing (excluding moulding)	0	0	0	0	35	0	25	60	25	20	45	69	Orange		IPC-V
52.2	Fibre glass (without lead) production and processing (excluding moulding)	0	0	0	0	30	0	25	55	25	20	45	65.1	Orange	The use of styrene in most methods of fibre glass production causes hazardous air pollution that is harmful to breathe at excessive levels.	IPC-V
53	Manufacturing of Firecrackers including improved crackers/green crackers, etc.	0	0	0	0	35	30	0	65	30	10	40	72	Orange	Various hazardous chemicals are used in the manufacturing process. Accident/safety hazard is also associated with such sector during manufacturing and usages.	IPC-V
<b>54.0</b>	<b>SYNTHETIC FIBRES MANUFACTURING</b>															
54.1	Synthetic fibres-PSF & PFY, generated from petrochemical	35	30	35	100	30	25	35	90	30	20	50	100	Red		IPC-I

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
54.2	Synthetic fibres including rayon, tyre cord, viscose filament yarn/staple fibre, acrylic fibres	25	20	25	70	30	20	25	75	20	10	30	87.5	Red		IPC-I
54.3	Synthetic fibres including rayon, tyre cord, viscose filament yarn/staple fibre, acrylic fibres using cleaner/gaseous fuel	25	20	25	70	30	20	10	60	20	10	30	83.5	Red		IPC-I
<b>55.0</b>	<b>FERTILIZERS PRODUCTION</b>															
55.1	Fertilizers (Urea)	10	30	35	75	30	30	20	80	20	30	50	92.5	Red		IPC-I
55.2	Fertilizers (Calcium Ammonium Nitrate/Ammonium Nitrate)	10	30	25	65	30	25	25	80	20	20	40	90.5	Red		IPC-I
55.3	Fertilizers (NPK)	10	30	25	65	30	25	25	80	20	20	40	90.5	Red		IPC-I
55.4	Fertilizers (Straight Phosphatic Fertilizers)	10	30	25	65	30	25	25	80	20	20	40	90.5	Red		IPC-I
55.5	Fertilizer (granulation /formulation / blending) generating wastewater through floor washings, cooling towers etc.	10	30	15	55	30	30	0	60	10	10	20	75	Orange		IPC-I
55.6	Fertilizer (granulation /formulation / blending) not generating wastewater	0	0	0	0	30	30	0	60	10	10	20	64	Orange		IPC-I
<b>56.0</b>	<b>FOOD AND FOOD PROCESSING INCLUDING FRUITS AND VEGETABLE PROCESSING</b>															
56.1	Wastewater generation ≥ 10 KLD	25	0	25	50	25	0	25	50	0	0	0	62.5	Orange		IPC-III
56.2	Wastewater generation < 10 KLD (without boiler)	25	0	15	40	0	0	0	0	0	0	0	40	Green		IPC-III
<b>57.0</b>	<b>FISH FEED, POULTRY FEED AND CATTLE FEED</b>															
57.1	Fish feed, poultry feed and cattle feed (with boiler)	0	20	15	35	25	25	25	75	0	0	0	79.4	Orange		IPC-V

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
57.2	Fish feed, poultry feed and cattle feed (without boiler)	0	0	0	0	0	25	0	25	0	0	0	25	Green		IPC-V
58	Fish processing and packing (excluding chilling of fishes)	25	25	20	70	0	20	0	20	0	0	0	73	Orange		IPC-IV
<b>59.0</b>	<b>MANUFACTURING OF MODULAR WOODEN FURNITURE</b>															
59.1	Modular wooden furniture from particle board, MDF, swan timber etc, Ceiling tiles/ partition board from saw dust, wood chips etc., and other agricultural waste using synthetic adhesive resin, wooden box making (With boiler)	0	0	0	0	25	25	10	60	0	0	0	60	Orange		IPC-V
59.2	Modular wooden furniture from particle board, MDF, swan timber etc, Ceiling tiles/ partition board from saw dust, wood chips etc., and other agricultural waste using synthetic adhesive resin, wooden box making (Without boiler)	0	0	0	0	0	25	0	25	0	0	0	25	Green		IPC-V
<b>60.0</b>	<b>CARPENTRY &amp; WOODEN FURNITURE MANUFACTURING</b>															
60.1	Carpentry & wooden furniture manufacturing with spray painting (excluding saw mill) with the help of electrical (motorized) machines such as electrical wood planner, steel saw cutting circular blade, etc.	0	0	0	0	0	25	0	25	0	0	0	25	Green		IPC-V

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
60.2	Carpentry & wooden furniture manufacturing without spray painting (excluding saw mill) with the help of electrical (motorized) machines such as electrical wood planner, steel saw cutting circular blade, etc.	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
61	<b>Foam</b> manufacturing	0	0	0	0	35	0	0	35	20	10	30	44.8	Green	Emissions of VOCs and HAPs. Raw materials are polyurethane, latex etc.	IPC-V
62	<b>Flour</b> mills (dry process)	0	0	0	0	0	25	0	25	0	0	0	25	Green	Separate classification for domestic flour mills may not require.	IPC-V
<b>63.0</b>	<b>STEEL FURNITURE INDUSTRY (Obnoxious gases from welding.)</b>															
63.1	Steel furniture with spray painting	0	0	0	0	0	25	0	25	0	0	0	25	Green		IPC-V
63.2	Steel furniture without spray painting	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
~G~																
<b>64.0</b>	<b>MANUFACTURING OF GLUE AND GELATIN</b>															
64.1	Manufacturing of glue and gelatin using coal/liquid fuel	25	20	15	60	25	20	25	70	10	10	20	82	Red		IPC-I
64.2	Manufacturing of glue and gelatin by using biomass/cleaner fuel	25	20	15	60	25	20	15	60	10	10	20	76	Orange		IPC-I
<b>65.0</b>	<b>MANUFACTURING OF GLASS (INCLUDING PRINTING OR ETCHING OF GLASS SHEET USING HYDROFLUORIC ACID)</b>															
65.1	Manufacturing of glass (Oil/coal fired)	0	15	15	30	25	25	25	75	0	0	0	78.8	Orange		IPC-V
65.2	Manufacturing of glass (gas fired)	0	15	15	30	25	25	10	60	0	0	0	66	Orange		IPC-V

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
66	Producer Gas plant using conventional coal Gasification	20	25	15	60	25	0	25	50	30	10	40	78	Orange		IPC-V
<b>67.0</b>	<b>COMPRESSED BIOGAS (CBG)/BIO-CNG PLANTS</b>															
67.1	CBG plants based on Municipal Solid Waste (MSW) as feed	30	25	25	80	0	20	0	20	0	0	0	82	Red		UPC-II
67.2	CBG plants based on process waste (industrial/ process liquid effluent & solid waste like press mud, organic sludge, molasses, etc.) as feed	30	25	25	80	0	20	0	20	0	0	0	82	Red		IPC-III
67.3	CBG plants based on crop residue (paddy straw /wheat straw /corn sweet sorghum/ Napier grass, etc.) as feed	30	25	20	75	0	20	0	20	0	0	0	77.5	Orange		IPC-III
67.4	CBG plants based on animal waste (dairy farms, poultry farms, and other animal waste) as feed	30	25	20	75	0	20	0	20	0	0	0	77.5	Orange		IPC-III
67.5	CBG plants producing Fermented Organic Manure (FOM) & Liquid Fermented Organic Manure (LFOM) as by-products	0	0	0	0	0	20	0	20	0	0	0	20	White	CBG plants producing FOM & LFOM as by-products in conformity with requirements of Gazette Notification No. 2051 dated 14.07.2020 & No. 1972 dated 01.06.2021, respectively, and utilizing entire FOM & LFOM as a fertilizer or manure on land and also not discharging any waste-water, to be considered under White category, subject to verification by SPCB on case-to-case basis.	IPC-III

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division	
<b>68.0</b>	<b>STANDALONE PRODUCTION OF HYDROGEN AND/OR AMMONIA (WITHOUT CAPTIVE POWER PLANT USING FOSSIL FUEL)</b>																
68.1	Integrated unit for production of Ammonia through Hydrogen generated by pyrolysis/gasification	20	25	20	65	20	25	25	70	30	20	50	87.3	Red	<p>i. Pyrolysis of biomass will generate syn gas and other condensable gases having hydrocarbons and other impurities.</p> <p>ii. Purification of gas will generate wastewater having high organic content and tarry residue as hazardous waste.</p> <p>iii. The process will generate fugitive emissions and due to pyrolysis operation.</p>	IPC-I	
68.2	Integrated unit for production of ammonia through Hydrogen generated by electrolysis using renewable energy (capacity ≥ 15 TPD)	10	25	35	70	0	20	0	20	30	20	50	80.5	Red	<p>i. Ammonia manufacturing process (Haber process) and associated safety hazards remain same as per the chemical properties of ammonia.</p> <p>ii. Wastewater generation due to the production of hydrogen through electrolysis and condensation of ammonia, other scrubbed liquid etc.</p> <p>iii. Generation of ETP sludge, exhausted membranes, molecular sieves, spent catalysts, etc. as hazardous waste.</p>	IPC-I	

S. No.	Sector	W1	W2	W3	PI <sub>W</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
68.3	Integrated unit for production of Ammonia through hydrogen generated by electrolysis using renewable energy (Capacity < 15 TPD)	10	25	20	55	0	20	0	20	30	10	40	68.5	Orange	<p>i. Ammonia manufacturing process (Haber process) and associated safety hazards remains same as per the chemical properties of ammonia.</p> <p>ii. Wastewater generation due to production of hydrogen through electrolysis and condensation of ammonia, other scrubbed liquid etc.</p> <p>iii. Generation of ETP sludge, exhausted membranes, molecular sieves, spent catalysts, etc. as hazardous waste.</p>	IPC-I
68.4	Hydrogen production through pyrolysis/gasification	20	25	20	65	20	25	25	70	30	10	40	85.8	Red	<p>i. Pyrolysis of biomass will generate syn gas and other condensable gases having hydrocarbons and other impurities.</p> <p>ii. Purification of gas will generate wastewater having high organic content and tarry residue as hazardous waste.</p> <p>iii. The process will generate fugitive emissions and due to pyrolysis operation.</p>	IPC-I

S. No.	Sector	W1	W2	W3	PI <sub>W</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
68.5	Hydrogen production through electrolysis using raw/seawater and renewable energy (capacity $\geq$ 2.5 TPD)	0	20	35	55	0	0	0	0	30	10	40	64.0	Orange	<p>i. Type of electrolyzers may include Alkaline Water Electrolyser (AWE), Proton Exchange Membrane (PEM), Solid Oxide Electrolyser Cell (SOEC) and Anion Exchange Membrane (AEM), etc.</p> <p>ii. Generation of DM reject, cooling tower blowdown, draining of alkaline/electrolyser water during maintenance, etc. as wastewater.</p> <p>iii. Generation of ETP sludge, exhausted membranes, molecular sieves, spent catalysts, etc. as hazardous waste.</p>	IPC-I
68.6	Hydrogen production through electrolysis using raw/sea water and renewable energy (capacity $<$ 2.5 TPD)	0	20	20	40	0	0	0	0	30	10	40	52.0	Green	<p>i. Type of electrolyzers may include Alkaline Water Electrolyser (AWE), Proton Exchange Membrane (PEM), Solid Oxide Electrolyser Cell (SOEC) and Anion Exchange Membrane (AEM), etc.</p> <p>ii. Generation of DM reject, cooling tower blowdown, draining of alkaline/electrolyser water during maintenance, etc. as wastewater.</p> <p>iii. Generation of ETP sludge, exhausted membranes, molecular sieves, spent catalysts, etc. as hazardous waste.</p>	IPC-I
68.7	Hydrogen production through electrolysis (using	0	0	0	0	0	0	0	0	0	10	10	10.0	White	<p>i. DM water as feed water for electrolyser and cooling/chilling</p>	IPC-I

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
	renewable energy) on BOO/BOOT/BOT, mode etc., located in the premises of end user industry and directly using de-mineralized water & other utilities (cooling tower, ETP, etc.) sourced from end user industry														water requirement to be met by the end user industry.  ii. Wastewater and other waste generated during O&M shall also be managed by the end user industry.	
69	<b>Glue</b> from starch (physical mixing) with Gas/ electrically operated oven /boiler.	0	0	0	0	25	0	10	35	0	0	0	35	Green		IPC-V
70	<b>Gold</b> and silver smithy (purification with acid smelting operation and sulphuric acid polishing operation) (using less or equal to 1 litre of sulphuric acid/ nitric acid per month)	0	0	0	0	0	25	0	25	0	0	0	25	Green		IPC-V
71	Compressed oxygen <b>Gas</b> from crude liquid oxygen (without use of any solvents and by maintaining pressure & temperature only for separation of other <b>Gases</b> )	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
72	<b>Glass</b> and ampules and vials making from <b>Glass</b> tubes	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
73	<b>Ground</b> nut decorticating	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
74	<b>Medical Oxygen</b>	0	0	0	0	0	0	0	0	10	10	20	20	White	The sector may become green category if it generates wastewater	IPC-V
~H~																
<b>75.0</b>	<b>HOT MIX PLANTS</b>															
75.1	Hot mix plants using oil as fuel	0	0	0	0	25	25	25	75	0	0	0	75	Orange		IPC-V
75.2	Hot mix plants using gaseous as fuel	0	0	0	0	25	25	10	60	0	0	0	60	Orange		IPC-V
76	<b>Hazardous</b> waste pre-processing/processing facility including spent acid processing, spent solvent recovery, etc.	25	30	15	70	25	25	15	65	30	20	50	87.3	Red		WM-II
77	<b>Handloom</b> / carpet weaving (without dyeing and bleaching operation)	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
~I~																
78	<b>Ice</b> cream manufacturing units	25	25	20	70	25	0	25	50	0	0	0	77.5	Orange		IPC-IV
79	Printing <b>Ink</b> Manufacturing	20	30	15	65	0	20	10	30	30	10	40	77.3	Orange	In the process pigments, binders and solvents are used. VOCs are generated.	IPC-I

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
80	Manufacturing of scientific and mathematical <b>Instrument</b> (assembling only)	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
~J~																
<b>81.0</b>	<b>JUTE PROCESSING</b>															
81.1	Jute processing (with dyeing / with boiler)	25	20	25	70	25	0	25	50	0	0	0	77.5	Orange		IPC-III
81.2	Jute processing (without dyeing / without boiler)	20	0	20	40	0	0	0	0	0	0	0	40	Green		IPC-III
81.3	Manufacturing of products from jute (without dyeing/ without boiler)	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-III
~L~																
82	<b>Lime</b> manufacturing (using lime kiln)	0	0	0	0	25	0	30	55	0	0	0	55	Orange		IPC-V
83	<b>Leather</b> foot wear and <b>Leather</b> products (excluding tanning and hide processing)	0	0	0	0	0	20	0	20	0	0	0	20	White	Fumes due to use of adhesives / gums.	IPC-IV
84	Manufacturing of optical <b>Lenses</b> (using electrical furnace)	0	20	15	35	0	0	0	0	0	0	0	35	Green		IPC-V
85	<b>Leather</b> cutting and stitching (more than 10 machine and using motor)	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
~M~																

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
86	Mobile towers using genset(s)	0	0	0	0	25	0	25	50	0	0	0	50	Green	i. The used oil/waste oil generated during repair and maintenance need to be disposed through authorized hazardous waste recycler by service provider/OEM.  ii. Order dated 24.08.2017 in the related matter with OA No. 83(THC) OF 2012 (Bharti Infratel Ltd.) may be referred for issuance of composite consent in case of mobile towers.	UPC-I
<b>87.0</b>	<b>MILK PROCESSES AND DAIRY PRODUCTS</b>															
87.1	Milk processes and dairy products (integrated project)	30	25	30	85	25	20	30	75	0	0	0	90.6	Red		IPC-IV
87.2	Dairy and dairy products (Small scale units), using coal/biomass as fuel (Wastewater generation ≥ 100 KLD)	25	25	30	80	25	0	25	50	0	0	0	85	Red		IPC-IV
87.3	Dairy and dairy products (Small scale units), using coal/biomass as fuel (Wastewater generation < 100 KLD)	25	25	20	70	25	0	25	50	0	0	0	77.5	Orange		IPC-IV
87.4	Dairy and dairy products, (Small scale units), using PNG as fuel	25	25	20	70	0	0	10	10	0	0	0	71.5	Orange		IPC-IV
<b>88.0</b>	<b>MINING AND ORE BENEFICIATION</b>															
88.1	Open-cast coal mining	10	25	35	70	25	30	35	90	10	70	80	97.5	Red		IPC-II
88.2	Underground coal mining	0	25	35	60	25	30	35	90	0	0	0	93	Red		IPC-II
88.3	Mining of major minerals and ore beneficiation	20	30	35	85	25	30	35	90	25	70	95	99.4	Red	Includes captive limestone mining.	IPC-II

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
88.4	Mining of minor minerals (except Sand/riverbed material mining)	10	0	20	30	25	25	25	75	0	0	0	78.8	Orange		IPC-II
88.5	Grinding, processing, and screening of minor minerals	0	0	0	0	25	30	0	55	0	0	0	55	Orange		IPC-II
89	Manufacturing of <b>Mirror</b> from sheet glass	0	0	0	0	30	20	0	50	25	10	35	58.8	Orange		IPC-V
90	<b>Mineral</b> processing, industries involving ore sintering, pelletising, grinding & pulverization	0	0	0	0	25	25	25	75	0	0	0	75	Orange		IPC-II
91	<b>Malteries</b> (without fermentation)	30	15	25	70	25	0	25	50	0	0	0	77.5	Orange		IPC-III
92	Manufacturing of <b>Mosquito</b> repellent & coil	0	0	0	0	30	0	25	55	0	0	0	55	Orange	Toxic fumes may be released.	IPC-V
93	Organic <b>Manure</b> (physical mixing)	0	0	0	0	0	20	0	20	0	0	0	20	White		IPC-V
94	Packing of powdered <b>Milk</b>	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
<b>METALS AND METALLURGICAL SECTORS</b>																
<b>95.0</b>	<b>IRON &amp; STEEL (PRIMARY PROCESSING FROM ORE, INTEGRATED STEEL PLANTS AND SPONGE IRON UNITS)</b>															
95.1	Integrated iron and steel plants	25	30	35	90	25	30	35	90	25	50	75	98.3	Red		IPC-II
95.2	Stand-alone sintering/palletisation	0	0	0	0	25	30	35	90	0	0	0	90	Red		IPC-II
95.3	Sponge iron with CPP (Captive Power Plant)	20	25	35	80	25	30	35	90	10	50	60	97	Red		IPC-II
95.4	Sponge iron without CPP	20	15	30	65	25	30	35	90	10	50	60	96.3	Red		IPC-II

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
95.5	Stand-alone coke oven gas plants	25	30	30	85	25	30	35	90	25	50	75	98	Red		IPC-II
<b>96.0</b>	<b>ALUMINIUM PROCESSING</b>															
96.1	Aluminium Refinery	10	30	35	75	25	25	35	85	10	70	80	96.6	Red		IPC-II
96.2	Aluminium Smelter	10	30	35	75	30	25	35	90	25	70	95	99.1	Red		IPC-II
97	<b>Copper Smelter</b>	10	30	35	75	30	25	35	90	10	70	80	97.8	Red		IPC-II
98	<b>Zinc smelter</b>	10	30	35	75	30	25	35	90	10	70	80	97.8	Red		IPC-II
<b>99.0</b>	<b>FERROUS AND NON-FERROUS METAL SECONDARY PROCESSING/REPROCESSING UNITS INVOLVING DIFFERENT FURNACES THROUGH MELTING, REFINING, CASTING, ALLOY-MAKING</b>															
99.1	All Ferrous and Non-ferrous metal secondary processing/reprocessing units involving different furnaces through melting, refining, casting, alloy-making (using coal/liquid fuels)	0	15	15	30	25	25	25	75	25	10	35	83.1	Red		IPC-V
99.2	Ferrous and Non-ferrous metal (excluding lead, nickel, and manganese) secondary processing/reprocessing units involving different furnaces through melting, refining, casting, alloy-making (using cleaner fuels/electricity)	0	15	15	30	25	25	10	60	10	10	20	70	Orange		IPC-V
100	Aluminium & copper extraction from scrap using an oil-fired furnace (dry process only)	0	0	0	0	25	25	25	75	0	0	0	75	Orange		IPC-V
<b>101.0</b>	<b>INDUSTRY OR PROCESS INVOLVING METAL SURFACE TREATMENT OR PROCESS/HEAT TREATMENT</b>															

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
101.1	Industry or process involving metal surface treatment or process such as pickling/ electroplating/paint stripping/ heat treatment using cyanide bath/ phosphating or finishing and anodizing / enamellings/ galvanizing	25	30	20	75	30	25	0	55	25	30	55	88.8	Red		IPC-V
101.2	Plasma electrolytic polishing (electroplating)	25	30	15	70	30	25	0	55	0	0	0	78.3	Orange		IPC-V
101.3	Heat treatment using furnace ( without cyaniding)	0	0	0	0	25	0	25	50	0	0	0	50	Green		IPC-V
101.4	Heat treatment with any of the new technology like ultrasound probe, induction hardening, ionization beam, gas carburizing etc.	0	15	15	30	0	25	0	25	0	0	0	38.8	Green		IPC-V
<b>102.0</b>	<b>FORGING OF FERROUS AND NON- FERROUS METALS</b>															
102.1	Forging of ferrous and non-ferrous metals using liquid fuel	0	0	0	0	25	25	20	70	30	10	40	76	Orange		IPC-V
102.2	Forging of ferrous and non-ferrous metals using gaseous fuel	0	0	0	0	25	25	10	60	30	10	40	68	Orange		IPC-V
102.3	Forging of ferrous and non-ferrous metals using electricity	0	0	0	0	25	25	0	50	30	10	40	60	Orange		IPC-V
102.4	Forging of ferrous and non-ferrous metals (cold forging, without any heat treatment)	0	0	0	0	0	0	0	0	30	10	40	40	Green		IPC-V
<b>103.0</b>	<b>ROLLING MILLS</b>															
103.1	Rolling and pickling	25	30	15	70	25	30	25	80	25	10	35	90.5	Red		IPC-V
103.2	Rolling mills (oil and coal fired)	0	15	15	30	25	0	25	50	0	0	0	57.5	Orange		IPC-V
103.3	Rolling mills (gas fired)	0	15	15	30	25	0	10	35	0	0	0	44.8	Green		IPC-V

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
103.4	Cold rolling mill (without heat treatment)	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
<b>104.0</b>	<b>FOUNDRY OPERATIONS</b>															
104.1	Cupola furnace	0	0	0	0	25	25	25	75	10	10	20	77.5	Orange		IPC-V
104.2	Induction furnace/arc furnace	0	0	0	0	25	30	0	55	10	10	20	59.5	Orange		IPC-V
<b>105.0</b>	<b>WIRE DRAWING AND WIRE NETTING</b>															
105.1	Wire drawing and wire netting (with pickling)	25	30	15	70	30	25	0	55	10	10	20	81.3	Red		IPC-V
105.2	Wire drawing and wire netting (without pickling and with heat treatment)	0	0	0	0	25	0	20	45	10	10	20	50.5	Green		IPC-V
105.3	Wire drawing and wire netting (without pickling and without heat treatment)	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
106	<b>Die-casting</b> /extrusion process only	0	0	0	0	25	0	25	50	0	0	0	50	Green		IPC-V
107	Manufacturing of aluminium utensils from aluminium circles pressing/ Brass and bell <b>Metal</b> utensils manufacturing from circles (dry mechanical operation only)	0	0	0	0	0	30	0	30	0	0	0	30	Green	Emissions during buffing	IPC-V
108	Manufacturing of <b>Metal</b> caps containers etc	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
~N~																
109	Formulation/palletisation of camphor tablets, <b>Naphthalene</b> balls from camphor/ naphthalene powders.	0	0	0	0	35	20	0	55	0	0	0	55	Orange	Emissions of benzene, hydrocarbons etc. are expected.	IPC-V
110	Organic and inorganic <b>Nutrients</b> by physical mixing (without boiler and without any reactor)	0	0	0	0	0	0	0	0	10	10	20	20	White	The sector may become green category if it generates wastewater	IPC-V
<b>111.0</b>	<b>ORGANIC CHEMICALS INCLUDING HALOGENATED HYDROCARBONS</b>															
111.1	Organic chemicals including halogenated hydrocarbons (using solid/liquid fuel)	30	30	25	85	35	0	30	65	30	20	50	93.6	Red		IPC-I
111.2	Organic chemicals including halogenated hydrocarbons (using cleaner fuel)	30	30	25	85	35	0	10	45	30	20	50	92.1	Red		IPC-I
112	<b>Oil</b> and gas extraction (offshore & onshore extraction through drilling wells), Coal Bed Methane (CBM) drilling and shale gas, including group gathering stations (GGS), etc.	25	30	15	70	20	25	0	45	30	10	40	82.8	Red		IPC-I
<b>113.0</b>	<b>EDIBLE OIL MILLS</b>															
113.1	Vegetable oil manufacturing including solvent extraction and refinery /hydrogenated oils	25	25	20	70	25	0	20	45	0	0	0	76.8	Orange		IPC-III
113.2	Oil mills Ghani and extraction without boiler (no refining/ hydrogenation)	10	25	15	50	0	0	0	0	0	0	0	50	Green		IPC-III

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
~P~																
<b>114.0</b>	<b>POWER GENERATION PLANTS</b>															
114.1	Power plants based on coal	0	15	35	50	35	25	35	95	10	70	80	98.3	Red		IPC-II
114.2	Power plants based on liquid fuels	0	15	35	50	25	25	35	85	30	20	50	92.5	Red		IPC-II
114.3	Biomass-based power plants	0	15	30	45	25	25	25	75	10	50	60	88.1	Red		IPC-II
114.4	Nuclear energy-based power plants (> 220 MW)	0	30	35	65	25	0	25	50	25	20	45	81.6	Red	Overall safety aspects related with radioactivity is regulated by Atomic Energy Regulatory Board (AERB).	IPC-II
114.5	Nuclear energy-based power plants (up to 220 MW)	0	30	35	65	25	0	25	50	25	10	35	79.9	Orange	Overall safety aspects related with radioactivity is regulated by Atomic Energy Regulatory Board (AERB).	IPC-II
114.6	Gas-based power plants	0	15	35	50	25	0	20	45	0	0	0	61.3	Orange		IPC-II
<b>115.0</b>	<b>PULP &amp; PAPER (AGRO &amp; WOOD)</b>															
115.1	Manufacturing of bleached chemical pulp, papers, and paperboards	30	30	35	95	30	0	35	65	30	30	60	98.1	Red		IPC-III
115.2	Unbleached or Totally Chlorine Free (TCF) bleaching for manufacturing of chemical pulp, papers, and paperboards	30	20	35	85	30	0	35	65	10	30	40	92.9	Red		IPC-III
115.3	Bleached grades of chemical pulp, paper, and paperboard having Totally Chlorine Free (TCF) bleaching	30	20	35	85	30	0	35	65	10	30	40	92.9	Red		IPC-III
<b>116.0</b>	<b>PULP AND PAPER (RECYCLED FIBRE/WASTE PAPER BASED)</b>															
116.1	Pulp & Paper (With bleaching)	30	15	35	80	25	0	25	50	10	30	40	89	Red		IPC-III
116.2	Pulp & Paper (Without bleaching, capacity ≥15 TPD)	25	15	35	75	25	0	25	50	10	30	40	86.3	Red		IPC-III

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
116.3	Pulp & Paper (Without bleaching; plant capacity <15 TPD)	25	15	20	60	25	0	25	50	10	10	20	74	Orange		IPC-III
<b>117.0</b>	<b>MANUFACTURING OF PAINTS, VARNISHES (The process may cause considerable emissions of volatile organic compounds (VOC).)</b>															
117.1	Manufacturing of solvent-based paints/varnish	35	30	20	85	25	20	25	70	25	30	55	94.4	Red		IPC-I
117.2	Manufacturing of water-based paints	25	30	20	75	25	20	25	70	20	20	40	88.8	Red		IPC-I
117.3	Manufacturing of powder coatings	0	15	15	30	20	30	25	75	10	20	30	82.5	Red		IPC-I
117.4	Manufacturing of paint and varnishes (only blending and mixing)	20	30	15	65	0	20	0	20	30	20	50	77.3	Orange		IPC-I
<b>118.0</b>	<b>PESTICIDE INDUSTRIES</b>															
118.1	Pesticide technical (organic chemicals based)	30	30	20	80	30	25	25	80	30	30	60	94	Red		IPC-I
118.2	Pesticide technical (inorganic chemicals based like Zinc Phosphide and Aluminium Phosphide)	20	30	20	70	30	25	25	80	20	20	40	91	Red		IPC-I
118.3	Pesticide formulation industries (Liquid formulation only) having boiler/thermopack	20	30	20	70	25	20	25	70	20	20	40	86.5	Red		IPC-I
118.4	Pesticide formulation industries (Liquid formulation only) without having boiler/thermopack	20	30	20	70	0	20	0	20	20	20	40	79	Orange	Considering that dry formulation industries can also generate effluent because of equipment cleaning, the water pollution score is given	IPC-I
118.5	Pesticide formulation industries (having both liquid and dry formulation or dry formulation only) without having boiler / thermopack	20	30	20	70	30	20	0	50	20	20	40	83.5	Red	Considering that dry formulation industries can also generate effluent because of equipment cleaning, the water pollution score is given	IPC-I

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
118.6	Pesticide formulation industries (having both liquid and dry formulation or dry formulation only) having boiler / thermopack	20	30	20	70	30	20	25	75	20	20	40	88.8	Red	Considering that dry formulation industries can also generate effluent because of equipment cleaning, the water pollution score is given	IPC-I
119	<b>Photographic</b> film and its chemicals	20	20	15	55	30	0	25	55	20	10	30	74.1	Orange	Silver salts and other chemicals are used	IPC-I
120	<b>Petroleum</b> oil refineries	35	30	30	95	35	20	35	90	20	20	40	98.3	Red		IPC-I
<b>121.0</b>	<b>PETROCHEMICALS</b>															
121.1	Petrochemicals (Naphtha cracker.)	30	30	30	90	35	25	35	95	30	20	50	98.5	Red		IPC-I
121.2	Petrochemicals (Gas cracker)	30	30	30	90	35	25	25	85	30	20	50	96.8	Red		IPC-I
121.3	Petrochemicals (without cracker)	25	30	20	75	25	25	15	65	20	20	40	88.1	Red		IPC-I
121.4	Petrochemicals (without cracker and using cleaner/gaseous fuel)	25	30	20	75	25	25	10	60	20	20	40	87.5	Red		IPC-I
<b>122.0</b>	<b>MANUFACTURING OF LUBRICATING OILS, GREASE AND PETROLEUM-BASED PRODUCTS</b>															
122.1	Manufacturing of lubricating oils, grease, and petroleum-based products	20	15	15	50	25	20	10	55	30	10	40	75.3	Orange	Such unit uses distillation columns/ boilers etc	IPC-I
122.2	Manufacturing of lubricating oils, grease, and petroleum-based products (only blending)	0	0	0	0	0	25	0	25	10	10	20	32.5	Green		IPC-I
<b>123.0</b>	<b>PHARMACEUTICAL INDUSTRY</b>															
123.1	Pharmaceuticals manufacturing	35	30	30	95	35	25	35	95	30	20	50	98.6	Red		IPC-I
123.2	Pharmaceuticals manufacturing using cleaner/gaseous fuel	35	30	30	95	35	25	10	70	30	20	50	98	Red		IPC-I

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
123.3	Pharmaceuticals (Formulation)	20	15	15	50	25	0	25	50	30	10	40	72.5	Orange		IPC-I
123.4	Pharmaceuticals (Formulation) using cleaner/gaseous fuel	20	15	15	50	25	0	10	35	30	10	40	68.8	Orange		IPC-I
123.5	Vaccine manufacturing	20	15	15	50	25	0	35	60	30	10	40	78	Orange		IPC-I
123.6	Vaccine manufacturing using cleaner/gaseous fuel	20	15	15	50	25	0	10	35	30	10	40	68.8	Orange		IPC-I
123.7	Pharmaceutical R&D facilities	20	15	15	50	25	0	25	50	30	10	40	72.5	Orange		IPC-I
123.8	Ayurvedic or Unani medicines manufacturing	20	15	15	50	25	0	25	50	30	10	40	72.5	Orange		IPC-I
123.9	Ayurvedic or unani medicines manufacturing using cleaner fuel	20	15	15	50	25	0	10	35	0	0	0	58.8	Orange		IPC-I
123.10	Ayurvedic or unani medicines manufacturing (Without boiler )	20	15	15	50	0	0	0	0	0	0	0	50	Green		IPC-I
124	Digital <b>Printing</b> on flex /vinyl, PVC etc. (more than 5 machines)	0	0	0	0	20	0	0	20	30	10	40	46	Green		IPC-V
125	Spray <b>Painting</b> , Paint baking, Paint shipping	0	0	0	0	0	25	0	25	30	10	40	47.5	Green	Emissions in the form of VOCs and HC are generated.	IPC-V
126	<b>Plywood</b> /board manufacturing ( including Veneer and laminate) with biomass fired boiler / thermic fluid heater (without resin plant)	20	20	15	55	25	20	25	70	0	0	0	78.3	Orange		IPC-V

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
127	<b>Printing</b> press (newspaper, books, magazines, etc./ Gravure printing)	20	0	15	35	20	0	0	20	30	10	40	56.5	Orange		IPC-V
128	Manufacturing of bi-axially oriented <b>Polypropylene</b> (PP) film along with metalizing operations	0	15	15	30	0	0	0	0	0	0	0	30	Green	Mainly extrusion process involving	IPC-V
129	<b>Pulse/Dal</b> Mills	0	0	0	0	0	30	0	30	0	0	0	30	Green		IPC-V
130	Insulation and other coated <b>Papers</b> (excluding paper or pipe manufacturing)	0	0	0	0	0	25	0	25	0	0	0	25	Green		IPC-V
131	<b>Packaging</b> materials manufacturing from non-asbestos fibre, vegetable fibre yarn	0	0	0	0	0	25	0	25	0	0	0	25	Green		IPC-V
132	<b>Polythene</b> and plastic processed products manufacturing (virgin/compostable plastic)	0	15	15	30	0	20	0	20	0	0	0	37	Green		IPC-V
133	<b>Poultry</b> , piggery, and hatchery	0	0	0	0	30	20	0	50	0	0	0	50	Green		IPC-V
134	<b>Puffed</b> rice (muri) (using gas)	0	0	0	0	25	0	10	35	0	0	0	35	Green		IPC-V

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
135	Biscuits trays etc from rolled <b>PVC</b> sheet (using automatic vacuum forming machines)	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
136	Fountain <b>Pen</b> manufacturing by assembling only	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
137	Glass <b>Putty</b> and sealant (by mixing with machine only)	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
138	Manufacturing of <b>Paper</b> Pins, U-clips, etc.	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
139	Solar <b>Power</b> generation through solar photovoltaic cell and wind power	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
~R~																
140	Synthetic <b>Rubber</b> excluding molding	20	15	15	50	20	0	25	45	20	10	30	68.8	Orange	Most synthetic rubber is created from two materials, styrene, and butadiene.	IPC-I
<b>141.0</b>	<b>REFRACTORIES</b>															
141.1	Refractories based on coal/liquid fuel (fuel consumption: 12 TPD and above)	0	0	0	0	25	25	30	80	0	0	0	80	Red		IPC-V
141.2	Refractories based on coal/liquid fuel (fuel consumption: less than 12 TPD)	0	0	0	0	25	25	25	75	0	0	0	75	Orange		IPC-V
141.3	Refractories based on cleaner fuels	0	0	0	0	25	25	10	60	0	0	0	60	Orange		IPC-V
<b>142.0</b>	<b>RUBBER PRODUCTS MANUFACTURING</b>															

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
142.1	Tyre and tube manufacturing	0	15	15	30	25	25	25	75	0	0	0	78.8	Orange		IPC-V
142.2	Tyres and tubes vulcanization/ hot retreading	0	15	15	30	25	20	10	55	0	0	0	61.8	Orange	Emissions of PM, VOCs and obnoxious odour are generated.	IPC-V
142.3	Rubber goods industry (with solid fuel/oil-based boiler)	0	15	15	30	25	0	25	50	0	0	0	57.5	Orange		IPC-V
142.4	Rubber goods industry (with gas-based boiler)	0	15	15	30	25	0	10	35	0	0	0	44.8	Green		IPC-V
<b>143.0</b>	<b>SYNTHETIC RESINS</b>															
143.1	Synthetic resins manufacturing	20	15	15	50	25	20	25	70	20	10	30	82	Red		IPC-I
143.2	Synthetic resins manufacturing (using only gaseous fuel)	20	15	15	50	25	20	10	55	20	10	30	73	Orange		IPC-I
144	Blending of melamine Resins & different powder, additives by physical mixing, including phenolic resin (without boiler)	0	15	15	30	0	30	0	30	20	10	30	51	Green		IPC-I
<b>145.0</b>	<b>RICE MILLS</b>															
145.1	Parboiled rice mill (with soaking and steam/drier)	25	0	20	45	25	0	25	50	0	0	0	61.3	Orange		IPC-V
145.2	Raw rice mill (Without soaking and steam/drier)/ hullers)	0	0	0	0	0	30	0	30	0	0	0	30	Green		IPC-V
146	Repairing of electric motors and generators (dry mechanical process)	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
147	Manufacturing of plastic or cotton Rope	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
148	Tyre <b>Retraders</b>	0	0	0	<b>0</b>	0	0	0	<b>0</b>	0	0	<b>0</b>	0	White		WM-III
<b>RECYCLING AND REPROCESSING SECTOR</b>																
<b>149.0</b>	INDUSTRIES ENGAGED IN <b>RECYCLING/REPROCESSING/ RECOVERY/REUSE</b> OF HAZARDOUS WASTE UNDER SCHEDULE IV OF H&OW(M & TBM) RULES, 2016 - ITEMS, NAMELY, SPENT CATALYSTS CONTAINING NICKEL, CADMIUM, ZINC, COPPER, ARSENIC, VANADIUM, AND COBALT, INCLUDING DRY BATTERY (EXCEPT LEAD), AND CLEARED METAL CATALYST.															
149.1	Hydro & pyro metallurgy	0	30	15	<b>45</b>	35	25	25	<b>85</b>	25	10	<b>35</b>	91	Red		WM-II
149.2	Hydro & pyro metallurgy (using cleaner/gaseous fuels & without crushing of materials)	0	30	15	<b>45</b>	35	25	10	<b>70</b>	25	10	<b>35</b>	82	Red		WM-II
149.3	Pyro metallurgy (using coal/liquid fuels)	0	0	0	<b>0</b>	35	25	25	<b>85</b>	20	10	<b>30</b>	87.3	Red		WM-II
149.4	Pyro metallurgy (using cleaner/gaseous fuels)	0	0	0	<b>0</b>	35	25	10	<b>70</b>	20	10	<b>30</b>	74.5	Orange		WM-II
149.5	Hydro metallurgy	0	30	15	<b>45</b>	30	25	0	<b>55</b>	25	10	<b>35</b>	73	Orange		WM-II
<b>150.0</b>	<b>E-WASTE DISMANTLING / RECYCLING</b>															
150.1	Industry engaged in recycling of e-waste generated from the electrical and electronic Equipment (EEE) listed in the E-Waste (Management) Rules 2022 using pyro/ hydro/ electro-metallurgical processing and recycling of plastic separated from Waste EEE	30	30	20	<b>80</b>	35	25	15	<b>75</b>	25	20	<b>45</b>	92	Red		WM-III

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
150.2	Industry engaged in recycling of e-waste generated from the electrical and electronic equipment (EEE) listed in the E-Waste (Management) Rules 2022 (PCB processing limited to only mechanical processing and separation without pyro/hydro/ electro-metallurgical processing), production of Al, Cu, and other metals from non-PCB sources and/or recycling of plastic separated from Waste EEE.	0	15	15	30	20	25	15	60	25	10	35	73	Orange		WM-III
150.3	Industry engaged in dismantling (only) of e-waste, generated from the electrical and electronic equipment (EEE) listed in the E-Waste (Management) Rules 2022	0	0	0	0	0	25	0	25	25	10	35	43.1	Green		WM-III
150.4	E-waste refurbishing centres	0	0	0	0	0	25	0	25	25	10	35	43.1	Green		WM-III
<b>151.0</b>	<b>INDUSTRIES ENGAGED IN RECYCLING/REPROCESSING/ RECOVERY/REUSE OF HAZARDOUS WASTE (Items as per Schedule IV of H&amp;OW( M &amp; TBM) Rules, 2016.)</b>															
151.1	Lead Recycling ( Lead Acid Batteries with Acids; Lead Scrap Recycling) Rotary Furnace/ Pit Furnace (Mandir/Canopy Bhatti)	0	30	20	50	35	30	25	90	20	20	40	94.5	Red	This also includes battery scrap, namely: Lead battery plates covered by ISRI, Code word "Rails" Battery lugs covered by ISRI, Code word "Rakes." Scrap drained/dry while intact, lead batteries covered by ISRI, Code word "rains."	WM-II

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
151.2	Lead Recycling ( Drained Lead Acid Batteries; Lead Scrap Recycling) Rotary Furnace/Mandir Bhatti on Cleaner Fuel	0	30	15	45	35	30	10	75	20	10	30	84.4	Red	This also includes, battery scrap, namely: Lead battery plates covered by ISRI, Code word "Rails" Battery lugs covered by ISRI, Code word "Rakes." Scrap drained/dry while intact, lead batteries covered by ISRI, Code word "rains."	WM-II
151.3	Isolated storages (as defined under Manufacture, Storage, and Import of Hazardous Chemicals Rules, 1989 as amended)	10	25	15	50	20	25	0	45	30	10	40	71.3	Orange		IPC-I
151.4	Paint and ink sludge / residues recycling	20	25	15	60	0	20	0	20	30	10	40	72	Orange		WM-II
151.5	Industries engaged in recycling / reprocessing/ recovery/reuse of Hazardous Waste, excluding lead, paint, and ink sludge	0	30	15	45	35	0	25	60	20	10	30	75	Orange	This includes items namely - Brass Dross, Copper Dross, Copper Oxide Mill Scale, Copper everts, Cake & Residues, Waste Copper and copper alloys in dispersible form, Slags from copper processing for further processing or refining, Insulated Copper Wire, Scrap/copper with PVC sheathing including ISRI-code material namely "Druid" Jelly filled Copper cables, Zinc Dross-Hot dip Galvanizers SLAB., Zinc Dross-Bottom Dross, Zinc ash/Skimming arising from galvanizing and die casting operations, Zinc ash/Skimming/other zinc bearing wastes arising from smelting and refining,, Zinc ash and residues including zinc alloy residues in dispersible form.	WM-II

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
151.6	Refining of used oil by hydro-treating/using solvent extraction	10	25	25	60	25	0	25	50	20	20	40	78	Orange		WM-II
151.7	Refining of used oil by using thin film evaporation/vacuum distillation with clay treatment	10	25	15	50	25	0	15	40	20	10	30	67.5	Orange		WM-II
151.8	Recycling / reprocessing of waste oil	20	25	15	60	25	0	15	40	20	10	30	74	Orange		WM-II
<b>152.0</b>	<b>RECYCLING OF PLASTIC WASTE</b>															
152.1	Manufacturing of flakes/staple fibre/strip from the recycling of PET bottles	20	15	25	60	0	20	0	20	0	0	0	64	Orange		IPC-I
152.2	Plastic waste processing (manufacturing of flakes/granules)	20	15	15	50	0	20	0	20	0	0	0	55	Orange	Process using In-built heaters.Washwater and fugitive emission.	UPC-II
<b>153.0</b>	<b>SCRAPING FACILITIES FOR RECYCLING END-OF-LIFE VEHICLES, WAGONS, AND COACHES</b>															
153.1	Collection, Depollution and Dismantling Centers (Without shredding)	0	30	15	45	0	30	0	30	25	10	35	62.9	Orange		WM-II
153.2	Collection, Depollution, Dismantling and shredding Centers	0	30	15	45	0	30	0	30	25	10	35	62.9	Orange		WM-II
153.3	Common Shredders (Standalone)	0	0	0	0	0	30	0	30	25	10	35	44.8	Green		WM-II
153.4	Collection Centers (Without depollution, dismantling and shredding)	0	0	0	0	0	0	0	0	0	0	0	0	White		WM-II
~S~																
154	<b>Sugar</b> (excluding khandsari/jaggery)	30	25	35	90	25	0	25	50	30	10	40	94.5	Red	Generates large volume of wastewater.	IPC-III

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
155	Ship breaking industries	0	0	0	0	0	30	0	30	30	20	50	57.5	Orange	Ship breaking releases a large number of pollutants, including toxic waste, used/waste oil, polychlorinated biphenyls, and heavy metals.	WM-III
156	Slaughterhouse / Slaughterhouse (with rendering plant)/ integrated slaughtering unit, meat processing units, bone mill, processing of animal horns, hoofs and other body parts	30	25	30	85	25	20	25	70	0	0	0	90.3	Red		IPC-IV
157	Manufacturing of Silica gel	10	25	20	55	30	0	20	50	25	10	35	74.1	Orange		IPC-I
158	Manufacturing of Iodized Salt from Crude / Raw Salt	10	20	15	45	25	0	25	50	0	0	0	61.3	Orange	Process may involve boiling in evaporators (multiple effect evaporators), centrifuging, iodization, mixing, etc.	IPC-V
159	Manufacturing of Starch / Sago / Sorbitol	20	25	25	70	25	0	25	50	0	0	0	77.5	Orange		IPC-III
160	Stone crushers	0	0	0	0	25	30	0	55	0	0	0	55	Orange		IPC-V
161	Stone crushing/grinding/washing & screening of riverbed material(s)	10	0	25	35	25	30	0	55	0	0	0	62.9	Orange		IPC-V

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division	
<b>162.0</b>	<b>MANUFACTURING OF SURGICAL AND MEDICAL PRODUCTS</b>																
162.1	Manufacturing of <b>Surgical</b> and medical products	10	25	15	<b>50</b>	25	0	10	<b>35</b>	0	0	<b>0</b>	58.8	Orange		IPC-V	
162.2	Surgical and medical products assembled only (with effluent-generating processes)	10	25	15	<b>50</b>	0	0	0	<b>0</b>	0	0	<b>0</b>	50	Green		IPC-V	
162.3	Surgical and medical products assembled only (without effluent-generating processes)	0	0	0	<b>0</b>	0	0	0	<b>0</b>	0	0	<b>0</b>	0	White		IPC-V	
<b>163.0</b>	<b>SEMICONDUCTOR MANUFACTURING INDUSTRIES</b> i. Toxic wastewater is generated due to presence of Hydrofluoric acid (HF), Mixed Nitric HF (HF + HNO <sub>3</sub> ), Phosphoric acid, Sulphuric acid (H <sub>2</sub> SO <sub>4</sub> ), Hydrogen Peroxide, Isopropyl alcohol (IPA) / Methanol (Methanol Only), Stripper EKC-265 /ACT N396 (ACT N396 Only), BHF – 63 U, Choline etchant, etc. ii. The air pollutants which are being emitted during the manufacturing process are SiH <sub>4</sub> , PH <sub>3</sub> , B <sub>2</sub> H <sub>6</sub> , HF, HBr, DCS, NF <sub>3</sub> , SF <sub>6</sub> , BC <sub>13</sub> , Cl <sub>2</sub> , HCL, NH <sub>3</sub> , C <sub>2</sub> F <sub>6</sub> , CHF <sub>3</sub> , CF <sub>4</sub> , C <sub>4</sub> F <sub>8</sub> , C <sub>2</sub> F <sub>6</sub> etc. iii. Process waste, used oil etc. are generated as hazardous waste.)																
163.1	Semiconductor fabs manufacturing	25	30	35	<b>90</b>	35	30	0	<b>65</b>	25	10	<b>35</b>	95	Red		WM-III	
163.2	Display fabs manufacturing	25	30	35	<b>90</b>	25	30	0	<b>55</b>	25	10	<b>35</b>	94.5	Red		WM-III	
163.3	Sensor fabs manufacturing/ Compound semiconductors/ silicon photonics	25	30	35	<b>90</b>	25	30	0	<b>55</b>	25	10	<b>35</b>	94.5	Red		WM-III	
163.4	Semiconductor Assembly, Testing, Marking and Packaging Facility (ATMP)	0	0	0	<b>0</b>	0	25	0	<b>25</b>	25	10	<b>35</b>	43.1	Green		WM-III	
<b>164</b>	<b>Saw mills</b>	0	0	0	<b>0</b>	0	30	0	<b>30</b>	0	0	<b>0</b>	30	Green		IPC-V	
<b>165</b>	<b>Spice grinding</b>	0	0	0	<b>0</b>	0	30	0	<b>30</b>	0	0	<b>0</b>	30	Green		IPC-V	
<b>166</b>	<b>Cutting, Sizing and polishing of marble, granite and other stones</b>	10	0	20	<b>30</b>	0	30	0	<b>30</b>	0	0	<b>0</b>	40.5	Green		IPC-V	

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
167	Manufacturing of <b>Solar</b> module/ non-conventional energy apparatus	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
~T~																
<b>168.0</b>	<b>TANNERIES</b>															
168.1	Tanneries (Raw to finish)	35	30	25	90	0	20	0	20	25	30	55	93.8	Red		IPC-IV
168.2	Tanneries (Raw to wet blue)	35	30	25	90	0	20	0	20	25	30	55	93.8	Red		IPC-IV
168.3	Tanneries (Wet blue to finish)	35	30	20	85	0	20	0	20	25	30	55	90.6	Red		IPC-IV
168.4	Vegetable tanning	20	25	25	70	0	20	0	20	20	10	30	77.5	Orange		IPC-IV
<b>169.0</b>	<b>MANUFACTURING OF TOOTH POWDER, TOOTHPASTE, TALCUM POWDER AND OTHER COSMETIC ITEMS</b>															
169.1	Manufacturing of toothpaste and other cosmetic items	20	25	20	65	25	0	25	50	0	0	0	73.8	Orange		IPC-V
169.2	Manufacturing of tooth powder, talcum powder	0	0	0	0	0	25	0	25	0	0	0	25	Green		IPC-V
<b>170.0</b>	<b>THERMOMETER MANUFACTURING</b>															
170.1	Glass (mercury based) thermometer manufacturing	10	30	15	55	25	0	10	35	25	10	35	70.8	Orange	Process involves making of glass bulb, forming reservoir in the glass tube for fluid, inserting fluid, scale marking. Use of fuel to heat the glass tubes and hydrofluoric acid to seal the scaling. Small quantities of spent acids are generated.	IPC-V
170.2	Digital thermometer manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
171	Manufacturing of <b>Teflon</b> -based products	10	0	15	25	25	25	25	75	0	0	0	78.1	Orange	Due to spraying applications, emissions (HC) are generated	IPC-V
172	<b>Thermocol</b> manufacturing (with boiler)	0	20	15	35	25	0	25	50	0	0	0	58.8	Orange		IPC-V

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
<b>173.0</b>	<b>MANUFACTURING OF TOBACCO PRODUCTS INCLUDING CIGARETTES AND TOBACCO PROCESSES</b>															
173.1	Manufacturing of tobacco products including cigarettes and tobacco processes (with boiler)	20	0	15	35	25	20	25	70	0	0	0	75.3	Orange		IPC-III
173.2	Manufacturing of tobacco products including cigarettes and tobacco processes (without boiler)	20	0	15	35	0	20	0	20	0	0	0	41.5	Green		IPC-III
174	<b>Transformer</b> repairing/manufacturing (dry process only)	0	0	0	0	0	25	0	25	30	10	40	47.5	Green		IPC-V
175	<b>Tyre</b> Pyrolysis Oil Industries-Applicable for advanced batch automated process / continuous TPO units	10	0	15	25	25	25	25	75	0	0	0	78.1	Orange		WM-III
176	<b>Tamarind</b> powder manufacturing	10	15	15	40	25	0	10	35	0	0	0	50.5	Green	Dried tamarind fruits are cleaned, soaked, and boiled in steam jacketed kettle. Then pulp is extracted in pulper and dried in drum type drier.	IPC-V
<b>177.0</b>	<b>TEA PROCESSING AND BLENDING</b>															
177.1	Tea processing (with boiler)	10	0	15	25	25	0	25	50	0	0	0	56.3	Orange		IPC-III
177.2	Tea processing (without boiler)	10	0	15	25	0	0	0	0	0	0	0	25	Green		IPC-III
177.3	Blending and packing of tea	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
<b>TEXTILE SECTOR</b>																
<b>178.0</b>	<b>TEXTILE INDUSTRY</b>															
178.1	Yarn / Textile processing involving any effluent/emission generating processes including bleaching, dyeing, printing, and colouring, including the garment and apparel manufacturing industry	30	30	30	90	25	0	35	60	30	20	50	95.5	Red		IPC-III
178.2	Yarn to grey fabric manufacturing with water jet machines	20	25	25	70	0	0	0	0	0	0	0	70	Orange		IPC-III
178.3	Garment and apparel manufacturing industry including Doubling / Reeling / TFO-Two for one unit (dry process)-with boiler	0	0	0	0	25	0	25	50	0	0	0	50	Green		IPC-III
178.4	Garment and apparel manufacturing industry including Doubling / Reeling / TFO-Two for one unit (dry process)-without boiler	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-III
<b>179.0</b>	<b>SAREE/FABRIC PRINTING BY SCREEN / WOODEN BLOCK /HAND BLOCK</b>															
179.1	Saree/fabric printing by screen / wooden block/hand block	25	0	25	50	25	0	20	45	30	10	40	71.3	Orange		IPC-III
179.2	Hand block printing without effluent generation	0	0	0	0	25	0	20	45	0	0	0	45	Green		IPC-III
<b>180.0</b>	<b>TEXTILE SPINNING, SIZING AND WEAVING MILLS</b>															
180.1	Textile spinning, sizing and weaving mills (wastewater generation $\geq$ 10 KLD )	10	20	20	50	25	0	15	40	0	0	0	60	Orange		IPC-III
180.2	Textile spinning, sizing and weaving mills (wastewater generation <10 KLD)	10	20	15	45	25	0	10	35	0	0	0	54.6	Green		IPC-III

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
181	<b>Power looms</b> (without dye and bleaching)	0	0	0	0	0	25	0	25	0	0	0	25	Green		IPC-III
<b>182.0</b>	<b>REPROCESSING OF WASTE TEXTILE FABRIC</b>															
182.1	Integrated facility for reprocessing of waste textile fabric (including washing, bleaching, dyeing etc.)	30	30	20	80	25	25	15	65	0	0	0	86.5	Red		IPC-III
182.2	Reprocessing of waste textile fabric (dry process)	0	0	0	0	0	25	0	25	0	0	0	25	Green		IPC-III
183	<b>Cotton and woollen Hosiers</b> making (Dry process only without any dyeing / washing operation)	0	0	0	0	0	0	0	0	0	0	0	0	White		IPC-V
~W~																
184	Seasoning of <b>Wood</b> in steam heated chamber	0	0	0	0	25	0	25	50	0	0	0	50	Green		IPC-V
185	Pulverization of bamboo and scrap <b>Wood</b>	0	0	0	0	0	25	0	25	0	0	0	25	Green		IPC-V
186	Distilled <b>Water</b> (without boiler) with electricity as source of heat	0	20	20	40	0	0	0	0	0	0	0	40	Green		IPC-V
187	Purification of <b>Water</b> and packaging (mineralized/non-mineralized water)	0	20	25	45	0	0	0	0	0	0	0	45	Green	RO Rejects.	IPC-V



## **ANNEXURE-II**

**(LIST OF ESSENTIAL ENVIRONMENTAL SERVICES)**



**LIST OF ESSENTIAL ENVIRONMENTAL SERVICES****i. Essential Environmental Services for Industrial Waste Management**

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division	
<b>1.0</b>	<b>COMMON EFFLUENT TREATMENT PLANT (CETP)</b>																
1.1	CETP having MEE/spray drier	30	30	35	95	25	0	25	50	25	50	75	98.1	Red		IPC-VII	
1.2	CETP (without having MEE/spray drier), Common MEE/common spray driers	25	30	30	85	0	0	0	0	25	30	55	89.1	Red		IPC-VII	
1.3	Common Sewage-Effluent Treatment Plant (CSETP)	25	30	30	85	0	0	0	0	25	20	45	88.4	Red		WQM-I & IPC-VII	
2.0	Effluent conveyance projects	20	30	35	85	0	0	0	0	25	10	35	87.6	Red	Such projects during O&M operation will generate deposited sludge, spillage etc. in addition regular operation of handling of effluent and its disposal.	IPC-VII	
<b>3.0</b>	<b>COMMON HAZARDOUS WASTE TREATMENT, STORAGE AND DISPOSAL FACILITY</b>																
3.1	Integrated facility (Secured landfill and incinerator)	35	30	15	80	25	25	15	65	30	70	100	100.0	Red		WM-II	
3.2	Only secured landfill	35	30	15	80	0	25	0	25	25	70	95	97.6	Red		WM-II	
3.3	Only incinerator	35	30	15	80	25	25	15	65	30	70	100	100.0	Red		WM-II	
<b>4.0</b>	<b>COMMON BIO-MEDICAL WASTE TREATMENT FACILITY (CBWTF)</b>																
4.1	CBWTF	20	25	20	65	35	20	25	80	20	20	40	90.5	Red		WM-I	
4.2	CBWTF using cleaner/gaseous fuel	20	25	20	65	35	20	10	65	20	20	40	83.4	Red		WM-I	

**ii. LIST OF BLUE CATEGORY SECTORS- Essential Environmental Services for Domestic/Household Activities:**

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
<b>1.0 MUNICIPAL SOLID WASTE MANAGEMENT FACILITY</b>																
1.1	Municipal Solid Waste Management Facility (Sanitary landfill/ Integrated Sanitary landfill with material recycling facility/ refused derived fuel, etc.)	35	30	15	80	35	25	0	60	0	0	0	86.0	Blue		UPC-II
1.2	Waste to energy power plants	0	15	30	45	35	25	35	95	10	50	60	97.6	Blue		UPC-II
1.3	Bio-mining of legacy waste projects	35	30	25	90	35	25	0	60	0	0	0	93.0	Blue		UPC-II
1.4	Municipal Solid Waste Bio-methanation plant (Quantity of MSW $\geq$ 5 TPD)	30	25	25	80	0	20	0	20	0	0	0	82.0	Blue		UPC-II
1.5	Municipal Solid Waste Composting Facility (Quantity of MSW $\geq$ 5 TPD)	30	25	15	70	0	30	0	30	0	0	0	74.5	Blue		UPC-II
1.6	Municipal Solid Waste Material Recovery Facility (Quantity of MSW $\geq$ 5 TPD)	20	25	15	60	0	30	0	30	0	0	0	66.0	Blue		UPC-II
<b>2.0 Construction and Demolition (C&amp;D) Waste Processing Plants</b>																
2.0	Construction and Demolition (C&D) Waste Processing Plants	10	0	15	25	25	25	0	50	0	0	0	56.3	Blue	Wastewater of high TDS of inorganic nature is generated.	UPC-I
<b>3.0 SEWAGE TREATMENT PLANT</b>																
3.1	Sewage Treatment Plant (5 MLD and above)	20	0	35	55	0	20	0	20	0	0	0	59.5	Blue		WQM-I
3.2	Sewage Treatment Plant (less than 5 MLD)	20	0	25	45	0	20	0	20	0	0	0	50.5	Blue		WQM-I



**ANNEXURE-III**  
**(LIST OF SERVICE/INFRASTRUCTURE DEVELOPMENT SECTORS**  
**CLASSIFIED UNDER RED, ORANGE, GREEN, AND WHITE**  
**CATEGORIES)**



**SERVICE/INFRASTRUCTURE DEVELOPMENT SECTORS**

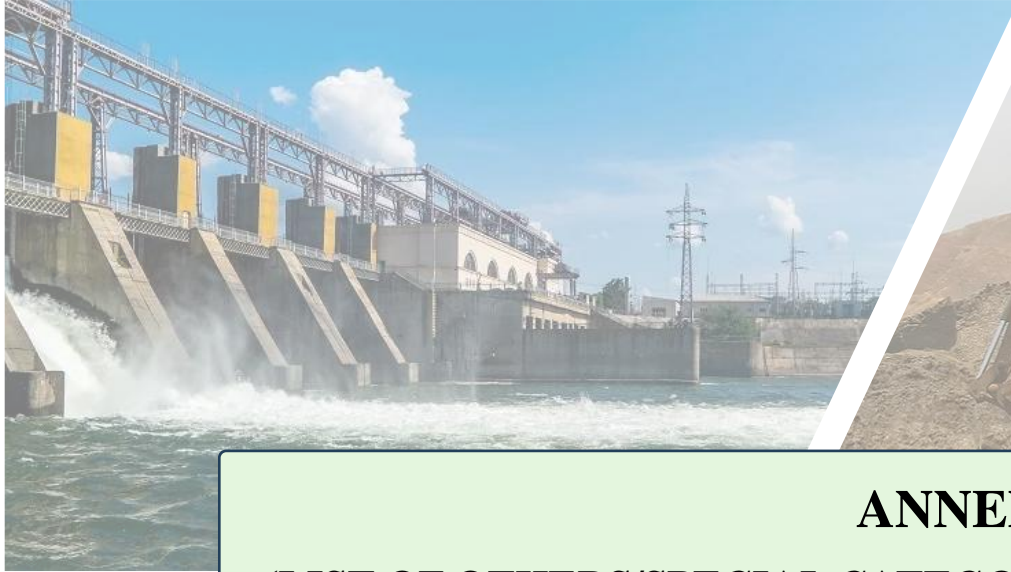
S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division	
1.0	<b>STANDALONE GENERATOR SET (Genset)</b> ( i. Standalone genset(s) of total capacity less than 1000 KVA may not require additional classification. The used oil/waste oil generated during repair and maintenance need to be disposed through authorized hazardous waste recycler by service provider/OEM. ii. Projects such data centers etc. having pollution potential due to gensets only, may be classified based on the capacity and fuel used.)																
1.1	Genset(s) of total capacity $\geq$ 1 MVA, using liquid fuel	0	0	0	0	25	0	25	50	30	10	40	60.0	Orange		UPC-I	
1.2	Genset(s) of total capacity $\geq$ 1 MVA, using cleaner/gaseous fuel	0	0	0	0	25	0	10	35	30	10	40	50.5	Green		UPC-I	
2.0	Airports	20	0	35	55	25	0	25	50	30	10	40	75.3	Orange	Airports generates mainly domestic sewage as wastewater. Emissions and generation of hazardous waste due to overall operations in airport are considered.	UPC-I	
3.0	<b>HEALTH CARE FACILITIES (HCFs) (AS DEFINED UNDER BIO-MEDICAL WASTE MANAGEMENT RULES, 2016)</b> (Sectors generates bio-medical waste. As per methodology scores assigned to H.)																
3.1	HCFs with captive incinerator, irrespective of number of beds	20	0	15	35	35	20	25	80			50	88.5	Red		WM-I	
3.2	more than 1000 bedded HCFs	20	0	35	55	0	0	0	0			100	100.0	Red		WM-I	
3.3	501 to 1,000 bedded HCFs	20	0	30	50	0	0	0	0			80	85.0	Red		WM-I	
3.4	201 to 500 bedded HCFs	20	0	30	50	0	0	0	0			60	70.0	Orange		WM-I	
3.5	51 to 200 bedded HCFs	20	0	20	40	0	0	0	0			50	60.0	Orange		WM-I	
3.6	11 to 50 bedded HCFs	20	0	20	40	0	0	0	0			40	52.0	Green		WM-I	
3.7	Up to 10 bedded HCFs	20	0	15	35	0	0	0	0			30	44.8	Green		WM-I	
3.8	Non-bedded HCFs	0	0	0	0	0	0	0	0			25	25.0	Green		WM-I	
4.0	<b>HOTELS/BANQUET HALLS HAVING ROOM FACILITY</b>																
4.1	Hotels (above 3 star) or having 100 & above rooms	20	25	30	75	25	0	25	50	0	0	0	81.3	Red		UPC-I	

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
4.2	Hotels (above 3 star) or having 100 & above rooms (based on cleaner /gaseous fuel)	20	25	30	75	25	0	10	35	0	0	0	79.4	Orange		UPC-I
4.3	Hotels (up to 3 star) or having more than 20 rooms but less than 100 rooms.	20	25	20	65	25	0	25	50	0	0	0	73.8	Orange		UPC-I
4.4	Up to 20 rooms	10	25	15	50	0	0	10	10	0	0	0	52.5	Green		UPC-I
5.0	<b>RAILWAY LOCOMOTIVE WORK SHOP/ INTEGRATED ROAD TRANSPORT WORKSHOP/ AUTHORIZED SERVICE CENTERS</b>															
5.1	Railway locomotive work shop/ Integrated road transport workshop/ Authorized service centers (wastewater generation $\geq$ 10 KLD)	20	25	25	70	30	25	0	55	30	10	40	84.3	Red		IPC-V
5.2	Railway locomotive work shop/ Integrated road transport workshop/ Authorized service centers (wastewater generation <10 KLD)	20	25	15	60	30	25	0	55	30	10	40	79.0	Orange		IPC-V
6.0	<b>RAILWAY STATIONS</b>															
6.1	Railway Stations (Wastewater Generation $\geq$ 5 MLD)	20	0	35	55	25	0	25	50	30	10	40	75.3	Orange	Wastewater generating from public toilets, public taps, platform, and apron washing, coach cleaning, laundry, restaurants etc.  Emissions and generation of hazardous waste due to overall operations are considered.	UPC-I
6.2	Railway Stations (Wastewater Generation $\geq$ 100 KLD, but < 5 MLD)	20	0	15	35	0	0	0	0	0	0	0	35.0	Green	Wastewater generating from various domestic uses as public toilets, public taps, platforms, and apron washing, restaurants etc.	UPC-I

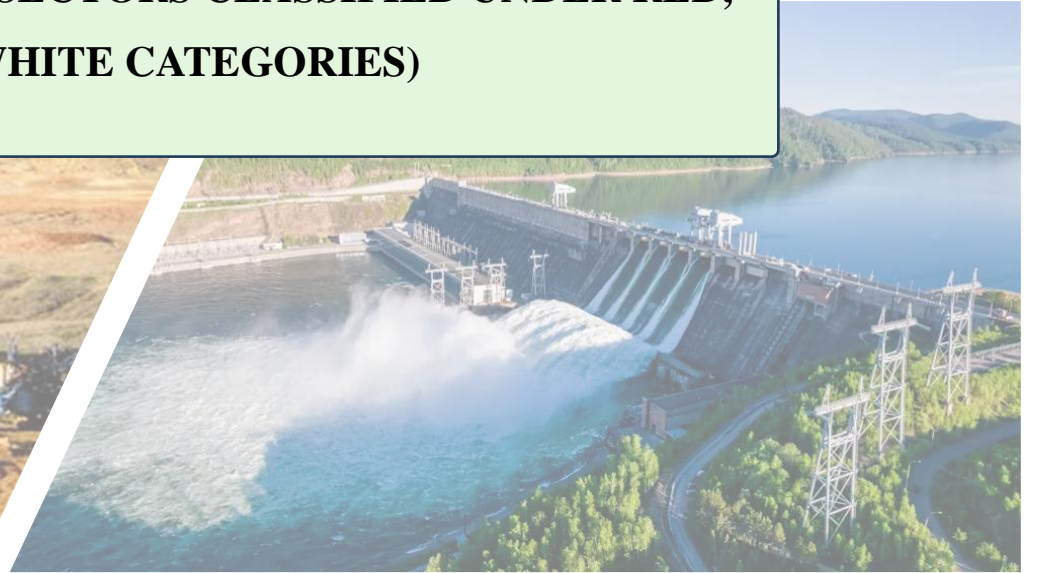
S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division	
7.0	<b>RAILWAY SIDINGS</b> (Fugitive emissions due to loading, unloading, storage and transportation of the minerals.)																
7.1	Railway sidings / Mineral stock yard	0	0	0	0	0	25	0	25	0	0	0	25.0	Green		UPC-I	
7.2	Railway sidings only for defence purpose	0	0	0	0	0	0	0	0	0	0	0	0.0	White		UPC-I	
8.0	<b>PORTS AND HARBOURS</b>																
8.1	Ports and harbours, jetties and dredging operations	20	30	25	75	0	25	0	25	30	20	50	84.4	Red		WM-I	
8.2	Ports and harbours (only containers handling)/ Captive jetties	20	25	20	65	0	25	0	25	30	10	40	76.4	Orange		WM-I	
9.0	Automobile service stations/ workshops	20	25	20	65	20	0	0	20	30	10	40	75.5	Orange		IPC-V	
10.0	<b>BUILDING CONSTRUCTION PROJECTS</b> ( i. During the construction phase, the sector is mainly air polluting. However, in post construction phase it is mainly water polluting due to generation of sewage. Consent to Establish/Operate to be taken as per EC conditions, as applicable. ii. Building construction project $\geq 5,000$ sq. m., but $< 20,000$ sq. m. built-up area (with connectivity to terminal STP) may not require separate classification. iii. For projects $< 5000$ the wastewater shall be managed according to on-site sanitation methods as mentioned in the Manual on Sewerage and Sewage Treatment System (2013), published by the Central Public Health and Environmental Engineering Organisation (CPHEEO), and as amended from time to time.)																
10.1	Building construction project $\geq 20,000$ sq. m. built-up area	20	0	25	45	25	0	25	50	0	0	0	61.3	Orange		UPC-I	
10.2	Building construction project $\geq 5,000$ sq. m., but $< 20,000$ sq. m. built-up area (without connectivity to terminal STP)	20	0	20	40	0	0	0	0	0	0	0	40.0	Green		UPC-I	
11.0	Standalone mechanized laundry (using boiler)	20	0	20	40	25	0	25	50	0	0	0	60.0	Orange		IPC-V	
12.0	New highway construction project	0	0	0	0	25	25	25	75	0	0	0	75.0	Orange	Such projects involve use of hot mix plants, ready-mix concrete plants, construction activities generating fugitive emissions, etc.	UPC-I	

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division	
13.0	<b>DAIRY FARM</b> (Dairy farms having less than 15 animals do not require separate classification.)																
13.1	Dairy Farm (having more than 500 animals)	30	25	25	80	0	20	0	20	0	0	0	82.0	Red		IPC-IV	
13.2	Dairy Farm (having 101 to 500 animals)	30	25	20	75	0	20	0	20	0	0	0	77.5	Orange		IPC-IV	
13.3	Dairy Farm (having 15 to 100 animals)	30	25	15	70	0	20	0	20	0	0	0	73.0	Orange		IPC-IV	
14.0	Gold Assaying & Hallmarking Centres	0	0	0	0	35	0	0	35	25	10	35	46.4	Green	Lead oxide, nitrous fumes are generated during cupellation and parting acid treatment, respectively contributing to the air emissions. The hazardous waste is generated during fire assay in the form of spent cupels bearing lead, spent acid, scrubbed water etc.	IPC-V	
15.0	Facility of handling, storage, and transportation of food grains in bulk	0	0	0	0	0	25	0	25	0	0	0	25.0	Green		IPC-V	
16.0	Flyash export or disposal operations	0	0	0	0	0	25	0	25	0	0	0	25.0	Green		IPC-V	
17.0	Oil and gas transportation pipeline (excluding pipeline covered under definition of isolated storage of hazardous chemicals, as per Manufacture, Storage, and Import of Hazardous Chemicals Rules, 1989)	0	0	0	0	25	0	10	35	0	0	0	35.0	Green		IPC-I	
18.0	Gaushalas	20	0	15	35	0	20	0	20	0	0	0	41.5	Green		IPC-IV	

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division
19.0	Household bio-digesters/gobar-gas (cow-dung) plants based on biodegradable wastes, etc.	0	0	0	0	0	20	0	20	0	0	0	20.0	White		IPC-V



**ANNEXURE-IV**  
**(LIST OF OTHERS/SPECIAL CATEGORY SECTORS CLASSIFIED UNDER RED, ORANGE, GREEN, AND WHITE CATEGORIES)**



**OTHERS/SPECIAL CATEGORY SECTORS**

S. No.	Sector	W1	W2	W3	PI <sub>w</sub>	A1	A2	A3	PI <sub>A</sub>	H1	H2	PI <sub>H</sub>	Pollution Index (PI)	Category	Remarks	Concerned Division	
1.0	<b>HYDEL POWER PLANTS INCLUDING PUMPED STORAGE PROJECTS</b>																
1.1	Hydel power plants (Capacity > 50 MW)													Red	PI may be considered as 90.	IPC-II	
1.2	Mini Hydel power plants (Capacity from more than 25 MVA and up to 50 MW)													Orange	PI may be considered as 67.5.	IPC-II	
1.3	Mini Hydel power plants (Capacity ≤ 25 MW)													White	PI may be considered as 12.5.	IPC-II	
2.0	<b>SAND / RIVERBED MATERIAL MINING FROM RIVERBED AND ITS FLOODPLAINS</b> (excluding manual excavation) ( i. Sand / riverbed material mining from riverbed and its floodplains may cause ecological disturbances, erosion of riverbed, change in hydro-geological conditions & river ecosystem, etc. ii. Cluster mining means that the distance of mining lease area is less than 500 m from periphery of another lease area. iii. This categorization is made considering the ecological damages and not based on pollution potential/index. iv. Cluster mining as defined in 'Enforcement & Monitoring Guidelines for Sand Mining, 2020', issued by MoEF&CC.)																
2.1	Mining lease area more than 5 hectares or Mining lease area up to 5 hectares which is part of cluster mining													Red	PI may be considered as 90.	IPC-II	
2.2	Standalone mining lease area up to five hectares in areas (not a part of any cluster mining)													Orange	PI may be considered as 67.5.	IPC-II	

**ANNEXURE-V**

**FORMAT FOR SUBMISSION OF INFORMATION BY SPCBS/PCCS REGARDING SECTORS  
CLASSIFIED UNDER WHITE CATEGORY**

S. No.	Sector	Water Pollutant Score (PI <sub>w</sub> )				Air Pollutant Score (PI <sub>A</sub> )				Waste Pollutant Score (PI <sub>H</sub> )			Pollution Index (PI)	Remarks (including brief description of process and pollution potential)
		W1	W2	W3	W	A1	A2	A3	A	H1	H2	H		



**A tool for progressive environmental Management**



**Central Pollution Control Board**

"Parivesh Bhawan", East Arjun Nagar, Delhi - 110032

# **“Guidelines for Environmental Management of Dairy Farms and Gaushalas”**



**Central Pollution Control Board**  
(Ministry of Environment, Forest and Climate Change, Govt. of India)  
**Parivesh Bhawan, East Arjun Nagar**  
**Delhi-110032**

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**CONTENT**

	<b>Page</b>
1. Background	03
2. Categorization of Dairy Farms and Gaushalas	04
2.1 Dairy Farms	04
2.2 Gaushalas	04
3. Environmental Issues in Dairy Farms and Gaushalas	04
3.1 Dairy Farms	04
3.1.1 Urban & Peri-urban Area	04
3.1.2 Rural Area	05
3.2 Gaushalas	05
3.2.1 Urban & Peri-urban Area	05
3.2.2 Rural Area	05
4. Methods for Disposal/Utilization of Dung	05
5. Guidelines for Waste Management in Dairy Farms	06
5.1 Guidelines for Waste Management in Dairy Farms located in Urban & Peri-urban Area	07
5.1.1 Solid Waste Management	07
5.1.2 Wastewater Management	07
5.1.3 Air Quality Management	08
5.1.4 Siting Policy	08
5.2 Guidelines for Waste Management in Dairy Farms located in Rural Area	08
5.2.1 Solid Waste Management	08
5.2.2 Wastewater Management	09
5.2.3 Air Quality Management	09
5.2.4 Siting Policy	09
6. Guidelines for Waste Management in Gaushalas	10
6.1 Solid Waste Management	10
6.2 Wastewater Management	10
6.3 Air Quality Management	11
6.4 Siting Policy	11
7. Regulatory/Monitoring Mechanism for Dairy Farms & Gaushalas	11
Annexure-I:- BIS: 12237-1987	13
Annexure-II:- BIS: 11799-2005	19
Annexure-III:- BIS: 11942-1986	31
Annexure-IV: Inventory Performa for Dairy Farms and Gaushalas in the State/UT	50

## 1. Background

India ranks first among world's milk producing Nations since 1998 and has largest bovine population in the World. Dairying has become an important secondary source of income for millions of rural families and has assumed most important role in providing employment and income opportunities particularly for marginal farmers.

Dairy farms are establishment which in-house milching animals to produce milk for distribution or supplying milk to milk processing plants (other than own consumption).

Gaushalas are establishment which in-house weak, sick, injured, handicapped and abandoned homeless cattle/cows to rehabilitate them. Different terminology is used for Gaushalas in different states like Gosadans, Pinjrapole, etc.

As per 20<sup>th</sup> Livestock Census carried out by Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture and Farmers Welfare, in 2019, state-wise total population of bovine by sex and in urban & rural area is as follow:

Sl. No.	State/UT	Male Bovine	Female Bovine	Total Bovine in Rural Area	Total Bovine in Urban Area	Total Bovine
1.	A & N Islands	10,899	29,239	37,916	2,222	40,138
2.	Andhra Pradesh	15,73,589	92,45,997	1,03,97,667	4,21,919	1,08,19,586
3.	Arunachal Pradesh	3,06,246	4,13,583	7,03,018	16,811	7,19,829
4.	Assam	33,77,705	79,53,249	1,11,05,707	2,25,247	1,13,30,954
5.	Bihar	18,15,419	2,13,02,355	2,23,53,630	7,64,144	2,31,17,774
6.	Chandigarh	3,370	22,247	8,927	16,690	25,617
7.	Chhattisgarh	52,00,444	59,58,232	1,07,13,966	4,44,710	1,11,58,676
8.	Dadar & Nagar Haveli	27,015	13,718	39,223	1,510	40,733
9.	Daman & Diu	587	1,627	1,637	577	2,214
10.	Delhi	34,868	2,13,707	2,39,796	8,779	2,48,575
11.	Goa	18,081	69,373	78,940	8,514	87,454
12.	Gujarat	25,20,220	1,76,56,667	1,93,89,940	7,86,947	2,01,76,887
13.	Haryana	7,48,898	55,47,807	58,27,031	4,69,674	62,96,705
14.	Himachal Pradesh	4,99,630	19,76,892	24,47,638	28,884	24,76,522
15.	Jammu & Kashmir	5,45,636	27,10,666	31,55,710	1,00,592	32,56,302
16.	Jharkhand	51,33,373	74,39,992	1,21,84,691	3,88,674	1,25,73,365
17.	Karnataka	20,39,509	94,14,055	1,08,00,819	6,52,745	1,14,53,564
18.	Kerala	2,07,111	12,36,389	13,15,665	1,27,835	14,43,500
19.	Lakshadweep	785	1,724	2,509	0	2,509
20.	Madhya Pradesh	71,00,049	2,19,57,910	2,76,69,875	13,88,084	2,90,57,959
21.	Maharashtra	53,06,297	1,42,89,699	1,88,97,723	6,98,273	1,95,95,996
22.	Manipur	87,062	1,82,699	2,37,699	32,062	2,69,761
23.	Meghalaya	3,53,580	5,65,704	9,11,065	8,219	9,19,284
24.	Mizoram	15,775	35,992	38,434	13,333	51,767
25.	Nagaland	59,057	58,016	1,09,716	7,357	1,17,073
26.	Odisha	42,66,720	60,95,574	1,00,34,984	3,27,310	1,03,62,294
27.	Puducherry	4,695	69,684	57,322	17,057	74,379

28.	Punjab	3,47,572	61,99,835	60,99,440	4,47,967	65,47,407
29.	Rajasthan	30,06,285	2,46,24,661	2,65,18,272	11,12,674	2,76,30,946
30.	Sikkim	36,209	1,18,164	1,51,972	2,401	1,54,373
31.	Tamil Nadu	8,14,996	92,22,459	89,12,712	11,24,743	1,00,37,455
32.	Telangana	19,09,034	65,49,811	81,46,252	3,12,593	84,58,845
33.	Tripura	1,24,505	6,21,657	7,08,228	37,934	7,46,162
34.	Uttar Pradesh	45,52,599	4,74,83,827	4,95,30,075	25,06,351	5,20,36,426
35.	Uttarakhand	5,50,595	21,67,900	25,34,526	1,83,969	27,18,495
36.	West Bengal	44,35,306	1,52,73,592	1,91,76,146	5,32,752	1,97,08,898
<b>All India</b>		<b>5,70,33,721</b>	<b>24,67,24,703</b>	<b>29,05,38,871</b>	<b>1,32,19,553</b>	<b>30,37,58,424</b>

## 2. Categorization of Dairy Farms and Gaushalas

Dairy Farms/Gaushalas are categorised on basis of nos. of bovine animals in a Dairy/Gaushala located in urban, peri-urban & rural area.

### 2.1 Dairy Farms

According to inventory received from SPCBs/PCCs and it is analysed that 60-70% Dairy Farms are having upto 25 animals, 15-20% Dairy Farms are having upto 100 animals and 15-20% Dairy Farms are having more than 100 animals. Therefore, they have been categorized as small, medium & large Dairy farm, respectively. It has been analysed that 5-10%, 5-10% and 80-90% Dairy Farms located in urban, peri-urban & rural area, respectively.

### 2.2 Gaushalas

Similarly, inventory received from SPCBs/PCCs for Gaushalas and it is analysed that 15-20 % Gaushalas having upto 100 animals and 80-85% Gaushalas having more than 100 animals. Therefore, Gaushala having upto 100 animals, 1000 animals & more than 1000 animals can be categorized as small, medium & large Gaushala, respectively. It has been analysed that 50-55%, 5-10% and 35-45% Gaushalas located in urban, peri-urban & rural area, respectively.

## 3. Environmental Issues in Dairy Farms and Gaushalas

Major environmental issues of Dairy farms and Gaushalas are related to disposal of dung and urinal wastewater. Poor handling & disposal of dung and wastewater causes water pollution & odour problem. A Bovine animal, on an average, weigh 400 kg and discharges 15-20 kg/day of dung and 12-14 litres/day of urine. Solid wastes produced from Dairy farms and Gaushalas are bovine dung, feed residue, etc. which are organic and non-hazardous in nature but requires proper handling and disposal.

### 3.1 Dairy Farms

#### 3.1.1 Urban & Peri-urban Area

Majority of Dairy Farms are in clusters. Issue of disposal of dung & wastewater from Dairy farms is predominant in urban & peri-urban area where it is discharged in drains, leading to clogging, which ultimately reach to and pollute rivers. These clogged drains become

breeding ground for mosquitoes creating health hazards and odour nuisance. Wastewater is generated from floor cleaning, bathing of animals, urine, etc. and disposed of without treatment into drains. Dung produces many gases/compounds such as carbon dioxide, ammonia, hydrogen sulphide, methane, etc. which emitted into atmosphere and responsible for odour.

### **3.1.2 Rural Area**

Dairy farms located in rural area are run by small & marginal farmers which produces milk for self-consumption and excess sell in local market. Dung being utilized as a manure in field. Problem arises when dung is stored for very long time and create odour. Wastewater generated majorly from urine which is generally disposed of without treatment into land due to unpaved floor or goes to nearby drain.

## **3.2 Gaushalas**

### **3.2.1 Urban & Peri-urban Area**

Dung is generally stored for very long time and creating odour issues. Sometimes, it finds its way to drains also. Dung is utilised as a manure in field and also in making dung wood/dung cakes. Wastewater is generated from floor cleaning, bathing of animals, urine, etc. Bathing of animal is done occasionally & floor cleaning is done mechanically. The urine usually discharges in drain without any treatment. However, it is also utilized for medicinal uses. Therefore, wastewater generated per bovine animal from Gaushalas is comparatively lower than Dairy Farms.

### **3.2.2 Rural Area**

Dung is being utilised as a manure in field and also used as fuel for domestic purpose. Problem arises when it stored for very long time and creating odour issues. Wastewater is generated from floor cleaning, bathing of animals, urine, etc. Bathing of animal is done occasionally & floor cleaning is done mechanically. The urine usually discharges in drain without any treatment. However, it is also utilized for medicinal uses.

## **4. Methods for Disposal/Utilisation of Dung**

Disposal of bovine dung is biggest challenge in dairy farms and gaushalas. However, bovine dung, if effectively utilised, can be a resource of manure & energy. Bovine dung may be used for many purposes i.e. for combustion (dung wood) or for producing biogas or as soil conditioner or as fertilizers or as material for wall plastering, etc. Following methods for disposal/utilisation of solid wastes (dung) may be adopted:

- a. **Composting/Vermicomposting**: Composting is a manure management practice to reduce impact on the environment. Composting is biological decomposition and stabilization of organic material. The process produces a final product that is stable, free of pathogens, reduced odours and can be applied on land as manure. Vermicomposting is method of preparing compost with use of earthworms that enriches soil quality by improving its physicochemical and biological properties. It is becoming popular as a major component of organic farming system.

- b. *Biogas/Compressed biogas (CBG) production*: Biogas plants are best way to handle dung waste. Biogas is generated in process of biodegradation of organic materials under anaerobic conditions which may be utilised for cooking and power generation. Biogas plant generated digested organic manure for crops. Biogas can be processed and filled in cylinders. Bio-gas may be further purified to remove hydrogen sulphide (H<sub>2</sub>S), carbon dioxide (CO<sub>2</sub>) & water vapour and compressed (known as Compressed Bio Gas, CBG) which has methane (CH<sub>4</sub>) content of more than 90% as per BIS standard IS 16087:2016. CBG has calorific value and other properties similar to CNG and hence can be utilized as green renewable fuel as replacement of CNG in automotive, industrial and commercial areas.
- c. *Manufacture of dung wood or dung cake to be used as fuel*: Bovine dung can be used as fuel as a replacement of firewood. Bovine dung can be dewatered and converted to value added products such as logs, powder etc. by mechanized/semi-mechanized machines.

Following options for disposal/utilization of dung may be adopted by Dairy Farms and Gaushalas:

Sl. No.	Dairy Farms/ Gaushalas	Methods for Disposal/Utilization of Dung
1.	Small Dairy Farms	<ul style="list-style-type: none"> <li>• Composting/vermicomposting, or</li> <li>• Manufacture of dung wood/dung cake, or</li> <li>• Combination of both</li> </ul>
2.	Medium Dairy Farms	<ul style="list-style-type: none"> <li>• Combination of any of three methods for disposal/utilization of dung</li> </ul>
3.	Large Dairy Farms	<ul style="list-style-type: none"> <li>• Biogas/compressed biogas production or</li> <li>• Combination with any of remaining method</li> </ul>
4.	Dairy Farms in Rural Area	<ul style="list-style-type: none"> <li>• Composting/vermicomposting, or</li> <li>• Manufacture of dung wood/dung cake</li> </ul>
5.	Dairy Farms in Cluster	<ul style="list-style-type: none"> <li>• Common Biogas/compressed biogas production, and</li> <li>• Any of remaining method at individual level</li> </ul>
6.	Small & Medium Gaushalas	<ul style="list-style-type: none"> <li>• Combination of any of three methods for disposal/utilization of dung</li> </ul>
7.	Large Gaushalas	<ul style="list-style-type: none"> <li>• Biogas/compressed biogas production or</li> <li>• Combination with any of remaining method</li> </ul>

## 5. Guidelines for Waste Management in Dairy Farms

Following guidelines are framed for management of wastes from Dairy farms. These guidelines are applicable to establishment which are discharging their wastes into environment. These establishments shall also follow existing laws, rules, guidelines, directions and standard operating procedures issued by different organizations.

## ***5.1 Guidelines for Waste Management in Dairy Farms located in Urban & Peri-urban Area***

### ***5.1.1 Solid Waste Management***

Guidelines to be followed for management of solid wastes are as under:

- i. Dung from floor of shed should be collected at regular interval, so as to keep floor clean. Surrounding areas should also be cleaned regularly to prevent obnoxious smell in area.
- ii. Premises and its surrounding areas should be properly sanitized and disinfected, e.g. by sprinkling crushed lime.
- iii. Dung & fodder residue etc. should not be washed into drains in order to avoid clogging of drains. Local bodies/corporations/SPCBs should ensure that untreated wastes are not discharged outside premises.
- iv. Collected solid wastes should be stored properly for its utilization.
- v. Small Dairy Farms may adopt dung for manufacture of dung wood/dung cake or composting/vermicomposting or combination of both methods for disposal/utilization of solid wastes. In case of cluster, biogas/compressed biogas production may be adopted for disposal/utilization of solid wastes in association with entrepreneurs or local dairy farmers association. Local bodies/corporations/SPCBs should facilitate Dairy farmers/entrepreneurs/NGOs in setting up of individual or common utilization facilities.
- vi. Medium & Large Dairy Farms may adopt a combination of disposal/utilization methods like manufacturing of dung wood or biogas generation or vermicomposting. However, Large Dairy Farms may setup biogas/compressed biogas production facility either by themselves or in association with entrepreneurs.
- vii. Domestic hazardous wastes (vaccines, vials, medicines, syringes, etc.) should be disposed as per provisions of “Solid Waste Management Rules, 2016”. If they have their own medical facilities then wastes should be disposed as per provisions of “Bio-medical Waste Management Rules, 2016”.

### ***5.1.2 Wastewater Management***

Guidelines for management of wastewater are as follow:

- i. Water should be judiciously used for bathing of bovines and other services including floor cleaning to contain wastewater quantity to 100 litres/day/bovine.
- ii. Adequate infrastructure should be provided to ensure proper handling, treatment and disposal of wastewater. They may set-up individual or common treatment facilities where in cluster. Local bodies/corporations/SPCBs should facilitate Dairy farmers/entrepreneurs/NGOs in setting up of individual or common treatment facilities.
- iii. Wastewater should be adequately treated so as to meet standards as prescribed by SPCBs/PCCs.
- iv. Flooring of shed should be properly paved (impervious) with a wastewater collection system. However, floor should not be slippery in order to ensure safety of animals.

### **5.1.3 Air Quality Management**

Guidelines for management of air quality/emissions are as follow:

- i. Animal housing should be ventilated allowing sufficient supply of fresh air to remove humidity, dissipate heat and prevent build-up of gases such as methane, carbon dioxide, ammonia, etc.
- ii. Good housekeeping practices like maintaining proper sanitary conditions, protecting dung from unwanted pests/insects should be followed in order to minimize odour nuisance.
- iii. Floor, feeding, water and air spaces available for each animal should be adequate for standing, resting, loafing, movement, feeding, watering and ventilation. Space requirements should be provided as per Bureau of Indian Standards (BIS) (refer BIS: 12237-1987 given at **Annexure-I**).
- iv. It is suggested to obtain ration advisory for improving/modifying quality and dosage of feed/forage/supplements from any of agricultural institutes/departments like Krishi Vigyan Kendra, State Dairy Department, Animal Husbandry Department, NDRI, NDDDB, etc. in order to reduce enteric methane generations from livestock. It is beneficial to animal health/nutrition and reduced impact on environment.
- v. Plantation of trees or green belts, wherever feasible, to provide a barrier against the spread of foul smell or noise originating from them.

### **5.1.4 Siting Policy**

Siting criteria will be applicable for new establishment. Existing establishments should take appropriate environmental friendly practices as per Guidelines. Dairy farm shall be setup as per siting policy/guidelines of local administration and may follow criteria as below:

- i. It should be located in area wherever permissible and atleast 100 meters away from residential dwellings, health centres/hospitals & schools in order to avoid odour problem,
- ii. Atleast 200 meters away from water spread area of major watercourses like Lake, canal and major drinking water sources,
- iii. Away from flood plain area of River and areas having shallow groundwater.
- iv. Atleast 5 meters of inter-se distance between two establishments (each establishment should provide 2.5 meters from each side) for ventilation should be provided and developed green belt.

## **5.2 Guidelines for Waste Management in Dairy Farms located in Rural Area**

### **5.2.1 Solid Waste Management**

- i. Dung should be collected & stored properly for its utilization. It should be used as compost in field or in making dung wood or vermi-compost. Biogas production may be practiced wherein cluster as a source of energy for rural area.

- ii. Dung & fodder residue should not be washed into drains in order to avoid clogging of drains and surrounding areas should also be cleaned regularly to prevent obnoxious smell in area.
- iii. Provisions of “Solid Waste Management Rules, 2016” should be followed for disposal of domestic hazardous wastes (vaccines, vials, medicines, syringes, etc.).

### **5.2.2 Wastewater Management**

- i. Water should be judiciously used to contain wastewater quantity to 100 litres/day/bovine.
- ii. Floor should be paved and wastewater should be collected and utilized for agriculture purpose. Floor should not be slippery in order to ensure safety of animals.
- iii. Wastewater should be adequately treated so as to meet standards as prescribed by SPCBs/PCCs.

### **5.2.3 Air Quality Management**

- i. Animal housing should be ventilated allowing sufficient supply of fresh air to remove humidity, dissipate heat and prevent build-up of gases.
- ii. Good housekeeping practices should be followed in order to minimize odour nuisance.
- iii. Floor, feeding, water and air spaces available for each animal should be adequate for standing, resting, loafing, movement, feeding, watering and ventilation. Space requirements should be provided as per Bureau of Indian Standards (BIS) (refer BIS: 11799-2005 given at **Annexure-II**).
- iv. It is suggested to obtain Ration advisory for improving/modifying quality and dosage of feed/forage/supplements from any of agricultural institutes/departments like Krishi Vigyan Kendra, State Dairy Department, Animal Husbandry Department, NDRI, NDDDB, etc. to reduce enteric methane generations from livestock.
- v. Plantation of trees or green belts, wherever feasible, to provide a barrier against spread of foul smell or noise originating from them.

### **5.2.4 Siting Policy**

Siting criteria will be applicable for new establishment. Existing establishments should take appropriate environmental friendly practices as per Guidelines. Dairy farm shall be setup as per siting policy/guidelines of local administration.

These should be located away from residential dwellings/hospitals/schools in order to avoid odour issue as per siting norms of local administration. It should be atleast 100 meters away from water spread area of major drinking water sources in order to avoid contamination of water bodies. These should be away from flood plain areas of River and areas having shallow groundwater.

Atleast 5 meters of inter-se distance between two establishments for ventilation, this space of 5 meters (2.5 meters from each side from each unit) shall be developed for green belt.

## **6. Guidelines for Waste Management in Gaushalas**

Following guidelines are framed for management of wastes from Gaushalas located in urban, peri-urban & rural area. These guidelines are applicable to establishment which are discharging their wastes into environment. These establishments shall also follow existing laws, rules, guidelines, directions and standard operating procedures issued by different organizations.

### **6.1 Solid Waste Management**

Guidelines to be followed for management of solid wastes are as under:

- i. Dung from floor of shed should be collected at regular interval, so as to keep floor clean. Surrounding areas should also be cleaned regularly to prevent obnoxious smell in area.
- ii. Premises and its surrounding areas should be properly sanitized and disinfected, e.g. by sprinkling crushed lime.
- iii. Dung & fodder residue etc. should not be washed into drains in order to avoid clogging of drains. Local bodies/corporations/SPCBs should ensure that untreated wastes are not discharged outside premises.
- iv. Solid wastes should be stored properly for its utilization in dung wood manufacturing or biogas generation or vermicomposting. In case of small & medium scale Gaushalas, a combination any of methods may be adopted for utilization of dung wherein large scale Gaushalas may setup biogas generation facility at its own or in partnership with entrepreneurs.
- v. Domestic hazardous wastes (vaccines, vials, medicines, syringes, etc.) should be disposed as per provisions of “Solid Waste Management Rules, 2016”. If they have their own medical facilities then the wastes should be disposed as per provisions of “Bio-medical Waste Management Rules, 2016”.

### **6.2 Wastewater Management**

Guidelines for management of wastewater are as follow:

- i. Water should be judiciously used for bathing of bovines and other services to contain wastewater quantity to 50 litres/day/bovine. (As water utilized by Gaushala is less in comparison to Dairy Farm due to occasional bathing & mechanized floor cleaning).
- ii. Adequate infrastructure should be set-up to ensure proper handling, treatment and disposal of wastewater. Local bodies/corporations/SPCBs should facilitate Gaushala owners/entrepreneurs/NGOs in setting up of treatment facilities.
- iii. Wastewater should be adequately treated so as to meet standards as prescribed by SPCBs/PCCs or utilized for various medicinal purpose.
- iv. Flooring of shed should be properly paved (impervious) with a wastewater collection system. However, floor should not be slippery in order to ensure safety of animals.

### ***6.3 Air Quality Management***

Guidelines for management of air quality/emissions are as follow:

- i. Animal housing should be ventilated allowing sufficient supply of fresh air to remove humidity, dissipate heat and prevent build-up of gases.
- ii. Good housekeeping practices like maintaining proper sanitary conditions, protecting dung from unwanted pests/insects should be followed in order to minimize odour nuisance.
- iii. Floor, feeding, water and air spaces available for each animal should be adequate for standing, resting, loafing, movement, feeding, watering and ventilation. Space requirements should be provided as per Bureau of Indian Standards (BIS) (refer BIS: 11942-1986 given at **Annexure-III**).
- iv. It is suggested to obtain Ration advisory for improving/modifying quality and dosage of feed/forage/supplements from any of agricultural institutes/departments like Krishi Vigyan Kendra, State Dairy Department, Animal Husbandry Department, NDRI, NDDB, etc. to reduce enteric methane generations from livestock.
- v. Plantation of trees or green belts, wherever feasible, to provide a barrier against spread of foul smell or noise originating from them.

### ***6.4 Siting Policy***

Siting criteria will be applicable for new establishment. Existing establishments should take appropriate environmental friendly practices as per Guidelines. Gaushala shall be setup as per siting policy/guidelines of local administration.

These should be located atleast 100 meters away from residential dwellings/schools/hospitals in order to avoid odour issue and away from the water spread area of major drinking water sources. These should be away from flood plain areas of River and areas having shallow groundwater. Atleast 5 meters of inter-se distance between two establishments for ventilation, this space of 5 meters (atleast 2.5 meters from each side from each unit) shall be developed for green belt.

## **7. Regulatory/ Monitoring Mechanism for Dairy Farms & Gaushalas**

- i. Local authorities/corporations should carry out inventory of Dairy farms and Gaushalas located in their jurisdiction in inventory performa given at **Annexure-IV** and same should be updated & shared with concerned SPCB/PCC on annual basis (calendar year wise).
- ii. Local bodies/municipal corporations shall publish a public notice in newspapers and on their website for registration of Dairy farms and Gaushalas as per municipal laws. Registration may be done preferably through online mode and same may be displayed at their websites.
- iii. SPCBs/PCCs shall publish a public notice for Dairy farms & Gaushalas to obtain consent to establish and consent to operate under Water Act, 1974 as well as Air Act, 1981 as per the categorization of industries in Orange and Green Category, respectively.
- iv. SPCBs/PCCs/local bodies/municipal corporations shall upload Environmental Guidelines on their website and also circulate to all Dairy farms and Gaushalas.

- v. Concerned SPCBs/PCCs/local bodies/corporations should monitor dairy farms and gaushalas on regular basis to ensure proper disposal of bovine dung and wastewater to check compliance of environmental norms. SPCBs/PCCs will consider carrying capacity of surroundings while allowing a new establishment and laying down environmental norms.
- vi. SPCBs/PCCs shall carry out environmental audit of atleast 2 Dairy farms and 2 Gaushalas, randomly selected from each district of State/UT and submit compliance and action taken report to CPCB on half yearly basis.
- vii. SPCBs/PCCs shall submit status of compliance of guidelines by Dairy farms and Gaushalas located in their jurisdiction in form of report once in six months to CPCB for Audit purpose.
- viii. CPCB shall carry out environmental auditing of 4 Dairy farms and 4 Gaushalas in each State/UT, randomly selected based on information received from SPCBs/PCCs on annual basis.
- ix. In case of any violation of environmental norms under Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981 and Environmental (Protect) Act, 1986 by Dairy farms and Gaushalas, concerned SPCBs/PCCs should impose environmental compensation as per CPCB methodology for “Environmental Compensation to be levied on Industrial Units”, for damaging the environment and in order to stop polluting activity and initiate prosecution for repeatedly polluting units.
- x. SPCBs/PCCs should provide training and consultation to Gram Panchayat for implementation of guidelines in their jurisdiction. Gram Panchayat should ensure implementation of guidelines by Dairy farms and Gaushalas falling under their jurisdiction for handling and management of wastes.
- xi. Hands on practical trainings on environment/waste management & treatment technologies, scientific feeding for enteric methane reduction, waste to wealth management programme, etc. should be provided to Dairy & Gaushala workers/entrepreneurs by local bodies/ SPCBs/PCCs on regular interval.

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IS : 12237 - 1987

Indian Standard

(Reaffirmed 2004)

## RECOMMENDATIONS FOR LOOSE HOUSING SYSTEM FOR ANIMALS

- 1. Scope** — This standard recommends the layout and constructional details of loose housing system for animals.
- 1.1** Various features covered in this standard are primarily meant for herd size of 50 adult cows or buffaloes.
- 2. Terminology** — For the purpose of this standard, the following definitions shall apply.
- 2.1 Loose House** — Animal house comprising of an open paddock or yard with a shelter having common watering and feeding facilities and in which animals are kept untied.
- 2.2 Paddock or Yard** — An open area surrounded by walls, fences or rails for accommodating cattle. This area is meant to provide open air exercise to the animals.
- 2.3 Shelter** — This is a covered area, normally one-third of the area of the paddock and is located in the middle or along one side of the latter. This is the area where the animals may take protection from direct sun or rain.
- 2.4 Feeding Arrangements** — These comprise of common manger normally situated along the long axis of the covered area or sometimes an additional one in the open area.
- 2.5 Watering Arrangements** — These comprise of water tanks made as partitioned portions of feed manger or as separate units in the open area.
- 3. Selection of Site**
- 3.1** The housing system should meet the provisions given under 3.1 to 3.4 of IS : 11786-1986 'Recommendations for cattle housing for an average farmer'.
- 3.2** The site shall be such that the longer axis of the wall of the shed should be oriented east to west in all areas except temperate Himalayan and hilly regions. In coastal and desert areas, the longer axis of the shed shall be oriented across the prevailing wind direction in order to protect the roof from being blown off by high wind and at the same time to provide sufficient air movement in the shed. In sub-mountainous region, the buildings should be so sited as to avail of the natural aeration and drying. The site shall be away from other buildings.
- 4. Herd Size** — A 50-cow or buffalo dairy farm normally comprises of 35 to 40 cows, buffaloes, 10 to 15 dry animals, 35 to 40 male and female or 15 to 20 female calves, 20 to 25 growing female stock of 1 to 3 years age, 1 or 2 bulls and 2 or 3 pair of bullocks.
- 5. Building Units** — In general, the buildings can be grouped into following three categories:
- Buildings in which there is maximum labour activity, frequent handling of animals and need for closer and constant supervision, such as milking shed, mixed animal shed, down-calving sheds (maternity pens), suckling calf shed and milk house.
  - Buildings in which there is lesser labour activity, no routine handling of animals and less need for closer supervision, such as dry animal-cum-bullock shed, young stock shed and bull shed.
  - Ancillary sheds where no animals are housed but activities relating to feeding and management of stock are performed, such as stores for ration and dry fodder, chaffing shed and silos.
- 6. Layout**
- 6.1 Arrangement of Buildings** — Economization of space without sacrificing free flow of air and natural lighting or making conditions cramped for animals, should be the broad guideline in arranging the different buildings on a dairy farm. As far as possible, buildings within each group may be

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G. 3

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arranged together, with the buildings of group mentioned under 5(a) getting the most central and most approachable area. The buildings of group mentioned under 5(c) should be close to or have easy access to the feeding area of the animal shed.

Note — Shady trees planted and protected in the open area and around the buildings are essential ingredient of loose housing system.

6.2 Typical layouts comprising the various units are given in Fig. 1 and 2 for guidance.

Note — These layouts can be modified depending upon size and shape of available land, topography of land, finances, special needs, etc. However, such modifications may not be contrary to the general principles given in 5, 6 and 7.

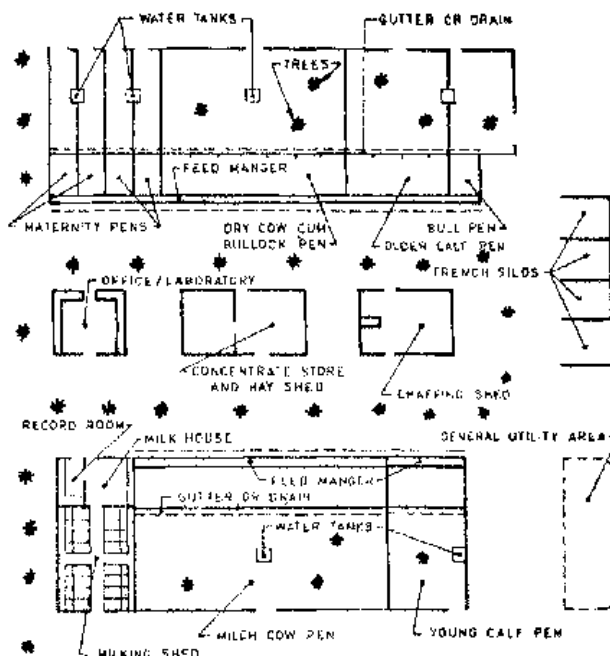


FIG. 1 LAYOUT SHOWING THE FUNCTIONAL DETAIL OF LOOSE HOUSING IN THREE ROWS

## 7. Description of Sheds

7.1 *Milking Shed* — This is a fully covered barn type building in which lactating cows are milked. It should be located at a central place with all other buildings arranged around it. There should be individual standings or stalls or stanchions in two rows in a tail-to-tail arrangement. Each standing can be used for milking 3 to 5 cows or buffaloes in one hour under hand milking conditions; the number of standings required on a farm, thus, will be about one-fourth of the number of milch animals. The length and width of the standing shall be decided according to the size of the animals and may vary from 1.5 to 1.7 m in length and 1.05 to 1.20 m in width. The width of the central passage shall be 1.5 to 1.8 m. The central passage shall have a gentle slope from the centre outwards towards the drain. There shall be two continuous mangers, one on each side along the heads of standing rows and a 0.75 m wide feeding alley beyond each manger. There shall be a shallow U-shaped drain 20 cm wide, one on either side of the central passage.

7.1.1 The floor of the standing should be paved with a slope of 1 in 40 towards drains. There should be walls along the length and at each end of the shed to support the beams of the roof. The roof of the shed should be gabled. The eaves of the roof shall project out at least 50 cm away from the side walls. The side walls need not necessarily be complete; large open spaces may be left in the side walls at suitable intervals. When walls are complete up to the roof, as is necessary in cooler areas, there shall be windows and ventilators at suitable places in the walls.

IS : 12237 - 1987

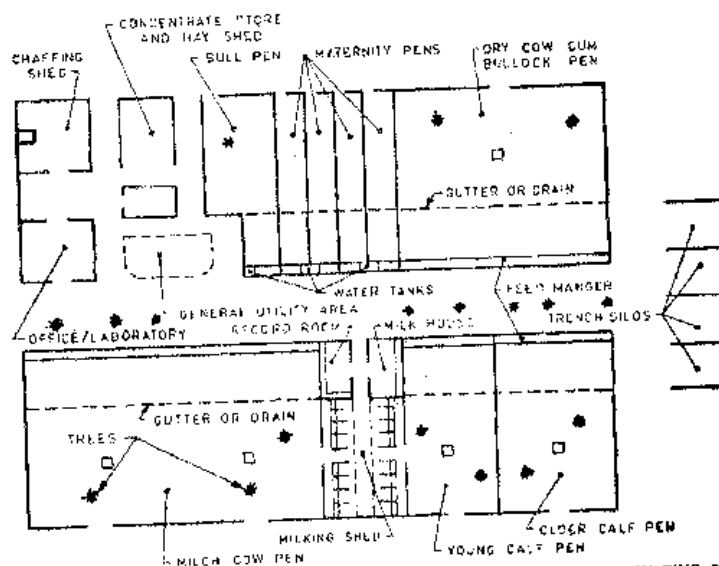


FIG. 2 LAYOUT SHOWING THE FUNCTIONAL DETAIL OF LOOSE HOUSING IN TWO ROWS

**7.1.2** Some device should be arranged to secure individual animal by neck in each standing. The milking barn may, if necessary, be extended to accommodate down-calvers as well as calves. Milch animal, that are in heat, can be left after milking in the standings and inseminated right there.

**7.2 Sheds for Milch Dry Animals** — These are sheds for housing milch animals and dry animals separately. On small farms, a partition can be raised in one shed for housing dry animals separately. On farms with only a few animals, all the animals, milking or dry, can be housed together.

**7.2.1** These are simple sheds comprising a covered portion and an adjoining open paddock. The manger and water tank should also be provided. The covered area should preferably be of cement concrete, brick-on edge, stone slab, *Maanum* or *Kunkar*, flooring may be used.

**7.3 Maternity Pens** — Pregnant cows are to be transferred into maternity pens or calving boxes two to three weeks before the expected date of calving. The number of calving boxes of maternity pens required is about 5 percent of the number of breedable female stock on the farm. These should be located near the living quarters of farmer and/or milking barn so that the down-calvers are constantly observed. The pens can be constructed either in a row or in groups of two or four.

**7.3.1** The dimensions of each calving pen shall be about 3 x 4 m for covered area and another 3 x 4 m for the open paddock. The covered area shall have a 1.25 m high wall all around, barring a 1.2 m wide gate opening into the open lot. A manger and a water trough of proper size should be constructed in each pen. The floors shall be *Maanum*, brick-on-edge or cement paved with a 1 in 40 slope towards the drain.

**7.4 Sick Animal Sheds** — Sheds more or less similar to maternity pens in structure shall be located well away from the other sheds so that these sheds are inaccessible to other animals.

**7.5 Calf Shed** — The calf shed can be located either at the end or on the side of the milking barn. This facilitates calves to their dams quickly at milking time (if weaning is not practised), and hand feeding of milk to calves if weaning is practised. If there is a large number of calves, the calf shed shall form a separate unit, but shall be located near to milking barn, so that calves of different age groups can be housed separately.

**7.5.1** The dimensions of calf shed depend on the number of calves to be housed. The dimensions of mangers and water troughs shall conform to specifications given in 8.2. Floors shall be of cement concrete in covered area and brick-on-edge in open area.

IS : 12237 - 1987

**7.6 Young Stock Shed** — Older heifer calves from about six months of age to breeding age are to be housed separately from the suckling calves. Generally, no male calves are kept on farms beyond six months of age. When a large number of young stock is there, they should be divided into different age groups and each group housed separately.

**7.6.1** When their number is small, the young stock shed may be an extension of the dry animal shed or it may be a separate unit nearer to it. In the latter case, the shed shall be constructed in a single row. The constructional details of this shed are the same as for cow sheds except for the difference in dimensions of mangers and water troughs.

**7.7 Bull Sheds** — The bull sheds should be constructed towards one end of the farm. There shall be one shed for each bull, the number of bulls required being one for every 50 breedable females on the farm, if natural breeding is practiced. When artificial insemination service facilities are available nearby, there may be no necessity to keep bulls on the farm. The bull shed shall have covered area of 3 x 4 m dimensions, leading into a paddock of 120 m<sup>2</sup>.

**7.8 Trees** — Shady trees, preferably quick growing, may be chosen for planting in and around animal sheds. Leaves and pods of many of these can be used as cattle feed. The following species may be considered:

- a) *Acacia arabica*
- b) *Acacia leucophloea*
- c) *Madhuca longifolia* or *Madhuca indica*
- d) *Cassia fistula*
- e) *Cordia dichotoma*
- f) *Erythroxylon monogynum*
- g) *Ficus bengalensis*
- h) *Ficus religiosa*
- i) *Helicteres isora*
- k) *Kydia calycina*
- m) *Leucaena leucocephala*
- n) *Mangifera indica*
- p) *Saxif tebrasperma*
- q) *Syzygium jabolianum*
- r) *Tamarindus indica*
- s) *Wrightia tictoria*

**7.8.1** As far as possible, existing trees of the site proposed for construction should not be destroyed but incorporated within the layout. Further, trees should be planted at pre-determined spots within the layout even before the construction is completed, and the same may be nurtured and protected by tree guards.

## 8. Constructional Details

**8.1 Floor** — It shall be in accordance with 7.1.1 of IS : 11799-1986 'Recommendations for cattle housing for a rural milk producer'.

**8.2 Manger** — The manger shall meet the provisions of 7.1.2 of IS : 11799-1986 except that the wooden planks are not recommended for its construction.

**8.3 Water Supply** — Water troughs or tanks should be constructed in each shed for the convenience of animals. The water troughs should be built with reinforced concrete, bricks with cemented junctions, stone slabs with cemented joints or plain thick galvanized iron sheets. The water tanks may be round (generally in larger pens) or rectangular and shall be located at a convenient place in the shed. Its dimensions shall be more or less the same as for mangers for different classes of livestock. A two metre wide paved platform shall be provided adjacent to the water troughs. In smaller pens, a tank can be made by raising an impervious partition towards one end of the continuous manger. Each water tank should have one hydrant, the outflow from which may be controlled by a float valve. The hydrant can also be left without a tap, and water let into the troughs at regular intervals so that the water trough may get filled as the animals empty them. Hydrants with spouts to attach a hose pipe should also be fixed in each shed at convenient places. The pens and animals (buffaloes) can be washed by flushing water through a hose. Wherever possible, the water supply pipe lines should run underground.

IS : 12237 - 1987

#### 8.4 Manure Disposal

**8.4.1 Liquid manure** — The liquid manure and wash water should be taken out of the shed by a shallow U-shaped gutter or drain located longitudinally to the long axis of the shed at the junction of the open and the covered area. Outside the shed, liquid manure from each shed can be lead by means of drains (preferably closed or sub-terrain drains) to a main farm drain. This main drain leads liquid waste ultimately to a liquid manure storage tank through an inspection chamber and a settling chamber. The drains should be constructed out of the same materials as that of floors. The width of the drains may vary between 30 to 40 cm. A slope of 1 to 40 should be provided to the drains towards storage tank so that the liquid may flow down easily. Shallow U-shaped drains are preferable. Drains in a row of pens should be made continuous by routing them through holes in the intervening partition walls.

**8.4.2 Solid manure** — When solid manure is collected separately, it should be stored properly in manure pits so that the same gets well decomposed. Manure pits should be located as far off as possible from animal habitations after duly considering the labour required in transporting manure from the sheds to the pits. This is necessary as a safeguard against foul odours existing near milk parlours and as a measure against fly menace. For reasons of hygiene, manure pits should be at a minimum distance of 10 m from wells, rivars and tanks and from the boundary of the adjoining land property. Further, they must be impermeable to water. The size and the number of manure pits required depend on the production of manure on the farm. Total manure storage capacity may be planned on 33 kg per day or 0.045 m<sup>3</sup> on per animal basis.

**8.5 Pillars** — Provisions given in 7.3 and 7.3.1 of IS : 11799-1986 should be followed.

**8.6 Walls and Roofs** — These should be in accordance with 7.2 and 7.4 of IS : 11799-1986, respectively.

**8.7 Paddock and Shelter** — The paddock and shelter of each shed should form an integrated unit so that the animals can move freely to any part of the paddock shelter combine. The sheltered regions should be paved while the paddock may be left unpaved, but well rammed. The space per animal shall be as given in Table 1.

TABLE 1 SPACE OF PADDOCK AND SHELTER

Sl No.	Category of Animal	Paddock (Open Area) m <sup>2</sup>	Shelter (Covered Area) m <sup>2</sup>	Maximum Number of Animals to be Kept in Each Shelter
i)	Buffalo	9	4	40
ii)	Cow	7	3.5	40
iii)	Young stock	4	2	30
iv)	Calf	2	1	30
v)	Calving pen	12	12	1
vi)	Bull	26	12	1

**8.7.1 Manger and water trough** — Manger and water trough may be constructed in paddocks with reinforced cement concrete, brick with cement mortar or stone slabs with cement joining. A 2 m wide paved platform shall be provided away from trough to withstand the heavy treading of animals and permit easy washing and cleanliness.

**8.8 Fencing** — It shall be in accordance with 8.2 of IS : 11799-1986.

**8.9 Gate** — A gate of suitable type and size may be provided taking care that they are hinged firmly and raised well above the ground. Braces shall be positioned vertically.

#### 9. Ancillary Structures

**9.1 Milk House** — Milk collection, recording, testing and cooling facilities as well as facilities for cleaning and stacking of milking pails and milk cans have to be provided in this house. This floor space can accommodate the milk recording equipment, milk cooling device in the form of bulk cooler, can racks, milking pail rack, sinks, washing outfit and furniture of the milk recorder. On very large farms, the different components of the milk house, that is recording-cum-milk cooling room, milk utensils and equipment room and washing room, may be constructed as separate units. The doors and the windows of the milk house shall be made fly-proof. The flooring of the room shall be of cement concrete, impervious and reinforced with iron strips located at suitable distances to make it hard wearing. The walls should be lined with white glazed tiles up to a height of 1.5 m. A suitable platform or concrete slab in the form of bench shall be provided for keeping the milk testing apparatus.

IS : 12237 - 1987

**9.2 Stores** — There shall be one main concentrate store-cum-feed mixing room at a distant place but it is advisable to have a small ration room near the milking barn for storing prepared concentrate mixture temporarily for a day or two. On smaller farms, one feed store near the milking barn would be sufficient. The feed room shall be damp-proof and rodent-proof.

**9.3 Silo** — Suitable size trench silo may be provided.

**9.4 Hay/Straw Shed** — Shed, preferably with walls on three sides may be provided for storing straw or hay. Storing hay or straw as stacks in the open results in excessive wastage in the form of spoilage and deterioration. Sometimes, a simple shed with gabled roof is used. The hay shed shall be away from animal sheds because of fire hazards. On larger farms, the hay sheds can be made into a sort of self-feeding hay bunks by placing movable wooden partition on one side edge of the hay shed so that the animals can eat hay at will from only the portions accessible through this wooden partition and do not spoil the hay excessively.

**9.5 Chaffing Shed** — A shed for chaffing the fodder with chaffing machine or ensilage cutter is erected. The shed may have provisions for power supply to the machine.

**9.6 Office Room** — Depending upon the size of the farm, an office room may be provided. The office room may also be used for keeping medicines and instruments required for treating sick animals. A toilet may also be provided. A visitors' room may be attached to the office room.

**9.7 Trevis or Cattle Crutch** — A cattle trevis may be provided in the general utility area for securing animals for insemination, treatment, etc.

**9.8 Segregation Room** — Provision may be made for a segregation room for keeping new animals introduced in the herd for some initial days before their mixing up with the herd.

**9.9 Lighting** — Provision of lighting shall be made; in case electricity is available, a 25 W bulb for each 10 m<sup>2</sup> space or 60 W bulb for each 20 m<sup>2</sup> space or equivalent tube light may be provided.

**9.10 Biogas Plant** — A bio-gas plant of suitable size may be installed so that the farm wastes (biomass) can be used to produce gas for use on the farm.

#### EXPLANATORY NOTE

Animal housing helps in moderating the range of microenvironment to which the animals are exposed and optimizes their production by protecting them from extreme climates. Normally, the animal housing consists of either barn system or loose system.

This standard covers the details of loose housing which is becoming now more popular. A number of Indian Standards on barn system of housing have already been published.

In the preparation of this standard, assistance has been derived from the Department of Live-stock Production and Management, Haryana Agricultural University, Hissar.

IS 11799 : 2005

भारतीय मानक  
ग्रामीण क्षेत्रों में पशु-आवास के लिए अनुशंसाएँ  
( पहला पुनरीक्षण )

*Indian Standard*  
RECOMMENDATIONS FOR CATTLE HOUSING IN  
RURAL AREAS  
( *First Revision* )

ICS 65.040.10

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**BUREAU OF INDIAN STANDARDS**  
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May 2005

Price Group 5

Livestock Feeds, Equipment and System Sectional Committee, FAD 5

#### FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Livestock Feeds, Equipment and System Sectional Committee had been approved by the Food and Agriculture Division Council.

Proper housing is an important feature in raising the production capabilities of animals, in addition to good breeding, feeding, selection and disease control. It is conducive to good health, comfort protection from inclement weather and the animals are capable of utilizing their genetic abilities and feed for optimum production.

Cattle raising and dairying is practiced in the country by various interests. Generally these interests are : (a) an average farmer who has not more than a pair of bullocks and two or three milch animals with their calves; (b) a rural milk producer normally having a total of about 20 animals including about 12 milch animals, their followers and a pair of bullocks; (c) *GAUSHALAS* and other organized milk producers; and (d) large dairy farms.

This standard was published in 1986, covering recommendations for cattle housing for rural milk producer. This revision has been taken up to enlarge the scope of the standard by incorporating the recommendations for cattle housing for an average farmer (IS 11786:1986 'Recommendations for cattle housing for an average farmer') and updating the referred standard.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard*  
**RECOMMENDATIONS FOR CATTLE HOUSING IN  
 RURAL AREAS**  
*(First Revision)*

**1 SCOPE**

This standard covers recommendations for layout and constructional details of a cattle shed meant for an average farmer normally having three milch animals with their calves and a pair of bullock and rural milk producer normally having 20 animals which may include about 12 milch animals, their followers and a pair of bullocks.

**2 REFERENCES**

The following standards contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	Title
258 : 2000	Potash alum --- Specification (second revision)
712 : 1984	Specification for building limes (third revision)
797 : 1982	Common salt for chemical industries (third revision)
3383 : 1988	Specification for burnt clay paving bricks (second revision)
3622 : 1977	Specification for sand stone (slabs and tiles) (first revision)

**3 TERMINOLOGY**

For the purpose of this standard, the following definitions shall apply:

**3.1 Paddock or Yard** — An open area surrounded by walls, fences or rails for accommodating cattle. This area is meant to provide open air exercise to the animals. It generally contains manger(s) or trough(s) with or without lies to control animals for different purpose.

**3.2 Standard (Stall)** — The floor space provided within a shed for an individual animal to stand or lie.

**4 SELECTION OF SITE**

**4.1** The shed shall be located on dry, elevated and well-drained area with consideration for future expansion.

**4.2** The shed shall preferably be located at a place where there are enough suitably placed trees to serve as wind-breaks and to provide shade. In order to break the wind, it is recommended that a row of trees be also planted across the directions of wind at the boundary of the farm.

**4.3** The site shall be away from public road but easily accessible throughout the year.

**4.4** The site shall be such that arrangement could be made for adequate and good water supply.

**4.5** The site shall be such that the long axis of the shed could be oriented east to west in all areas except temperate Himalayan and hilly regions. In desert areas, the shed shall be oriented across the prevailing direction of the wind in order to protect the roof from being blown off by high wind.

**4.5.1** In coastal areas the shed shall be oriented along the prevailing wind direction in order to protect the roof from being blown off by high wind and at the same time to provide sufficient air movement in the shed. In sub-mountainous region, the buildings should be so sited as to avail of the natural aeration and drying.

**5 HERD SIZE**

A typical herd for an average farmer has been assumed to have about 5 animals comprising 3 milch animals, their followers and a pair of bullocks whereas for rural milk producer it is about 20 animals comprising 12 milch animals of which about 8 may be in milk. The remaining eight animals may include the followers of adult animals and a pair of bullocks.

**6 SHED AND LAYOUT****6.1 For an Average Farmer**

An average farmer having not more than three milch animals with calves and a pair of bullocks generally makes use of an existing wall for constructing the cattle shed. The construction of shed under this interest, therefore, has been suggested assuming that a lean to type roof could be built against an existing wall. Arrangement of adequate water supply and light shall be made in the shed. The typical layout of such a shed to accommodate five animals is shown in Fig. 1. The two side walls should be of height not more than

IS 11799 : 2005

1.2 m. The height of main wall (see A in Fig. 1) shall be minimum of 2.5 m.

#### 6.2 For a Rural Milk Producer

The shed shall consist of standings for accommodating adult animals and the young stock. At the far end of the shed, there shall be a room for accommodating calves and a separate calving box. The paddock or yard for adult and young stock and calves may be separate on either side of the standings. The calves and the down calver shall have separate paddocks or yards for themselves laid adjacent to the calf room and calving box.

6.2.1 The layout and overall dimensions of each of the units (see 6.2) may be as given in Fig. 2 and Fig. 3.

### 7 CONSTRUCTION

#### 7.1 Standing

For an average farmer the standings shall be constructed in such a way that the animals are kept facing towards the wall. The manger shall be adjacent to the wall. The length, width and area of cow shed and buffalo shed capable of accommodating one to four cattle is given in Table 1.

For a rural milk producer the standings shall be constructed in such a way that the animals are arranged in rows. The length and width of each standing shall be decided depending upon the size of the animals. The length and width of each standing shall be decided depending upon the size of the animals. The length and width of each standing may vary from 1.5 m to 1.7 m and 1.0 m to 1.2 m per animal respectively. In coastal region, sometimes buffaloes with spreading horns are found; in that case the width per animal may vary from 1.2 m to 1.3 m.

##### 7.1.1 Floor of Standings

The floor may be either of *MOORUM KANKAR* and

sand, cement concrete, stone slabs or bricks-on-edge. The details of laying these floorings may be as given in Annex A. A plinth of at least 15 cm shall be provided for the floor. The surface of the cement concrete or stone flooring shall be grooved to make it non-slippery for animals. For larger animals, the grooves shall be formed in a square of 15 cm × 15 cm and for calves 10 cm × 10 cm (see A in Fig. 4). The width of the groove shall be 12 mm and depth 10 mm. The groove shall be of 'U' shape. A slope of 1 in 60 towards the drain shall be provided in order to keep the floor properly drained after washing. Steel rings may be provided on the floor near the manger for tying the animals.

##### 7.1.2 Manger

The manger shall be continuous type. The manger shall be made of stone slabs, wooden plank or brick-in-lime or cement mortar. The flooring material of the manger shall be the same as for the floor but the surface shall be finished smooth. All the corners of the manger shall be rounded off and finished smooth. The dimensions of the manger (see Fig. 5) shall be as given in Table 2. In case the mangers are of brick, the fore curb should be topped with angle iron.

#### 7.2 Walls

The wall shall be of brick or stone slab laid in cement mortar. The wall may be cement-plastered from inside. The thickness of the wall shall be at least 20 cm. All walls shall be solid up to 1.25 m height from the floor level and shall be constructed in honey comb pattern above that height in order to provide sufficient air movement in the shed. The rest of the portion of the wall may be left open by a series of wire-netted windows. In desert areas, the solid portion may extend up to 1.8 m in height. In case of lean-to type system, the end walls above the solid portion may be left open or provided with a series of wire-netted windows.

Table 1 Space Norms for Cattle Shed

(Clause 7.1)

All dimensions in metres.

No. of Cattle	Cow Shed		Buffalo Shed		Remarks
	Length	Width	Length	Width	
(1)	(2)	(3)	(4)	(5)	(6)
1	2.5	3.0	2.7	3.4	Along with calf
2	4.2	3.0	5.2	3.4	Along with calves
3	5.7	3.0	7.3	3.4	Along with calves
4	5.6	3.0	6.8	3.4	For cattle
	2.0	1.5	2.4	1.9	For calves

### 7.3 Pillars

One pillar shall be placed at intervals of every two or three standings depending on the width of each standing. Pillars may be made from any of the following materials and their minimum dimensions shall be as indicated against each:

- |                         |   |
|-------------------------|---|
| a) Brick                | 45 cm × 35 cm<br>(see Note 1) or<br>40 cm × 30 cm<br>(see Note 2) |
| b) Mild steel I section | 10 cm × 10 cm   |
| c) Stone masonry        | 30 cm × 30 cm   |
| d) Iron pipes, dia      | 10 cm   |
| e) Timber               |   |
| 1) Square               | 10 cm × 10 cm   |
| 2) Round                | 15 cm dia   |

#### NOTES

- In case of 22.5 cm × 11.25 cm brick, 2 lengths and 3 widths shall be used.
- In case of 20 cm × 10 cm (modular) brick, 2 lengths and 3 widths shall be used.
- All iron structures shall be suitably painted for protection against corrosion.

7.3.1 All edges in rectangular pillars shall be rounded off a finished smooth.

### 7.4 Roof

The roof shall be of lean-to type or gabled type. The roof material may either be asbestos cement sheets, galvanized steel sheets, asphalt roofing material, or locally available material. Where necessary, particularly in hot climate, asbestos cement or galvanized steel roofs may be overlaid with a 8 cm to 10 cm thick thatch to lessen the stress of extreme climate. In areas where locally available materials are used, gunny sacks treated with cement lime mixture (see 7.4.1) may be used. The roof shall be supported by steel or wooden trusses or by a series of central pillars. The pitch of the roof may range from 22 to 30 degrees depending upon the material used. Wooden purlins may be spaced up to 1.3 m apart. The eaves of the roof shall project out (see A in Fig. 2 and 3) at least 50 cm away from the pillars and in the regions where extreme climatic conditions prevail, the eaves of the roof may project out to 75 cm from the pillars in order to afford protection to the animals from direct sun and rain. The eaves should be 2.2 mm high from ground level (see B in Fig. 2 and 3).

#### 7.4.1 Preparation of Cement Lime Mixture

Stir thoroughly 12 parts by volume of cement and three parts by volume of lime (see IS 712) salt (see IS 797) and one-half part by volume of alum (see IS 258) and stir until all ingredients are well mixed. Apply the mixture evenly with the help of a brush on the inner surface of the gunny sack. Give

Table 2 Dimensions of Manger

(Clause 7.1.2)

All dimensions in centimetres.

Sl No.	Particulars	Stone Slab	Wooden Plank	Brick Laid in Cement or Lime	Ref to Fig. 1
(1)	(2)	(3)	(4)	(5)	(6)
i)	Height of the manger wall, <i>Min</i>	75	75	75	A
ii)	Height of fore curb, <i>Max</i>				
a)	For adults	50	50	50	B
b)	For calves	30	30	30	B
iii)	Thickness of fore curb, <i>Min</i>	4	3	10	C
iv)	Inner width of the manger, <i>Min</i>				
a)	For adults:				
1)	One way feeding	60	60	60	D
2)	Two way feeding	120	120	120	D
b)	For calves: one way feeding	40	40	40	D
v)	Depth of manger, <i>Min</i> :				
a)	For adults	40	40	40	E
b)	For calves	15	15	15	E

IS 11799 : 2005

two coats of the mixture on the outer surface of the gunny sack. Stretch the gunny sack and dry in the sun until it becomes stiff.

#### 7.5 Drains

The drain shall be laid in the shed at the back of the standing. In case of gabled type roof, two drains shall be laid outside the shed, one on each side of the standing. The drain shall be made of brick in cement mortar or of stone and shall be of 'U' shape with a depth of 6 cm at the bottom. The slope of the drain shall be 1 in 40 to 1 in 60. The width of the drain (see 'C' in Fig. 2 and 3) may vary between 30 cm and 40 cm. The drain may be led to a common urine pit having a depth not exceeding 40 cm or to the field if slope permits. The urine pit may be circular or rectangular.

#### 7.6 Special Constructional Requirements for a Rural Milk Producer

##### 7.6.1 Water Supply

There shall be an adequate supply of potable water in the shed. For this purpose, a trough of reinforced cement concrete or brick-in-cement should be provided. The size of the trough shall depend upon the daily requirement of water calculated at the rate of 50 litres per livestock per day. The water troughs should be provided with railing on its sides so that the animals may not try to step in the water trough and contaminate it.

##### 7.6.2 Calf-Room

A part of the standing at the far end of the shed shall be partitioned suitably for housing calves. Generally, a floor space of 1.2 m<sup>2</sup> to 1.5 m<sup>2</sup> is recommended per calf. There shall be a manger adjacent to the wall of the room. A wall covering half the height of the room shall be provided in order to separate the calf-room from its adjoining yard.

##### 7.6.3 Calving-Box

A separate unit shall be provided for housing one

down-calver. The calving-box shall be adjacent to the calf-room and at the end of the standings. The box shall be separated from the calf-room as well as from the rest of the shed by a suitable partition. The dimensions of the calving-box shall be 2.8 m × 4 m. There shall be cement concrete manger and water trough in one corner of the box. The width of the manger and the water trough shall be at least 60 cm.

#### 8 OTHER REQUIREMENTS FOR A RURAL MILK PRODUCER

##### 8.1 Paddock or Yard

8.1.1 The design of the paddock or open yard may be made while using the common wall of the residence of the average farmer. There shall be a paddock with the following minimum space per animal for various categories of animals:

a) Buffalo	8 m <sup>2</sup>
b) Cow	7 m <sup>2</sup>
c) Young stock	4 m <sup>2</sup>
d) Calf	2 m <sup>2</sup>
e) Calving	12 m <sup>2</sup>

8.1.2 There shall be feeding and water troughs within the paddock.

##### 8.2 Fencing

8.2.1 The wall of bricks or stone slabs or a railing or wires may constitute fence. The railings may be of 35 mm galvanized iron pipe or 5 mm galvanized iron wire and posts to support railings. The posts may be of 5 cm steel pipe, 6 cm × 4 cm angle iron, 8 cm × 5 cm stone slabs or 10 cm × 10 cm timber placed 2 m apart. The posts shall be holed to pass the railings through or it may be riveted or 'U' bolted to the place.

8.2.1.1 The railings for different categories of the animals shall be fixed with the posts as given below:

Height from Ground to Centre of Each Rail	Calves cm	Cows, Young Stock and Buffaloes cm	Bull cm
First rail	30	40	40
Second rail	60	80	80
Third rail	90	120	120
Fourth rail	120	-	150

IS 11799 : 2005

8.2.2 The wooden horizontal braces or steel horizontal braces shall be placed as given in Fig. 6. Braced steel end or corner posts shall be embedded as given in Fig. 7.

### 8.3 Ancillary Structure

8.3.1 Provision of milk recording room and ration room, each of approximately 9 m<sup>2</sup>, preferably at fore end of the shed, may be made.

## 9 LIGHTING

Provision of lighting shall be made. In case electricity

is available, 125 W bulb for each 10 m<sup>2</sup> floor space or 60 W bulb for each 25 m<sup>2</sup> space or equivalent fluorescent tube light may be provided.

## 10 WASTE HANDLING

It is suggested that bio-gas plant of suitable size should be installed. The animal waste should be removed from standing/dung alley either by scrapping or direct collection in hand push cart or animal cart and taken to feed the bio-gas plant.

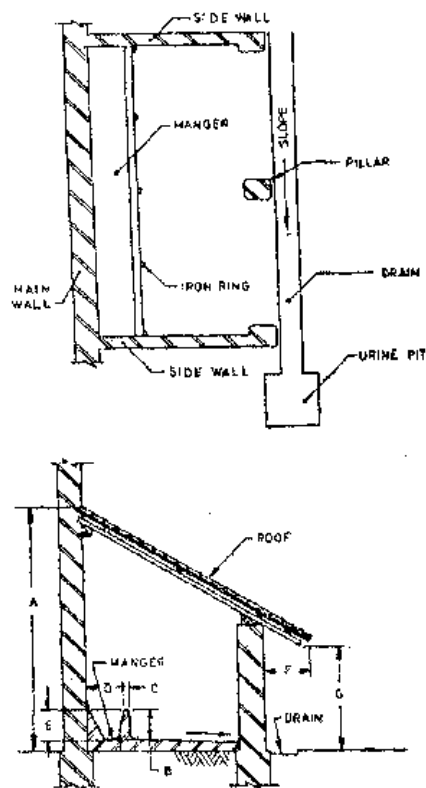


FIG. 1 TYPICAL LAYOUT OF FARM CATTLE SHED

IS 11799 : 2005

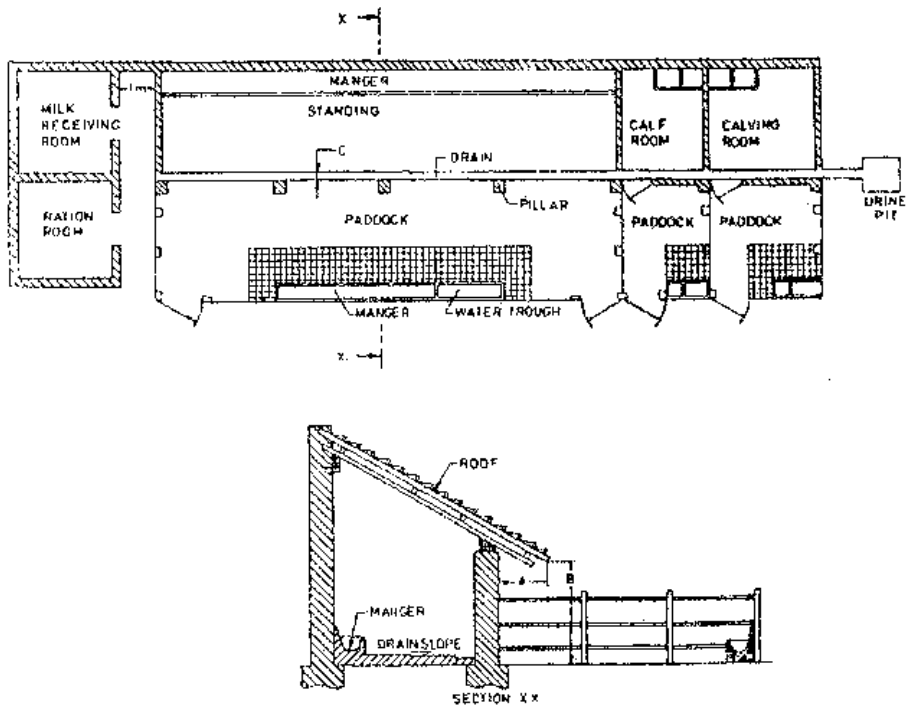


FIG. 2 A TYPICAL LAYOUT OF SHED, LEAN-TO TYPE ROOF

IS 11799 : 2005

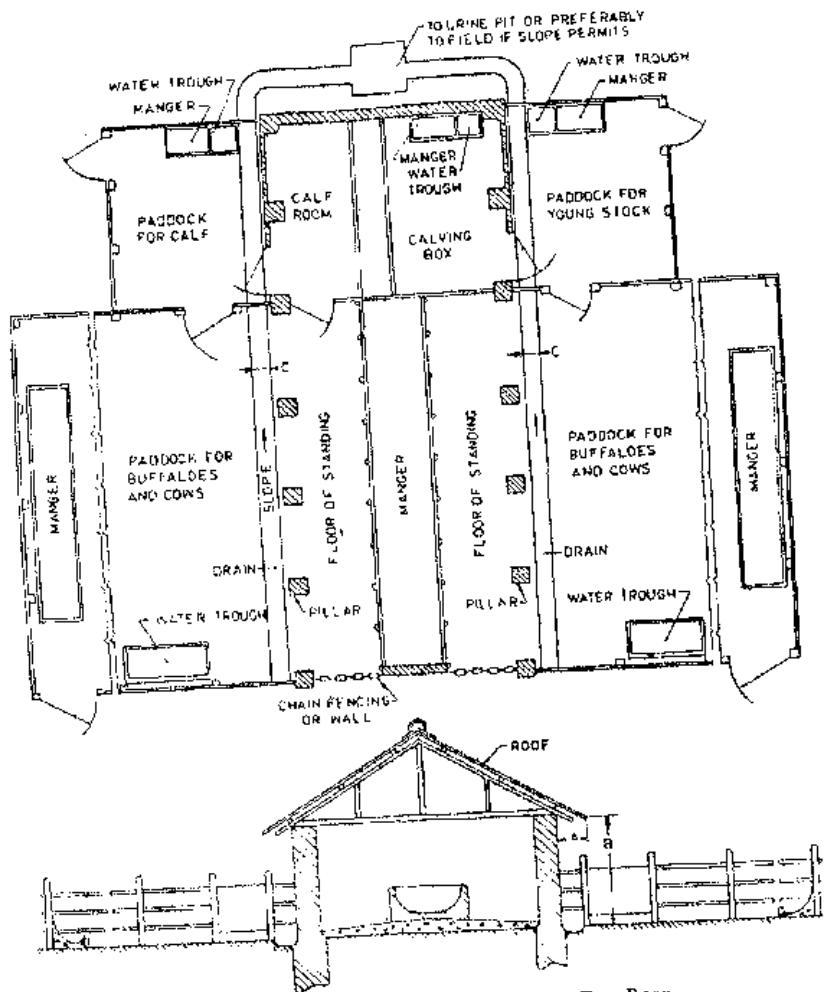
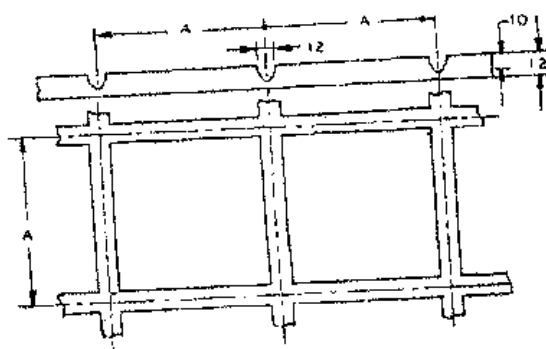
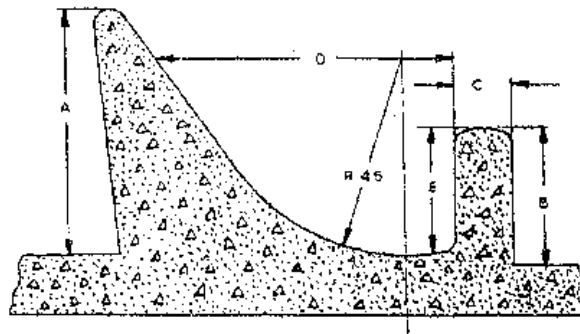


FIG. 3 A TYPICAL LAYOUT OF SHED, GABLED TYPE ROOF



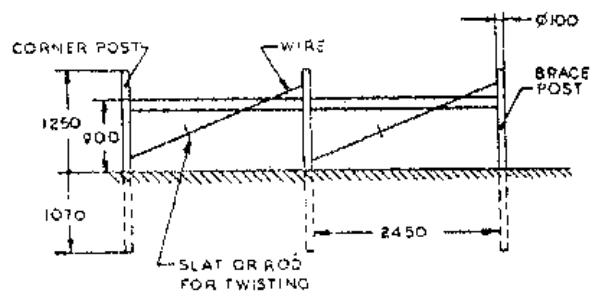
All dimensions in millimetres.  
FIG. 4 CROSS-SECTION OF STANDING

IS 11799 ; 2005



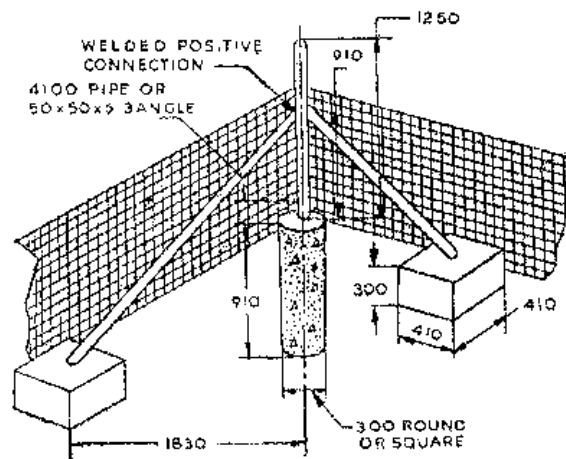
All dimensions in millimetres.

FIG. 5 CROSS-SECTION OF MANGER



All dimensions in millimetres.

FIG. 6 WOOD OR STEEL HORIZONTAL BRACES



All dimensions in millimetres.

FIG. 7 BRACED STEEL END OR CORNER POST

## ANNEX A

(Clause 7.1.1)

## DETAILS OF LAYING DIFFERENT TYPES OF FLOORING OF STANDINGS

**A-1 MOORUM, KANKAR AND SAND FLOORING**

The *moorum*, *kankar* and sand flooring shall be laid over a subgrade or rubble packing or broken bricks of 15 to 25 cm thick wetted and well rammed. A 1.5 cm layer of hard *moorum*, *kankar* and sand (as the case may be) shall be laid over this subgrade with coarser pieces at the bottom and fine ones over at the top. A layer of powder *moorum*, *kankar* and sand about 3 to 5 cm shall be spread over the top of this layer. Water shall then be sprinkled and the surface shall be well rammed. Water shall again be sprinkled until the floor is fully saturated. The surface shall be rammed, leveled and well consolidated. When the floor is dry, a thick paste of cow dung plaster shall be uniformly spread and it shall be well rammed. A final thin coating of mixture of cow dung (four parts) and cement (one part) shall be applied after the floor has dried up and wiped clean to prevent cracking and puccelling. The cow dung plaster shall be applied weekly or fortnightly to keep the floor in good condition.

**A-2 BRICK ON EDGE FLOORING**

**A-2.1** The subgrade for this type of flooring shall be rubble or brick aggregates which shall be hand packed, watered and well rammed. A layer of 10 cm of lime concrete shall be spread over the subbase, well rammed and shall be allowed to set for 7 days. The bricks shall be well burnt and of good quality (see IS 2583) and shall be well soaked in water before laying. Bricks shall be laid on about 10 mm thick cement or lime mortar bed and each brick shall be properly bedded on edge and set home by gentle tapping with the handle of trowel or a wooden mallet. Its inside faces shall be buttered with mortar before the next brick is laid and pressed against it. On completion of a portion of flooring the vertical joints shall be fully filled from the top with the mortar.

**A-2.2** The surface of the flooring during the laying shall be frequently checked with a straight edge at

least 2 m long so as to obtain a true surface with the required slope. The surface of the flooring shall be kept constantly moist for a minimum period of 7 days. In the case of fat lime mortar, curing shall commence two days after the laying of the flooring and shall continue for 7 days. The bricks may be laid in rows having the joints parallel and at right angles to the walls or in 'herringbone' pattern.

**A-3 STONE SLAB FLOORING**

**A-3.1** The stone slabs shall be of good quality, hard, sound and dense (see IS 3622). Apart from sandstone any other good quality stone slabs may be used according to the availability of the material. The subgrade shall be prepared as given in A-2.1 and the lime concrete bed shall be cleaned, wetted and mopped. The bedding for the slabs shall be made with cement mortar 1:4 (1 cement : 4 coarse sand) or with lime mortar (either 1 lime putty : 1 surkhi : 1 coarse sand or 1 lime putty : 2 coarse sand). The average thickness of the bedding mortar under the slab shall be 20 mm. The mortar shall be spread under the area of each slab to the specified thickness. The stone slab shall be washed clean before laying. It shall be laid on top, pressed, tapped with wooden mallet and brought to level with the adjoining slabs. It shall be lifted and laid aside. The top surface of the mortar shall then be corrected by adding fresh mortar at hollows. The edges of the slab already paved shall be buttered with cement slurry. The slab to be paved shall be lowered gently back in position and tapped with wooden mallet till it is properly bedded in level with and close to the adjoining slab with as fine joints as possible. Subsequent slabs shall be laid in the same manner. After each slab has been laid, surplus cement on the surface of the slab shall be cleaned off. The flooring shall be cured for a minimum period of 7 days. The surface of the flooring as laid shall be true to a level and shall be of the desired slope. Slight unevenness at the meeting edges of slabs shall be removed by fine chiseling.

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**Amendments Issued Since Publication**

Amend No.	Date of Issue	Text Affected

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IS : 11942 - 1986

[ Superseding IS : 4466 ( Part 3 )-1968,  
IS : 5605 ( Part 3 )-1970 and  
IS : 8845 ( Part 3 )-1978 ]

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**AMENDMENT NO. 1 DECEMBER 2005  
TO  
IS 11942 : 1986 RECOMMENDATIONS FOR GAUSHALA  
AND OTHER ORGANIZED MILK PRODUCERS**

( Page 16, clause 10.8 ) -- Substitute the following for the existing text:

'Provision must be made for a suitable foot bath at the entrance gate. Also at the main entrance of the gate, a concrete floor should be constructed. This is to ensure that any vehicle entering the farm will be allowed to pass through the shallow floor which contains medicated solution.'

( FAD 5 )

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Reprography Unit, B18, New Delhi, India

IS : 11942 - 1986

*Indian Standard*  
**RECOMMENDATIONS FOR  
 GAUSHALA AND OTHER ORGANIZED  
 MILK PRODUCERS**

**0. FOREWORD**

**0.1** This Indian Standard was adopted by the Indian Standards Institution on 31 December 1986, after the draft finalized by the Animal Structures and Equipment Sectional Committee had been approved by the Agricultural and Food Products Division Council.

**0.2** Proper housing is an important feature in raising the production capabilities of animals, in addition to good breeding, feeding, selection and disease control. It is conducive to good health, comfort and protection from inclement weather and the animals are capable of utilizing their genetic abilities and feed for optimum production.

**0.3** Cattle raising and dairying is practised in the country by various interests. Generally these interests are: (a) an Average Farmer who has not more than a pair of bullocks and two or three milch animals with their calves; (b) rural Milk Producers normally having a total of about 20 animals including about 12 milch animals, their followers and a pair of bullocks; (c) *gaushalas* and other organized milk producers; and (d) Large Dairy Farms.

**0.4** This standard covers recommendations for shed for *GAUSHALA* and other organized milk producers. It supersedes IS : 4466 ( Part 3 )-1968\*, IS : 5605 ( Part 3 )-1970†, and IS : 8845 ( Part 3 )-1978‡. Since India's climatic conditions, unlike most of the principal dairy countries of the world, are very varied, hence shed of cattle would also vary according to the climatic conditions prevailing in a particular region. In order to meet these varied requirements, wherever necessary specific recommendation has been made for (a) plain areas with medium rainfall, (b) arid area, (c) high altitude areas, and (d) heavy rainfall and high humidity areas.

\*Recommendations for farm cattle housing for plain areas with medium rainfall: Part 3 Farm cattle sheds for *GAUSHALAS* and other organized milk producers.

†Recommendations for farm cattle housing for heavy rainfall and high humidity areas: Part 3 Farm cattle sheds for *GAUSHALAS* and other organized milk producers.

‡Recommendations for farm cattle housing for arid areas: Part 3 Farm cattle sheds for *GAUSHALAS* and other organized milk producers.

IS : 11942 - 1986

## 1. SCOPE

1.1 This standard recommends layout and constructional details of a cattle shed meant for *GAUSHALA* and other organized milk producer.

## 2. TERMINOLOGY

2.1 For the purpose of this standard, the following definitions shall apply.

2.1 **Paddock or Yard** — An open area surrounded by walls, fences or rails for accommodating cattle. This area is meant to provide open air exercise to the animals. It generally contains manger(s) or trough(s) with or without ties to control animals for different purposes.

2.2 **Standing ( Stall )** — The floor space provided within a shed for an individual animal to stand or lie.

## 3. SELECTION OF SITE

3.1 The shed shall be located on dry, elevated and well-drained area with consideration for future expansion.

3.2 The shed shall preferably be located at a place where there are enough suitably placed trees to serve as wind-breaks and to provide shade. In order to break the wind it is recommended that a row of trees be also planted across the direction of wind at the boundary of the farm.

Note — In case there are no shaded trees on the site, these should be planted immediately keeping a minimum distance of 4 m from the shed.

3.3 The site shall be away from public road but easily accessible throughout the year.

3.4 The site shall be such that arrangement could be made for adequate and good water supply.

3.5 The site shall be such that the long axis of the shed could be oriented east to west in all areas except temperate Himalayan and hilly regions. In desert areas, the shed shall be oriented across the prevailing direction of the wind in order to protect the roof from being blown off by high wind.

3.5.1 In coastal areas the shed shall be oriented along the prevailing wind direction in order to protect the roof from being blown off by high wind and at the same time to provide sufficient air movement in the shed. In sub-mountainous region, the buildings should be so sited as to avail of the natural aeration and drying.

IS : 11942 - 1986

#### 4. HERD SIZE

4.1 It is assumed that producers in this interest shall normally maintain a herd of about 130 animals consisting of 40 milch animals, 40 dry animals, two bulls, and the rest comprising followers, as also about three pairs of bullocks.

#### 5. BUILDING UNITS

5.1 The units should comprise sheds ( *see 5.1.1* ) for housing different categories of animals and the necessary ancillary structures ( *see 5.1.2* ) required for this interest.

5.1.1 *Sheds* — Various types of sheds ( *see 7* ) that are required under this interest are as follows:

- a) Milch animals shed,
- b) Dry animal shed,
- c) Down-calver shed,
- d) Sick-animal shed,
- e) Young stock shed,
- f) Calf shed, and
- g) Bull shed.

5.1.1.1 There shall be a paddock attached to each of the sheds.

5.1.2 The ancillary structures ( *see 10* ) required under this interest shall be as follows:

- a) Milk collection, recording and testing room;
- b) Utensils room;
- c) Ration room;
- d) Store;
- e) Office room;
- f) Fodder processing and storage room;
- g) Trevis; and
- h) Foot bath.

#### 6. LAYOUT

6.1 A typical layout comprising the various units is given in Fig. 1.

*Note* — The layout with these units could be modified depending upon local conditions like shape, size and topography of available land, size of enterprises, finances, etc.

IS : 11942 - 1986

**7. DESCRIPTION OF SHEDS**

**7.1 Milch Animal Shed** — The standings of the milch animal shed shall be of a tail-to-tail system with a central passage. The length and width of the standing shall be decided according to the size of the animal and may vary from 1.5 to 1.7 m in length and 1.0 to 1.2 m in width. In coastal region, sometimes buffaloes with spreading horns are found in that case width per animal may vary from 1.2 to 1.3 m.

**7.1.1** The width of the central passage may be 1.8 m. The central passage shall be sloped from the centre outwards towards drains. There shall be a drain on either side of the central passage.

**7.1.2** There shall be two continuous manger ( *see 8.2* ), one on each side in front of the standings with a cross passage of one metre width at the end of every 8 standings for easy movement.

**7.1.3** There shall be pillars ( *see 8.4* ) along with length of the sheds to support the beam of the roof. The roof of the shed shall be gabled ( *see 8.6* ).

**7.1.4** The shed may, if necessary, be extended to accommodate calving ( *see 7.3* ) as also calves ( *see 7.6* ).

**7.2 Dry Animal Shed** — The standings of the shed shall be constructed on the head-to-head system with a central manger and if in a single line, facing the wall ( *see Fig. 1* ). The length and width of each standing shall be in the same range as specified for the milch animals ( *see 7.1* ). There shall be a drain behind each line of animals. There shall be pillars along the length of the sheds to support the beam of the roof and walls at each end. The roof of the shed shall be gabled. The dry animal shed may be extended to accommodate the young stock as well ( *see 7.5* ).

**7.2.1** The bullocks may be accommodated with dry animals or a separate provision for bullock shed may be made. If a separate provision for bullock shed is made, a cart shed may also be attached to it.

**7.3 Calving Animal Shed** — The shed shall have two calving boxes for housing animals very close to calving and standings adjacent to the boxes for accommodating heavy-in-calf. Provision for this should generally be made at the rate of 5 percent of the adult females. A calving attendant room may also be provided in the shed.

**7.3.1 Calving Boxes** — The calving boxes shall be adjacent to each other and shall be at the end of the shed separated by a wall from the standings. The wall partition between the two calving boxes may be 1.25 m high. The dimension of each calving box shall be 3 × 4 m. A manger and a water trough, each 0.5 m wide inside, shall be constructed

IS : 11942 - 1986

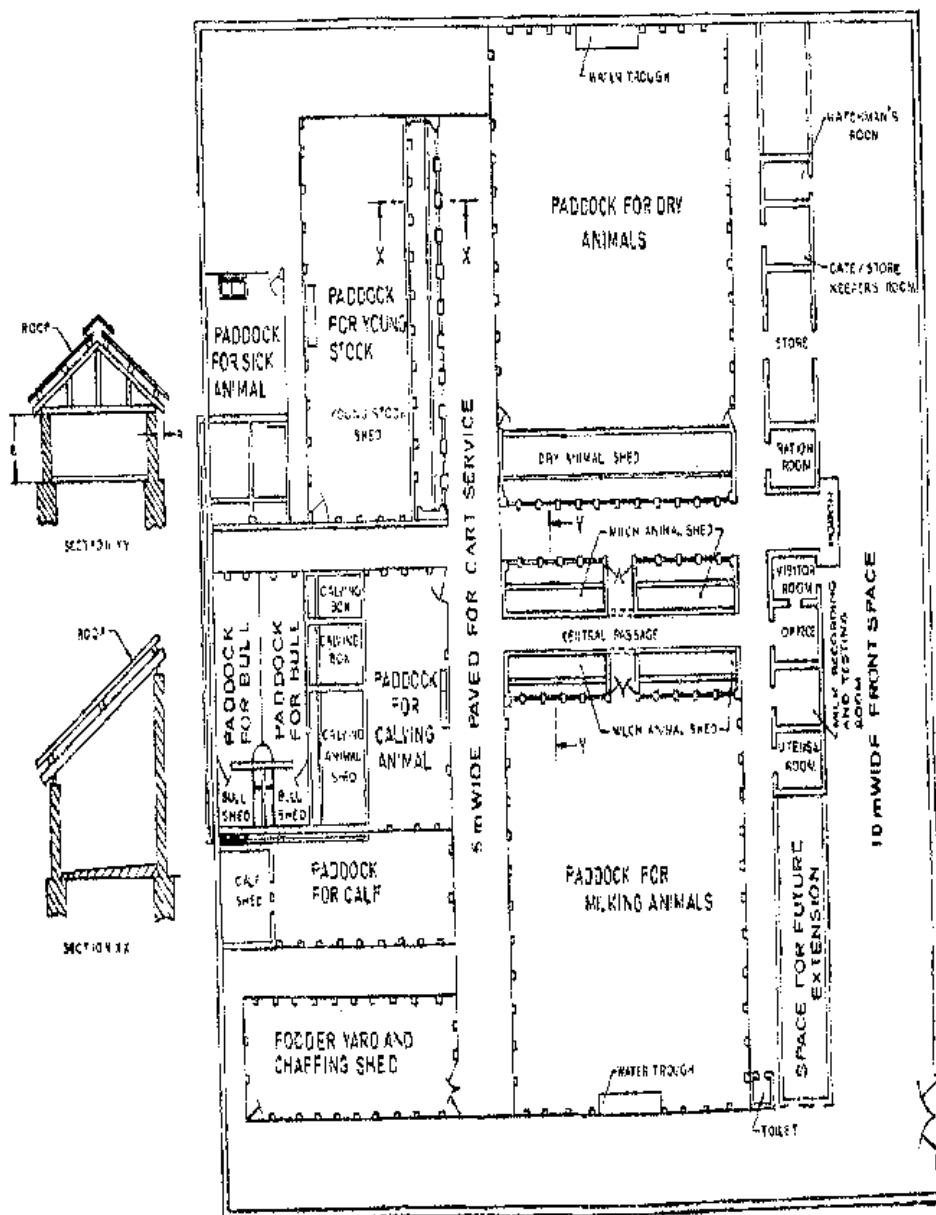


FIG. 1. TYPICAL LAYOUT OF FARM CATTLE SHED FOR GAUSHALAS AND OTHER ORGANISED MILK PRODUCERS (Continued)

IS : 11942 - 1986

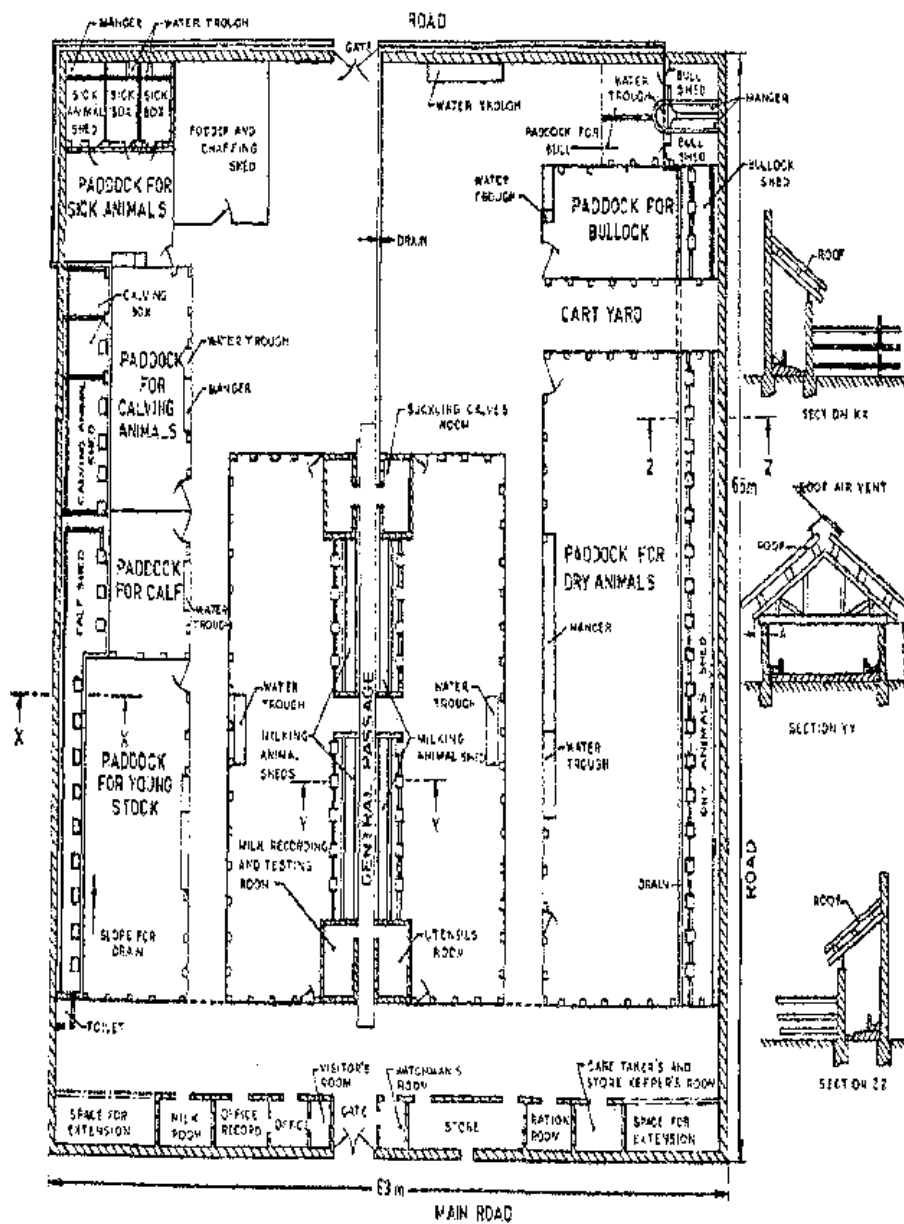


FIG. 1 TYPICAL LAYOUT OF FARM CATTLE SHED FOR GAUSHALAS AND OTHER ORGANISED MILK PRODUCERS

at the two separate corners of each of the calving boxes or a trough throughout the width of the box. A single-leaf door 2 m high and 1.2 m wide shall be provided for each of the calving boxes. The flooring of the calving boxes and standings shall be sloped towards the wall and into a drain running outside the shed.

**7.3.2 Standings** — The standings of the down-calver shed shall be constructed in such a way that animals are kept tethered facing the wall. There shall be a continuous manger along the wall. The length and width of each standing shall be 2.0 m and 1.6 m respectively.

**7.4 Sick Animal Shed** — The sick animal shed shall be located well away from the other sheds inaccessible to other animals. The dimensions and arrangements for sick animal shed shall be the same as in 7.3.1 and 7.3.2.

**7.5 Young Stock Shed** — The young stock shed may be an extension of the dry animals shed or a separate unit. In case the young stock shed is a separate unit to economize cost and space, the shed shall be constructed in such a way that young animals are tethered in two rows facing each other with a central manger. The length and width of each standing shall be 1.4 and 1.0 m respectively. The two drains of the shed shall be laid on either side of the standings. The roof of the shed shall be gabled and shall be supported on the length of the shed by a series of pillars and walls at each end. The young stock standings may alternatively be in a single line against a wall and the drains located suitably.

**7.6 Calf Shed** — The calf shed may be annexed either at the end or on the side to the milch animal shed and the calves may be separated from the milch animals by a suitable partition. If there is a large number of calves, the calf shed may form a separate unit. The dimensions of the calf shed shall depend upon the number of calves. The floor space provided per calf shall be not less than 1 m<sup>2</sup>. The calves may be kept loose. The manger shall be constructed along the walls of the three sides of the shed. There shall be a central shallow saucer-shaped drain. The roof may be either lean-to-type or gabled. A water trough shall be provided at one corner of the shed.

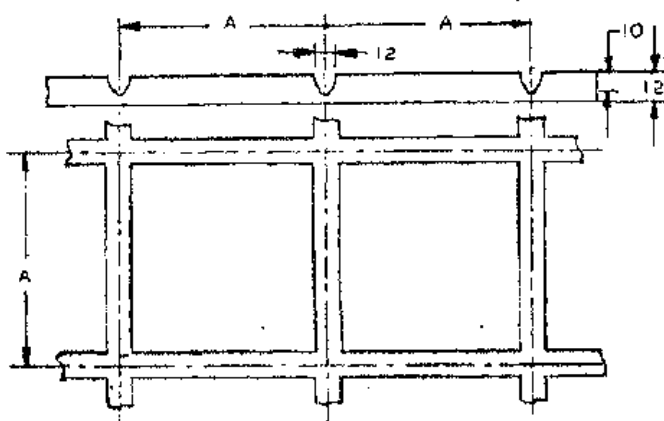
**7.7 Bull Shed** — The bull shed shall have two boxes each measuring 4 × 3 m. The walls may be 1.5 m high. A 0.5 m wide raised manger with feed and water sections shall be provided in each box. The two boxes shall lead to separate paddocks.

## 8. CONSTRUCTIONAL DETAILS OF SHEDS

**8.1 Floor** — The floor may be either of *MOORUM*, *KANKAR*, cement concrete, brick-on-edge or stone slabs. The details of laying of flooring

IS : 11942 - 1986

are given in Appendix A of IS : 11786-1986\*. In case of cement concrete flooring, the surface shall be properly grooved in order to avoid slipping of the animals. For larger animals, the grooves shall be formed in square of  $15 \times 15$  cm and for calves  $10 \times 10$  cm ( see A in Fig. 2 ). The width of the groove shall be 12 mm and depth 10 mm. The groove shall be of U shape. A plinth of at least 15 cm shall be provided for the floor. A slope of 1 in 60 towards the drains shall be provided in order to keep floor properly drained after washing.



All dimensions in millimetres.

FIG. 2 CROSS-SECTION OF STANDING

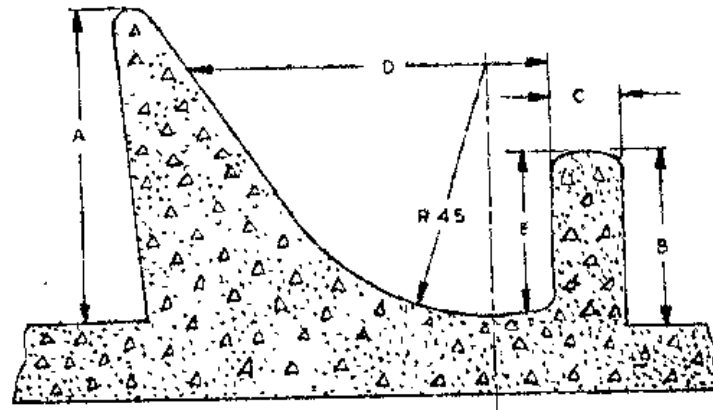
**8.2 Manger** — The manger shall be of continuous type. The manger shall be made of reinforced cement concrete, stone slabs, or brick-in-lime or cement mortar. The flooring material of the manger shall be the same as for the floor but the surface shall be finished smooth. All the corners of the manger shall be rounded off and finished smooth. The dimensions of the manger ( see Fig. 3 ) shall be as given in Table 1. In case the mangers are of brick, the fore curb should be topped with angle iron.

**8.2.1 Water Supply** — There shall be an adequate supply of potable water in the shed. One of the ways of supplying water in the shed may be that water trough of 20 cm diameter may be constructed on the manger wall. Water shall be allowed to flow through these troughs so that fresh water may be made available to the animals, calculated at the rate of 50 litres per livestock unit per day. These troughs may be placed between the two standings. The water troughs should be provided with railing on its sides so that the animals may not try to step in the water

\*Recommendations of cattle housing for an average farmer.

IS : 11974 - 1990

trough and contaminate it. When a piped water supply is available, a shallow water trough having its slope towards one end, and having a balancing float tank at the other end, ensures fresh water supply.



All dimensions in millimetres.

FIG. 3 CROSS-SECTION OF MANGER

TABLE 1 DIMENSIONS OF MANGER

( Clause 8.2 )

( All dimensions in cm )

Sl. No.	PARTICULARS	REINFORCED CEMENT CONCRETE	BRICK LAID IN CEMENT	STONE SLAB	REF TO FIG. 3
(1)	(2)	(3)	(4)	(5)	(6)
i)	Height of manger wall, <i>Min</i>	75	75	75	A
ii)	Height of fore curb <i>Max</i>				
a)	For adults	50	50	50	B
b)	For calves	30	30	30	
iii)	Thickness of fore curb, <i>Min</i>	10	10	4	C
iv)	Inner width of manger, <i>Min</i>				
a)	For adults	60	60	60	D
b)	For calves	40	40	40	
v)	Depth of manger, <i>Min</i>				
a)	For adults	40	40	40	E
b)	For calves	15	15	15	

IS : 11942 - 1986

**8.3 Drains** — The drains shall be made of brick in cement mortar or of stone and shall be of shallow U type with a depth of 6 cm at the bottom. The slope of the drain shall be 1 in 100 to 1 in 120. The width of the drains may vary between 30 and 40 cm. Where a long running shed is constructed, connecting drains at right angles should be provided after every 15 standings. The main drain may be led to a common urine pit having a depth not exceeding 40 cm or to the field if slope permits. The urine pit may be circular or rectangular.

**8.4 Pillars** — One pillar shall be placed at intervals of every two or three standings depending upon the width of each standing. Pillars may be made from any of the following materials and their minimum dimensions shall be as indicated against each:

- |  |  |
|--|--|
| a) Brick   | 45 × 35 cm ( see Note 1 ), or<br>40 × 30 cm ( see Note 2 ) |
| b) Mild steel I Section                                    | 10 × 10 cm   |
| c) Stone   | 10 × 10 cm or 8 × 15 cm                                    |
| d) Iron pipes dia  | 10 cm  |
| e) Timber ( include palmira palm,<br>coconut and bamboo ): |  |
| 1) Rectangular pillars                                     | 10 × 10 cm   |
| 2) Round pole, dia   | 15 cm  |

NOTE 1 — In case of 22.5 × 11.25 cm bricks, 2 lengths and 3 widths shall be used.

NOTE 2 — In case of 20 × 10 cm ( modular ) bricks, 2 lengths and 3 widths shall be used.

NOTE 3 — All iron structures shall be suitably painted for protection against corrosion.

**8.4.1** All edges in rectangular pillars shall be rounded off and finished smooth.

**8.5 Walls** — The wall shall be of brick or stone slab laid in cement mortar. The wall may be cement-plastered from inside. The thickness of the wall shall be at least 20 cm, however in case of bull shed it shall be at least 30 cm. All walls shall be solid up to 1.25 m height from the floor level and shall be constructed in honey comb pattern above that height in order to provide sufficient air movement in the shed. The rest of the portion of the wall may be left open by a series of wire-netted windows. In desert areas, the solid portion may extend up to 1.8 m in height. In case of lean-to-type system, the end walls above the solid portion may be left open or provided with a series of wire-netted windows.

IS : 11942 - 1986

**8.6 Roof**— The roof may be gabled, flat or lean-to-type. The roof may be constructed either of corrugated asbestos sheets or galvanized steel sheets or tiles (Country tiles are not recommended). The roof shall be supported by steel or wooden trusses or by a series of central pillars. The pitch of the roof may range between 22 to 30 degrees depending upon the materials used. Wooden purlins may be spaced up to 1.3 m apart. Generally, the eaves of the roof (see A in Fig. 1) shall project out at least 50 cm away from the pillars/walls and in regions where extreme climatic conditions prevail, the eaves of the roof may project up to 75 cm from the pillars/walls in order to afford protection to the animals from direct sun and rain. The eaves should be 2.2 m high from the ground level (see B in Fig. 1).

## 9. PADDOCKS OR YARD

**9.1** A paddock shall be attached to every shed for animals to move about freely. There may be trees in the paddock to provide enough shade. A part of the paddock may be paved with bricks laid on edge. The paddock shall have the following minimum space per animal for various categories of animals:

a) Buffaloes	8 m <sup>2</sup>
b) Cow	7 m <sup>2</sup>
c) Young stock	4 m <sup>2</sup>
d) Calf	2 m <sup>2</sup>
e) Calving	12 m <sup>2</sup>
f) Bull	25 m <sup>2</sup>

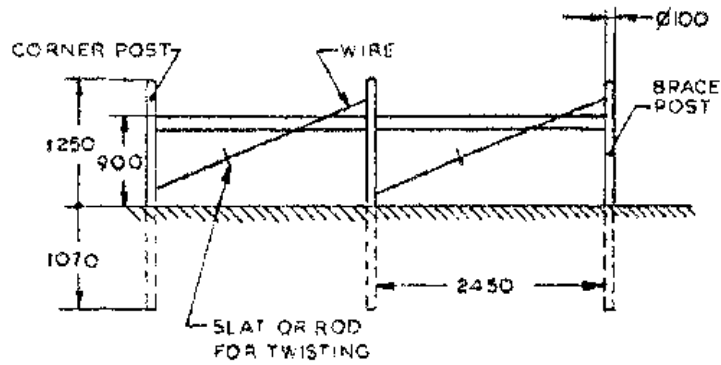
## 9.2 Fences

**9.2.1** The wall of bricks or stone slabs or a railing or wires may constitute fence. The railings may be of 35 mm galvanized iron pipe or 5 mm galvanized iron wire and posts to support railings. The posts may be of 5 cm steel pipe, 6 × 4 cm angle iron, 8 × 5 cm stone slabs or 10 × 10 cm timber placed 2 m apart. The posts shall be holed to pass the railings through or it may be riveted or 'U' bolted to the place. The railings for different categories of the animals shall be fixed with the posts as given below:

<i>Height from Ground to Centre of Each Rail</i>	<i>Calves</i>	<i>Cows, Young Stock and Buffaloes,</i>	<i>Bull</i>
	cm	cm	cm
First rail	30	40	40
Second rail	60	80	80
Third rail	90	120	120
Fourth rail	120	—	150

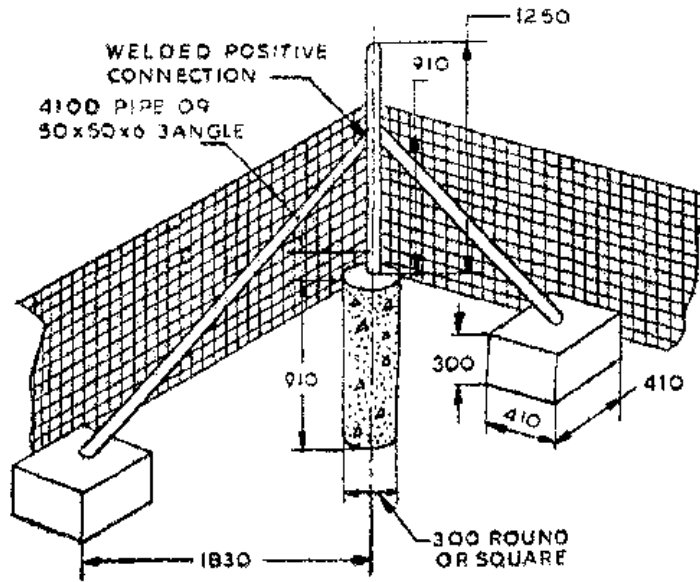
IS : 11942 - 1986

9.2.2 The wooden horizontal braces or steel horizontal braces shall be placed as given in Fig. 4. Braced steel end or corner posts shall be embedded as given in Fig. 5.



All dimensions in millimetres.

FIG. 4 WOOD OR STEEL HORIZONTAL BRACES



All dimensions in millimetres.

FIG. 5 BRACED STEEL END OR CORNER POST

IS : 11942 - 1986

**9.3 Gate** — A gate of suitable type and size may be provided taking care that they are hinged firmly and raised well above the ground. Braces shall be positioned vertically.

**9.4 Manger and Water Trough** — Manger and water trough may be constructed with reinforced cement concrete, brick with cement mortar or stone slabs with cement joining. A 2-m wide paved platform shall be provided away from trough to withstand the heavy treading of animals and permit easy washing and cleanliness.

## 10. ANCILLARY STRUCTURES

**10.1 Milk Collection, Recording and Testing Room** — There shall be a room of 4 × 3 m in or near the milch animal shed for collecting, recording and testing of milk. The door and the windows shall be made fly-proof. The flooring of the room shall be of cement concrete impervious and reinforced with iron strips at suitable distances to make it hard wearing. A suitable platform or a slab shall be provided for testing apparatus. A separate milk room may also be provided for handling milk.

**10.2 Utensils Room** — There shall be a room of 4 × 3 m for washing and storing milk cans. The flooring of the room shall be of hard-wearing type to withstand the frequent handling of heavy milk cans. The door and windows shall be made fly-proof. The room may be located as near as possible to the milk recording and testing room.

**10.3 Ration Room** — There shall be a room of at least 4 × 3 m near to the milch animal shed to store feed concentrates temporarily to meet the requirements of the animals for the day. The ration room shall be damp- and rodent proof.

**10.4 Store** — The store shall be adequate to accommodate feed concentrate required for a period of about 2 months. The space required for storage shall be 0.2 m<sup>2</sup> per livestock unit. The store shall be made damp- and rodent-proof. A store keeper's room may also be attached to the store.

**10.5 Office Room** — Provision of an office accommodation is generally desirable in *GAUSHALAS* and similar organizations. The office room may also be used for keeping medicines and instruments required for treating sick animals. The dimensions of the office room shall depend upon the space available and the size of the enterprise. A toilet may also be provided. A visitor's room may also be attached to the office room.

**10.6 Trevis or Cattle Crutch** — A cattle trevis may be provided to secure the animals for rendering first-aid and artificial insemination.

**IS : 11942 - 1986**

**10.7** Adequate provision shall be made for storage of roughages.

**10.8** A provision shall be made for a suitable foot bath at the entrance gate.

**10.9** Provision may be made for a segregation room for keeping new animals introduced in the herd for some initial days before their mixing up with the herd.

**10.10 Lighting** — Provision of lighting shall be made in case electricity is available, a 25 W bulb for each 10 m<sup>2</sup> space or 60 W bulb for each 20 m<sup>2</sup> space or equivalent fluorescent tube light may be provided.

**10.11 Waste Handling System** — Bio-gas plant of suitable size should be installed. The animal waste (dung, urine and other biomass) should be fed to the plant.

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Printed at Printograph, New Delhi, India

**Inventory Performa for Dairy Farms and Gaushalas in the State/UT**

Sl. No.	Description	Urban Area	Peri-urban Area	Rural Area
1.	Total no. of dairy farms <ul style="list-style-type: none"> <li>• Small (upto 25 animals)</li> <li>• Medium (upto 100 animals)</li> <li>• Large (above 100 animals)</li> <li>• Total</li> </ul>	• • • •	• • • •	• • • •
2.	Total no. of animals in <ul style="list-style-type: none"> <li>• Small dairy farms</li> <li>• Medium dairy farms</li> <li>• Large dairy farms</li> <li>• Total</li> </ul>	• • • •	• • • •	• • • •
3.	Total amount of bovine dung produced (ton per day) by <ul style="list-style-type: none"> <li>• Small dairy farms</li> <li>• Medium dairy farms</li> <li>• Large dairy farms</li> <li>• Total</li> </ul>	• • • •	• • • •	• • • •
4.	Methods of disposal/utilization of bovine dung and wastewater by dairy farms (to be enclosed)			
5.	Total no. of dairy colonies/clusters  (list of such dairy colonies/clusters along with the details of no. of dairies, no. of bovine, method of disposal/utilization of bovine dung & wastewater, etc. to be enclosed)	•	•	•

6.	Total no. of Gaushalas • Small (upto 100 animals) • Medium (upto 1000 animals) • Large (above 1000 animals) • Total	•	•	•
7.	Total no. of animals in • Small Gaushalas • Medium Gaushalas • Large Gaushalas • Total	•	•	•
8.	Total amount of dung produced (ton per day) by • Small Gaushalas • Medium Gaushalas • Large Gaushalas • Total	•	•	•
9.	Methods of disposal/utilization of dung and wastewater by Gaushalas (to be enclosed)			

**Note:**

Urban area: As per the Census of India 2011, the urban area is defined as follows:

- i. All places with a municipality, corporation, cantonment board or notified town area committee, etc.
- ii. All other places which satisfied the following criteria:
  - a. A minimum population of 5,000;
  - b. At least 75 per cent of the male main working population engaged in non-agricultural pursuits, and
  - c. A density of population of at least 400 persons per sq. km.

Peri-urban area: It is an area or habitation located on the perimeter of the urban area having partial or complete influence of urbanization.

Dairy colonies/cluster: It is defined as the area designated by the government for the purpose of dairy activities.

\*\*\*\*\*



केंद्रीय प्रदूषण नियंत्रण बोर्ड  
CENTRAL POLLUTION CONTROL BOARD  
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार  
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE, GOVT. OF INDIA

F.No. Tech/12/Gen(TN)/RDC/2024-25/ 417

Date: 02.08.2024

To

The Member Secretary  
Tamil Nadu Pollution Control Board  
No.76, Mount Road, Guindy  
Chennai-600032

**Sub: Request to provide ATR in case of OA No. 213 of 2024 (SZ) against an illegal dairy farm inside Dr. MGR Janaki college, on the banks of Adyar river**

Sir,

The Hon'ble National Green Tribunal, Southern Zone, Chennai has registered an Original Application No. 213/2024 based on the application received from Dr. MGR-Janaki College of Arts and Science for Women Alumni Association, Rep by its Secretary Ms. Sarjana against an illegal dairy farms inside Dr. MGR Janaki college, on the banks of Adyar river.

In this connection, it is kindly requested to provide action taken report (ATR) to this office, at the earliest.

Yours faithfully

(H. D. Varalaxmi)  
Regional Director

क्षेत्रीय निदेशालय ( चेन्नई ) : द्वितीय तल , 40-ई, बीएसएनएल बिल्डिंग, थिरु-वी-का औद्योगिक एस्टेट, सिपेट रोड, गिंडी, चेन्नई - 600032  
दूरभाष: 044-29998683/044-29567019 ईमेल: rdchennai.cpcb@gov.in

Regional Directorate (Chennai): Second Floor, 40-E, BSNL Building, TVK Industrial Estate, CIPET Road, Guindy, Chennai - 600032  
Phone: 044-29998683/044-29567019 Email: rdchennai.cpcb@gov.in

प्रधान कार्यालय : परिवेश भवन, पूर्वी अर्जुन नगर, दिल्ली -110 032

Head Office: Parivesh Bhawan, East Arjun Nagar, Delhi - 110032

दूरभाष /Telephone: 011-43102030, Fax : 22305793, 22307078, 22307079, 22301932, 22304948

ई-मेल / E-mail: cpcb@nic.in वैबसाइट / Website : www.cpcb.nic.in

फ़ा. नतक :./12/जनरल(त.ना)/क्षे.नि.चे./2024-25/417

दिनांक: 02.08.2024

सेवा में

सदस्य सचिव  
तमिलनाडु राज्य प्रदूषण नियंत्रण बोर्ड  
नंबर 76, माउंट रोड, गिंडी  
चेन्नई-600032

**विषय: अड्यार नदी के तट पर डॉ. एमजीआर जानकी कॉलेज के अंदर एक अवैध डेयरी फार्म के खिलाफ एटीआर उपलब्ध कराने का अनुरोध**

महोदय,

माननीय राष्ट्रीय हरित अधिकरण, दक्षिणी क्षेत्र, चेन्नई ने डॉ. एमजीआर-जानकी कॉलेज ऑफ आर्ट्स एंड साइंस फॉर विमेन एलुमनाई एसोसिएशन, सचिव सुश्री सर्जना एस, नंबर 11 और 13, दुर्गाबाई देशमुख रोड, राजा अन्नामलाईपुरम, चेन्नई - 600028 द्वारा प्रतिनिधित्व, से प्राप्त आवेदन के आधार पर डॉ. एमजीआर जानकी कॉलेज के अंदर अड्यार नदी के तट पर एक अवैध डेयरी फार्म के खिलाफ मूल आवेदन संख्या 213/2024 पंजीकृत किया है।

इस संबंध में, कृपया अनुरोध है कि टीएनपीसीबी द्वारा की गई कार्रवाई की रिपोर्ट शीघ्रातिशीघ्र इस कार्यालय को उपलब्ध कराई जाए।

निष्ठापूर्वक

एच डी वरलक्ष्मी

(एच. डि. वरलक्ष्मी)  
क्षेत्रीय निदेशक



केंद्रीय प्रदूषण नियंत्रण बोर्ड  
CENTRAL POLLUTION CONTROL BOARD  
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार  
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE, GOVT. OF INDIA

F.No. Tech/12/Gen(TN)/RDC/2024-25/ 416

Date: 02.08.2024

To

The Member Secretary  
Tamil Nadu Pollution Control Board  
No.76, Mount Road, Guindy  
Chennai-600032

**Sub: Request to provide ATR in case of OA No. 213 of 2024 (SZ) against an illegal dairy farm inside Dr. MGR Janaki college, on the banks of Adyar river**

Sir,

The Hon'ble National Green Tribunal, Southern Zone, Chennai has registered an Original Application No. 213/2024 based on the application received from Dr. MGR-Janaki College of Arts and Science for Women Alumni Association, Rep by its Secretary Ms. Sarjana against an illegal dairy farms inside Dr. MGR Janaki college, on the banks of Adyar river.


In this connection, it is kindly requested to provide action taken report (ATR) to this office, at the earliest.

Yours faithfully

  
(H. D. Varalaxmi)  
Regional Director

Copy to:

1. The Joint Chief Environmental Engineer  
Tamil Nadu Pollution Control Board  
First Floor, 950/1, Poonamallee High Road  
Arumbakkam, Chennai - 600 106
2. District Environmental Engineer  
Tamil Nadu Pollution Control Board  
Second floor, 950/1, Poonamallee High Road  
Arumbakkam, Chennai - 600 106

  
(H. D. Varalaxmi)  
Regional Director

क्षेत्रीय निदेशालय (चेन्नई) : द्वितीय तल, 40-ई, बीएसएनएल बिल्डिंग, थिरु-वी-का औद्योगिक एस्टेट, सिपेट रोड, गिंडी, चेन्नई - 600032  
दूरभाष: 044-29998683/044-29567019 ईमेल: rdchennai.cpcb@gov.in

Regional Directorate (Chennai): Second Floor, 40-E, BSNL Building, TVK Industrial Estate, CIPET Road, Guindy, Chennai - 600032  
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प्रधान कार्यालय : परिवेश भवन, पूर्वी अर्जुन नगर, दिल्ली -110 032

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दूरभाष /Telephone: 011-43102030, Fax : 22305793, 22307078, 22307079, 22301932, 22304948

ई-मेल / E-mail: cpcb@nic.in वैबसाइट / Website : www.cpcb.nic.in

फ़ा. नतक :./12/ जनरल(त.ना)/क्षे.नि.चे./2024-25/ 416

दिनांक: 02.08.2024

सेवा में

सदस्य सचिव  
तमिलनाडु राज्य प्रदूषण नियंत्रण बोर्ड  
नंबर 76, माउंट रोड, गिंडी  
चेन्नई-600032

**विषय: अड्यार नदी के तट पर डॉ. एमजीआर जानकी कॉलेज के अंदर एक अवैध डेयरी फार्म के खिलाफ एटीआर उपलब्ध कराने का अनुरोध**

महोदय,

माननीय राष्ट्रीय हरित अधिकरण, दक्षिणी क्षेत्र, चेन्नई ने डॉ. एमजीआर-जानकी कॉलेज ऑफ आर्ट्स एंड साइंस फॉर विमेन एलुमनाई एसोसिएशन, सचिव सुश्री सर्जना एस, नंबर 11 और 13, दुर्गाबाई देशमुख रोड, राजा अन्नामलाईपुरम, चेन्नई - 600028 द्वारा प्रतिनिधित्व, से प्राप्त आवेदन के आधार पर डॉ. एमजीआर जानकी कॉलेज के अंदर अड्यार नदी के तट पर एक अवैध डेयरी फार्म के खिलाफ मूल आवेदन संख्या 213/2024 पंजीकृत किया है।

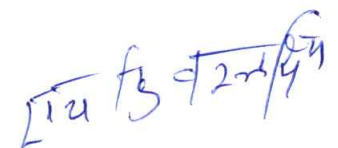
इस संबंध में, कृपया अनुरोध है कि टीएनपीसीबी द्वारा की गई कार्रवाई की रिपोर्ट शीघ्रातिशीघ्र इस कार्यालय को उपलब्ध कराई जाए।

निष्ठापूर्वक

(एच. डि. वरलक्ष्मी)  
क्षेत्रीय निदेशक

प्रतिलिपि:

- संयुक्त मुख्य पर्यावरण अभियंता  
तमिलनाडु प्रदूषण नियंत्रण बोर्ड  
प्रथम तल, 950/1  
पूनमल्ली हाई रोड अरुंबक्कम  
चेन्नई - 600 106
- जिला पर्यावरण अभियंता  
तमिलनाडु प्रदूषण नियंत्रण बोर्ड  
दूसरी मंजिल, 950/1  
पूनमल्ली हाई रोड अरुंबक्कम  
चेन्नई - 600 106



(एच. डि. वरलक्ष्मी)  
क्षेत्रीय निदेशक



केंद्रीय प्रदूषण नियंत्रण बोर्ड  
CENTRAL POLLUTION CONTROL BOARD  
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार  
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE, GOVT. OF INDIA

**NGT MATTER/MOST URGENT**

**REMINDER – I**

F.No.: Tech/12/Gen/TN/RDC/2024-25 /1043

10.02.2025

To,  
The Member Secretary  
Tamilnadu Pollution Control Board  
No.76, Mount Road, Guindy,  
Chennai – 600 032

**Sub: Request to provide ATR in O.A 213 of 2024 (SZ) against dairy farm operating inside Dr. MGR Janaki College for Women, on the banks of Adyar River**

Sir,

Kindly refer to CPCB letter of even number dated 02.08.2024 seeking action taken report on the subject matter followed by telephonic requests. However, ATR is not yet received despite lapse of 06 months. The matter is scheduled for hearing on 21.03.2025.

It is once again requested to provide Action Taken Report (ATR) to this Office by 13.02.2025 positively.

Yours faithfully,

(H. D. Varalaxmi)  
Regional Director

क्षेत्रीय निदेशालय (चेन्नई) : द्वितीय तल, 40-ई, बीएसएनएल बिल्डिंग, थिरु-वी-का औद्योगिक एस्टेट, सिपेट रोड गिंडी, चेन्नई – 600032

दूरभाष: 044-29998683/044-29567019 ईमेल: rdchennai.cpcb@gov.in

Regional Directorate (Chennai): Second Floor, 40-E, BSNL Building, TVK Industrial Estate, CIPET Road Guindy, Chennai – 600032

Phone: 044-29998683/044-29567019 Email: rdchennai.cpcb@gov.in

प्रधान कार्यालय : परिवेश भवन, पूर्वी अर्जुन नगर, दिल्ली -110 032

Head Office: Parivesh Bhawan, East Arjun Nagar, Delhi – 110032

दूरभाष /Telephone: 011-43102030, Fax : 22305793, 22307078, 22307079, 22301932, 22304948

ई-मेल / E-mail: cpcb@nic.in वेबसाइट / Website : www.cpcb.nic.in



**केंद्रीय प्रदूषण नियंत्रण बोर्ड**  
CENTRAL POLLUTION CONTROL BOARD  
**पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार**  
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE, GOVT. OF INDIA

एनजीटी मेटर/सबसे जरूरी

अनुस्मारक - I

फ़ा. सं.: Tech/12/Gen/TN/RDC/2024-25 / 1043

दिनांक: 10.02.2025

सेवा में,

सदस्य सचिव  
तमिलनाडु प्रदूषण नियंत्रण बोर्ड  
संख्या 76, माउंट रोड, गिंडी,  
चेन्नई - 600 032

**विषय: मूल आवेदन संख्या 213/2024 के संबंध में एटीआर प्रदान करने का अनुरोध**

महोदय,

कृपया सीपीसीबी सम संख्या के दिनांक 02.08.2024 के पत्र और टेलीफोन अनुरोधों को देखें जिसमें विषय वस्तु पर की गई कार्रवाई रिपोर्ट मांगी गई है। तथापि, 6 माह बीत जाने के बावजूद एटीआर अभी प्राप्त नहीं हुआ है। मामले की सुनवाई 21.03.2025 को होनी है।

एक बार फिर अनुरोध है कि 13.02.2025 तक इस कार्यालय को सकारात्मक रूप से कार्रवाई रिपोर्ट (एटीआर) प्रदान करें।

निष्ठापूर्वक  
*एच डि वारलक्ष्मी*  
(एच डि वारलक्ष्मी)  
क्षेत्रीय निदेशक

**क्षेत्रीय निदेशालय (चेन्नई):** द्वितीय तल, 40-ई, बीएसएनएल बिल्डिंग, थिरु-वी-का औद्योगिक एस्टेट, सिपेट रोड गिंडी, चेन्नई - 600032

दूरभाष: 044-29998683/044-29567019 ईमेल: rdchennai.cpcb@gov.in

**Regional Directorate (Chennai):** Second Floor, 40-E, BSNL Building, TVK Industrial Estate, CIPET Road Guindy, Chennai - 600032

Phone: 044-29998683/044-29567019 Email: rdchennai.cpcb@gov.in

**प्रधान कार्यालय:** परिवेश भवन, पूर्वी अर्जुन नगर, दिल्ली -110 032

**Head Office:** Parivesh Bhawan, East Arjun Nagar, Delhi - 110032

दूरभाष /Telephone: 011-43102030, Fax : 22305793, 22307078, 22307079, 22301932, 22304948

ई-मेल / E-mail: cpcb@nic.in वैबसाइट / Website : www.cpcb.nic.in

By Speed Post



## TAMIL NADU POLLUTION CONTROL BOARD


**From**

Er. R. Kannan, M.Tech.,  
Member Secretary,  
Tamil Nadu Pollution Control Board,  
76, Mount Salai, Guindy,  
Chennai – 600 032.

**To**

The Regional Director,  
Central Pollution Control Board,  
Regional Directorate (Chennai)  
40 – E, BSNL Building,  
TVK Industrial Estate, CIPET Road,  
Guindy, Chennai – 600 032.

**Letter No.TNPCB/LAW/LA – III/NGT/016188 , Dated:18.02.2025.**

**Madam,**

**Sub:** TNPCB- Law – OA No. 213 of 2024(SZ) –filed by Dr. MGR- Janaki College of Arts and Science for Women - No. 11 & 13, Durgabai Deshmuk Road, Raja Annamalaipuram, Chennai, against the dairy farm located inside the premises of the College - Action taken report– Sent- Regarding.

- Ref:**
1. Letter received from the Regional Director, CPCB, F.No.Tech/12/Gen(TN)RDC/2024-25 Dt 02.08.2024.
  2. Hon'ble NGT Case in OA No. 213 of 2024 filed by Dr. MGR- Janaki College of Arts and Science for Women, No. 11 & 13, Durgabai Deshmuk Road, Raja Annamalaipuram, Chennai against dairy farming situated inside the premises of the College.
  3. SCN Proc. No. DEE/TNPCB/CHS/SCN/F.NAW&A/2024, Dated 31.07.2024.(Copy enclosed)
  4. ROA report of the water sample taken on 03.08.2024(Copy enclosed)
  5. DEE, CHS Letter No:DEE/TNPCB/CHS/NA/PH/2024, dated. 25.09.2024(Copy enclosed)
  6. Proceeding No.: TNPCB / T1 / F. 028213 / Sealing of unit / Water &Air / 2025, dated:14.02.2025 (Copy enclosed)

\*\*\*\*\*

I am to invite kind attention to the reference first cited , wherein it has been requested to provide action taken report with respect to the case OA No.213 of 2024, (SZ), filed against the dairy farm located inside the premises of the Dr. MGR- Janaki College of Arts and Science for Women, No. 11 & 13, Durgabai Deshmuk Road, Raja Annamalaipuram, Chennai.

In this regard, the following is informed:

- The dairy farm of M/s. P.M. Enterprises, Durgabai Deshmuk Road, Raja Annamalaipuram, Chennai was inspected by the officials of the O/o. DEE, TNPCB, Chennai South on 29.07.2024 and it was observed that, the said dairyfarm was operating with 40 numbers of cows without obtaining consent of

No. 76, MOUNT SALAI, GUINDY, CHENNAI - 600 032.

Tel : 044-22353134 - 139 Fax : 044-22353068

Email : tnpccb-chn@gov.in Web : tnpccb.gov.in

the Board and without complying with the Guidelines for Environmental Management of Dairy Farms and Gaushalas, issued by the CPCB July 2020

- Hence, show cause notice was issued to the unit on 31.07.2024 vide reference 3<sup>rd</sup> cited (Copy of show cause notice enclosed), for the reasons stated therein.
- 4 numbers of water samples were taken on 03.08.2024, at bore well (one sample) & well (one sample) located inside the Dr. MGR- Janaki College of Arts and Science for Women, No. 11 & 13, Durgabai Deshmuk Road, Raja Annamalaipuram, Chennai and 2 Nos at Adyar river one at the outfall point of untreated effluent in Adyar river and another at 100 meter distance from the discharge point of Adyar river.
- The RoA of the sample taken at the outfall point of untreated effluent in Adyar river, reveals that the parameters TSS, TDS, BOD, COD, Fluorides exceeds the standards prescribed by the Board. Sulphate was found exceeded for in the samples taken at Adyar river points.
- Further, the unit did not furnished any reply to the show cause notice issued and hence, vide reference 5<sup>th</sup> cited, the unit was called for a personal hearing on 26.09.2024.
- The unit attended the personal hearing and informed the following,
  - a. The unit has operated the cattle farm in the said location for past 50 years (1973) with around 200 cattle. Presently, the unit is running with 15 cattle only.
  - b. The unit was not aware on the guidelines on cattle farm and obtaining of consent of Board.
  - c. The unit has requested 3 months of time for providing the treatment plant for treating the sewage generated from the farm.
  - d. Also, it was informed that, a case on dispute and the said dairy farm is under stay at Hon'ble Supreme Court vide SLP. No. 6465 of 2016.

The CPCB Guidelines for Environmental Management of Dairy Farms and Gaushalas, July 2020 states that the Local Bodies/Municipal Corporations shall publish a public notice in newspapers and on the website for registration of dairy farms, gaushals as per Municipal Law.

- Hence, the DEE, TNPCB, Chennai South vide letter dated 25.09.2024, forwarded the said complaint to the Zonal officer, Zone IX, Greater Chennai Corporation, Nungambakkam, Chennai for taking necessary action.



## TAMIL NADU POLLUTION CONTROL BOARD



- The unit was again inspected by the officials of the O/o. DEE, TNPCB, Chennai South on 12.12.2024 and observed the following:
  - a. The unit was operating with 1 No. s of Bull, 15 Nos of milk cows and 11 Nos of calf.
  - b. The unit authorities have not completely vacated the cows from the premises.
  - c. The dairy farm generates effluent from wash dung & fodder residues etc. The cattle farm has not provided any treatment plant for treating the waste generated from its premises.
  - d. The untreated effluent from the dairy farm is being discharged into the Adyar River flowing near by in southern side of the dairy farm.
  - e. The unit has provided pipeline connected to Adyar River for the discharge of untreated effluent.
  - f. The unit has provided one DG set for domestic power supply. The unit does not have TANGEDCO Power supply.
  - g. The unit authorities have not given any assurance on complete shifting of the above said cows.
  - h. The unit has not obtained NOC from the Greater Chennai Corporation for their activity.
- Therefore, the Board vide proceeding dated 14.02.2025 in the reference 6<sup>th</sup> cited, has issued directions under the Water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981 to the District Collector, Chennai to seal the dairy farm and DG Set of the unit M/s. P.M. Enterprises, located inside the premises of the Dr MGR - Janaki College of Arts & Science for Women, No. 11 & 13, Durgabai Deshmuk Road, Raja Annamalaipuram, Chennai for the said Violations and for not satisfying the Guidelines for Environmental Management of Dairy Farms and Gaushalas, issued by the CPCB July 2020.

This is submitted for kind information.

For Member Secretary

19/2/25

**BEFORE THE HON'BLE NATIONAL  
GREEN TRIBUNAL  
SOUTHERN ZONE BENCH,  
CHENNAI**

**ORIGINAL APPLICATION NO. 213 OF 2024 (SZ)**

**IN THE MATTER OF**

Dr. MGR-Janaki College of Arts & Science  
for women Alumni Association,  
Represented by its Secretary, Chennai

..... Applicant(s)

*Vs*

The Tamil Nadu Pollution Control Board  
(TNPCCB),  
Represented by its Member Secretary,  
Chennai and Ors.

...Respondent(s)

**REPLY ON BEHALF OF THE  
RESPONDENT NO. 2,  
CENTRAL POLLUTION  
CONTROL BOARD (CPCB)**

**Advocate N Nathami**  
Counsel for the 2<sup>nd</sup> Respondent  
(CPCB)