

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

For

**SETTING UP MANUFACTURING UNIT OF 2304 TPA
UREA FORMALDEHYDE RESINS (UF RESINS),
2304 TPA MELAMINE FORMALDEHYDE RESINS (MF RESINS),
2304 TPA MELAMINE UREA FORMALDEHYDE RESINS (MUF RESINS)
&
864 TPA PHENOL FORMALDEHYDE RESINS (PF RESINS)**

M/S. ECO VISION INDIA

**Plot No. - 27, Khatian No - 586 (LR)
J.L No. - 96, Village - Haldibari, P.O - Dhankoil,
P.S - Kaliaganj, District - Uttar Dinajpur
Pin - 733129, West Bengal**

Prepared by :



ENVIROCHECK

NABET Accredited EIA Consultant Organization

Certificate Number - NABET / EIA / 23-26 / SA 0238

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FOR

**SETTING UP MANUFACTURING UNIT OF 2304 TPA OF
UF RESINS, 2304 TPA OF MF RESINS, 2304 TPA OF MUF
RESINS AND 864 TPA OF PF RESINS**

AT

**Plot No. – 27, Khatian No – 586 (LR), JL No – 96,
Village-Haldibari, P.O. Dhankoil, P.S. Kaliyaganj,
Dist.- Uttar Dinajpur,
West Bengal - 733129**

Sector and Schedule – 5(f) Synthetic organic chemicals industry,

Category – ‘B’

APPLICANT

M/S. ECO VISION INDIA

**EIA Consultant: ENVIROCHECK, Kolkata
(NABET CERTIFICATE NO. – NABET/EIA/23-26/SA 0238
DATED 30/05/2025)**

ENVIROCHECK REPORT NO.: ENVC/EC-DIV/01-25/01





National Accreditation Board for Education and Training

Certificate of Accreditation

ENVIROCHECK

63/B, Rastraguru Ave, Clive House, Ramgarh, Kamardanga, South Dumdum, Kolkata, West Bengal- 700028

The organization is accredited as **Category-A** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organization, Version 3: for preparing EIA/EMP reports in the following Sectors-

S. No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1.	Mining of minerals including opencast & underground	1	1 (a) (i)	A
2.	Thermal power plants	4	1 (d)	A
3.	Metallurgical industries (Ferrous & non-ferrous)	8	3 (a)	A
4.	Cement plants	9	3 (b)	A
5.	Petroleum refining industry	10	4 (a)	A
6.	Petro-chemical complexes	18	5 (c)	A
7.	Petrochemical based processing	20	5 (e)	A
8.	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	21	5 (f)	B
9.	Industrial estates/parks/complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes	31	7(c)	A
10.	Ports, harbours, jetties, marine terminals, break waters and dredging	33	7(e)	A
11.	Highways	34	7 (f)	A
12.	Common Municipal Solid Waste Management Facility (CMSWMF)	37	7 (i)	B
13.	Building and construction projects	38	8 (a)	B
14.	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in SAAC minutes dated February 18, 2025, posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/25/3615 dated May 30, 2025. The accreditation needs to be renewed before the expiry date ENVIROCHECK, Kolkata following due process of assessment.

Valid up to
January 18, 2026

Issue Date
May 30, 2025



Certificate No.
NABET/EIA/23-26/SA 0238

Varinder Kanwar
Prof (Dr) Varinder S Kanwar
CEO - NABET

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.



We hereby certify that we were a part of mentioned EIA / EMP Report team in the following capacity that developed the above report

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6.	S Devi Prasad	LU	S Devi Prasad
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2. Sharbani Chatterjee	4. Priyanka Mukherjee

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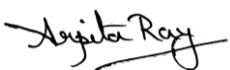
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DOCUMENT REVISION AND AUTHORIZATION SHEET

EV.	DATE	REASON OF ISSUE	FILE NAME
0	13-October-2025	Draft EIA Report	Environment Impact Assessment Report

PREPARED BY	CHECKED BY	AUTHORIZED BY
 Mrs. Arpita Ray	 Dr. Paulomi Das	 Dr. Sumit Baran Chowdhury

DECLARATION BY CONSULTANT

To whomsoever it may concern

I hereby declare that the EIA/EMP report for Setting up manufacturing unit of Synthetic Resin viz. Urea Formaldehyde Resin - 2304 TPA (UF Resin), Melamine Formaldehyde Resin - 2304 TPA (MF Resin), Melamine Urea Formaldehyde Resin - 2304 TPA (MUF Resin) and Phenol Formaldehyde Resin - 864 TPA (PF Resin) at Plot No – 27, Khatian No – 586 (LR), JL No – 96, Village-Haldibari, P.O. Dhankoil, P.S. Kaliyaganj, Dist. Uttar Dinajpur, West Bengal - 733129 by M/s **Eco Vision India** has been prepared as per “Terms of References” and information supplied by the project proponent.

Paulomi Das

Authorized Signatory

ABBREVIATION LIST:

AAQM	Ambient Air Quality Monitoring
APHA	American Public Health Association
ASTM	American Society for Testing and Materials
BDL	Below Detectable Limit
CPCB	Central Pollution Control Board
CER	Corporate Environment Responsibility
EAC	Expert Appraisal Committee
EIA	Environmental Impact Assessment
EC	Environmental Clearance
EHS	Environment Health & Safety
EMP	Environment Management Plan
EMS	Environment Management System
EPA	Environmental Protection Act
ETP	Effluent Treatment Plant
DMP	Disaster Management Plan
GLC	Ground Level Concentration
GOI	Government of India
WBPCB	West Bengal Pollution Control Board
IMD	Indian Metrological Data
IS	Indian Standard
MoEF&CC	Ministry of Environment, Forest & Climate Change
MSL	Mean Sea Level
MSDS	Material Safety Data Sheets
NH	National Highway
NOC	No Objection Certificate
OSHA	Occupational Safety And Health Administration
PM	Particulate Matter
PPEs	Personal Protective Equipments
RA	Risk Assessment
TOR	Terms of Reference
TSDF	Treatment, Storage and Disposal Facility
TDS	Total Dissolved Solid

Compliance of TOR

Specific Terms of Reference for (Synthetic Organic Chemicals Industry)

TOR No.	TOR Points	Compliance Status
Specific		
Executive Summary		
1.	The Executive summary of the EIA/EMP report in about 8-10 pages should be prepared incorporating the information on following points:	
	1) Project name and location (Village, District, State, Industrial Estate (if applicable)	Chapter 2, page 31
	2) Products and capacities. If expansion proposal, then existing products with capacities and reference to earlier EC.	Chapter 2, page 46
	3) Requirement of land, raw material, water, power, fuel, with source of supply (Quantitative).	Chapter 2, page 40
	4) Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.	Chapter 2, page 47
	5) Measures for mitigating the impact on the environment and mode of discharge or disposal.	Chapter 2, page 55
	6) Capital cost of the project, estimated time of completion.	Chapter 2, page 47
	7) Site selected for the project- Nature of land- Agricultural (single/ double crop), barren, Govt./ private land, status of its acquisition, nearby (in 2-3 km) water body, population, with in 10 km. other industries, forest, eco-sensitive zones, accessibility, (note- in case of industrial estate this information may not be necessary).	Chapter 2, page 58

	8) Baseline environmental data- air quality, surface and groundwater quality, soil characteristic, flora and fauna, socio-economic condition of the nereby population.	Chapter 3, Page 58
	9) Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.	Chapter 7, page 145
	10) Likely impact of the project on air, water, land, flora-fauna and nearby population.	Chapter 4, page 121
	11) Emergency preparedness plan in case of natural or in plant emergencies.	Chapter 7, page 195
	12) Issues raised during public hearing (if application) and response given.	Chapter 7, page 145
	13) Environment Management Plan (EMP) as per Office Memorandum issued by the MoEF & CC vide F.No. 22-65/2017-IA.III dated 30.09.2020 with proposed expenditure.	Chapter 10, page 210
	14) Occupational Health Measures.	Chapter 6, page 141
	15) Post project monitoring plan.	Chapter 6, page 139
A. Standard Terms of Reference		
1.	Executive Summary	Complied
2.	Introduction	
	i. Details of the EIA Consultant including NABET accreditation	Chapter 12, Page 226
	ii. Information about the Project Proponent	Chapter 1, Page 32
	iii. Importance and benefits of the Project	Chapter 8, Page 202
3.	Project Description	

	i. Cost of project and time of completion	Chapter 2, page 47
	ii. Products with capacities for the Proposed project	Chapter 2, page 46
	iii. If expansion project, details of existing products with capacities and whether adequate land is available for expansion, reference of earlier EC if any.	N.A.
	iv. List of raw materials required and their source along with mode of transportation.	Chapter 2, Page 50
	v. Other chemicals and materials required with quantities and storage capacities.	Chapter 2, Page 50
	vi. Details of Emission, effluents, hazardous waste generation and their management.	Chapter 2, Page 55
	vii. Requirement of water, power with source of supply status of approval, water balance diagram, man power requirement (regular and contract).	Chapter 2, Page 52
	viii. Process description along with major equipments and machineries, process flow sheet (quantative) from raw materials to products to be provided.	Chapter 2, Page 47
	ix. Hazard identification and details of proposed safety systems.	Chapter 7, Page 145
	x. Expansion / modernization proposals:	
	a. Copy of all the Environmental Clearance including Amendments thereto obtained for the project from MOEF/SEIAA shall be attached as an Annexure. A certified copy of the latest Monitoring Report of the Regional Office of the Ministry of Environment and Forests as per circular dated 30 th May 2012 on the status of compliance of conditions stipulated in all the existing environmental clearances including Amendments shall be provided. In addition, status of compliance of Consent to Operate for the ongoing / existing operation of the project from SPCB shall be attached with the EIA-EMP report.	N.A.

	b. In case the existing project has not obtained environmental clearance, reasons for not taking EC under the provisions of the EIA Notification 1994 and/or EIA Notification 2006 shall be provided. Copies of Consent to Establish/ No Objection Certificate and Consent to Operate (in case of units operating prior to EIA Notification 2006, CTE and CTO of FY 2005 – 2006) obtained from the SPCB shall be submitted. Further, compliance report to the conditions of consents from the SPCB shall be submitted.	N.A.
4.	Site Details	
	i. Location of the project site covering village, Taluka/ Tehsil, District and State, justifications for selecting the site, whether other sites were considered.	Chapter 2, Page 40
	ii. A toposheet of the study area of radius of 10km and site location on 1:50000/ 1:25000 scale on an A3/A2 sheet. (including all eco-sensitive areas and environmentally sensitive places)	Chapter 2, Page 42
	iii. Details w.r.t. option analysis for selection of site	N.A.
	iv. Co-ordinates (lat – long) of all four corners of the site.	Chapter 2, Page 43
	v. Google map-Earth downloaded of the project site.	Chapter 2, Page 43
	vi. Layout maps indicating existing unit as well as proposed unit indicating storage area, plant area, greenbelt area, utilities etc. If located within an industrial area/ estate/ complex, layout of Industrial area indicating location of unit within the Industrial area/ Estate.	Chapter 2, Page 45
	vii. Photographs of the proposed and existing (if applicable) plant site. If existing show photographs of plantation/ greenbelt in particular.	Chapter 2, Page 44
	viii. Land use break-up of total land of the project site (identified and acquired), government/ private agricultural, forest, wasteland, water bodies, settlements etc. shall be included (not required for industrial area)	Chapter 2, Page 44
	ix. A list of major industries with name and type within study area (10km radius) shall be incorporated. Land use details of the study area.	Chapter 3, Page 119

	x. Geological features and Geo-hydrological status of the study area shall be included.	Chapter 3, Page 83
	xi. Details of Drainage of the project upto 5km radius of study area. If the site is within 1 km radius of any major river, peak and lean season river discharge as well as flood occurrence frequency based on peak rainfall data of the past 30 years. Details of Flood level of the project site and maximum Flood level of the river shall also be provided (mega green field projects).	Chapter 3, Page 84
	xii. Status of acquisition of land. If acquisition is not complete, stage of the acquisition process and expected time of complete possession of the land.	Land is Acquired, Annexure-2
	xiii. R&R details in respect of land in line with state Government policy.	N.A.
5.	Forest and Wildlife related issues (if applicable)	
	i. Permission and approval for the use of forest land (forestry clearance), if any, and recommendations of the State Forest department (if applicable)	N.A.
	ii. Landuse map based on High resolution satellite imagery (GPS) of the proposed site delineating the forestland (in case of projects involving forest land more than 40 ha)	N.A.
	iii. Status of application submitted for obtaining the stage I forestry clearance along with latest status shall be submitted.	N.A.
	iv. The projects to be located within 10 km of the National Parks, sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife warden-thereon.	N.A.
	v. Wildlife conservation plan duly authenticated by the Chief Wildlife warden of the State Government for conservation of schedule I fauna, if any exists in the study area.	N.A.
	vi. Copy of application submitted for clearance under the Wildlife (protection) Act, 1972 to the standing committee of the National Board for Wildlife.	N.A.
6.	Environmental Status	

	i. Determination of Atmospheric inversion level at the project site and site specific micro meteorological data using temperature, relative humidity, hourly wind speed and direction and rainfall.	Chapter 3, Page 60
	ii. AAQ data (except monsoon) at 8 locations for PM10, PM2.5, SO2, NOX, CO and other parameters relevant to the project shall be collected. The monitoring stations shall be based CPCB guidelines and take into account the pre-dominant wind direction, population zone and sensitive receptors including reserved forests.	Chapter 3, Page 63
	iii. Raw data of all AAQ measurement for 12 weeks of all stations as per frequency given in the NAQQM Notification of Nov. 2009 along with min, max, average, and 98% values for each of the AAQ parameters from data of all AAQ stations should be provided as an annexure to the EIA report.	Annexure-4
	iv. Surface water quality of nearby River (60m upstream and downstream) and other surface drains at eight locations as per CPCB/ MOEF & CC guidelines.	Chapter 3, Page 70
	v. Whether the site falls near to polluted stretch of river identified by the CPCB/ MOEF & CC, if yes give details.	N.A.
	vi. Ground water monitoring at minimum at 8 locations shall be included.	Chapter 3, Page 70
	vii. Noise levels monitoring at 8 locations within the study area.	Chapter 3, Page 69
	viii. Soil characteristic as per CPCB guidelines.	Chapter 3, Page 77
	ix. Traffic study of the area, type of vehicles, frequency of vehicles for transportation of materials, additional traffic due to proposed project, parking arrangement etc.	Chapter 3, Page 79
	x. Detailed description of flora and fauna (terrestrial and aquatic) existing in the study area shall be given with special reference to rate, endemic and endangered species. If schedule I fauna are found within the study area, a wildlife conservation plan shall be prepared and furnished.	Chapter 3, Page 96
	xi. Socio economic status of the study area.	Chapter 3, Page 85
7.	Impact Assessment and Environment Management Plan	

	i. Assessment of ground level concentration of pollutants from the stack emission based on site specific meteorological features. In case the project is located on a hilly terrain, the AQIP modeling shall be done using inputs of the specific terrain characteristics for determining the potential impacts of the project on the AAQ. Cumulative impact of all sources of emissions including transportation on the AAQ of the area shall be well assessed. Details of the model used and the input data used for modeling shall also be provided. The air quality contours shall be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any.	Chapter 4, Page 123
	ii. Water Quality modeling – in case of discharge in water body	Not Applicable as it is a Zero Discharge unit
	iii. Impact of the transport of the raw materials and end products on the surrounding environment shall be assessed and provided. In this regard, options for transport of raw materials and finished products and wastes (large quantities) by rail or rail cum road transport or conveyor-cum rail transport shall be examined.	Chapter 8, Page 202
	iv. A note on treatment of wastewater from different plant operations, extent recycled and reused for different purposes shall be included. Complete scheme of effluent treatment. Characteristics of untreated and treated effluent to meet the prescribed standards of discharge under E(P) rules.	Chapter 2, Page 53
	v. Details of stack emission and action plan for control of emissions to meet standards.	Chapter 2, Page 55
	vi. Measures for fugitive emission control	Chapter 10, Page 210
	vii. Details of hazardous waste generation and their storage, utilization and disposal. Copies of MGU regarding utilization of solid and hazardous waste shall also be included. EMP shall include the concept of waste minimization, recycle/ reuse/ recover techniques, Energy conservation, and natural resource conservation.	Chapter 10, Page 212

	viii. Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 2009. A detailed plan of action shall be provided.	N.A.
	ix. Action plan for the green belt development plan in 33% area i.e., land with not less than 1,500 trees per ha. Giving details of species, width of plantation, planning schedule etc. shall be included. The green belt shall be around the project boundary and a scheme of greening of the roads used for the project shall also be incorporated.	Chapter 10, Page 214
	x. Action plan for rainwater harvesting measures at plant site shall be submitted to harvest rainwater from the roof tops and also to use for the various activities at the project site to conserve fresh water and reduce the water requirement from other sources.	Chapter 10, Page 220
	xi. Total capital cost and recurring cost/ annum for environmental pollution control measures shall be included.	Chapter 10, Page 221
	xii. Action plan for post project environmental monitoring shall be submitted.	Chapter 6, Page 139
	xiii. Onsite and Offsite Disaster (natural and Man-made) preparedness and Emergency Management Plan including Risk Assessment and damage control. Disaster management plan should be linked with District Disaster Management Plan.	Chapter 10, Page 218
8.	Occupational health	
	i. Plan and fund allocation to ensure the occupational health & safety of all contract and casual workers.	Chapter 6, Page 141
	ii. Details of exposure specific health status evaluation of worker. If the workers' health is being evaluated by pre designed format, chest x rays, Audiometry, Spirometry, Vision testing (Far & Near vision, colour vision and any other ocular defect), ECG, during pre placement and periodical examinations give the details of the same. Details regarding last month analyzed data of abovementioned parameters as per age, sex, duration of exposure and department wise.	Chapter 6, Page 141

	iii. Details of existing Occupation & Safety Hazards. What are the exposure levels of above mentioned hazards and whether they are within Permissible Exposure level (PEL). If these are not within PEL, what measures the company has adopted to keep them within PEL, so that health of the workers can be preserved.	N.A.
	iv. Annual report of health status of workers with special reference to Occupational Health and Safety.	N.A.
9.	Corporate Environment Policy	
	i. Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA Report.	Chapter 10, Page 218
	ii. Does the Environment Policy prescribe for standard operating process/ procedures to bring into focus any infringement/ deviation / violation of the environmental or forest norms/ conditions? If so, it may be detailed in the EIA.	Chapter 10, Page 218
	iii. What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions? Details of this system may be given.	Chapter 10, Page 218
	iv. Does the company have system of reporting of non compliances/ violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism shall be detailed in the EIA report.	Chapter 10, Page 218
10.	Details regarding infrastructure facilities such as sanitation, fuel, restroom etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase.	Chapter 10, Page 210
11.	Environment Management Plan (EMP)	
	i. Adequate funds shall be earmarked towards Environment Management Plan based on Public Hearing issues and item-wise details along with time bound action plan shall be included. Socioeconomic development activities need to be elaborated upon. The office Memorandum issued by the MoEF&CC vide F.No.22-65/2017-IA, III dated 30/09/2020 should be strictly followed.	Chapter 10, Page 221

12.	Any litigation pending against the project and/or any direction/order passed by any Court of Law against the project, if so, details thereof shall also be included. Has the unit received any notice under the Section 5 of Environment (Protection) Act, 1986 or relevant Sections of Air and Water Acts? If so, details thereof and compliance/ATR to the notice(s) and present status of the case.	N.A.
13.	A tabular chart with index for point wise compliance of above TOR.	Page 18
B.	Specific Terms of Reference for EIA studies for Synthetic Chemicals industry (Dyes & Dye intermediates: Bulk Drugs and intermediates excluding Drug formulations; synthetic rubbers; Basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	
	1. Details on solvents to used, measures for solvent recovery and for emission control.	Chapter 2, page 55
	2. Details of process emissions from the proposed unit and its arrangement to control.	Chapter 2, page 55
	3. Ambient air quality data should include VOC, other process-specific pollutants like NH ₃ *, chlorine*, HCl*, HBr*, H ₂ S*, HF*, etc (* -as applicable)	Chapter 3, page 65
	4. Work zone monitoring arrangements for hazardous chemicals.	Chapter 6, page 139
	5. Detailed effluent treatment scheme including segregation of effluent streams for units adopting "Zero" liquid discharge.	Chapter 2, page 55
	6. Action plan for odour control to be submitted.	N.A.
	7. A copy of the Memorandum of Understanding signed with cement manufacturers indicating clearly that they co-process organic organic solid/ hazardous waste generated.	N.A.
	8. Authorization/ Membership for the disposal of liquid effluent in CETP and solid/ hazardous waste in TSDF, if any.	Chapter 2, page 55
	9. Action plan for utilization of MEE/ dryers salts.	N.A.
	10. Material Safety Data Sheet for all the Chemicals are being used/ will be used.	Chapter 7, page 161
	11. Authorization/ Membership for all the Chemicals are being used/ will be used.	N.A.

	12. Details of incinerator if to be installed.	N.A.
	13. Risk assessment for storage and handling of hazardous chemicals/ solvents. Action plan for handling & safety system to be incorporated.	Chapter 7, page 150
	14. Arrangements for ensuring health and safety of workers engaged in handling of toxic materials.	N.A.
C.	Additional Conditions imposed	
	1. MSDS of all chemicals should be provided along with EIA report.	Chapter 7, page 161
	2. Wood/plywood rejects to be specified as boiler fuel instead of firewood.	Chapter 2, page 54
	3. Revised lay out maps indicating proposed unit with 100 percent services viz, storage details of flammable, toxic and corrosive chemicals, parking area, entry/exit, storm water drain, storage of hazardous waste, location of silent DG, ETP, cooling tower, occupational health centre etc.	Chapter 2, page 45
	4. Process description along with major equipment and machinery.	Chapter 2, page 46
	5. Land use break up.	Chapter 2, page 44
	6. Membership of TSDF and CHWIF	N.A.
	7. Present and future traffic and transport facilities for the area and analysis with detailed measures to show that LOS of the existing road will not be affected due to this project.	Chapter 3, page 79
	Water and waste water	
	8. Ground water level monitoring should be carried out. Water level data should be represented with respect to ground level and mean sea level. Locations should be specified along with depth of wells and other details, water level elevation contour map with flow directions should be provided and groundwater chemical analysis reports should be submitted.	Chapter 3, page 70
	9. Monitoring of the water quality of the nearby water body.	Chapter 3, page 70

	10. A DMW plant with backwash and regeneration facilities should be provided.	Chapter 2, page 52
	11. Design details of ETP and detailed action plan to achieve ZLD.	Chapter 2, page 52
	12. Details of emission, effluent, hazardous waste generated and their management details.	Chapter 2, page 56
	Emission	
	13. Action plan to control and monitor fugitive emission from all sources.	Chapter 6, page 140
	Greenbelt	
	14. Detailed plantation plan with local spp with large foliage and suitable for pollution abatement and their maintenance plan.	Chapter 10, page 214
	15. Distance from nearest habitation and the impact of project activities on the local inhabitants in respect of ground water, noise level and soil characteristics.	Chapter 4, page 121

CHAPTER 1 INTRODUCTION

1. Chapter 1: Introduction

1.1 Purpose of the Report

The purpose of this Environmental Impact Assessment (EIA) Study is to study the present background environmental scenario, study the likely activities related to proposed construction and operation of the proposed plant involving chemical process, identification of the probable environmental impacts due to those activities, hazard potential and review of the proposed environmental control measures, recommendation for acceptable alternative where necessary and finally assessment of the impacts of the Project on the environment.

EIA Report is a planning tool that is generally regarded as an integral component of sound decision making.

1.2 Identification of the Project & Project Proponent

M/s. ECO VISION INDIA has proposed for setting up manufacturing unit of Synthetic Resin viz. Urea Formaldehyde Resin (UF Resin), Melamine Formaldehyde Resin (MF Resin), Melamine Urea Formaldehyde Resin (MUF Resin) and Phenol Formaldehyde Resin (PF Resin) with total production capacity of 7776 TPA at Plot No – 27, Khatian No – 586 (LR), JL No – 96, Village-Haldibari, P.O. Dhankoil, P.S. Kaliyaganj, Dist. Uttar Dinajpur, West Bengal - 733129. The company will manufacture those products complying with the international quality standards.

Some of the general uses of UF Resin include laminates, textiles, paper, wrinkle-resistant fabrics, cotton blends, and foam artificial snow. It can also be found as a coating for electrical appliances such as desk lamps. MF Resins are used as adhesives for exterior and semi-exterior-grade plywood and particleboard. PF resins make excellent wood adhesives for plywood and particle board because they form chemical bonds with the phenol-like lignin component of wood. The Company's corporate office is situated at Haldibari, Kaliyaganj, Uttar Dinajpur, West Bengal.

The annual production capacity of the proposed project is 2304 Tonnes of UF Resins, 2304 Tonnes of MF Resins, 2304 Tonnes of MUF Resins and 864 Tonnes of PF Resins based on 288 working days and one shifts per day. Three (3) resin Kettles will be introduced. The manufacturing unit will be located at Plot No – 27, Khatian No – 586 (LR), JL No – 96, Village-Haldibari, P.O. Dhankoil, P.S. Kaliyaganj, Dist. Uttar Dinajpur, West Bengal - 733129 on land of 794.48 Sqm.

Table 1.1: Salient Features of the Project

1	Name of the Company	M/s. Eco Vision India
2	Registered Office Plant & Admin Office	Plant: Plot No – 27, Khatian No – 586 (LR), JL No – 96, Village-Haldibari, P.O. Dhankoil, P.S. Kaliyaganj, Dist. Uttar Dinajpur, West Bengal - 733129. Registered Office: Plot No – 27, Khatian No – 586 (LR), JL No – 96, Village-Haldibari, P.O. Dhankoil, P.S. Kaliyaganj, Dist. Uttar Dinajpur, West Bengal – 733129.
3	Name of the Directors	Shri Subhadip Das
4	Proposed Sector	5(f) Synthetic organic chemicals industry
5	Area of plant	794.48 SQM (0.2 Acre), Industrial Land
6	Proposed Unit	Setting up manufacturing unit of Synthetic Resin viz. Urea Formaldehyde Resin - 2304 TPA (UF Resin), Melamine Formaldehyde Resin - 2304 TPA (MF Resin), Melamine Urea Formaldehyde Resin - 2304 TPA (MUF Resin) and Phenol Formaldehyde Resin - 864 TPA (PF Resin)
7	Cost of Project	Rs. 72.40 Lakhs

1.3 The Project Proponent

M/s. Eco Vision India is managed by the director directly namely Shri Subhadip Das. Details about the Director is given in **Table 1.2**.

Table 1.2: Promoter & Their Background

Particulars	Description
Name	Subhadip Das
Educational Qualification	BBA
Address	School Para, Kaliyaganj, U/Dinajpur (W.B)

M/s. Eco Vision India has obtained Land Conversion Certificate dated 16.12.2024 in their name. The same is enclosed as Annexure-2 for ready reference.

1.4 Brief Description of nature, size, location of the project and its importance to the country, region

1.4.1 Nature and size of the project

The proposed project activity falls under the Category-B under project activity **5(f) Synthetic organic chemicals industry** under EIA Notification 2006.

Table 1.3: The Different Products That Will Be Produced From The Proposed Plant

Urea-Formaldehyde Resin

Capacity, TPM :192 Ton Per Month	
Batch Size:	8 Tons
No. of Batches/Day:	1
Working Days/ month:	24

Sl.No.	Raw Material	Kg/Batch	MT/Batch	TPD	TPM	Remarks
	INPUT					
1.	Industrial Urea	2350	2.350	2.350	56.4	Raw Materials
2.	Formalin	5640	5.640	5.640	135.36	
3.	Caustic Soda	8	0.008	0.008	0.192	
4.	Acetic Acid	4	0.004	0.004	0.096	
5.	Water caustic soda solution & Acid solution	20	0.02	0.02	0.480	
	TOTAL	8022	8.022	8.022	192.528	
	OUTPUT	8000	8	8	192	
1	Urea-Formaldehyde Resin	8000	8	8	192	Finished Product
2	Handling Loss	22	0.022	0.022	0.528	Evaporator
	Total	8000	8	8	192	

Melamine Formaldehyde Resin

Capacity, TPM:	192 Ton Per Month
Batch Size, Ton:	4 Tons
No. of Batches/Day:	2
Working Days/ month:	24

Sl. No.	Raw Material	Kg/Batch	Ton /Batch	TPD	TPM	Remarks
	INPUT					
1.	Melamine	1525	1.525	3050	73.2	Raw Materials
2.	Formalin	2440	2.440	4880	117.12	
3.	Borax	20	0.02	40	0.960	
4.	Water for Borax solution	26	0.026	52	1.248	
	TOTAL	4011	4.011	8.022	192.528	
	OUTPUT	4000	4	8	192	
1	MF Resin	4000	4	8	192	Finished Product
2	Handling Loss	11	0.011	0.022	0.528	Evaporator
	Total	4000	4	8	192	

Melamine Urea Formaldehyde

Capacity, TPM:	192 Ton Per Month
Batch Size, Ton:	8 Ton
No. of Batches/Day:	1
Working Days/ month:	24

Sl.No.	Raw Material	Kg/Batch	Ton /Batch	TPD	TPM	Remarks
	INPUT					
1.	Industrial Urea	1050	1.050	1.050	25.2	Raw Materials
2.	Formalin	5330	5.330	5.330	127.920	
3.	Melamine	1600	1.600	1.600	38.4	
4.	Caustic Soda	12	0.012	0.012	0.288	
5.	Water for Caustic Soda solution	30	0.03	0.03	0.720	
	TOTAL	8022	8.022	8.022	192.528	
	OUTPUT	8000	8	8	192	
1	MUF Resin	8000	8	8	192	Finished Product

Phenol Formaldehyde Resin

Capacity, TPM :	72 Ton Per Month
Batch Size, Ton :	1.5 Ton
No. of Batches/Day :	2
Working Days/ month :	24

Sl.No.	Raw Material	Kg/Batch	Ton /Batch	TPD	TPM	Remarks
	INPUT					
1.	Phenol	500	0.05	1000	24	Raw Materials
2.	Formalin	900	0.09	1800	43.2	
3.	Caustic Soda	38	0.038	76	1.824	
4.	Oxalic Acid	-	-	-	-	
5.	Water for Caustic Soda solution	70	0.070	140	3.360	
	TOTAL	1508	1.508	3.016	72.384	
	OUTPUT	1500	1.5	3	72	
1	P-F Resin	1500	1.5	3	72	Finished Product

1.4.2 Location of the project

The manufacturing unit will be located at Plot No – 27, Khatian No – 586 (LR), JL No – 96, Village-Haldibari, P.O. Dhankoil, P.S. Kaliyaganj, Dist. Uttar Dinajpur, West Bengal - 733129 on a new land of 0.2 Acre (794.48 Sqm).

The Latitude and Longitude of the project site are given below:-

Latitude	Longitude
25°36'24.36"N	88°20'34.25"E
25°36'24.70"N	88°20'34.16"E
25°36'24.77"N	88°20'31.36"E
25°36'24.44"N	88°20'31.35"E

Source: - Google Earth

1.5 Need for the Project & Importance to the Country

High demand in Resin is due to their chemical properties and usage. Keep in mind the glowing requirements of the clients, the Manufacturers, Exporters and Suppliers are offering quality Resin. Resin manufacturers process the product in view of its utilization. Owing to these enormous usages, the resin suppliers, exporters and sellers offer it at reasonable prices.

Specialty vinyl resins are used in a variety of applications, including coatings, adhesives, and as a binder in paints. They are used in industries like construction, electronics, and automotive due to their flexibility and adhesion properties. They are known for their corrosion resistance and are used in applications like FRP water tanks, chemical processing plants, and even aerospace applications.

Resins are widely used in paints, varnishes, and coatings due to their ability to form durable, glossy, and weather-resistant films, as well as their versatility and cost-effectiveness. The global specialty resins market size is estimated at USD 9.66 billion in 2025 and is predicted to reach around USD 16.17 billion by 2034, accelerating at a CAGR of 5.90% from 2025 to 2034. Rising demand from the building and construction industry is expected to substantially propel market expansion.

1.6 Market demand evaluation for the project

The use of synthetic resins for various purposes such as adhesives, finishes, particle board, MDF, and moulded objects is growing rapidly in the country. Urea-formaldehyde and melamine-formaldehyde resins belong to the category of thermosetting resins, which are mostly produced by urea-formaldehyde resins with 80% of the global production. Amino resins have applications in enhancing the performance of rubber, paper and electrical devices. Phenol formaldehyde resins are the first synthetic resins (plastics) ever made, and they are used for making molded products, coatings, adhesives, and circuit boards. Phenol formaldehyde resins or phenolic resins are a type of synthetic polymers that are formed by the reaction of phenol or its derivatives with formaldehyde. They are the basis of Bakelite, which was the first synthetic resin (plastic) to be commercially produced. They are widely used for making molded products such as billiard balls, laboratory countertops, and coatings and adhesives. They used to be the main material for making circuit boards, but they have been mostly replaced by epoxy resins and fibreglass cloth, which are more fire-resistant.

The Indian market has become more competitive in recent years, leading many companies to exit low-margin segments due to lower prices. This has resulted in a mismatch between supply and demand. When some of the key competitors are removed from the market, the demand exceeds the supply and causes significant price increases in a free-pricing market.

The resin demand depends on the state and growth of the economy. The demand can be met by domestic production or imports. However, for a developing country, importing large amounts of resin is not feasible due to limited foreign exchange. Therefore, it is better for a country to produce its own resin and reduce its dependence on imports. This will help the country save foreign exchange and replace imported products with domestic ones.

There may be large opportunities to become a global supplier of quality resin. Also there exists abundant market opportunities in the neighboring regions of Asia, Africa and the Middle East. The finished goods will be sold in domestic market and would be largely exported to the Regulated International Market as per demand.

However, keeping in mind the above points and subsequently realizing the importance, M/s. Eco Vision India has proposed for setting up manufacturing unit of 2304 TPA of UF Resins, 2304 TPA of MF Resins, 2304 TPA of MUF Resins and 864 TPA of PF Resins.

1.7 Methodology for the Environmental Impact Assessment (EIA) Study

Amongst various essential data required for formulation of EIA study report are different background data. Assessment of the background environmental scenario has been partly based on the latest published Census document of the area and the maps published by various Government agencies as well as information collected through site visits and data/information obtained from various Government offices. Meteorological data of Malda Meteorological Observatory published by India Meteorological Department has been used for reference. Basic information like wind direction; wind speed, air temperature and relative humidity are available in the published data.

To assess the status of the background environment condition ambient air quality, water quality, noise level and soil quality were monitored and analyzed in accordance with standard procedures approved by the MOEF engaging NABL accredited testing laboratory for such environmental parameters desired by the statutory authority.

As regards socio-economic profile, the study has been carried out based on Census of India 2011 for Uttar Dinajpur district of West Bengal. The study has been confined basically to Population Structure, Sex Ratio, Literacy Rate, Classified Population and Occupational structure.

The Study Area is concerned as the area covered by a radius of 10 km radius centering the project site. Details of the proposed project activities have been described primarily based on information furnished in the Project Report provided by the project proponent and the Pre-Feasibility Report (PFR) prepared by the Environmental Consultants and the Form-1 submitted subsequently.

To specify the water demand and effluent quality & quantity, the guidelines of various prevailing norms/codes and Acts have been taken into account. The waste treatment measure (basically domestic wastewater from toilets of official staff, operators, security personnel as well as contractual labourers) has been suggested to achieve the desired environmental quality as well as present day norm.

Monitoring schemes are suggested to ensure that the Project meets the requirements that are recommended by the State Pollution Control Board.

The impacts have been quantified based on objective and subjective judgments. The findings have been given as Environmental Impact Assessment.

The study has been divided under the following 12 Sections as suggested in notification no. S.O.1533 dated 14th September, 2006 ('EIA Notification - 2006') published by Ministry of Environment & Forests, Govt. of India:

Chapter 1 : Introduction

Chapter 2 : Project Description

Chapter 3 : Description of the Environment

Chapter 4 : Anticipated Environmental Impacts & Mitigation Measures
Chapter 5 : Analysis of Alternatives
Chapter 6 : Environmental Monitoring Program
Chapter 7 : Additional Studies
Chapter 8 : Project Benefits
Chapter 9 : Environmental Cost Benefit Analysis
Chapter 10 : Environmental Management Plan
Chapter 11 : Summary and Conclusion
Chapter 12 : Disclosure of Consultants Engaged

CHAPTER 2

PROJECT DESCRIPTION

2. Chapter 2: Project Description

2.1 Type of The Project

Synthetic resins are produced chemically and are renowned for their adaptability and durability, which make them appropriate for a variety of applications, including adhesives, coatings, and composite materials.

2.2 Need for the Project

High demand in Resin is due to their chemical properties and usage. Keep in mind the glowing requirements of the clients, the Manufacturers, Exporters and Suppliers are offering quality Resin. Resin manufacturers process the product in view of its utilization. Owing to these enormous usages, the resin suppliers, exporters and sellers offer it at reasonable prices.

Specialty vinyl resins are used in a variety of applications, including coatings, adhesives, and as a binder in paints. They are used in industries like construction, electronics, and automotive due to their flexibility and adhesion properties. They are known for their corrosion resistance and are used in applications like FRP water tanks, chemical processing plants, and even aerospace applications.

Resins are widely used in paints, varnishes, and coatings due to their ability to form durable, glossy, and weather-resistant films, as well as their versatility and cost-effectiveness. The global specialty resins market size is estimated at USD 9.66 billion in 2025 and is predicted to reach around USD 16.17 billion by 2034, accelerating at a CAGR of 5.90% from 2025 to 2034. Rising demand from the building and construction industry is expected to substantially propel market expansion.

Demand and Supply Gap

The Indian market has become more competitive in recent years, leading many companies to exit low-margin segments due to lower prices. This has resulted in a mismatch between supply and demand. When some of the key competitors are removed from the market, the demand exceeds the supply and causes significant price increases in a free-pricing market.

2.3 Project Location

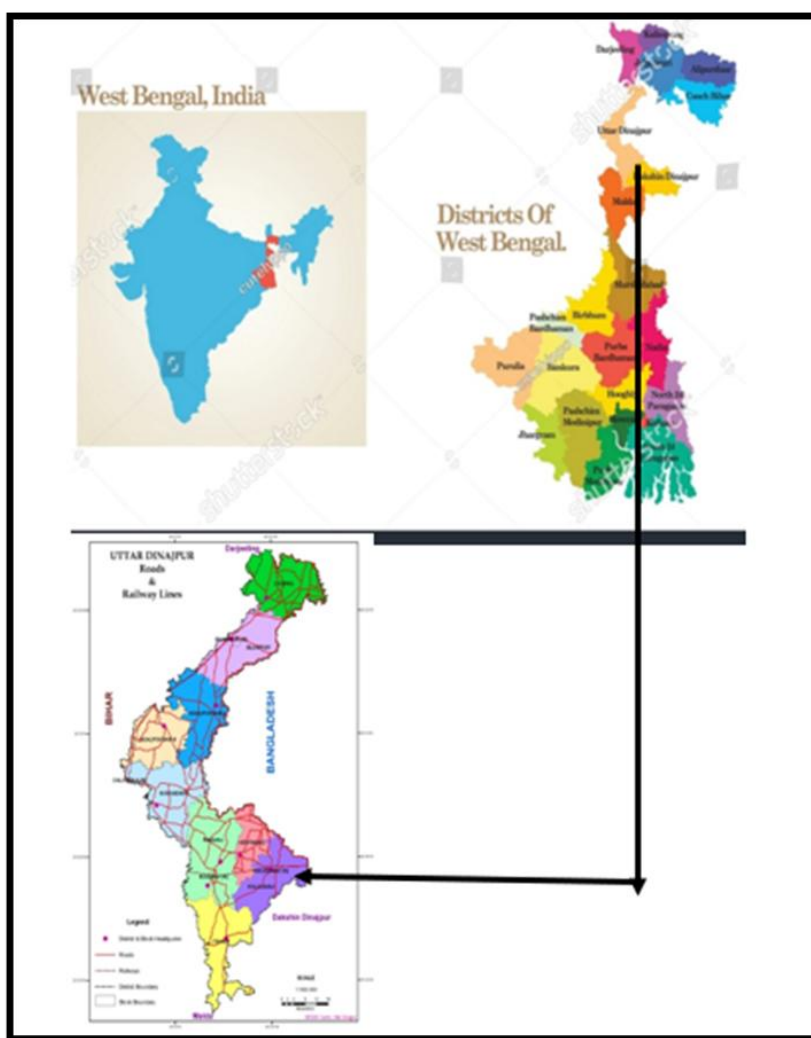
The proposed project is to be located at Plot No – 27, Khatian No – 586 (LR), JL No – 96, Village-Haldibari, P.O. Dhankoil, P.S. Kaliyaganj, Dist. Uttar Dinajpur, West Bengal - 733129, West Bengal. The proponent has acquired 0.2 Acre (794.48 Sqm) of land under the above Plot No. & JL No. The land is converted into Mill and mutated. The factory will be constructed on the said land. The land is within 70 KM from Malda and 330 KM from Kolkata. The land is also adjacent to Raiganj-Buniadpur Road. Kaliyaganj Station is within 3.2 K.M. from the proposed project location.

All the civic amenities like market, bus stand, hospital, school, college, hotel, restaurant etc. all are available in the town which is about 5-7 km from the site. Following forests and rivers are within 10 km radius of the site.

- Dhamja Forest – 2.5 KM (approx.) – SSW
- Dhamja Big Forest – 3.5 KM (approx.) – SSW
- Tangon River – 8.0 KM (approx.) - E
- Srimoti River- 0.15 KM (approx.)-N

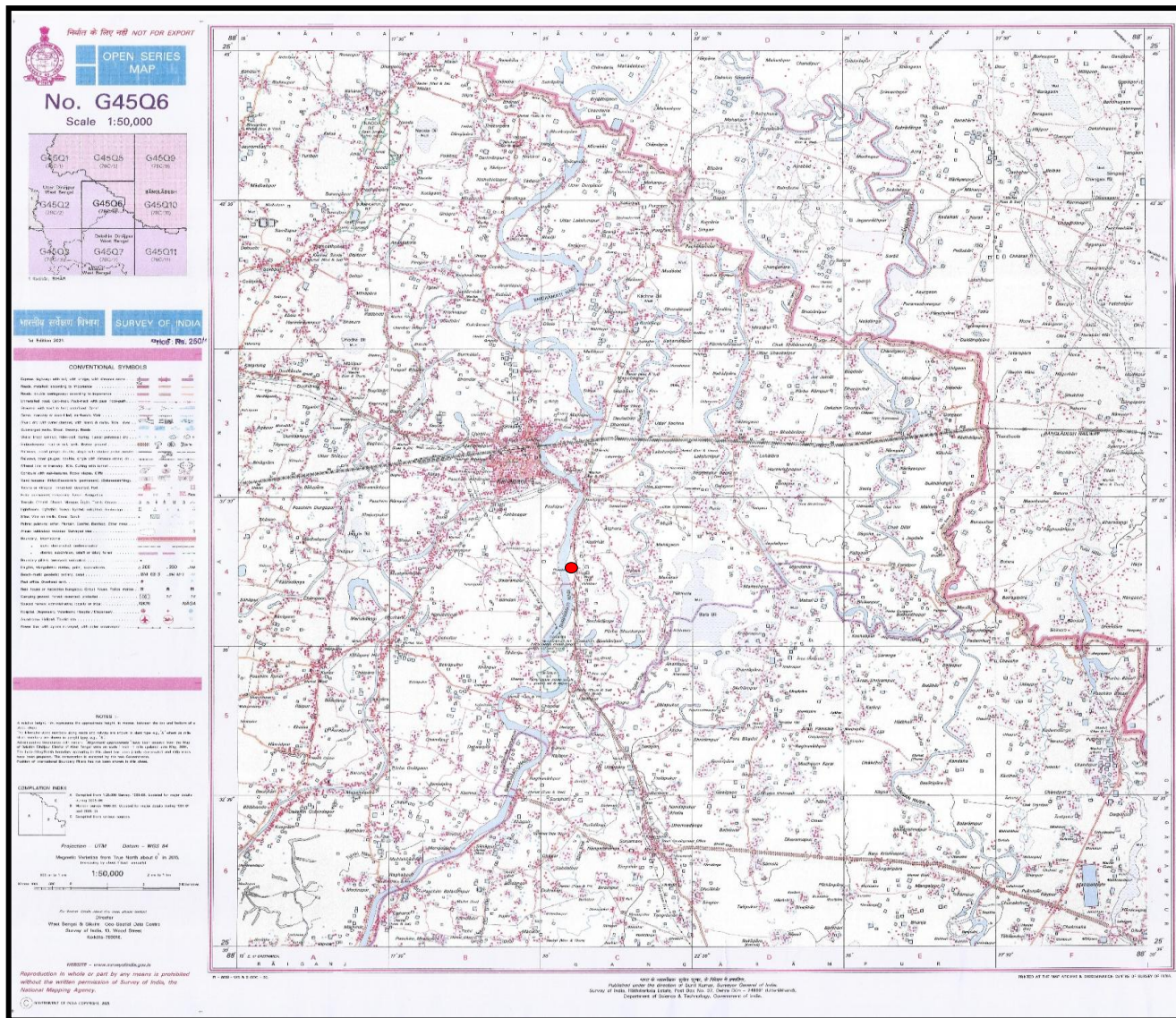
Location of the site is broadly furnished below for having firsthand information about the site and its surroundings marked in the following maps, the usual practice that is generally followed for such reports:-

Figure 2.1: Map showing location of project site



The site is marked on Survey of India's new series Map No. G45QC

Figure 2.2: Project site marked on Survey of India's Map



Notwithstanding the above, location of the land acquired is identified on Google Earth Map and the same is furnished below for ready better understanding and reference:-

From the site location map it can be seen that the land is within an existing small industrial area.

Figure 2.3: Map of Study Area



Source: - Google Earth

2.3.1 Project Boundary & Project Site Layout

The project boundary is clearly marked on the Google Earth map above which is within the existing industrial complex.

Table 2.1: Project Coordinates

Latitude	Longitude
25°36'24.36"N	88°20'34.25"E
25°36'24.70"N	88°20'34.16"E
25°36'24.77"N	88°20'31.36"E
25°36'24.44"N	88°20'31.35"E

A proposed Site Plan of the proposed project is furnished below showing different areas marked including measurement.

The areas broadly marked are as under:-

AREA CHART				
KEY	DESCRIPTION	LEGENDS	AREA IN SQ. MT.	AREA %
1	GUARD ROOM		6.88 SQ.MT.	0.87 %
2	OFFICE ROOM		8.94 SQ.MT.	1.13 %
3	ELECTRICAL METER ROOM & STORE ROOM		20.81 SQ.MT.	2.62 %
4	RAW MATERIAL STOCK AREA (PROPOSED G.C.I. ROOF SHADE)		25.09 SQ.MT.	3.16 %
5	RESIN STOCK AREA (PROPOSED G.C.I. ROOF SHADE)		25.09 SQ.MT.	3.16 %
6	RESIN KETTLE AREA (PROPOSED G.C.I. ROOF SHADE)		84.24 SQ.MT.	10.60 %
7	SILENT DG (PROPOSED G.C.I. ROOF SHADE)		20.18 SQ.MT.	2.54 %
8	BOILER SECTION (PROPOSED G.C.I. ROOF SHADE)		20.18 SQ.MT.	2.54 %
9	COOLING TOWER (PROPOSED G.C.I. ROOF SHADE)		18.42 SQ.MT.	2.32 %
10	FIRE WOOD STOCK AREA (PROPOSED G.C.I. ROOF SHADE)		18.42 SQ.MT.	2.32 %
11	EFFLUENT TREATMENT PLANT (ETP) (PROPOSED G.C.I. ROOF SHADE)		11.22 SQ.MT.	1.41 %
12	LATRINE & URINAL (L & U)		6.00 SQ.MT.	0.76 %
SL. NO.	DESCRIPTION	LEGENDS	AREA IN SQ. MT.	AREA %
1	GREEN AREA (PLANTATION AREA)		279.34 SQ.MT.	35.16 %
2	ROAD		225.79 SQ.MT.	28.41 %
3	VACANT LAND		23.88 SQ.MT.	3.00 %
TOTAL AREA			794.48 SQ.MT.	100.00 %

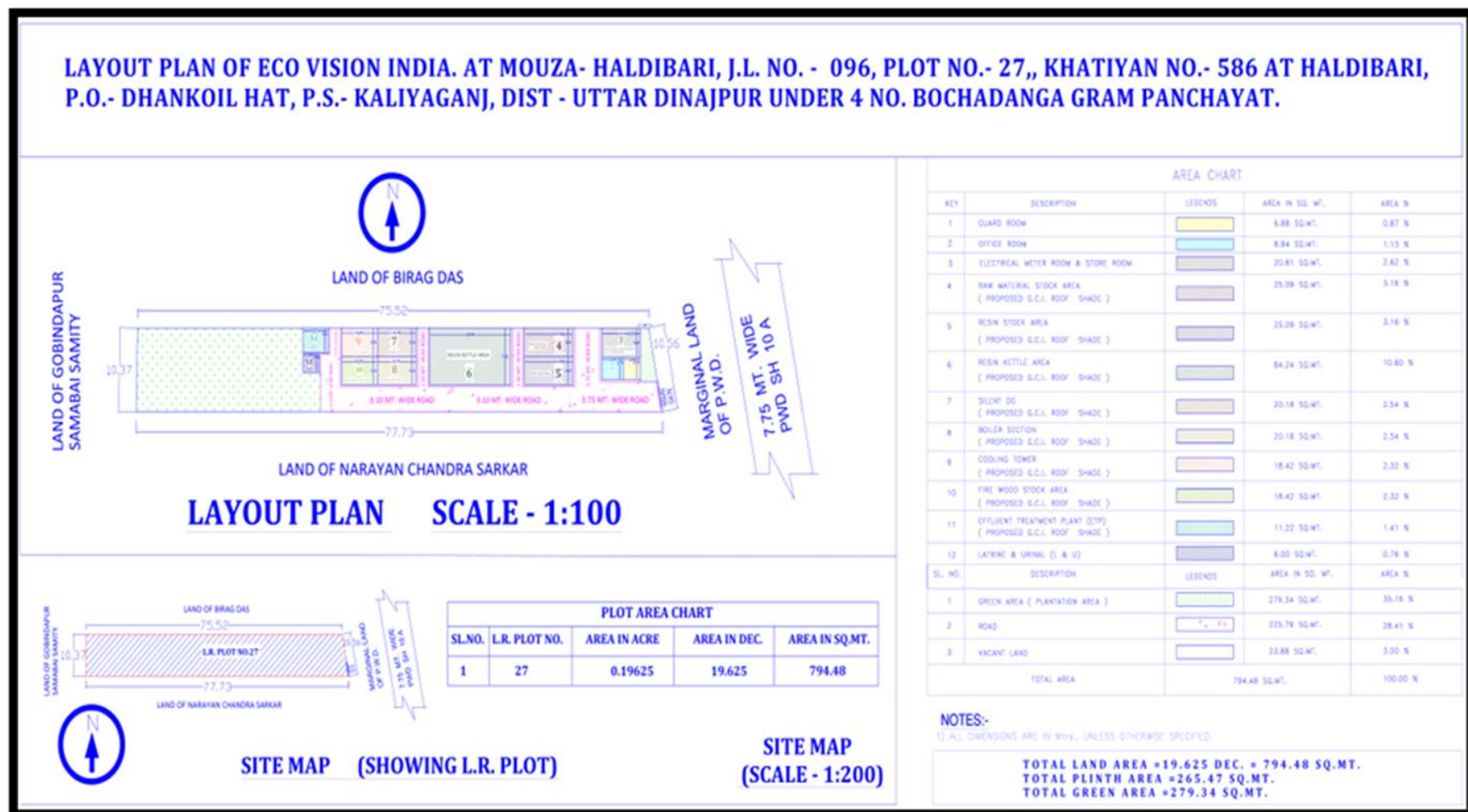
The proposed Master Ground Floor Plan (Site Plan) is furnished in Fig. 2.5 from where the above details are collected and reproduced.

2.3.2 Site Photographs:

Figure 2.4: Photographs of the Project Site



Figure 2.5: Proposed Plant Layout



2.4 Size of the Operation

M/s. ECO VISION INDIA has proposed for setting up manufacturing unit of Synthetic Resin viz. Urea Formaldehyde Resin (UF Resin), Melamine Formaldehyde Resin (MF Resin), Melamine Urea Formaldehyde Resin (MUF Resin) and Phenol Formaldehyde Resin (PF Resin) with total production capacity of 7776 TPA.

The plant will propose the Following Machinery and Plant Equipments:

S.No.	Plant Machinery Details		
	Machinery	Specification	Quantity
1	Boiler (Steam)	Boiler with all accessories and stack of 0.2 m diameter and 20-meter height; Capacity 1TPH	1
2	Resin Kettle	Capacity 8 Ton	1
3	Resin Kettle	Capacity 4 Ton	1
4	Resin Kettle	Capacity 1.5 Ton	1
5	Silent DG Set	Capacity 80KVA with stack of height 5 m from GL	1
6	Cooling Tower	85°C to 45°C in 1 hour	1

The above mentioned equipments are utilized to manufacture following products:

Sl	Name of the product	Production Capacity Ton/Month) 24 Days	Production Capacity (Ton /Annum) 288 Days	Storage Capacity (MT)	Mode of Storage
1	Urea-Formaldehyde Resin	192	2304	25	Fixed Tank
2	Melamine - Formaldehyde Resin	192	2304	25	Fixed Tank
3	Melamine Urea Formaldehyde Resin	192	2304	25	Fixed Tank
4	Phenol- Formaldehyde Resin	72	864	08	Plastic Container
Total		648	7776	83	

2.5 Estimated project cost.

Total cost of the project will be around Rs. 72.40 Lakhs. Budgetary breakup is as follows:

Sl. No	Particular	Cost (Rs. Lakh)
1	Land & Land Development	6.35
2	Building & Civil Construction	25.68
3	Plant & Machinery	34.50
4	Electrical Installations	2.52
5	Miscellaneous Fixed Assets	2.50
6	Preliminary & Preoperative Expenses	0.85
Total		72.40

2.6 Proposed schedule for approval and implementation

After obtaining all the necessary clearances including EC; the proponent planned the following construction, erection and commissioning schedule:

Table 2.2: Project Proposed schedule

Activity	Commencement	Completion
Land acquisition and development	Acquired and developed land	
Civil works, Buildings, Foundation of Machineries	July 2026	September 2026
Structural fabrication and erection of technological structures	August 2026	October 2026
Placement of Orders of Plant and Machinery	August 2026	November 2026
Erection of Equipments	December 2026	January 2027
Trial Run and Commissioning	January 2027	February 2027
Commercial Operation Date	February 2027	

2.7 Technology and process description

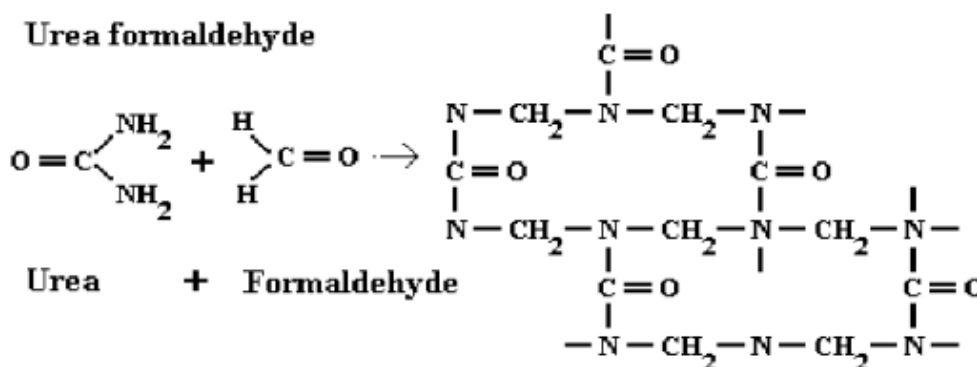
Flow sheet of manufacturing process

Urea-Formaldehyde Resin

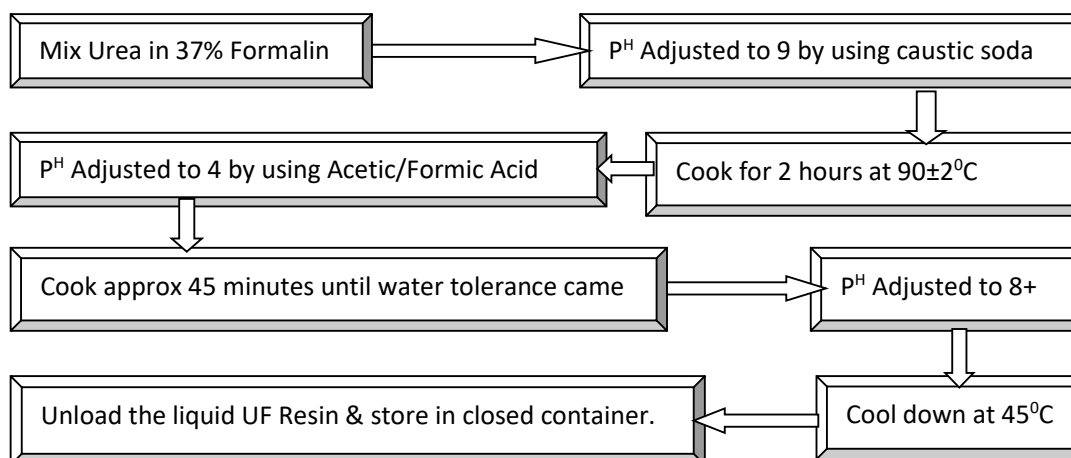
Urea formaldehyde resins are poly-condensation products of the reaction of formaldehyde with urea. The relatively easy production of UF resins, their good solubility in water and absence of colour, makes these thermosetting polymers irreplaceable in the manufacture of many wood

based products. Due to the low resistance to humidity of UF resins, the wood products are suitable for interior use in dry condition. The specifications of the resin product such as the molar ratio of formaldehyde to urea, solid content, viscosity etc. are adjusted as per requirement. The manufacturing process diagram is depicted in figure.

Chemical Reaction:



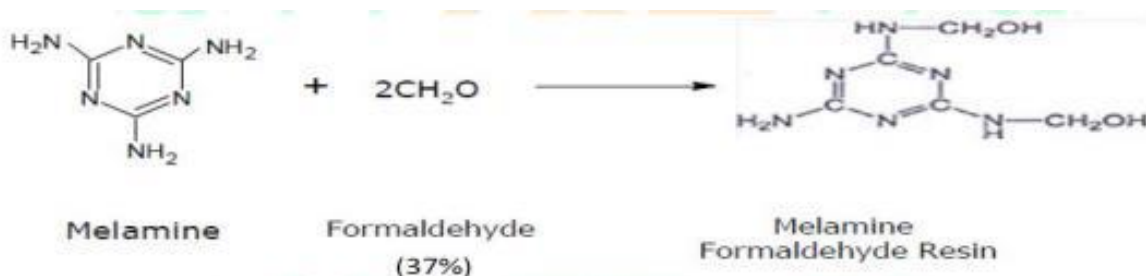
Process Flow Chart:



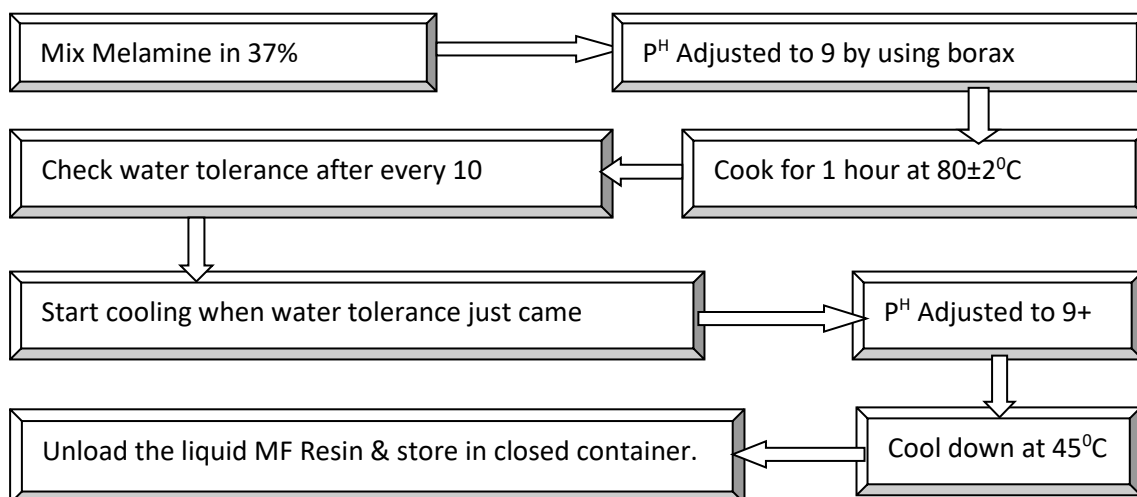
Melamine Formaldehyde Resin

Melamine-formaldehyde resin is a thermosetting polymer created by reacting melamine with formaldehyde. It is known for its high durability, heat resistance, and flame-retardant properties, as it releases nitrogen gas when burned, helping to extinguish flames. This resin forms a rigid, three-dimensional structure due to its highly cross-linked network, making it suitable for various applications, including laminates, adhesives, and coatings.

Chemical Reaction:



Process Flow Chart:

**Melamine Urea Formaldehyde**

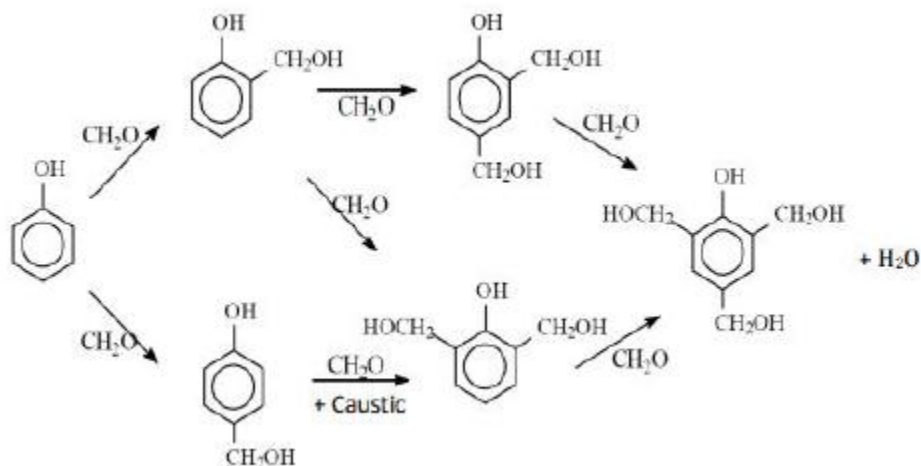
Melamine urea formaldehyde resin (MUF) is defined as a type of adhesive resin that is more resistant to moisture than urea formaldehyde resin, and is utilized for bonding applications such as scarf jointing of plywood and laminates, benefiting from the complete hydroxymethylation of melamine.

This amino-plastic resin is co polymer of MF & UF resin. Usually it is made of 50% of MF resin & 50% of UF resin.

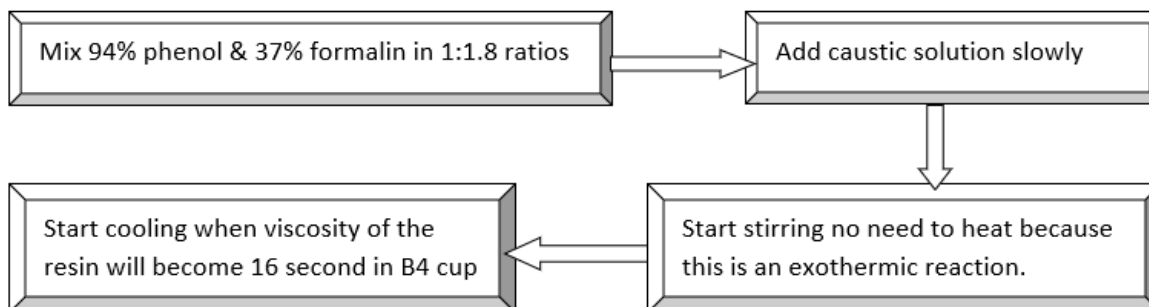
Phenol Formaldehyde Resin

A step-growth polymerization reaction that is exothermic produces Phenol-Formaldehyde Resin, a group of polymers. The viscosity of the material rapidly changes, so a batch reactor controls the reaction. The reactive form of formaldehyde, which is Methylene Glycol Oligomers in dynamic equilibrium, has a concentration that depends on temperature and pH.

Chemical Reaction:



Process Flow Chart:



2.8 Raw Material, Major equipment and Facilities

2.8.1 Raw Material

Urea-Formaldehyde Resin

Capacity, TPM :192 Ton Per Month	
Batch Size:	8 Tons
No. of Batches/Day:	1
Working Days/ month:	24

Sl.No.	Raw Material	Kg/Batch	MT/Batch	TPD	TPM	Remarks
INPUT						
1.	Industrial Urea	2350	2.350	2.350	56.4	Raw Materials
2.	Formalin	5640	5.640	5.640	135.36	
3.	Caustic Soda	8	0.008	0.008	0.192	

4.	Acetic Acid	4	0.004	0.004	0.096	
5.	Water caustic soda solution & Acid solution	20	0.02	0.02	0.480	
	TOTAL	8022	8.022	8.022	192.528	
	OUTPUT	8000	8	8	192	
1	Urea-Formaldehyde Resin	8000	8	8	192	Finished Product
2	Handling Loss	22	0.022	0.022	0.528	Evaporator
	Total	8000	8	8	192	

Melamine Formaldehyde Resin

Capacity, TPM:	192 Ton Per Month
Batch Size, Ton:	4 Tons
No. of Batches/Day:	2
Working Days/ month:	24

Sl. No.	Raw Material	Kg/Batch	Ton /Batch	TPD	TPM	Remarks
	INPUT					
1.	Melamine	1525	1.525	3050	73.2	Raw Materials
2.	Formalin	2440	2.440	4880	117.12	
3.	Borax	20	0.02	40	0.960	
4.	Water for Borax solution	26	0.026	52	1.248	
	TOTAL	4011	4.011	8.022	192.528	
	OUTPUT	4000	4	8	192	
1	MF Resin	4000	4	8	192	Finished Product
2	Handling Loss	11	0.011	0.022	0.528	Evaporator
	Total	4000	4	8	192	

Melamine Urea Formaldehyde

Capacity, TPM:	192 Ton Per Month
Batch Size, Ton:	8 Ton
No. of Batches/Day:	1
Working Days/ month:	24

Sl.No.	Raw Material	Kg/Batch	Ton /Batch	TPD	TPM	Remarks
	INPUT					
1.	Industrial Urea	1050	1.050	1.050	25.2	Raw Materials
2.	Formalin	5330	5.330	5.330	127.920	
3.	Melamine	1600	1.600	1.600	38.4	
4.	Caustic Soda	12	0.012	0.012	0.288	
5.	Water for Caustic Soda solution	30	0.03	0.03	0.720	
	TOTAL	8022	8.022	8.022	192.528	
	OUTPUT	8000	8	8	192	
1	MUF Resin	8000	8	8	192	Finished Product

Phenol Formaldehyde Resin

Capacity, TPM :	72 Ton Per Month
Batch Size, Ton :	1.5 Ton
No. of Batches/Day :	2
Working Days/ month :	24

Sl.No.	Raw Material	Kg/Batch	Ton /Batch	TPD	TPM	Remarks
	INPUT					
1.	Phenol	500	0.05	1000	24	Raw Materials
2.	Formalin	900	0.09	1800	43.2	
3.	Caustic Soda	38	0.038	76	1.824	
4.	Oxalic Acid	-	-	-	-	
5.	Water for Caustic Soda solution	70	0.070	140	3.360	
	TOTAL	1508	1.508	3.016	72.384	
	OUTPUT	1500	1.5	3	72	
1	P-F Resin	1500	1.5	3	72	Finished Product

2.9 Utilities

2.9.1 Water Requirement

The estimated demand for water is 10KLD for meeting the entire requirements for domestic consumption, gardening and Industrial uses. The company will meet its entire water requirement from ground water.

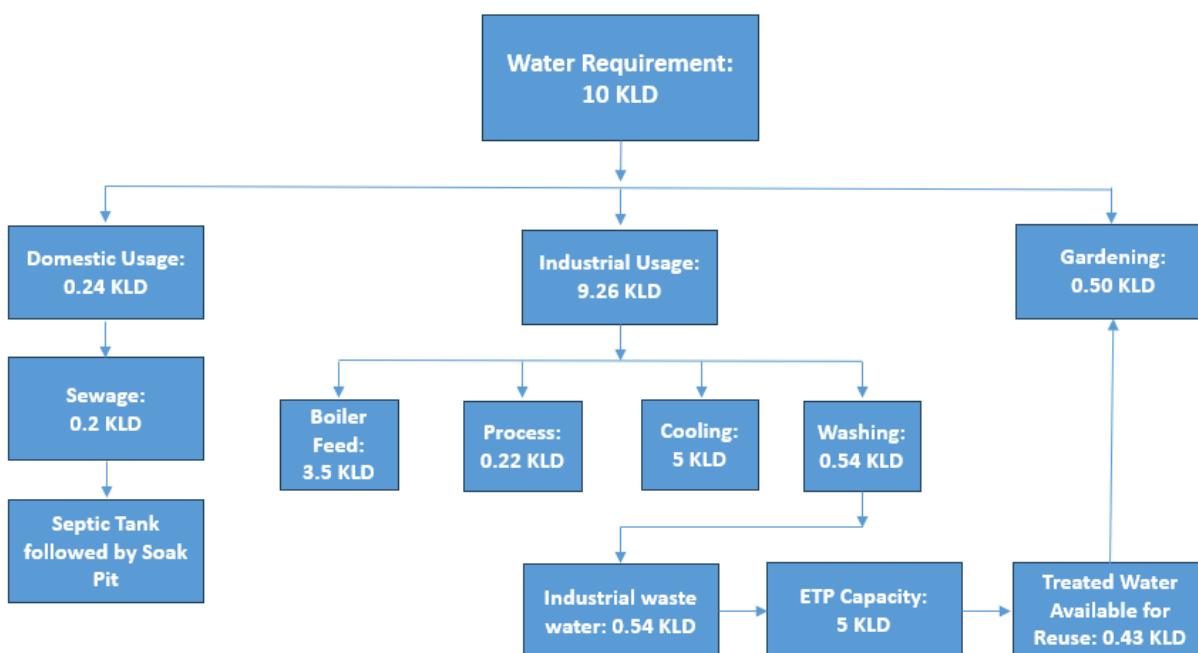
The water requirement including for cooling& others and Domestic water are given below.

Table 2.3: Water Requirement

Sl. No.	Particulars	Water Requirement (KLD)
1.	Domestic	0.24
2.	Gardening	0.50
3.	Boiler Feed	3.50
4.	Process (For Resin Mfg)	0.22
5.	Cooling	5.00
6.	Washing	0.54
	Total	10.00

Rain Water Harvesting System shall be incorporated. Maximum use of harvested water for plant use.

Figure 2.7: Water Balance Diagram



2.9.2 Power and Fuel Requirement

Electricity: Total power requirement for the proposed project will be 75 KVA and will be sourced from WBSEDCL (West Bengal State Electricity Distribution company Limited). During emergency purpose D. G. Set of 80 KVA will be utilized.

Fuel Requirement:

Sl No.	Fuel Type	Consumption per Day.	Fuel Burning operation where the fuel is used.
1.	WOOD/PLYWOOD REJECTS	800 KG	Boiler (Running Hour max. 5 Hrs/Day)
2.	DIESEL	6 LIT/HOUR (When need)	Diesel Generator Set

2.9.3 Manpower:

The total requirement of manpower for the proposed project is estimated 10 numbers. The required manpower is available locally.

S. No.	Particulars		Heads
1.	Loading Unloading Labour	Unskilled	03
2.	Security	Unskilled	02
3.	Machine Helper	Unskilled	01
4.	Machine Operator	Semi-skilled	02
5.	Chemist	Skilled	01
6.	Accountant/Manager	Skilled	01
Total			10

2.10 Description of mitigation measures incorporated into the project to meet environmental standards, environmental operating conditions, or other EIA requirements:

The project involving synthetic organic chemicals (SOCs), several mitigation measures must be incorporated to meet environmental standards, comply with environmental impact assessment (EIA) requirements, and adhere to operating conditions set by regulatory bodies. These measures aim to prevent, reduce, or offset potential adverse environmental impacts across the air, water, soil, and biological environments. The types of pollution, which affect the environment, emanating from this plant can be classified as follows:

- Air Pollution
- Water Pollution
- Solid Waste
- Noise Pollution

2.10.1 Air Pollution:**Air Pollution control devices for Proposed Project:**

Flue gas emissions from boiler is the primary cause of air pollution. Additionally, the handling and transportation of raw materials, as well as manufacturing activities, will increase the likelihood of fugitive emissions. Below is a description of the several types of air pollution.

Main source of flue gas emission is:

1. Boiler with all accessories
2. A 80 KVA Diesel based Generator equipped with stack of height 3 m from GL

Boiler will be attached with a Dust Collector and an ID fan to control the particulate emission evolved during burning of fuel in the boiler.

Technical Details of Proposed APC:

Proposed Stack No.	Stack Attached to	Stack height (m)	Dia of Stack(m)	Temp. (°C)	Velocity (m/s)	PM (mg/Nm ³)	APC System & Air Volume As given in Test Report
1	Boiler	30	0.2	50	9.86	≤50	Adequate Dust Collector Volume-12000 m ³ /hr
2	DG Set (1x80 KVA)	3.0	0.1	162	13.84	<75	Nil

In the process there will be no chance of generation of air pollution as all the reactors will be kept closed during the reaction process and will be under negative pressure.

2.10.2 Water Pollution:

Industrial waste water (0.54 KLD) will be generated and will be treated in ETP of 5 KLD Capacity.

Domestic waste water (0.1KLD) will be generated and will be treated in septic tank followed by soak pit.

2.10.3 Solid waste:

The other sources of hazardous waste generation from proposed activity will be discarded containers/ Barrel from storage and handling of raw materials and spent/used oil generation from

plant machinery. Ash produces from burning of wood will be around 150 kg/ day which will contain a lots of calcium and will be used for soil amendment.

The unit will provide dedicated storage area for the hazardous waste storage within premises having impervious floor and roof cover.

Type of Solid Waste	Estimated Generation (kg/Month)	Process of Disposal
Discarded Containers/ Barrels	50	Decontamination and reuse or sell to scrap vendors
ETP Sludge	15	Collection, Storage & Disposal to Govt. authorized agency
Sewage Sludge	15	To be given to Govt. approved incinerators

2.10.4 Noise Pollution:

Noise pollution from such unit may be sourced from the following areas:

- Raw Material Handling Sections
- Process and Product handling
- Generator Area
- Traffic Movement

The adequate precautions will be taken for abatement of noise pollutions, which are as follows;

- DG sets to be installed will be Silent DG which will run only during power cut meeting present day norm.
- The machinery and equipment will require timely and appropriate lubrication, oiling, and preventive maintenance to minimize noise production.
- Green buffers and proper zoning within the plant layout.
- Regular noise monitoring and worker protection through PPE.

CHAPTER 3 DESCRIPTION OF THE ENVIRONMENT

3. Chapter 3: Description of The Environment

3.1 Introduction

With reference to the most significant environmental characteristics, this chapter provides a representation of the current environmental situation of the studied area. When describing the physical, air, and noise environments, traffic patterns and densities, water, land, biological, and socioeconomic environments, the baseline conditions are established by taking into account the current environmental setting. Additionally, an environmental baseline study was carried out in order to generate secondary data and collect primary data.

3.1.1 Study Area, Period Components & Methodology

The Study Area has been considered to be an area covered within a radius of 10 km around the proposed project site as per the requirement laid down by the statutory authority. The Study Area based on Survey of India's Map has been developed encompassing the area coming under 10 km radius of the project site. The same has been enclosed as **Fig. – 3.1**. Centre of the land bears Latitude 25°36'24.40"N (approx.) and Longitude 88°20'33.89"E (approx.) This point falls within Survey of India's Map No. G45Q6. To cover 10 km radius around the project site entirely falls in Map No. G45Q6.

3.1.2 Study period

The TOR has been granted on 10th September 2025 vide file no. EN/T-II-1/194/2025. Accordingly, the baseline environmental study has been done for the period **1st March, 2025 to 31st May, 2025**, as well as secondary data also collected from different sources. Baseline data has been collected out during this period by **M/s. Envirocheck**. The impact identification always commences with the collection of baseline data such as Ambient Air Quality, Micro-Meteorology, Ground and Surface Water Quality, Noise levels, Soil Quality, Land use pattern, Biological Environment and Socio-economic aspects, Solid and Hazardous waste, Risk Assessment, Geology and Hydrology within the study zone of 10 Km. radius.

3.1.3 Components and Methodology

Description of the environment is sub-divided into following components:

- a) Air Environment,
- b) Noise Environment,
- c) Water Environment,
- d) Soil Environment,
- e) Physical Environment,
- f) Socio-economic Environment,
- g) Ecological Environment.

From C. D. Block maps published in Census document a 10 km radius circle centering the project site has been developed where it is observed that the land area covered almost totally falls within Uttar Dinajpur district.

Figure 3.1: 10 km radius Study Area Map based on Survey of India's published maps



3.2 Meteorology and Climatic Conditions

3.2.1 Meteorological data

Assessment of the micro and macro meteorology is important from the standpoint of understanding the nature and extent of air pollution in the study area. Climate has an important role in the build-up of pollution levels. The meteorological station was set-up at the project site and baseline data was collected which are reproduced as under.

3.2.2 Climatic condition

The meteorological data recorded during the monitoring period is very useful for proper interpretation of the baseline information as well as for input prediction models for air quality dispersion. A meteorological station equipped with continuous monitoring equipment was installed on at project site, at a height 7.0 m above ground level to record wind speed, wind direction, relative humidity and temperature.

3.2.3 Regional meteorology

The district received an average annual rainfall of 2087 mm. Period from June to September is well known for monsoon. The monthly rainfall data shows that 75% of rainfall comes during monsoon period. The wind direction is predominantly from N, W & NW during winter and S, E and SE during most of the other seasons.

The year broadly is divided into four seasons:

- Winter Season: December to February
- Pre – Monsoon: March to May
- Monsoon Season: June to September
- Post – Monsoon: October to November

A. WIND

Regional meteorological scenario helps to understand the trends of the climatic factors. It also helps in determining the sampling stations and in predicting the post project environmental scenario. Meteorological scenario exerts a critical influence on Air Quality as the pollution arises from the interaction of atmospheric contaminants with adverse meteorological conditions such as temperature inversions, atmospheric stability and topographical features like hills, and valleys.

The critical weather elements that influence air pollution are wind speed, wind direction, temperature, which together determines atmosphere stability. Hence it is an indispensable part of any air pollution studies and required for interpretation of base line information. Wind speed and direction data recorded during the study period is useful in identifying the influence of meteorology on the air quality of the area.

B. WIND ROSE

The meteorological data was collected at the site by installing an automatic weather station during Pre-Monsoon season. Due care was taken in establishing the monitoring station to ensure free flow of winds without any obstructions.

Wind Speed, Wind Direction, Temperature and Relative Humidity were recorded for the total study period. The data on wind patterns are pictorially represented by means of wind rose diagrams for study period **1st March, 2025 to 31st May, 2025**. Wind rose is shown in **Figure 3.4**.

Figure 3.2: Windrose diagram

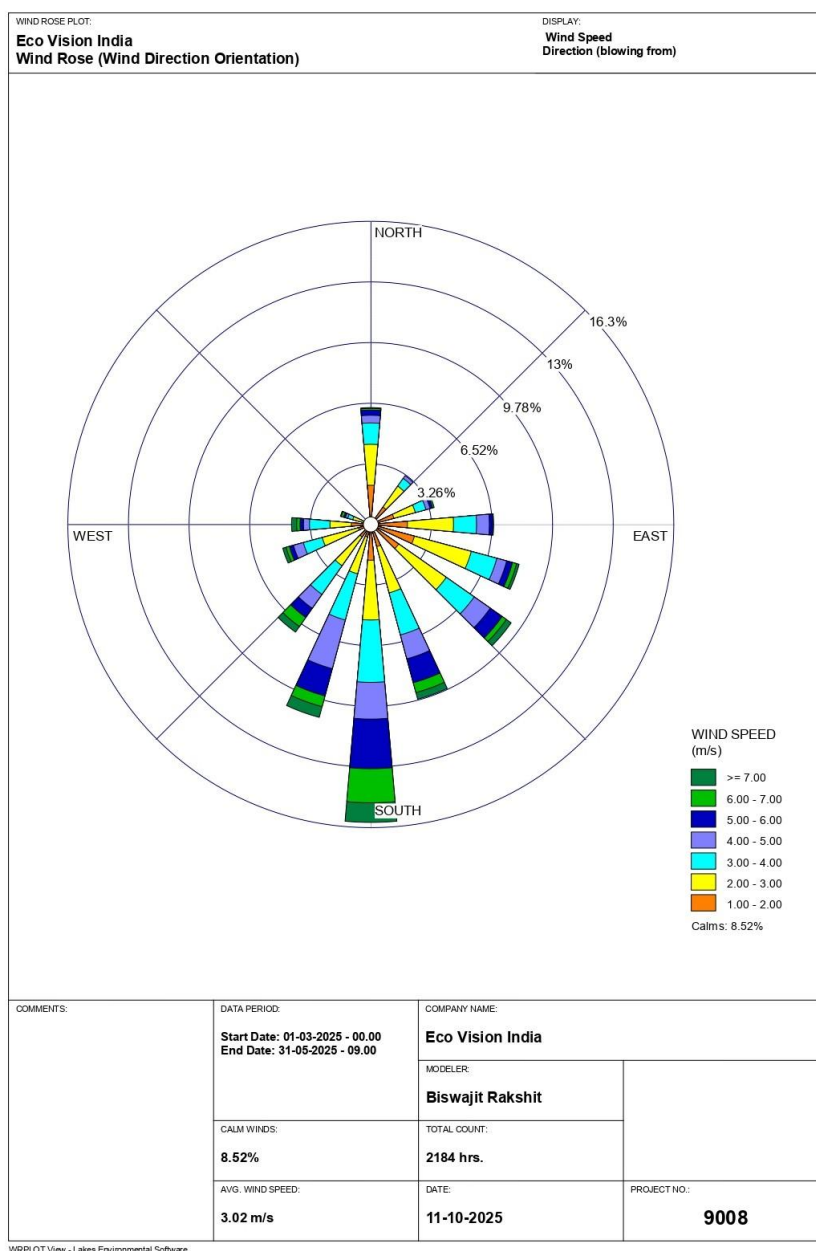


Table 3.1: Weather summary during study period

TEMPERATURE [°C]

Minimum	17.1
Maximum	41.1
Mean	29.7

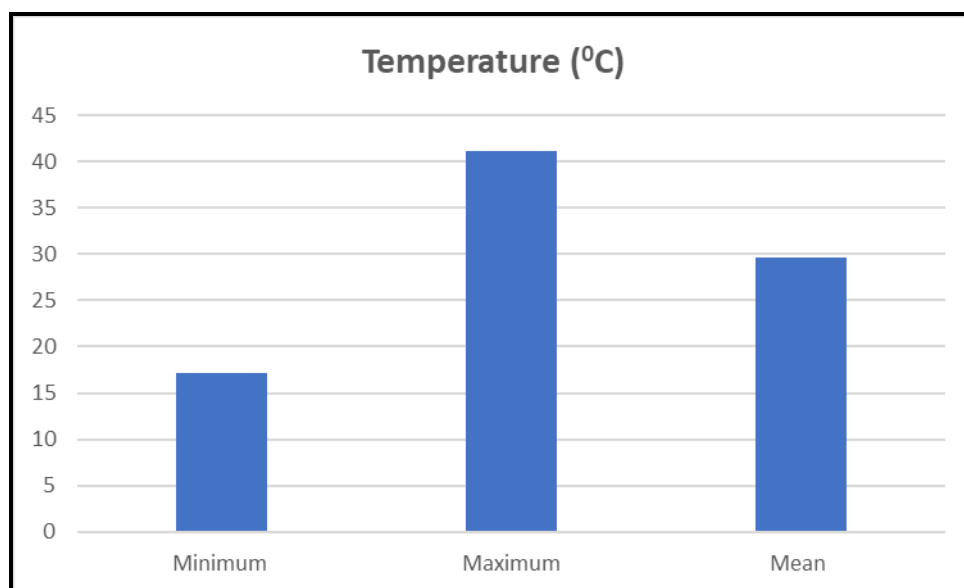
HUMIDITY [%]

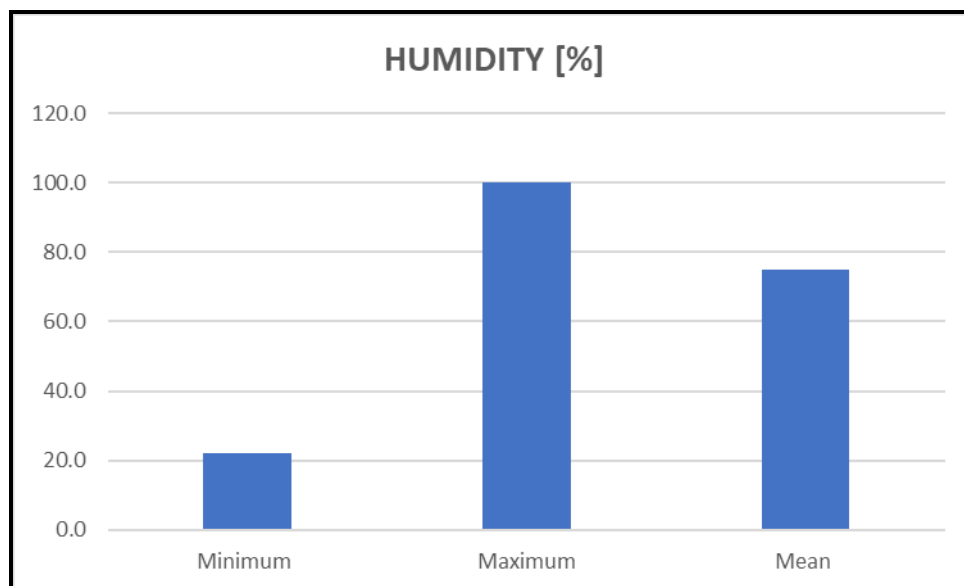
Minimum	22.0
Maximum	100.0
Mean	75.0

AVERAGE RAINFALL

0.22 mm

Figure 3.3: Graphical Representation of Temperature and Humidity





3.3 Air Quality

3.3.1 Analytical techniques for air quality monitoring

Criteria pollutants like Fine Particulate Matter (PM_{2.5}), Respirable Suspended Particulate Matter (PM₁₀), Sulphur dioxide (SO₂), Nitrogen dioxide (NO₂), Carbon Monoxide (CO) and VOC are monitored within the study area by following CPCB guidelines. Monitoring is carried out using Respirable & Fine Dust Sampler with attachment for gaseous sampling.

Selections of ambient air quality monitoring stations- Ambient air quality monitoring stations are selected within the impact zone by knowing the upwind and downwind direction (obtained from IMD, previous EIA reports, Coverage factor Analysis and screen modeling technique). Logistics for operating the instrument like accessibility, electricity connection, security and safety of instruments etc. is another main factor that is used to locate the station. Sampler is not operated using petrol/ diesel Generator Sets and not located on ground or along the road-side. The three broad criteria for selection of ambient air quality monitoring stations are given below.

- Sampling Height - Sampler should be located 3 m to 5 m height from ground level.
- Sampling Location - Sampler should be located > 500 m distance from the roads.
- Aerial Clearance - Minimum clearance satisfactory for sampling is 270°. There should be no high-rise structures above the sampler height, like tall trees, tall buildings, hordings or other high obstructions around the sampler (in a circle of 500 m radius).

Eight ambient air quality monitoring stations were located in the impact area during Summer season (1st March, 2025 to 31st May, 2025). Standard procedures and frequency prescribed by

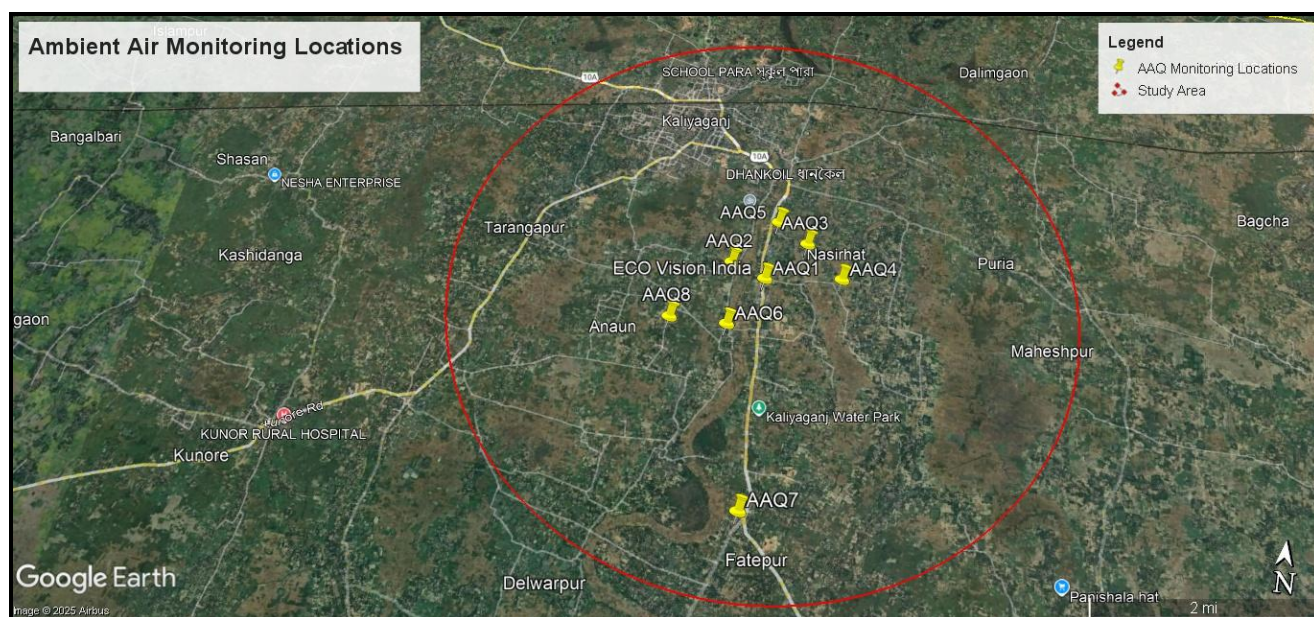
CPCB were used. The monitoring locations are shown below. The summary of AAQ results is shown in **Table 3.3**.

Table 3.2: Ambient Air Quality Monitoring Locations

Code	Location	Dist. (km)	Dir.
A1	Project Site	--	--
A2	Sintore SSK School	0.60	NW
A3	Nasirhat	1.00	NE
A4	Atghara FP School	1.25	NE
A5	Nasirhat Mahajonpara Anganwadi Kandra	1.07	NE
A6	Balarampur Prathamik School	1.02	SW
A7	Fatehpur CD High School Ground	3.96	S
A8	Anaun Uttar Para Masjid	1.65	SW

The above monitoring stations are appropriately marked on Google Earth map and are furnished as **Fig. 3.4** below:

Figure 3.4: Location of Ambient Air Quality Monitoring Station



The micrometeorological data collected at site is given as **Annexure – 3** at the end of the report. A Wind Rose diagram has been developed based on the site monitored data and the same is enclosed as Fig. 3.2. It is evident from the site monitored data that the predominant wind direction during the monitoring period (Pre-Monsoon) of ambient air quality monitoring broadly matches with the for data generated over prolonged period of 27 years and furnished in the IMD's published data.

Parameters Monitored during Ambient Air Monitoring

Parameters namely Particulate Matter (PM₁₀), Respirable Particulate Matter (PM_{2.5}), Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Carbon Monoxide (CO) and VOC at project site and where felt applicable as directed through TOR vide SEIAA Memo No. EN/T-II-1/194/2025 dated 10/09/2025.

Methodologies followed were as per recommendations of MOEF and NABL.

Frequency and duration of Monitoring

The frequency of monitoring in each station was twice a week for a period of three (3) months. Each reading was of 24-hour average monitored in and around the site during the months of March, April and May 2025.

3.3.2 Air quality of study area

The results of ambient air quality monitoring, carried out by the EIA Consultants' NABL accredited laboratory in furnished in **Annexure-4** at the end of the report. Monitored data for each monitoring station have been furnished separately indicating the dates of monitoring.

The summary of the monitored Ambient Air Quality (AAQ) data is furnished below for a view of the result at a glance:

Table 3.3: Summary of Ambient Air Quality Concentrations in the Study Area

Pollutant	Location	Max.	Min.	Avg.	98 Percentile	NAAQS
PM ₁₀ (µg/m ³)	A-1	74.00	31.50	55.90	73.77	100
	A-2	57.20	24.10	40.50	56.74	
	A-3	61.50	28.50	48.20	59.02	
	A-4	61.80	30.20	46.30	59.68	
	A-5	61.50	26.80	48.80	60.40	
	A-6	62.80	35.10	52.10	62.34	
	A-7	65.20	36.50	51.70	64.20	
	A-8	71.20	41.50	56.80	70.23	
PM _{2.5}	A-1	36.50	15.20	26.40	35.86	60

Pollutant	Location	Max.	Min.	Avg.	98 Percentile	NAAQS
(µg/m ³)	A-2	25.30	14.50	20.40	25.21	
	A-3	32.80	18.50	24.00	30.82	
	A-4	32.60	12.60	22.70	30.58	
	A-5	34.60	14.20	23.40	32.58	
	A-6	36.20	19.50	25.00	34.50	
	A-7	34.20	16.80	23.70	33.92	
	A-8	38.20	19.50	27.10	36.82	
NO _x (µg/m ³)	A-1	23.50	4.80	15.90	22.58	80
	A-2	20.00	8.00	15.20	18.50	
	A-3	18.50	8.00	14.10	16.50	
	A-4	20.00	8.00	14.20	19.31	
	A-5	21.50	9.00	15.70	20.81	
	A-6	20.00	10.00	15.60	18.50	
	A-7	23.50	8.00	15.90	23.04	
	A-8	23.50	10.00	18.20	23.09	
SO ₂ (µg/m ³)	A-1	6.20	4.80	5.60	6.20	80
	A-2	<4.0	<4.0	<4.0	<4.0	
	A-3	<4.0	<4.0	<4.0	<4.0	
	A-4	<4.0	<4.0	<4.0	<4.0	
	A-5	<4.0	<4.0	<4.0	<4.0	
	A-6	<4.0	<4.0	<4.0	<4.0	
	A-7	<4.0	<4.0	<4.0	<4.0	
	A-8	7.20	4.80	5.70	7.10	
CO (mg/m ³)	A-1	<0.1	<0.1	<0.1	<0.1	02
	A-2	<0.1	<0.1	<0.1	<0.1	
	A-3	<0.1	<0.1	<0.1	<0.1	
	A-4	<0.1	<0.1	<0.1	<0.1	
	A-5	<0.1	<0.1	<0.1	<0.1	
	A-6	<0.1	<0.1	<0.1	<0.1	
	A-7	<0.1	<0.1	<0.1	<0.1	
	A-8	<0.1	<0.1	<0.1	<0.1	
VOC (µg/m ³)	A-1	<1.0	<1.0	<1.0	<1.0	--
	A-2	<1.0	<1.0	<1.0	<1.0	
	A-3	<1.0	<1.0	<1.0	<1.0	

Pollutant	Location	Max.	Min.	Avg.	98 Percentile	NAAQS
	A-4	<1.0	<1.0	<1.0	<1.0	
	A-5	<1.0	<1.0	<1.0	<1.0	
	A-6	<1.0	<1.0	<1.0	<1.0	
	A-7	<1.0	<1.0	<1.0	<1.0	
	A-8	<1.0	<1.0	<1.0	<1.0	

3.3.3 Observations

The above Table containing the summarized data clearly establishes the expectation of AAQ in the area during monitoring season. Values obtained of all the six (6) pollutants monitored represent the present condition of AAQ in the area.

Particulate Matter (PM₁₀)

The maximum value of PM₁₀ in all the 8 monitoring stations are well within the permissible limit.

Respirable Particulate Matter (PM_{2.5})

The maximum value of PM_{2.5} in all the 8 monitoring stations is well within the permissible limit.

Sulfur Dioxide (SO₂)

All the monitored values of SO₂ are below detection limit of 4 µg/m³ except at Stn. A-1 (Project Site) and the average value is 5.60 µg/m³, which is incidentally well within the permissible limit.

Oxides of Nitrogen (NO_x)

Maximum value of all the monitored values of NO_x varied between 18.20 µg/m³ and 14.10 µg/m³. All these values are well below (80 µg/m³) the prescribed limit and very much expected in such areas.

The laboratory test results for all the monitoring stations are separately furnished at the end of Chapter-3 as **Annexure-4** covering all the parameters separately in all eight (8) AAQ stations for perusal and ready reference.

The results of AAQ monitoring data are represented through Bar Graph below for view at a glance:

Figure 3.5: Graphical representation of Particulate Pollutants PM_{10} & $PM_{2.5}$

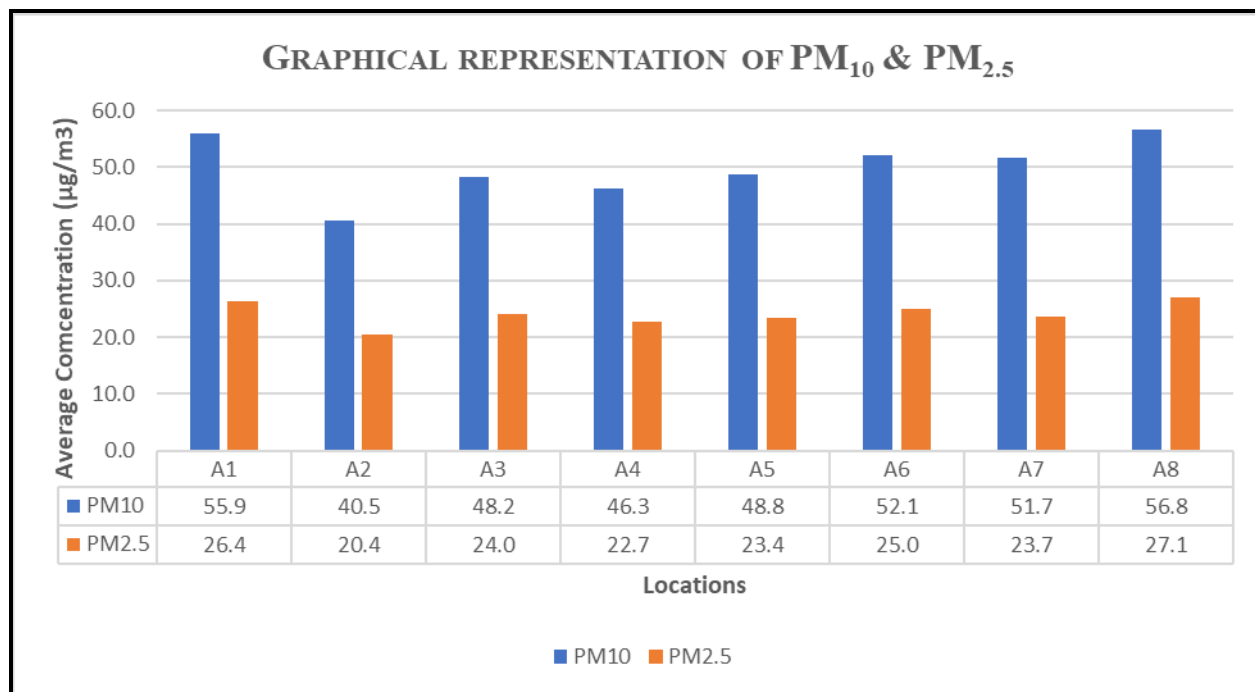
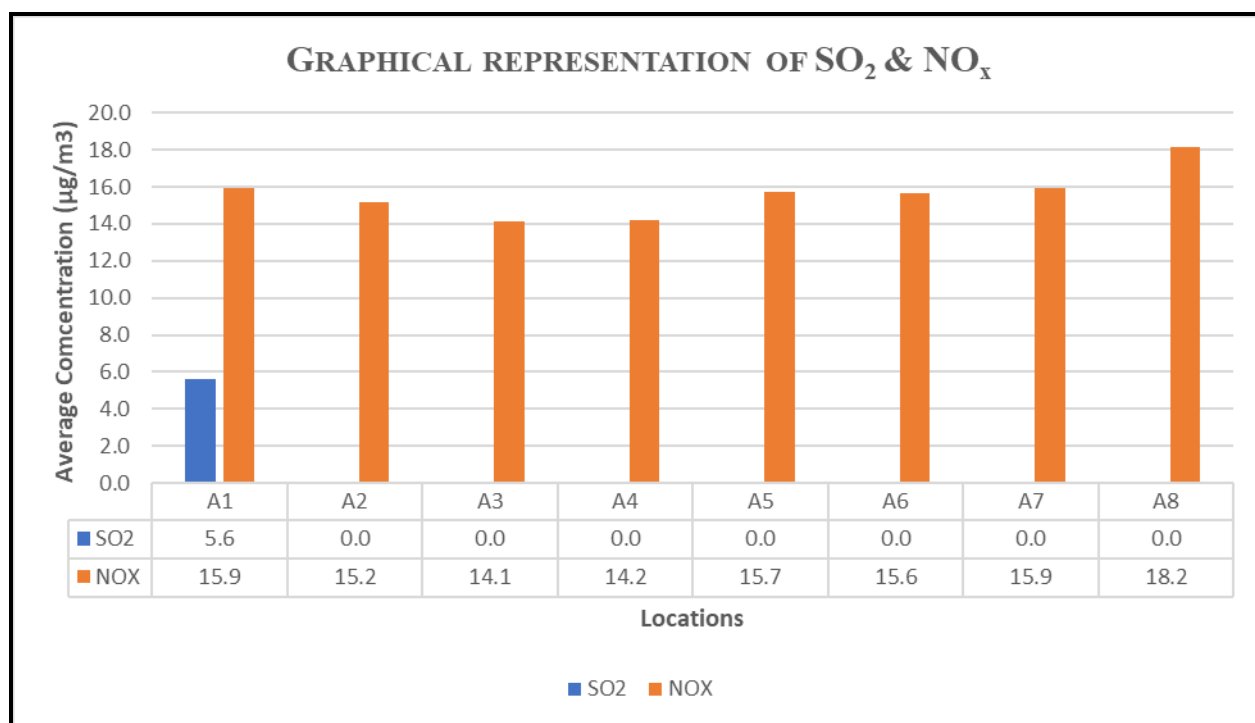


Figure 3.6: Graphical representation of Gaseous Pollutants SO_2 & NO_x



As regards the other two gaseous pollutants viz. CO and VOC, the monitored values are all below detection limit. Hence no graphical representation is done.

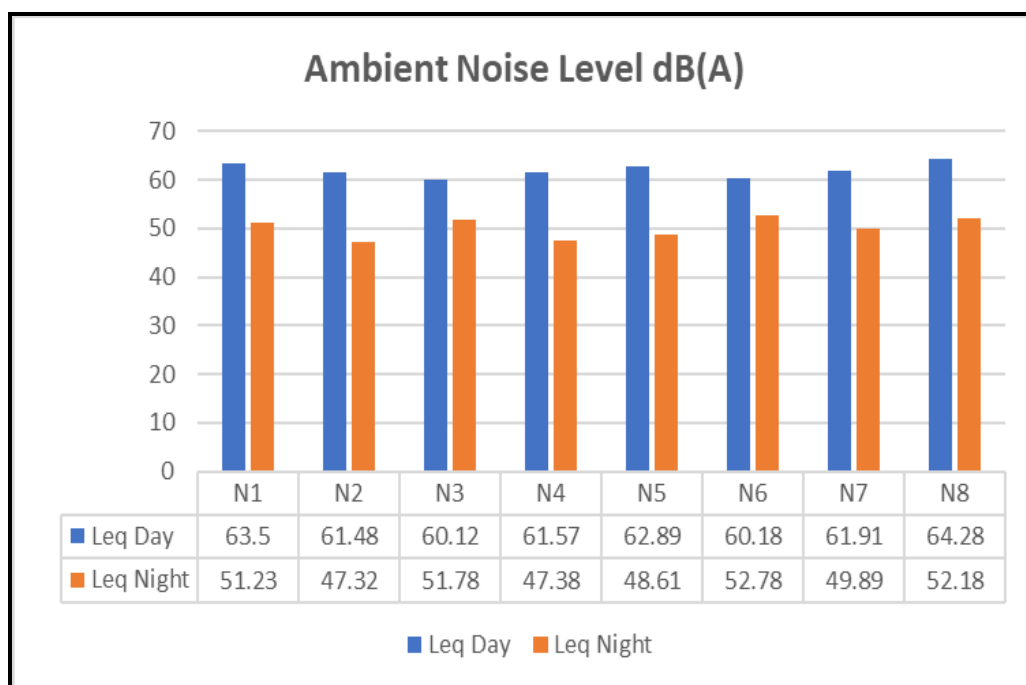
3.4 Noise Environment

Noise level data were measured at the eight (8) AAQ Monitoring stations. Monitoring were carried out during day time and night time separately. The measured noise levels at all the monitoring stations are furnished as **Annexure-5**. Incidentally all the noise levels at all the stations were found to be within the permissible limit. The following Bar Graph represents the noise level data for view at a glance:

Table 3.4: Monitoring Locations were Located within the Study Area

Code	Location	Dist. (km)	Dir.
N1	Project Site	--	--
N2	Sintore Ssk School	0.60	NW
N3	Nasirhat	1.00	NE
N4	Atghara FP School	1.25	NE
N5	Nasirhat Mahajonpara Anganwadi Kendra	1.07	NE
N6	Balarampur Prathamik School	1.02	SW
N7	Fatehpur CD High School Ground	3.96	S
N8	Anaun Uttar Para Masjid	1.65	SW

Figure 3.7: The graphical representation of Equivalent Noise Levels at all location



3.5 Water Environment

3.5.1 Reconnaissance survey

The impact has been assessed on randomly selected surface and ground water sources falling within the impact zone. In order to assess the existing water quality, the water samples were collected from ten different locations within the study area and analyzed as per the procedure specified in standard methods for examination of water and wastewater published by American Public Health Association and Bureau of Indian Standards (APHA/BIS).

Selected water quality parameters for water resources of the study area have been used for describing the water environment and assessing the impacts on it. To assess the water quality impacts, water resources in the impact area have been grouped into 2 classes.

- a. Ground water resources in the deeper strata of the ground
- b. Surface water resources

To assess the background water quality eight (8) ground water samples were collected more or less close to the AAQ monitoring stations and analysed.

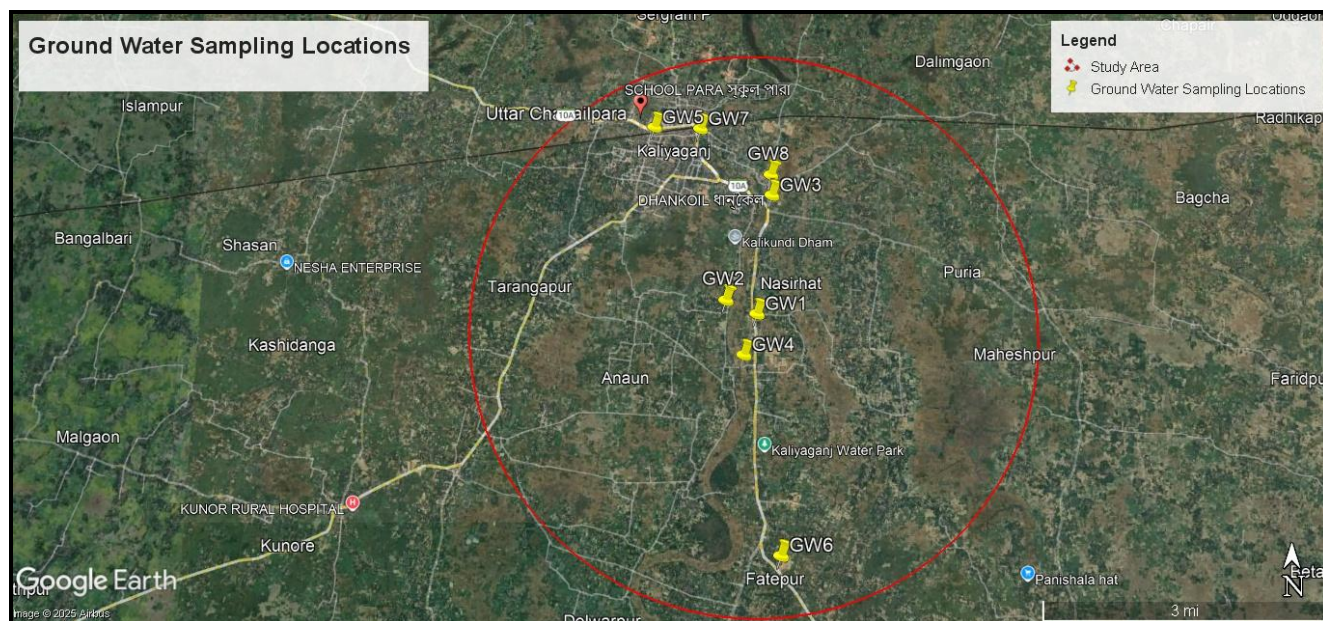
As regards eight (8) Surface water sampling locations they are different from ground water and the locations are shown in the following map. Notably there are 4 samples from ponds nearby the AAQ stations while remaining four samples are from Rivers, including Hugli River, a very small portion of this river fall within the study area. The Surface Water sampling locations are marked on Google Earth map and the same is furnished below for ready reference.

Table 3.5: Water Sampling Locations

Code	Name of the Station	Remarks
GW1	Tubewell Water Near Project Site	Ground Water
GW2	Tubewell Water at Singtore Ssk School	
GW3	Tubewell Water Near Dhankoli More	
GW4	Tubewell Water Near Haldi Bari	
GW5	Tubewell Water Near Vivekananda Club Kaliyaganj	
GW6	Borewell Water Near Fatehpur	
GW7	Tubewell Water Near Kaliaganj near Kaliagunj Police Station	
GW8	Tubewell Water Near Dhankali Hat	

Code	Name of the Station	Remarks
SW1	Pond water Near Project Site	Surface Water
SW2	Pond water Near Sintair	
SW3	Pond water Near Nasirhat	
SW4	Pond Water Near Atghara	
SW5	Pond Water near Kaliaganj college	
SW6	Pond water Near Balarampur Stadium	
SW7	River Water 100 m Up-stream of Tangon River	
SW8	River Water 100 m Down-stream of Tangon River	

Figure 3.8: Ground and Surface water quality monitoring locations



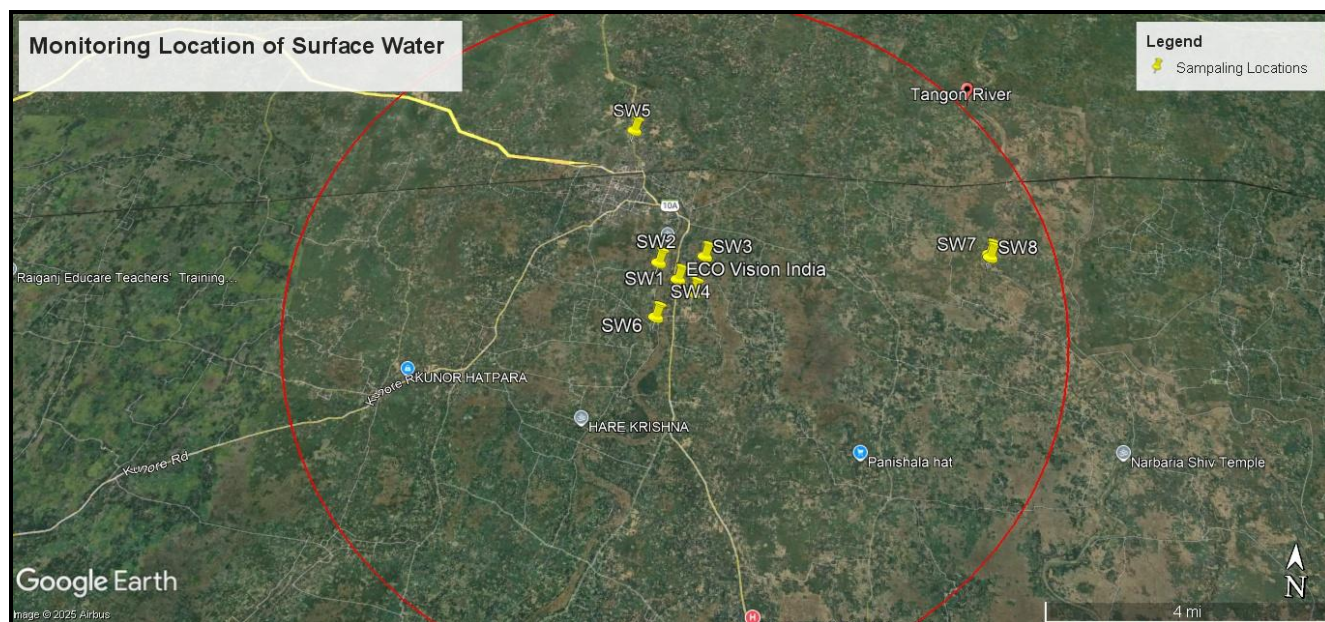


Table 3.6: Result of Ground water analysis

Sl. No.	Parameters	[GW1]	[GW2]	[GW3]	[GW4]
1	Odour (TON)	Odourless	Odourless	Odourless	Odourless
2	Colour (Hazen)	1	1	1	1
3	Taste	Acceptable	Acceptable	Acceptable	Acceptable
4	Temperature (0C)	16.5	15.0	14.5	16.5
5	Total Suspended Solid (mg/l)	<10.0	<10.0	<10.0	<10.0
6	Total Dissolved Solid (mg/l)	436.0	485.0	450.0	397.0
7	Electrical Conductivity	671.6	750.3	689.4	610.5
8	Turbidity (NTU)	1.62	1.80	1.50	1.23
9	pH	6.8	6.76	6.9	6.85
10	Total Hardness (mg/l)	46.00	53.00	40.00	33.00
11	Dissolved Oxygen (mg/l)	7.2	7	6.8	7.4
12	BOD at 270C for 3days (mg./l)	<2.0	<2.0	<2.0	<2.0
13	COD (mg./l)	<5.0	<5.0	<5.0	<5.0
14	Carbonate (mg./l)	8.5	12.5	7.2	6.5
15	Alkalinity (mg/l)	27	30	28	20
16	Total Nitrogen (mg/l)	8.2	12.5	7.2	6.5
17	Phenol (mg/l)	<0.01	<0.01	<0.01	<0.01
18	Nitrate + Nitrate (mg/l)	6.5	9.20	6.8	5.60
19	Chloride (mg/l)	42.5	46.50	45.2	36.5
20	Fluoride (mg/l)	<0.1	<0.1	<0.1	<0.1
21	Sulphate (mg/l)	16.5	20	18.2	12.5
22	Bi-Carbonate (mg/l)	32.94	36.6	34.16	24.4

23	Residual Chlorine (mg/l)	<0.01	<0.01	<0.01	<0.01
24	Ortho-Phosphate (mg/l)	3.5	3.8	2.8	2.3
25	Calcium (mg/l)	12.42	16.03	11.62	10.82
26	Magnesium (mg/l)	3.6	3.12	2.64	1.44
27	Potassium (mg/l)	3.5	8.2	9.5	4.6
28	Sodium (mg/l)	23.5	28.5	25.6	18.2
29	Manganese (mg/l)	<0.03	<0.03	<0.03	<0.03
30	Boron (mg/l)	<0.1	<0.1	<0.1	<0.1
31	Lead (mg/l)	<0.05	<0.05	<0.05	<0.05
32	Arsenic (mg/l)	<0.01	<0.01	<0.01	<0.01
33	Zinc (mg/l)	0.29	0.45	0.32	0.25
34	Iron (mg/L)	0.61	0.65	0.48	0.39
35	Copper (mg/l)	<0.04	<0.04	<0.04	<0.04
36	Chromium (VI) (mg/l)	<0.1	<0.1	<0.1	<0.1
37	Nickel (mg/l)	<0.02	<0.02	<0.02	<0.02
38	Mercury (mg/l)	<0.001	<0.001	<0.001	<0.001
39	Cadmium (mg/l)	<0.002	<0.002	<0.002	<0.002
40	Cyanide (mg/l)	<0.01	<0.01	<0.01	<0.01
41	Aluminium (mg/l)	<0.02	<0.02	<0.02	<0.02
42	Total Coliform (CFU/ 100 ml)	<1	<1	<1	<1
43	Fecal Coliform (CFU/100 ml)	<1	<1	<1	<1

<1 indicate No Colony developed.

Sl. No.	Parameters	[GW5]	[GW6]	[GW7]	[GW8]
1	Odour (TON)	Odourless	Odourless	Odourless	Odourless
2	Colour (Hazen)	1	1	1	1
3	Taste	Acceptable	Acceptable	Acceptable	Acceptable
4	Temperature (0C)	16.5	15.0	14.5	16
5	Total Suspended Solid (mg/l)	<10.0	<10.0	<10.0	<10.0
6	Total Dissolved Solid (mg/l)	467.0	480.0	425.0	364.0
7	Electrical Conductivity	720.8	739.6	653.7	552.8
8	Turbidity (NTU)	1.2	1.5	1.6	1.38
9	pH	6.8	6.9	7.1	7.2
10	Total Hardness (mg/l)	69	73	58.0	47
11	Dissolved Oxygen (mg/l)	6.8	6.6	7.2	7.4
12	BOD at 270C for 3days (mg./l)	<2.0	<2.0	<2.0	<2.0
13	COD (mg./l)	<5.0	<5.0	<5.0	<5.0
14	Carbonate (mg./l)	6.8	7.2	5.2	4.8
15	Alkalinity (mg/l)	38	43	35	27
16	Total Nitrogen (mg/l)	8.2	9.5	6.2	5.6

17	Phenol (mg/l)	<0.01	<0.01	<0.01	<0.01
18	Nitrate + Nitrate (mg/l)	8.5	12.50	9.2	6.5
19	Chloride (mg/l)	36.5	42.8	32.5	28.5
20	Fluoride (mg/l)	<0.1	<0.1	<0.1	<0.1
21	Sulphate (mg/l)	21.5	26.8	18.5	16.2
22	Bi-Carbonate (mg/l)	46.36	52.46	42.7	32.94
23	Residual Chlorine (mg/l)	<0.01	<0.01	<0.01	<0.01
24	Ortho-Phosphate (mg/l)	6.5	7.2	5.8	4.5
25	Calcium (mg/l)	20.04	21.24	24.04	12.02
26	Magnesium (mg/l)	4.56	4.8	4.32	4.08
27	Potassium (mg/l)	18.2	21.5	12.5	9.2
28	Sodium (mg/l)	26.5	34.8	23.1	19.5
29	Manganese (mg/l)	<0.03	<0.03	<0.03	<0.03
30	Boron (mg/l)	<0.1	<0.1	<0.1	<0.1
31	Lead (mg/l)	<0.05	<0.05	<0.05	<0.05
32	Arsenic (mg/l)	<0.01	<0.01	<0.01	<0.01
33	Zinc (mg/l)	0.48	0.62	0.34	0.45
34	Iron (mg/L)	0.68	0.71	0.54	0.43
35	Copper (mg/l)	<0.04	<0.04	<0.04	<0.04
36	Chromium (VI) (mg/l)	<0.1	<0.1	<0.1	<0.1
37	Nickel (mg/l)	<0.02	<0.02	<0.02	<0.02
38	Mercury (mg/l)	<0.001	<0.001	<0.001	<0.001
39	Cadmium (mg/l)	<0.002	<0.002	<0.002	<0.002
40	Cyanide (mg/l)	<0.01	<0.01	<0.01	<0.01
41	Aluminium (mg/l)	<0.02	<0.02	<0.02	<0.02
42	Total Coliform (CFU/ 100 ml)	<1.0	<1.0	<1.0	<1.0
43	Fecal Coliform (CFU/100 ml)	<1.0	<1.0	<1.0	<1.0

<1 indicate No Colony developed

Table 3.7: Result of Surface water analysis

Sl. No.	Parameters	[SW1]	[SW2]	[SW3]	[SW4]
1	Odour (T.O.N)	Odourless	Odourless	Odourless	Odourless
2	Temperature (0C)	14.0	15	14.5	14
3	pH	7.23	7.28	7.2	7.36
4	Total Suspended Solid (mg./l)	16.0	18.0	23.0	20.0
5	Total Dissolved Solid (mg./l)	310.0	350.0	380.0	230.0
6	Electrical Conductivity	475.6	539	581.3	349.73
7	Turbity	1.68	1.80	1.65	1.50
8	Total Hardness (mg/l)	65.0	70.0	85.0	50.0
9	Dissolved Oxygen (mg/l)	7.2	7.0	6.8	7.4
10	BOD , 3 days at 270C (mg./l)	3.0	4.0	6.0	3.0
11	COD (mg./l)	10.0	12.0	15.0	10.0

12	Oil & Grease (mg./l)	<1.0	<1.0	<1.0	<1.0
13	Salinity (ppt.)	0.0	0.0	0.0	0.0
14	Kjeldahl Nitrogen (mg/l)	3.6	5.2	6.5	2.5
15	NH ₃ - N (mg/l)	1.6	2.1	2.3	1.5
16	Nitrate + Nitrite (mg/l)	6.5	8.2	12.5	5.8
17	Chloride (mg/l)	32.5	38.5	41.8	21.5
18	Fluoride (mg/l)	<0.1	<0.1	<0.1	<0.1
19	Sulphates as SO ₄ (mg/l)	18.2	23.5	28.5	15.0
20	Alkalinity (mg/l)	35.0	39.0	48.0	27.0
21	Bi-Carbonate (mg/l)	43.50	48.50	58.2	32.5
22	Total P (mg/l)	8.5	12.5	16.2	11.5
23	Phosphate (mg/l)	5.3	6.2	7.2	6.5
24	Calcium (mg/l)	16.43	19.64	25.65	15.23
25	Magnesium (mg/l)	5.76	5.04	5.04	2.88
26	Potassium (mg/l)	9.5	12.5	18.5	6.2
27	Sodium (mg/l)	41.2	56.8	65.2	26.5
28	Manganese (mg/l)	<0.02	<0.02	<0.02	<0.02
29	Boron (mg/l)	<0.1	<0.1	<0.1	<0.1
30	Lead (mg/l)	<0.05	<0.05	<0.05	<0.05
31	Arsenic (mg/l)	<0.01	<0.01	<0.01	<0.01
32	Zinc (mg/l)	0.12	0.1	0.16	0.08
33	Iron (mg/l)	0.08	0.12	0.1	0.06
34	Chromium (Total) (mg/l)	<0.02	<0.02	<0.02	<0.02
35	Hexavalent Chromium (mg/l)	<0.1	<0.1	<0.1	<0.1
36	Nickel (mg/l)	<0.02	<0.02	<0.02	<0.02
37	Mercury (mg/l)	<0.001	<0.001	<0.001	<0.001
38	Cadmium (mg/l)	<0.002	<0.002	<0.002	<0.002
39	Total Coliform /100 ml.	2.3x10 ⁴	2.5x10 ⁴	2.8 x10 ⁴	1.9x10 ⁴
40	Faecal Coliform (MPN/100 ml.)	9.2x10 ³	8.5x10 ³	8.6x10 ³	6.2x10 ³

Sl. No.	Parameters	[SW5]	[SW6]	[SW7]	[SW8]
1	Odour (T.O.N)	Odourless	Odourless	Odourless	Odourless
2	Temperature (°C)	15.0	16.5	15.0	16.0
3	pH	7.2	6.9	7.36	7.45
4	Total Suspended Solid (mg./l)	20.0	26.0	16.0	18.0
5	Total Dissolved Solid (mg./l)	350.0	380.0	230.0	260.0
6	Electrical Conductivity	526.6	579	341.0	396.3
7	Turbidity	1.65	1.57	1.8	1.9
8	Total Hardness (mg/l)	32.0	36.0	25.0	2.9
9	Dissolved Oxygen (mg/l)	6.8	7.2	7.4	7.6
10	BOD , 3 days at 27°C (mg./l)	5.0	6.0	7.0	6.0
11	COD (mg./l)	16.0	15.2	20.0	23.0

12	Oil & Grease (mg./l)	<1.0	<1.0	<1.0	<1.0
13	Salinity (ppt.)	0.0	0.0	0.0	0.0
14	Kjeldahl Nitrogen (mg/l)	3.5	3.8	2.3	2.1
15	NH ₃ - N (mg/l)	1.8	1.9	2.3	2.5
16	Nitrate + Nitrite (mg/l)	6.5	7.2	6.5	9.2
17	Chloride (mg/l)	23.6	28.58	16.33	19.96
18	Fluoride (mg/l)	<0.1	<0.1	<0.1	<0.1
19	Sulphates as SO ₄ (mg/l)	16.5	18.2	21.5	25
20	Alkalinity (mg/l)	26.0	32.0	22.0	26.0
21	Bi-Carbonate (mg/l)	31.72	39.04	26.84	31.72
22	Total P (mg/l)	7.2	8.9	6.5	8.2
23	Phosphate (mg/l)	3.2	4.5	3.8	5.2
24	Calcium (mg/l)	8.02	11.62	7.21	7.62
25	Magnesium (mg/l)	2.88	1.68	1.68	2.4
26	Potassium (mg/l)	4.5	5.8	6.2	8.5
27	Sodium (mg/l)	16.50	21.8	15.2	23.8
28	Manganese (mg/l)	<0.02	<0.02	<0.02	<0.02
29	Boron (mg/l)	<0.1	<0.1	<0.1	<0.1
30	Lead (mg/l)	<0.05	<0.05	<0.05	<0.05
31	Arsenic (mg/l)	<0.01	<0.01	<0.01	<0.01
32	Zinc (mg/l)	0.09	0.1	0.06	0.08
33	Iron (mg/l)	0.06	0.08	0.12	0.07
34	Chromium (Total) (mg/l)	<0.02	<0.02	<0.02	<0.02
35	Hexavalent Chromium (mg/l)	<0.1	<0.1	<0.1	<0.1
36	Nickel (mg/l)	<0.02	<0.02	<0.02	<0.02
37	Mercury (mg/l)	<0.001	<0.001	<0.001	<0.001
38	Cadmium (mg/l)	<0.002	<0.002	<0.002	<0.002
39	Total Coliform /100 ml.	2.6X10 ⁴	3.2X10 ⁴	2.8X10 ⁴	3.8X10 ⁴
40	Faecal Coliform (MPN/100 ml.)	8.5X10 ³	9.2X10 ³	1.6X10 ³	6.8X10 ³

Methodology and Results

Methodology adopted for sampling and analysis of the to establish the background water quality for this study, was as per IS:3026, APHA, AWWA and WPCF. Parameters recommended by the Ministry of Environment & Forests, Government of India were analysed.

The Ground Water Analyses report is enclosed as **Annexure-6** and Surface Water Analyses Report as **Annexure-7** at the end of the report.

Observations Ground Water Quality

Analyses of all the ground water quality reveals they are good and generally used as drinking water purpose with some disinfection in cases.

Observations on the Surface Water

All surface water generally conform to either Class C or Class D of Inland Surface Water standards subject to pollution (IS 2296). This means that the pond water in the ponds around the project site is acceptable for different kinds of uses as expected in most of the cases.

River water quality are also found to be within acceptable standards.

3.6 Soil

3.6.1 Soil quality

The present study on soil quality establishes the baseline characteristics in the study area surrounding the project site. The study has been addressed with the following objectives.

- To determine the base line characteristics
- To determine the soil characteristics of proposed project site.
- To determine the impact of industrialization/urbanization on soil characteristics
- To determine the impacts on soils from agricultural productivity point of view.

3.6.2 Criteria adopted for selection of sampling locations

Top soil samples were collected from four (4) locations and the locations are nearby the AAQ monitoring stations. Soil analyses report is enclosed as **Annexure-8**.

3.6.3 Methodology and sampling

The homogenized soil samples collected at different locations were packed in a polyethylene plastic bag and sealed. The sealed samples were sent to laboratory for analysis. The important physical, chemical parameter concentrations were determined from all samples.

3.6.4 Soil sampling Locations

Details of the soil sampling locations are given in **Table 3.10**.

Table 3.8: Soil Sampling Locations

Code	Name of the Station
S1	Inside Project Site
S2	Near Biswadeb Math
S3	Near Anaun Uttar Para Masjid
S4	Near Playground of Fatehpur CD High School

Figure 3.9: Soil quality monitoring locations

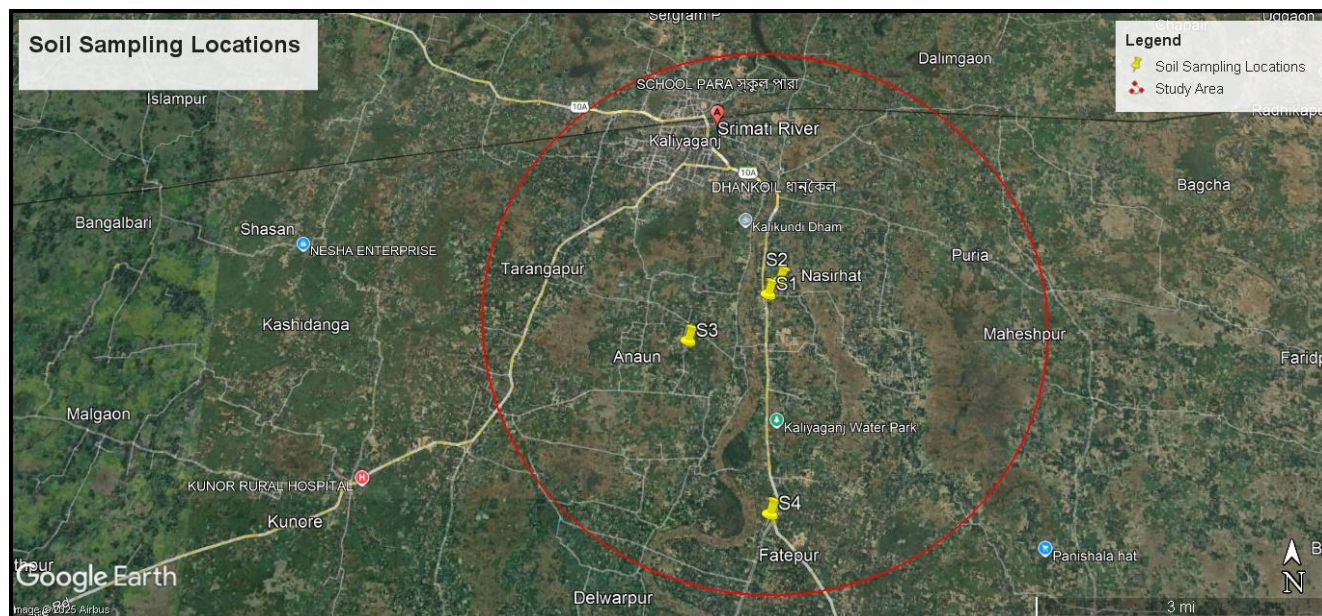


Table 3.9: Soil Characteristic of the project site

No.	Name of the soil sampling site	[S1]	[S2]	[S3]	[S4]
1	Description of Soil	Undisturbed soil	Undisturbed soil	Undisturbed soil	Undisturbed soil
	<u>PARAMETERS</u>				
	PHYSICAL				
2	Colour	Grayish	Grayish	Grayish	Grayish
3	pH (1:2)	7.36	7.46	7.23	7.12
4	Particle size distribution				
	Soil Texture (upto 60 cm depth)	Sandy loam	Sandy loam	Sandy loam	Sandy loam
	Sand (%)	60	55	65	70
	Silt (%)	20	20	20	20
	Clay (%)	20	25	15	10
5	Electrical conductivity	1.6	1.8	1.5	1.8
6	Cation exchange capacity	12.4	14.7	13.9	11
7	Sodium Absorption Ratio (SAR)	6.15	5.22	5.73	5.44
8	Permeability(cm/sec)	1.5	1.8	2.1	2.3

9	Water holding capacity(%)	45	42	38	34
	CHEMICAL				
10	Nitrogen (mg/Kg)	1080	660	680	580
11	Potassium (mg/Kg)	1250	710	920	620
12	Phosphorous (mg/Kg)	680	980	620	380
13	Organic Carbon (gm/Kg)	6.5	5.2	4.8	3.8
14	Sodium (mg/kg)	680	650	710	730
15	Calcium(mg/kg)	650	780	830	660
16	Magnesium (gm/kg)	720	1080	890	750

3.6.5 Observations

In order to establish the baseline status of soil characteristics, soil samples were collected at 4 sampling locations.

The analysis results show that soil is basic in nature as pH value ranges from 7.12 to 7.46. The concentration of Nitrogen, Phosphorus and Potassium has been found to be in good amount in the soil samples. Soil texture is Sandy loam.

3.7 Traffic Density

Proposed road and transport plans for the area:

Current transport model for the area

Raiganj- Buniadpur is adjacent to the site.

Accident data

There are no records of major accident along 2 Km stretch across the plant during last year.

Current information on the traffic and parking generation

There are space for parking truck and car inside the factory premises.

Table 3.10: Average Traffic density/hour data of project site

Raiganj- Buniadpur Rd

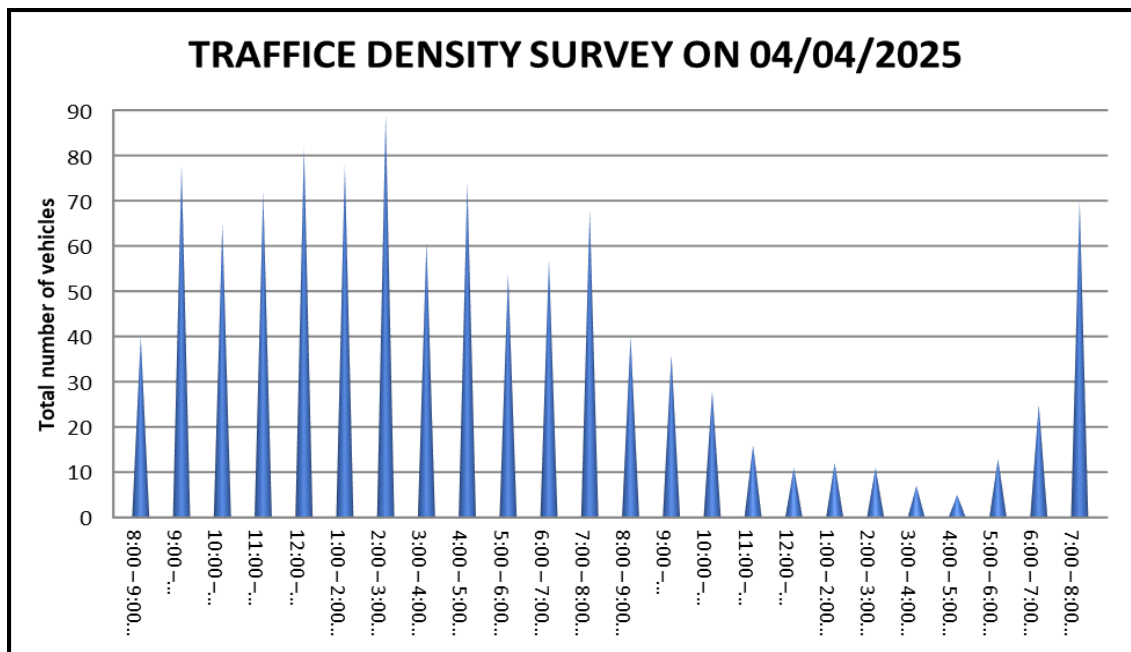
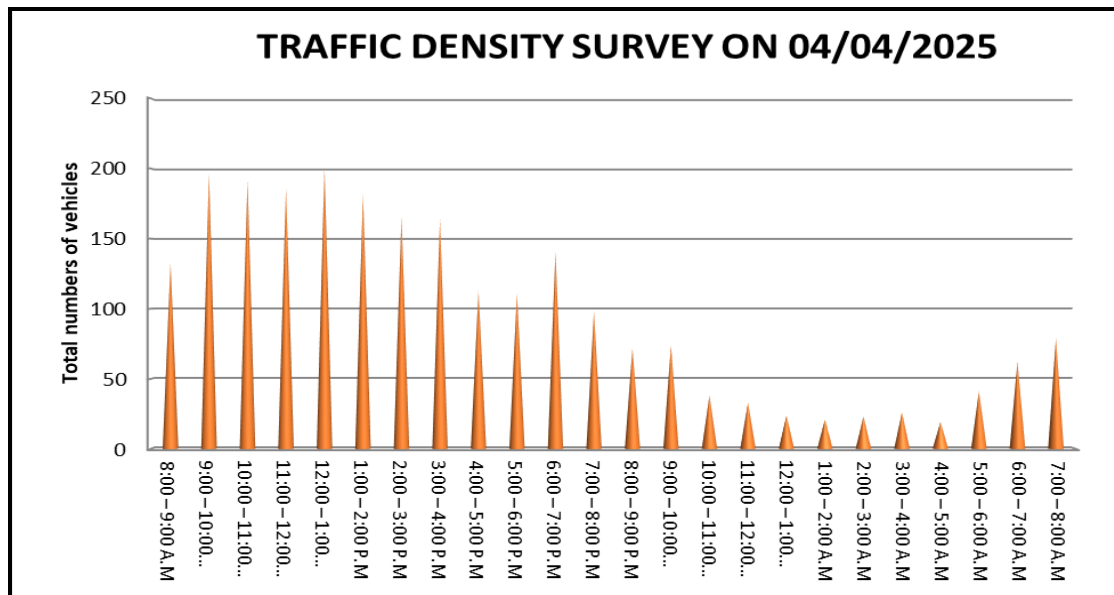
	Car & Jeep	Bus	Truck	Two Wheeler
Average traffic/hour	34.16	4.91	8.12	52.62

Kunore Rd

	Car & Jeep	Bus	Truck	Two Wheeler
Average traffic/hour	21	4	1	21

The details report is given in *Annexure – 9*.

Figure 3.10: Traffic Density



3.8 Landuse pattern

Land use / land cover analysis

The geo-spatial database on “Land Use/ Land Cover on 1:50,000 scale” is prepared using three season Resourcesat-2 ortho rectified LISS-III data of 2019 and Resolution 24 meters. Interpretation of satellite imagery is done using visual interpretation technique and individual classes were interpreted using their visual characteristics. Output is in GIS vector file format, prepared using LCC projection and WGS-84 as datum.

Methodology

On screen visual interpretation was used in the current exercise wherein the GIS LU/LC vector layer created during the first cycle was overlaid on to the terrain corrected Resource sat 2 LISS III imagery acquired during 2019. The methodology essentially is based on editing the above vector layer for the changed areas thereby creating the new LU/LC vector layer for 2019.

1. Acquisition of Satellite Data Depends on inputs
2. Preparation of base map From SOI topo sheet.
3. Data Analysis using VIP techniques
4. Ground truth Studies or field checks using GPS
5. Finalization of the Maps
6. Digitization using Head up Vectorisation methods
7. Topology construction in GIS
8. Area Calculation for Statistics Generation
9. Mosaicing

Table 3.11: Land Use/ Land Cover Analysis

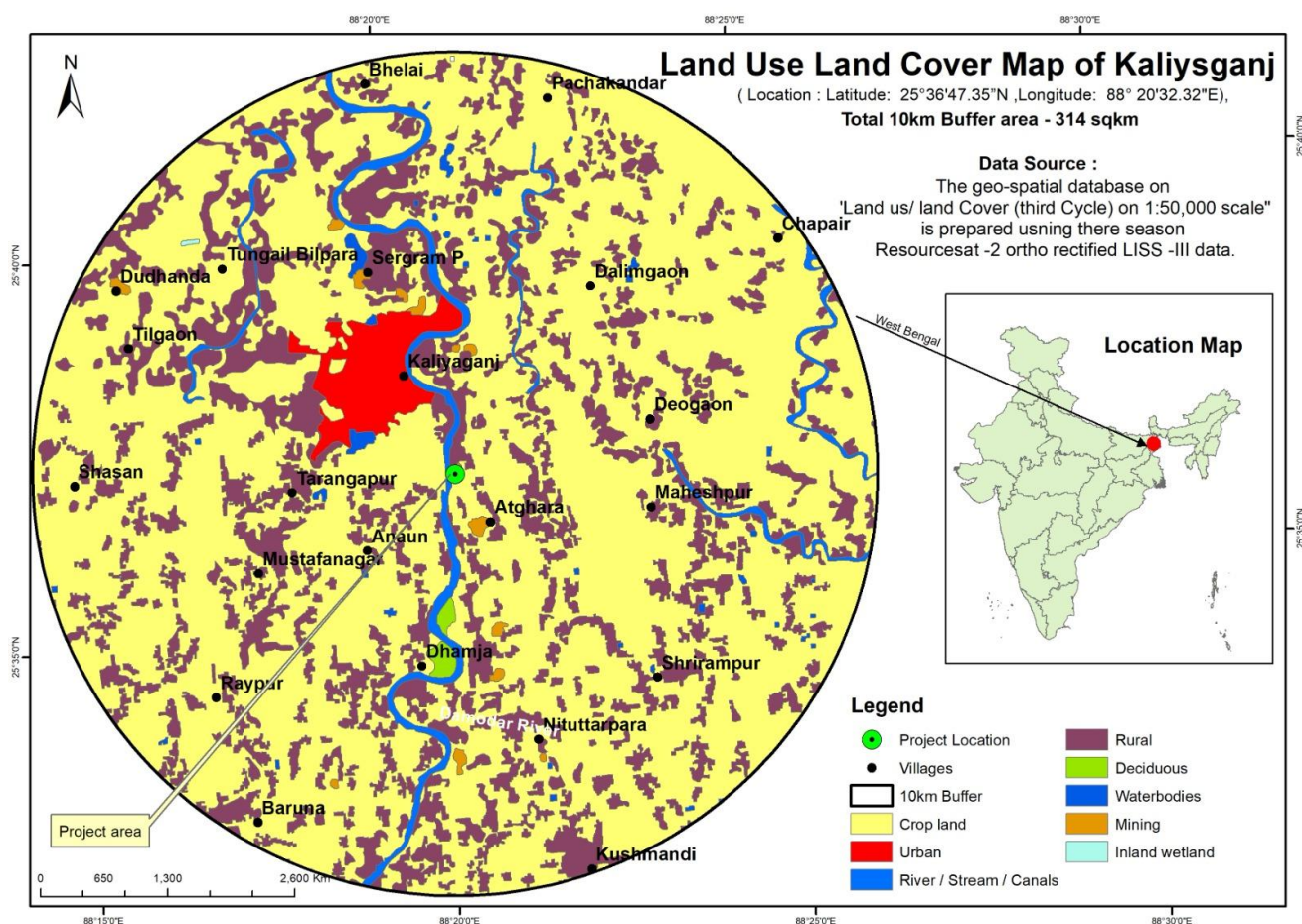
S.No	DESCR_1	DESCR_2	AREA (Sqkm)	Percentage
1	Agriculture	Crop land	225.02	71.66
2	Builtup	Urban	6.53	2.08
3	Wetland / Waterbodies	River / Stream / Canals	7.75	2.47
4	Builtup	Rural	71.43	22.75

5	Forest	Deciduous	0.66	0.21
6	Wetland / Waterbodies	Waterbodies	1.43	0.46
7	Builtup	Mining	1.13	0.36
8	Wetland / Waterbodies	Inland wetland	0.05	0.02
Total Area			314.00	100.00

Note:

1. Most of Area covered By Agriculture – Crop land that is 225.02 sq km (71.66 %)
2. Very Low area covered Wetland/ Waterbodies – Inland wetland 0.05 sqkm (0.02 %)
3. Builtup- Urban: 6.53 sqkm (2.08%)
4. Mining 1.13 sqkm (0.36%)
5. Built up covered Rural Area: 71.43 Sqkm (22.75%)

Figure 3.11: Land Use Map of 10 km radius Study Area using Satellite Imagery software



3.9 Physiography and Hydrology

Geology and Soil

Uttar Dinajpur District belongs to the Barind Tract which is the largest Pleistocene physiographic unit of the Bengal Basin, covering an area of about 7,770 sq km. This tract has long been identified as a unit of older alluvium, which differs from the surrounding flood plains. In Bengali, it is spelled and pronounced as Varendra Bhumi. These are Recent Alluvial Fan, Barind Pleistocene, and Recent Floodplain. These morphologic units are separated by long, narrow bands of recent alluvium. The Barind Tract, which is the largest Pleistocene Terrace of the country, is made up of the Pleistocene alluvium, also known as older alluvium. Tectonically, this region is situated in the Pre-cambrian Indian Platform, mostly in the saddle and shelf area of the shield. This platform region is covered mostly by Tertiary and Quaternary sediments and Recent Alluvium. The Barind is floored by the characteristic Pleistocene sediments known as the Madhupur (Barind) Clay. The Madhupur clay is reddish brown in colour, oxidized, sticky and rather compact. It is assumed that these deposits are of fluvial origin. Actually, they were deposited in the late Pleistocene time towards the end of the last glacial period. Nearly 18,000 years ago, the last glacial period reached the peak of activities. During that time the sea level dropped to 100 m to 130 m below the present-day level. Then the icemelt water flowed into the Bay of Bengal. Right at that time the northeast monsoon climatic condition commenced in the subcontinent. Rainfall was not then dominating the Bengal plain. Bengal rivers only flowed with ice-melt water through their narrow and incised valleys. Later, 12,000 years ago, the southwest monsoon climate started dominating the region, and brought heavy rainfall over the Bengal Basin.

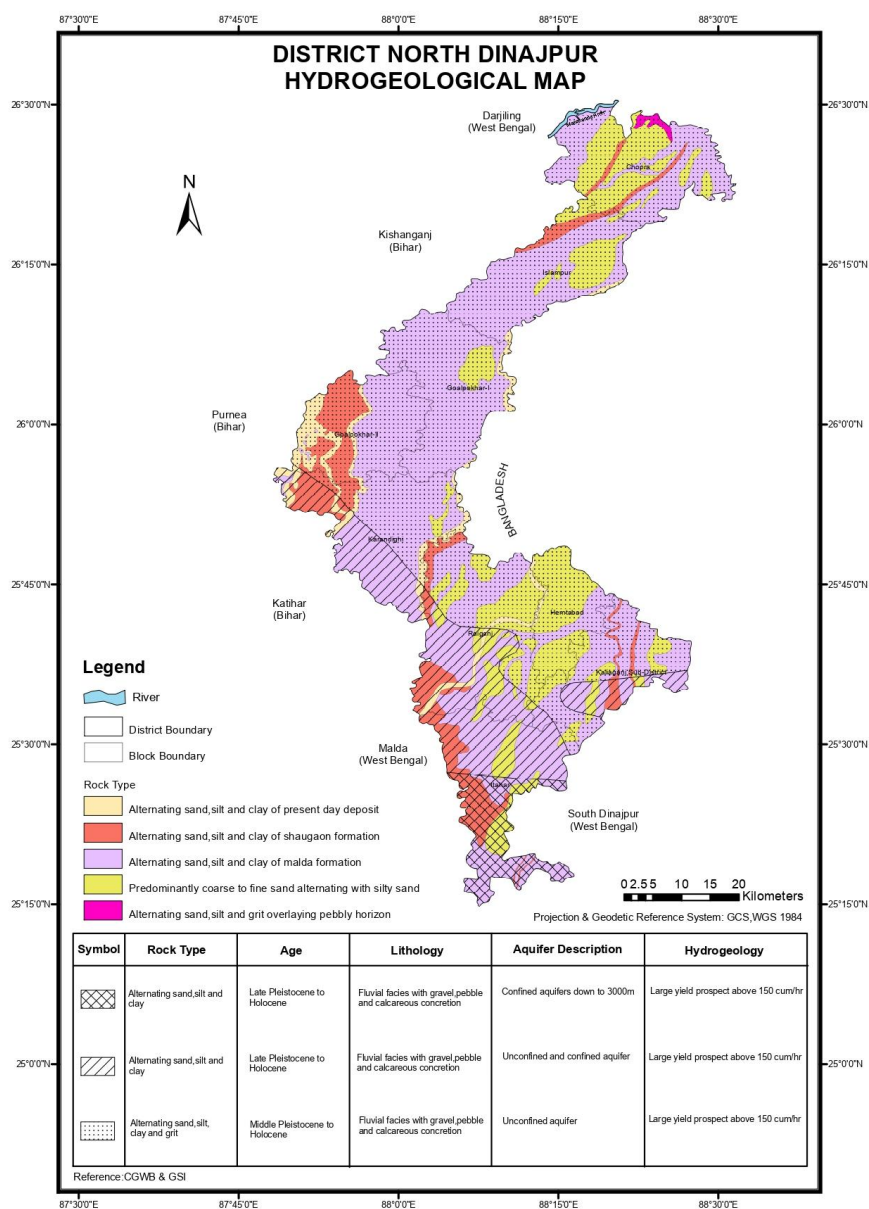
(Source: Environmental & Social Impact Assessment. HVDS & GIS Sub-Project Of Uttar Dinajpur District Under WBEDGMP, Document No.: IISWBM/ESIA-WBSEDCL/2019-2020/006 Version: 1.2)

Hydrogeology

Hydrogeological map of Uttar Dinajpur District is presented in Figure 3.17. Ground water occurs both under unconfined & confined condition with in the explored depth of maximum 600 mbgl. Aquifers are fairly thick & regionally extensive with large yield prospect of about 150m³/hr.

Flood Hazard Zone

‘Srimati’ or locally called ‘Chiramoti’ River which is 0.15 km from the site starts its course from the Pirganj area of Bangladesh. The river enters India through Kaliaganj block and after crossing Kaliaganj town it flows into South Dinajpur district. On the large parts of the river and river bed people grow paddy on these lands. Incessant rainfall causes Tangan river which is about 8 km from the proposed site, to swell, spill over the banks and flood several localities.

Figure 3.12: Pictorial description of Geomorphological Units Classification methods

Drainage Pattern

The river Shrimati is important river of the district. It passes through Kaliyaganj, Itahar and then enters into Mahananda in Malda. The river Tangan enters the district through the Kaliyaganj police station and then through South Dinajpur into Malda and joins Mahananda. The ultimate destination, of all these rivers is the Ganga. The rivers are navigable in the rainy season. They maintain the drainage system of the study area.

3.10 Seismic status

The Project site is located in an area which is falling in seismic Zone III (Source: IS 1893 (Part 1):2002). The details are given below. According to GSHAP data, the state of Jharkhand falls in a region of low to high seismic hazard. As per the 2002 Bureau of Indian Standards (BIS) map, this state also falls in Zones II, III & IV. Historically, parts of this state have experienced seismic activity in the M5.0 range.

Figure 3.13: Seismic map of India



3.11 Socio-Economics of the study area

All infrastructure projects at any location usually are advantageous for the local residents by several means, like enhancing-i) easy obtain ability of the products, ii) employment prospect in the Project, iii) possibility for upgrading quality of life. However, the Project may also have some adverse social impacts involving losses like land acquisition, resettlement and rehabilitation (R&R) and certain other social implications relating to health and safety, gender issues, child labour, various social discrimination etc. An attempt to mitigate those undesirable

impacts needs to be made by the Project authority. The present assessment, therefore, was undertaken in order to better comprehend the present situation and socioeconomic impact of the proposed Project. The information collected will serve as baseline data and will also be useful for prospective environmental monitoring and evaluations.

Socioeconomic Environment

Social Impact Assessment (SIA) is a process to assess the impact of any project on the residents around its project locations and also to predict the future socioeconomic conditions of the project area that might be expected to occur as an effect or consequence of implementing the project activities. SIA is an integral part of Environment Impact Assessment (EIA) and it includes the processes of analysing, planning for, managing and monitoring the positive and negative social impacts and consequences. Its primary purpose is to bring about a sustainable as well as equitable development.

Approach and Methodology

The approach and methodology that were involved in preparing this report included the followings:

- i. Firstly a detailed desk review of all available secondary data related to the socioeconomic context of the Project were initially undertaken for assessing the prevalent situation. These included reports and documents like Primary Census Abstract, 2011 and socioeconomic context of the Project was undertaken to grasp the existing situation. The, District map, and other relevant websites were also consulted. The actual field study was carried out from 21st to 22nd of January 2024.
- ii. Secondly, based on the secondary data, locations within the radial coverage of 10 kilometers (aerial) from the proposed expansion project area were identified. Three zones were demarcated- a) **Study Area** - within 10km radius from the proposed Project site.
- iii. Thirdly, a field study for carrying out baseline socioeconomic survey was conducted using an observation checklist and pre-coded questionnaire; and lastly public consultations were carried out in the defined 10 km study area.

Tools and Techniques

The tools used for this study were-an observation checklist, a semi-structured questionnaire and a focus group discussion guide for public consultation. Towards assessing the impact baseline socioeconomic data were collected within 10 km radius in the study area. In depth probing helped in understanding the existing situation and assessing likely impact of the proposed project and also helped in identifying issues, people's attitude, apprehensions and expectations.

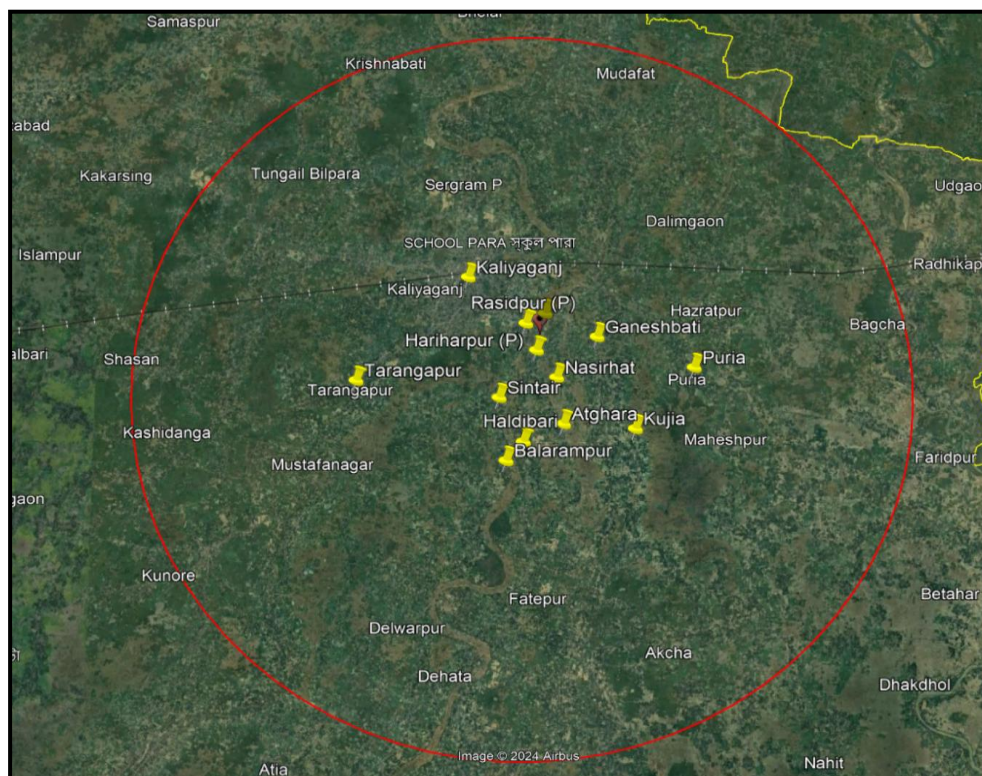
Sampling

Zone wise sampling was done in order to ensure effective representation and proportionate inclusion. Selective villages from 10 km study area were taken up for the survey. It was experienced that while moving away from the project site, the impact of the project on the residents were fading away or it was impact of some other industry. So the focus of the study was more in the surrounding areas of project site. A proportionate purposive sampling was drawn for selection from 10 km study area. The distribution of sampled locations is presented below:

Table 3.12: Sampled Locations

Sl. No	Locations	Sl. No	Locations
1.	Nasirhat	8.	Ganeshbati
2.	Atghara	9.	Balarampur
3.	Hariharpur (P)	10.	Kujia
4.	Haldibari	11.	Puria
5.	Sintair	12.	Tarangapur
6.	Rasidpur (P)	13.	Kaliyaganj
7.	Lakshmipur		

Figure 3.14: Visited Locations in the Study Area



Data Management

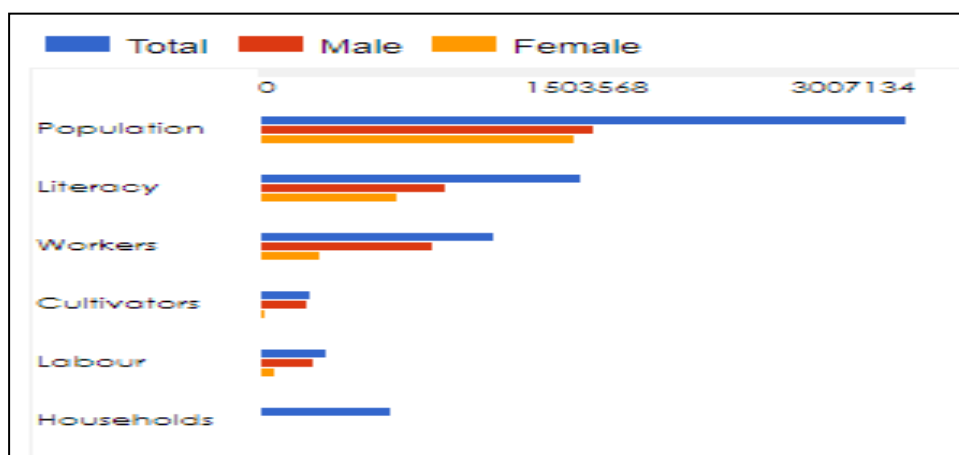
The collected data, after scrutinising, have been computerized after checking for validity, processed and analysed. The qualitative data were quantified for analysis.

Profile of the Project Location

The population of West Bengal makes up 7.8% of India's total population. As per Census of India 2011, the concerned State- West Bengal has population of 9.13 crores, an increase from figure of 8.02 crore in 2001 census. As per projection, population of West Bengal in 2019 is 9.98 crore. The total population growth in this decade was 13.8% while in previous decade it was 17.8%. The population of West Bengal formed 7.5% of India in 2011. Sex ratio was 950, population density per square kilometre was 1028, and literacy rate was 76.3%- male literacy 81.7% and female literacy being 70.5%.

Currently, the State's literacy rate is 76.26%, falling well above the national rate of 74.04%. Nearly 20% of people in West Bengal live below poverty line, but this has declined from almost 32% just ten years ago. Over the last ten years, West Bengal's population grew by almost 14%. This is down from nearly 18% in the previous decade. Though growth of the State has slowed, there is no indication that it will significantly drop or stop, leaving the future clear for continued population growth.

Uttar Dinajpur District occupies 17th position in terms of population in West Bengal. As per 2011 census data, Uttar Dinajpur district is home to a population of 3,007,134 individuals, which is approximately equivalent to the population of Albania or the US state of Mississippi. This places the district at 124th position in India out of a total of 640 districts. The population density of the district stands at 956 inhabitants per square kilometre (2,480/sq mi). Over the period of 2001-2011, the population growth rate was recorded at 22.9%. The sex ratio in Uttar Dinajpur is 936 females for every 1000 males, with a literacy rate of 59.1%. Urban areas are inhabited by 12.05% of the population. Scheduled Castes and Scheduled Tribes account for 26.87% and 5.41% of the population respectively.



The concerned CD Block Kaliyaganj had a population of 224,412 in 2011 of which 115,104 were males and 109,038 were females. SC and ST population were 138,461 and 12,675 respectively. Population density in 2011 was 750 per sq km.

Table 3.13: List of Habitations in the 10 km Study Area

Sl No.	Name	Household	Population	Male Population	Female Population	SC Population	ST Population	Population of under 06 age	Population of Literate
1	Nasirhat	404	1791	913	878	1549	23	245	1020
2	Atghara	469	2232	1159	1073	2078	13	312	1198
3	Haldibari	60	284	139	145	271	3	48	144
4	Sintair	407	1811	920	891	1137	42	224	1221
5	Hariharpur (P)	236	1094	559	535	808	34	113	713
6	Rasidpur (P)	70	286	144	142	254	2	37	156
7	Lakshmipur	383	1729	898	831	1042	6	211	1062
8	Ganeshbati	207	933	486	447	906	3	138	457
9	Balaramppur	93	460	237	223	402	0	61	268
10	Bochadanga	311	1406	715	691	1354	1	170	777
11	Dakshin Bhabanipur	168	735	378	357	729	5	85	331
12	Dakshin Krishnapur	270	1279	632	647	260	10	172	842
13	Anaun	438	1950	973	977	779	8	245	1105
14	Baidan	326	1509	782	727	494	9	237	854
15	Gogra	129	639	327	312	569	18	92	319
16	Dhamja	284	1332	675	657	1326	0	182	676
17	Khanpur	161	787	377	410	658	1	107	400
18	Pakuria	202	989	505	484	457	5	136	573
19	Purba Shankarpur	58	293	157	136	71	0	36	186
20	Bheur	500	2130	1121	1009	1646	133	230	1282
21	Tarangapur	916	3956	2077	1879	1700	103	466	2567
22	Natuadangi	317	1365	682	683	980	14	164	779
23	Baral	205	907	444	463	594	21	88	566
24	Paschim Rampur	69	366	192	174	365	1	27	292
25	Ratan (P)	529	2402	1289	1113	1862	86	293	1292
26	Madhabpur	544	2477	1302	1175	730	242	300	1600
27	Kaliaganj	49745	224142	115104	109038	138461	12675	29540	129417
28	Dhankail (P)	618	2603	1340	1263	1982	32	391	1294
29	Shursa	322	1447	739	708	1358	7	192	804
30	Gopalpur	136	659	337	322	656	1	94	374

Sl No.	Name	Household	Population	Male Population	Female Population	SC Population	ST Population	Population of under 06 age	Population of Literate
31	Daulatbati	137	621	330	291	589	3	89	347
32	Raghabpur Bara	48	208	111	97	191	0	24	125
33	Chak Lakshmi	54	223	125	98	223	0	22	121
34	Uttar Kachna	143	617	318	299	613	4	91	345
35	Puria	508	2289	1191	1098	1765	5	289	1389
36	Deogaon	725	3278	1684	1594	2734	113	435	1750
37	Mujia	126	648	338	310	633	9	93	338
38	Mahagaon	114	565	280	285	558	1	86	298
39	Kujia	110	544	268	276	98	9	96	272
40	Maheshpur	487	2181	1108	1073	1433	99	282	1270
41	Khurkhuria	50	255	127	128	65	0	41	137
42	Mahatair	38	210	97	113	0	37	23	127
43	Fatepur	714	3161	1596	1565	2812	23	372	1785
44	Chandipur	229	1167	570	597	1125	28	183	580
45	Delwarpur	1056	5086	2615	2471	4481	165	684	2601
46	Madhupur	82	406	196	210	406	0	60	178
47	Chauli	42	209	109	100	161	0	16	139
48	Baruna	399	1721	856	865	1177	275	237	885
49	Khatsa	393	1697	864	833	1065	431	187	1044
50	Kuria	150	737	372	365	732	0	83	459
51	Chaipara	166	790	405	385	699	66	114	489
52	Raypur	218	926	484	442	632	84	118	572
53	Bhuinhara	544	2372	1194	1178	1156	115	272	1413
54	Hatpara	274	1144	592	552	670	162	115	779
55	Kunore	996	4709	2543	2166	1545	323	525	3071
56	Binagram	128	568	298	270	484	16	78	381
57	Shasan	1019	4559	2347	2212	329	93	711	2523
58	Keotan	372	1639	869	770	1292	14	196	1064
59	Kuanrpur	289	1243	643	600	890	3	133	744
60	Mahipur	319	1421	688	733	520	147	218	775
61	Dudhanda	455	1983	1007	976	844	72	270	1172
62	Bhandar (P)	652	3078	1570	1508	2720	22	358	1946
63	Bhatara	141	638	339	299	289	13	87	400
64	Chandbari Mirzapur	194	926	470	456	374	0	118	626
65	Krishnabati	262	1148	602	546	830	12	150	707
66	Krishnapur	239	1071	547	524	3	0	140	727
67	Patair	261	1132	568	564	749	7	128	664

Sl No.	Name	Household	Population	Male Population	Female Population	SC Population	ST Population	Population of under 06 age	Population of Literate
68	Minapara	106	551	262	289	43	88	80	341
69	Ratibati	226	945	489	456	909	25	121	554
70	Dasai	314	1480	763	717	1456	6	206	910
71	Sergram (P)	818	3758	1897	1861	2970	155	494	2296
72	Bhelai	320	1294	643	651	654	172	209	635
73	Mahinagar	620	2655	1354	1301	1285	348	363	1443
74	Jugipukur	71	367	178	189	363	0	44	254
75	Pachakandar	243	1076	526	550	1056	19	155	506
76	Mudafat	220	988	505	483	929	15	113	528
77	Buridangi	157	681	339	342	533	8	84	392
78	Uttar Shankarpur	251	1088	544	544	583	78	148	704
79	Chak Shibananda	197	919	459	460	605	44	116	598
80	Lohatara	372	1594	819	775	919	5	221	1003
81	Dhanipukur	95	422	204	218	155	0	55	291
82	Chapair	242	1113	575	538	620	14	176	495
83	Narayanpur	219	1023	517	506	332	2	159	581
84	Dakshin Gauripur	190	864	447	417	157	0	110	510
85	Bagcha	262	1170	609	561	1038	32	171	610
86	Paligaon	380	1834	955	879	58	0	266	1277
87	Bhabanipur	443	1964	1020	944	1758	11	239	1046

The findings of desk review, socioeconomic survey and various consultations at community level are presented below:

The 10 km study area is characterized by several industries, educational institutions and medical centres. Major sources of livelihood are agriculture; work in factories as labourers, petty business and services. Of the participants more than 56% are worker, 10% are homemakers, rest are associated with driving, business. Few are students and unemployed. Child labour in any industry was no reported. Land in the villages is mainly used for agriculture purpose and for residential use. Almost all have a cell phone for communication, many own two-wheelers.

Almost all locations have pre-primary, primary school; for secondary and higher secondary schooling students travel to other adjacent towns/cities. College education and various degree/diploma courses are accessed at Raiganj and for university the students mostly travel to Malda or Kolkata. Very few students go for higher education from the 10 km study area. There are technical institutes and English language training schools at Raiganj.

For water supply the residents depend mainly on Bore well, which exists in each village. In each village the concerned panchayat is accountable for providing potable water. In majority villages

people have latrine at home. There is no solid waste management system in the 10 km study area. There is electric supply in all villages; all villages enjoy the benefit of Public Distribution System (PDS). Of all 50% of the villages have some playground available with them. Main mode of communication or daily activities is bus. Other modes are motorbike, toto, etc. Most of the locations have bus stops nearby. Almost every household is using mobile phone.

All the locations have access to some banks, though may not be in the same village. Each location has self help groups created by the women with support of anganwadi workers or under some government scheme. These are thrift and credit societies, but most of those groups are not yet confident to start any business till date. Probably they need more support and hand holding towards such initiative.

For advanced and critical health care, people visit nearby health center and government hospital. Of all 50% of the respondents communicated that people mainly suffer from allergy, skin disease, breathing problem, asthma, eye problem, etc. due to pollution.

Location	Date	Peoples' Views	Number of Participants
Nasirhat	21/03/2025	This is a municipality area. Almost all houses are semi-pucca. The source of drinking water is Bore well. Electricity connection is there to every houses. The area is well connected to other places. Bus, toto, bike etc. are main mode of transportation. Community hall, play ground etc. are available. Medical facilities like health centre, ambulance, medicine shop are there in the locality. Literacy rate is high. Students attain nearby schools, colleges. Some of respondents know about air pollution. They suggested that the air pollution must be checked. People will be benefited if they get job.	8
Hariharpur (P)	21/03/2025	Villagers depend on supplied water for drinking. Quality of drinking water is good. There is electric connection in every house. Respondents reported that they do not get any benefit from near by industries. The main occupation is cultivation. As per respondents, there is no such disease due to	10

		pollution. Asthma is most common illness here. Nearest hospital is at Kaliyaganj. They face difficulties to reach hospital.	
Atghara	21/03/2025	As per respondents the drinking water sources is Bore well and the quality of water is good. Almost every household has electricity and latrine, there is no solid waste management. Breathing problem and skin disease are the common illnesses. Nearest government hospital is at kaliyaganj and there is a health center in the locality. Primary and higher secondary schools is there in the village. As per respondents literacy rate is high. Villagers have idea about industrial pollution. Mainly air pollution from nearest factory effects their health. Villagers do not get any help from local industries. It can be beneficial for villagers if they get job in plant. Maximum villagers work as daily wage labour.	9
Haldibari	21/03/2025	It is an urban area. Pipeline and tube well are the main sources of water supply. Most of the households have electric connection and sanitation. There is no solid waste management system. Health center is there in the village but for government hospital villagers travel to Kaliyaganj. There is no such disease due to pollution. Pre- primary, Primary and middle secondary schools are there but for high school, students travel to nearby villages. Cultivation is main way of earning for villagers. Respondent don't know about the pollution. Few women are associated as factory worker.	7
Balarampur	21/03/2025	Villagers depend on supplied water for drinking. Quality of drinking water is good. There is electric connection in every house. Respondents reported that they do not get any benefit from near by industries. People	11

		do not have idea about pollution which affects their health. As per respondents, there is no such disease due to pollution. Asthma is most common illness here. Nearest hospital is at Kaliyaganj. They face difficulties to reach hospital.	
Sintair	21/03/2025	This is a semi-urban area. Electricity connection is there. The nearby plants do not help villagers. New industry will be beneficial for villagers. New job opportunity will be created.	8
Rashidpur (P)	21/03/2025	The village comes under Kaliyaganj Tehsil. Villagers buy water for drinking. Most of the households have electric connection and sanitation. Villagers work nearby industries on contractual basis. People do not get any benefit from plant. Allergy, eye problem due to pollution are common health disease. There is a health centers in the locality. Hospital is at Kaliyaganj. Villagers know about air pollution.	6
Kaliyaganj	22/03/2025	This is a semi-urban area. Deep well is main sources of drinking water. Villagers also buy water. In the village, there is electricity and sanitation. Skin and eye problems are common. Bus, toto, cycle are the mode of transport. Nearest health center is at locality and government hospital is at the area. Eye, skin, breathing are common disease villagers face due to pollution. Literacy rate is low. Villagers do not get any benefit from industries and they do have idea about industrial pollution.	10
Lakshmipur	22/03/2025	Residents here depend on bore well for drinking water. There is electric connection and sanitation in every house. Villagers depend on toto, cycle, bike for transportation Villagers have travel to Kaliyaganj for government hospital.	3

		Common illness is asthma. High school is in the village area. One of the respondents said that local people do not get job in industries.	
Ganeshbati	22/03/2025	Tube well is one of the main source of drinking water. There is electric connection and latrine. For transportation private bus and toto are available. Overall literacy rate here is up to graduation. Agriculture is main way of earning. There is local health center. Government hospital is at Kaliyaganj.	6
Kujia	22/03/2025	A Semi-urban area. People depends on supplied water for drinking water, the quality of water is good. Almost each household have latrine. Electric connection is there. Agriculture is main source of income. Some of the villagers work at nearby factories. They get 250 – 300 per day. Diarrhea and breathing problem are most common illnesses here. The nearby plants do not help villagers. Villagers do not know about industrial air pollution.	6
Puria	22/03/2025	Supplied water is the source of drinking water. Electric connection and sanitation are available. Cultivation is the major occupation. People do not have idea about industrial pollution.	5
Tarangapur	22/03/2025	Residents depend on supplied water drinking purpose. Electric connection and sanitation are there. But water quality is average. Maximum people are associated with private sector. There is no such effect of pollution from factories. There is no health center. No such disease from pollution.	3

Bibliography

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<http://worldpopulationreview.com/world-cities/west-bengal-population/>

3.12 Ecology and biodiversity

This study describes the existing baseline environmental status with reference to the present environmental attributes (evaluation of the floral and faunal biodiversity of the terrestrial and aquatic environment) of the study area covering 10 Km radius from the project site. The scope of this study is limited to only those issues, which are of concern in the environmental Impact assessment. The data/features documented here under have been collected through field investigations, interactions with local people, desk research and published data sources.

SCOPE OF WORK

The scope of the present study includes the following:

Terrestrial Ecological Study

- a) Collection of relevant information on climate, soil conditions and forest type.
- b) To prepare total list of plants.
- c) To prepare the floristic check list, dominant species, rare and endangered floristic and faunal species in the study area.
- d) To list medicinal plants.
- e) Terrestrial fauna of the study area as per schedule of Indian wild life (Protection Act, 1972) as amended in 1991.

Aquatic Ecological Study

- a) To prepare the list of aquatic flora and fauna
- b) To prepare the list phytoplankton, Zooplankton,
- c) Listing of Fishes and macrophytes.

Terrestrial Plants

Methodology

The qualitative rapid survey of terrestrial ecology in and around the study area consists of the following,

- a) Listing of species composition.
- b) Determination of forest types.
- c) Listing of genetically and economically important plant species.
- d) Listing of medicinal plant species.
- e) Listing of rare and endangered plant species.
- f) Listing of fauna species.

The flora and fauna observed in the study area has been discussed with the local people and noted. It shows some greenery within the plant area including natural and planted habitat. Agricultural land observed in the study area. Paddy and mustard are major crops and cultivated in several fields throughout the season. Pea, pulse etc. are also cultivated in interval.

Observation of Biodiversity Study**Flora****Terrestrial Flora**

The vegetation of the Dinajpur districts of West Bengal is primarily mixed deciduous type in which sal trees are common in the north. There are some 25-30 m tall trees are common e.g., *Albizia lebbeck*, *Azadirachta indica*, *Bombax ceiba*, *Dalbergia sissoo*, *Ficus religiosa*, *Gmelina arborea*, *Lagerstroemia speciosa*, *Lannea coromandelica*, *Melia azedarach*, *Oroxylum indicum*, *Syzygium jambos*, *Tectona grandis*, *Terminalia arjuna*, etc. In the occasional submerged areas or near wetlands *Barringtonia acutangula* are common in occurrence. Shrubs like *Clerodendrum infortunatum*, *Flacourtia indica*, *Glycosmis Tabernaemontana divaricata*, *Ziziphus oenopolia*, etc. are abundant forming dense bushes on the ground.

Following species were observed within the study area.. The area does not have any rare or endangered species. Though the vegetation cover at study sites is significant. Two forests - Dhamja Reserve Forest and Dakshin Bhabanipur Reserve forest are within the study area.

The detailed list of major plants in the study area is as follows:

Table 3.14: Terrestrial plants observed in and around the study area

List of trees

SCIENTIFIC NAME	COMMON NAME	FAMILY
<i>Terminalia arjuna</i> W. & A.	Arjun	Combretaceae
<i>Tectona grandis</i> L.f.	Sahgun	Lamiaceae
<i>Eucalyptus</i>		Myrtaceae
<i>Swietenia mahagoni</i> (L.) Jacq.	Mahagony	Meliaceae
<i>Azadirachta indica</i> A. Juss.	Neem	Meliaceae
<i>Phoenix sylvestris</i> Roxb.	Date Palm	Arecaceae
<i>Albizia lebbeck</i> (L.)Benth.	Siris	Mimosaceae
<i>Ficus bengalensis</i> L.	Banyan, Bot, Bargat	Moraceae
<i>Alstonia scholaris</i> (L.) R. Br.	Chatim, Chatian, Devil tree	Apocynaceae
<i>Caesalpinia pulcherima</i>	Krishnachura	Fabaceae
<i>Araucaria</i> Juss.	Araucaria	Araucariaceae
<i>Ficus religiosa</i> L.	Ashwattha	Moraceae

SCIENTIFIC NAME	COMMON NAME	FAMILY
<i>Mangifera indica</i> L.	Mango	Anacardiaceae
<i>Roystonea regia</i> (Kunth) O.F.Cook	Royal palm	Arecaceae
<i>Cocos nucifera</i> L.	Coconut	Arecaceae
<i>Acacianilotica</i> (L.) Willd. ex Delile	Babul	Fabaceae
<i>Putranjiva roxburghii</i> Wall.	Putijia, Putranjiva	Putranjivaceae
<i>Tamarindus indica</i> L.	Tamarind, Imli, Tentul	Fabaceae
<i>Ziziphus mauritiana</i> Lam.	Ber	Rhamnaceae
<i>Ziziphus oenopolia</i> (L.) Mill.	Shiakul	Rhamnaceae
<i>Barringtonia acutangula</i> ,	Hijol	Lecythidaceae
<i>Butea frondosa</i>	Palas	Fabaceae
<i>Moringa oleifera</i> Lam.	Sajihan	Moringaceae
<i>Borassus flabellifer</i>	Tal	Arecaceae
<i>Khaya anthotheca</i> (Welw.) C.DC.	Lambu	Meliaceae
<i>Bombax ceiba</i> L.	Simul	Malvaceae

List of shrubs

SCIENTIFIC NAME	COMMON NAME	FAMILY
<i>Calotropis procera</i>	Akanda	Asclepiadaceae
<i>Clerodendrum infortunatum</i> L.	Bhant, Ghentu	Lamiaceae
<i>Jatropha gossypifolia</i>	Verenda	Euphorbiaceae
<i>Ricinus communis</i>	Rehri	Euphorbiaceae
<i>Abutilon indicum</i>	Petari	Malvaceae
<i>Tabernaemontana alternifolia</i>	Tagar	Apocynaceae
<i>Sida cordifolia</i>	Berela	Malvaceae
<i>Sida rhombifolia</i>	Atibala	Malvaceae

<i>Phyllanthus reticulatus</i> Poir.	Bhui amla	Euphorbiaceae
<i>Eupatorium cannabinum</i>	Ayapana	Asteraceae
<i>Tephrosia purpurea</i>	Bon-nil	Papilionaceae
<i>Glycosmis pentaphylla</i> (Retz.) DC.	Gin Berry, opal orange,	Rutaceae

List of herbs & climbers

SCIENTIFIC NAME	COMMON NAME	FAMILY
<i>Acalypha indica</i>	Muktajhuri	Euphorbiaceae
<i>Croton bonplandianum</i>	Bon-tulasi	Euphorbiaceae
<i>Euphorbia hirta</i>	Boro-karni	Euphorbiaceae
<i>Ageratum conyzoides</i> L.	Goat weed,	Asteraceae
<i>Cleome rutidosperma</i>	Fringed spider flower	Cleomaceae
<i>Amaranthus spinosus</i>	Kantanotey	Amaranthaceae
<i>Achyranthes aspera</i>	Apang	Amaranthaceae
<i>Lindenbergia indica</i>	Haldi Basanto	Scrophulariaceae
<i>Boerhaavia diffusa</i>	Punarnaba	Nyctaginaceae
<i>Solanum xanthocarpum</i>	Bhurangini	Solanaceae
<i>Solanum nigrum</i>	Kakmachi	Solanaceae
<i>Parthenium hysterophorus</i>	Parthenium	Asteraceae
<i>Coccinia grandis</i>	Telakucha	Cucurbitaceae
<i>Mukia maderaspatana</i>	Bilavi	Cucurbitaceae
<i>Ipomoea carnea</i>	Besharm	Convolvulaceae
<i>Asparagus plumosus</i>	Satamulee	Liliaceae
<i>Citrullus vulgaris</i>	Matira	Cucurbitaceae

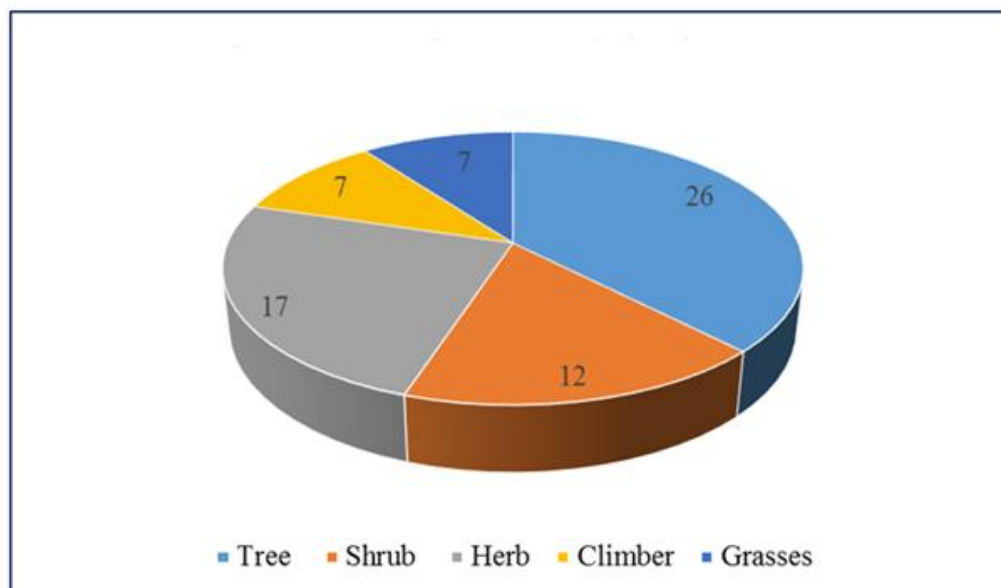
List of grasses

SCIENTIFIC NAME	COMMON NAME	FAMILY
<i>Eragrostis tenella</i>	Bharbusi	Poaceae
<i>Eragrostis unioides</i>	Kush	Poaceae
<i>Cynodon dactylon</i>	Durba	Poaceae
<i>Chrysopogon aciculatus</i>	Chorkanta	Poaceae
<i>Saccharum spontaneum</i>	Lal Kans	Poaceae
<i>Cyperus rotundus</i>	Motha	Cyperaceae
<i>Typha elephantine</i>	Elephant grass	Typhaceae

Rare and endangered plant species

As per IUCN 's "Red Data Book", none of the taxa are found in the study area could be marked as rare or endangered plant species.

Figure 3.15: Habitat wise distribution of vegetation in the study area



List of medicinal plants

During the survey of the study area about 11 plant species could be identified having medicinal value and the list of the medicinal plant species are given below in table 3.15.

Table 3.15: List of Medicinal Plants Observed in Study Area

Name of the Species	Common Name	Family
<i>Azadirachta indica</i>	Nim	Meliaceae
<i>Ocimum sanctum</i>	Tulsi	Lamiaceae
<i>Euphorbia hirta</i>	Baro-Karani	Euphorbiaceae
<i>Sida rhombifolia</i>	Lal – berela	Malvaceae
<i>Achyranthes aspera</i>	Apang	Amaranthaceae
<i>Solanum nigrum</i>	Kakmachi	Solanaceae
<i>Eclipta prostrata</i>	Keshut	Asteraceae
<i>Boerhaavia diffusa</i>	Punarnaba	Nyctaginaceae
<i>Sida cordifolia</i>	Berela	Malvaceae
<i>Sida rhombifolia</i>	Atibala	Malvaceae
<i>Phyllanthus reticulatus</i> Poir.	Bhui amla	Euphorbiaceae

Forest in the study area

Two forests - Dhamja and Dakshin Bhabanipur forest are located within the study area (10 km). The Dhamja reserve forest is at 4.5 km aerial distance and Dakshin Bhabanipur forest is at 5.5 km aerial distance from the proposed location of the industry. Both the forests declared reserve forest in 2020, as informed by office of the divisional forest officer Raiganj Division Uttar Dinajpur.

Dhamja Reserve Forest

Area 32.9421-hectare

Location: 24° 35' 10.86'' N

88° 18' 52.89'' E

South Bhawanipur forest

Area: 20.15hectare

Location: 25° 34' 51.00'' N

88° 20' 38.45'' E

These forests of Raiganj division is divided into nos. of small patches surrounded by villages interspersed with agricultural lands. Throughout these forest areas wherever blank or degraded patches are available, those areas are mostly regenerated artificially with miscellaneous diverse species. Being fertile gangetic belt this area produces different species having vigorous growth with potential to produce good quality timber.

According to Champion and Seth's classification of forest types in India, the vegetation of the - Dhamja Reserve Forest and Dakshin Bhabanipur Reserve forest are being primarily mixed deciduous type with some Sal forests which are common in both the forest. The upper storey of these forests is formed by 25-30 m tall trees that form canopies. During March-April, the upper canopy becomes almost leafless but during the rest of the year it forms dense canopy over the lower storeys of the forest.

Some important plants observed in the forests are listed below:

Table 3.16: Terrestrial Plants observed in Dakshin Bhabanipur Forest

List of Trees

SCIENTIFIC NAME	COMMON NAME	FAMILY
<i>Acacia nilotica</i> (L.) Willd. ex Delile	Babul	Fabaceae

SCIENTIFIC NAME	COMMON NAME	FAMILY
<i>Albizia lebbeck</i> (L.) Benth.	Siris	Mimosaceae
<i>Alstonia scholaris</i> (L.) R. Br.	Chatim, Chatian,	Apocynaceae
<i>Azadirachta indica</i> A. Juss.	Neem	Meliaceae
<i>Barringtonia acutangula</i> L.	Hijol	Lecythidaceae
<i>Bombax ceiba</i> L.	Simul	Malvaceae
<i>Borassus flabellifer</i> L.	Tal	Arecaceae
<i>Dalbergia sissoo</i> DC	Shishoo	Fabaceae
<i>Ficus religiosa</i> L.	Ashwattha	Moraceae
<i>Gmelina arborea</i> Roxb. ex Sm.	Gamhar	Lamiaceae
<i>Lagerstroemia parviflora</i> Roxb.	Jarul	Lythraceae.
<i>Lannea coromandelica</i> (Houtt.) Merr	Gurjon	Anacardiaceae
<i>Mangifera indica</i> L.	Mango/Aam	Anacardiaceae
<i>Melia azedarach</i> L.	Chinaberry tree	Meliaceae
<i>Oroxylum indicum</i> (L.) Kurz	Broken Bones	Bignoniaceae
<i>Phoenix sylvestris</i> Roxb.	Date Palm	Arecaceae
<i>Pterocarpus marsupium</i> Roxb.	Piasal	Fabaceae
<i>Putranjiva roxburghii</i> Wall.	Putijia, Putranjiva	Putranjivaceae
<i>Semecarpus anacardium</i> Linn.	Bhilwa	Anacardiaceae
<i>Shorea robusta</i> C. F. Gaertn	Sal	Dipterocarpaceae
<i>Sideroxylon tomentosum</i> Roxb.	Kanta buhel	Sapotaceae
<i>Spondias pinnata</i> (L.f.) Kurz.	Amra	Anacardiaceae

SCIENTIFIC NAME	COMMON NAME	FAMILY
<i>Syzygium cumini</i> L.	Kalajam	Myrtaceae
<i>Tectona grandis</i> L. f.	Teak	Lamiaceae
<i>Tectona grandis</i> L.f.	Segun	Lamiaceae
<i>Terminalia arjuna</i> W. & A.	Arjun	Combretaceae
<i>Ziziphus mauritiana</i> Lam.	Kul	Rhamnaceae
<i>Morinda citrifolia</i> L.	Achu	Rubiaceae
<i>Moringa oleifera</i> Lam.	Sajina	Moringaceae
<i>Phyllanthus emblica</i> L.	Amla	Phyllanthaceae
<i>Pongamia pinnata</i> (L.)Pierr.	Karanj	Fabaceae
Shrubs		
<i>Clerodendrum infortunatum</i> L.	Ghetu	Verbenaceae
<i>Flacourtia indica</i> (Burm.f.) Merr.	Governor's plum	Salicaceae
<i>Glycosmis pentaphylla</i> (Retz.) DC	Ashsheora	Rutaceae
<i>Lantana camara</i> L.	Putush	Verbenaceae
<i>Meyna laxiflora</i> Robyns	Muyna	Rubiaceae
<i>Premna latifolia</i>	Agimantha	Verbenaceae
<i>Suregada multiflora</i> (A.Juss.) Baill.		Euphorbiaceae
<i>Trema orientalis</i> (L.) Blume	Charcoal tree	Cannabaceae.
Herbs		
<i>Anisomeles indica</i> (L.) Kuntze	Catmint	Lamiaceae
<i>Desmodium triflorum</i> (L.) DC.	Hamsapadi	Fabaceae
<i>Elephantopus scaber</i> L.	Hasti Pada	Asteraceae

SCIENTIFIC NAME	COMMON NAME	FAMILY
<i>Richardia scabra</i> L.	Mexican clover	Rubiaceae
<i>Senna sophora</i> (L.) Roxb	Kasaunda	Fabaceae
<i>Sida rhombifolia</i>	Bala	Malvaceae
<i>Synedrella nodiflora</i> (L.) Gaertn.	Cinderella Weed	Asteraceae
<i>Mitracarpus hirtus</i> (L.) DC.	Himalayan Mulberry	Rubiaceae
Climbers		
<i>Caesalpinia bonduc</i> (L.) Roxb.	Natakaranja	Fabaceae
<i>Cissus quadrangularis</i> L.	Hadjod	Vitaceae
<i>Cryptolepis buechananii</i> Roem. & Schult.	Indian Sarsaparilla	Apocynaceae
<i>Ichnocarpus frutescens</i> (L.) W. T. Aiton.	Shyama lata	Apocynaceae
<i>Luffa cylindrica</i> (L.)	Sponge gourd	Cucurbitaceae
<i>Mallotus repandus</i> (Rottler) Müll.Arg.		Euphorbiaceae
<i>Tinospora cordifolia</i> (Willd.) Miers	Guduchi	Menispermaceae

Figure 3.16: Habitat wise distribution of vegetation in Dakshin Bhabanipur Forest

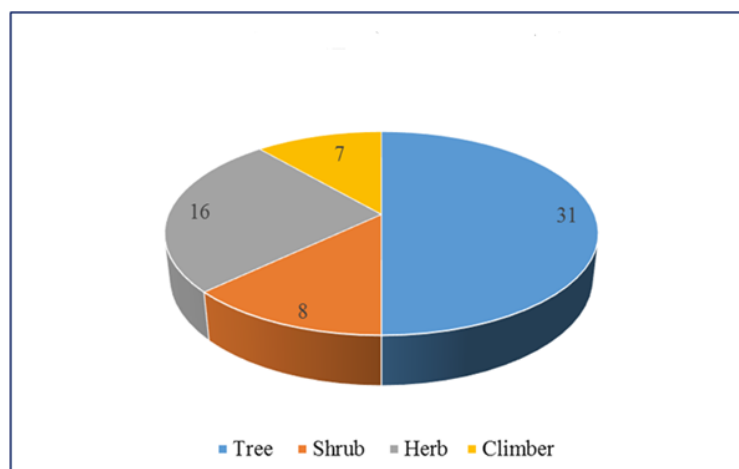


Table 3.17: Terrestrial plants observed in Dhamja forest**List of trees**

SCIENTIFIC NAME	COMMON NAME	FAMILY
<i>Acacia auriculiformis</i> A. Cunn. ex Benth.	Akashmoni	Fabaceae
<i>Adenanthera pavonina</i> L.	Acacia Coral	Fabaceae
<i>Adina cordifolia</i> (Roxb.) Brandis	Haldu	Rubiaceae
<i>Aegle marmelos</i> (L.) Correa	Bel	Rutaceae
<i>Ailanthus excelsa</i> Roxb.	Mahaneem	Simaroubaceae
<i>Alangium salvifolium</i> Linn.	Ankol	Cornaceae
<i>Albizia lebbeck</i> (L.) Benth.	Shirish	Fabaceae
<i>Alstonia scholaris</i> (L.) R. Br.	Chatim	Apocynaceae
<i>Anthocephalus cadamba</i> (Roxb.) Miq.	Kadamba	Rubiaceae
<i>Artocarpus lacucha</i> Buch.-Ham	Dehu	Moraceae
<i>Azadirachta indica</i> A. Juss.	Neem	Meliaceae
<i>Bombax ceiba</i> L.	Silk cotton	Malvaceae
<i>Bridelia retusa</i> (L.) A.Juss.	Khaja	Phyllanthaceae
<i>Buchanania latifolia</i> Roxb.	Piyal	Anacardiaceae
<i>Calicarpa arborea</i> Roxb.	Barmalla	Lamiaceae
<i>Casuarina equisetifolia</i> L.	Jhau	Casuarinaceae
<i>Cochlospermum religiosum</i> (L.) Alston	Galgol	Bixaceae
<i>Cordia dichotoma</i> G.Forst.	Lashora	Boraginaceae
<i>Dalbergia lanceolaria</i> L.f.	Takoli	Fabaceae

SCIENTIFIC NAME	COMMON NAME	FAMILY
<i>Diospyros montana</i> Roxb.	Bangab	Ebenaceae
<i>Erythrina stricta</i> Roxb.	Madar	Fabaceae
<i>Ficus benghalensis</i> L.	Bat	Moraceae
<i>Ficus hispida</i> L. f.	Dumur	Moraceae
<i>Ficus religiosa</i> L.	Aswattha	Moraceae
<i>Gmelina arborea</i> Roxb. ex Sm.	Gamar	Lamiaceae
<i>Grewia latifolia</i> F.Muell. ex Benth.	Pitali	Malvaceae
<i>Hardwickia binata</i> Roxb.	Anjan	Fabaceae
<i>Holoptelea integrifolia</i> (Roxb.) Planch.	Chilbil	Ulmaceae
<i>Lagerstroemia flos-reginae</i> Retz.	Jarul	Lythraceae
<i>Lannea coromandelica</i> (Houtt.) Merr.	Jiyol	Acardaceae
<i>Madhuca longifolia latifolia</i> (Roxb.) A.Chev.	Mahua	Sapotaceae
<i>Mallotus philippensis</i> (Lam.) M.Arg.	Kamala	Euphorbiaceae
<i>Mangifera indica</i> L.	Aam	Anacardiaceae
<i>Melia azedarach</i> L.	Ghoraneem	Meliaceae
<i>Morinda citrifolia</i> L.	Achu	Rubiaceae
<i>Moringa oleifera</i> Lam.	Sajina	Moringaceae
<i>Phyllanthus emblica</i> L.	Amla	Phyllanthaceae
<i>Pongamia pinnata</i> (L.)Pierr.	Karanj	Fabaceae
<i>Pterocarpus marsupium</i> Roxb.	Piasal	Fabaceae
<i>Semecarpus anacardium</i> Linn.	Bhilwa	Anacardiaceae
<i>Shorea robusta</i> C. F. Gaertn	Sal	Dipterocarpaceae

SCIENTIFIC NAME	COMMON NAME	FAMILY
<i>Sideroxylon tomentosum</i> Roxb.	Kanta buhel	Sapotaceae
<i>Spondias pinnata</i> (L.f.) Kurz.	Amra	Anacardiaceae
<i>Syzygium cumini</i> L.	Kalajam	Myrtaceae
<i>Tectona grandis</i> L. f.	Teak	Lamiaceae
<i>Terminalia arjuna</i> W. & A.	Arjun	Combretaceae
<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Bahera	Combretaceae
<i>Terminalia chebula</i> Retz.	Haritaki	Combretaceae
<i>Terminalia elliptica</i> Wight & Arn.	Asan	Combretaceae
<i>Wendlandia exserta</i> (Roxb.) DC.	Chanlai	Rubiaceae

List of shrubs

SCIENTIFIC NAME	COMMON NAME	FAMILY
<i>Calotropis procera</i> (Ait.) R. Br.	Akanda	Asclepiadaceae
<i>Clerodendrum infortunatum</i> L.	Bhant, Ghentu	Lamiaceae
<i>Abutilon indicum</i> (L.)	Petari	Malvaceae
<i>Sida cordifolia</i> L.	Berela	Malvaceae
<i>Sida rhombifolia</i> L.	Atibala	Malvaceae
<i>Nerium odoratum</i> Lam.	Karabi	Apocynaceae
<i>Martynia diandra</i> L.	Bagnok	Martyniaceae
<i>Flacourtia indica</i> (Burm.f.) Merr.	Boichi	Salicaceae
<i>Jatropha curcus</i> L.	Bherenda	Euphorbiaceae
<i>Lantana camara</i> L.	Putus	Verbenaceae
<i>Girardinia zeylanica</i> Decne.	Bichhu	Urticaceae
<i>Woodfordia floribunda</i> Salisb.	Dhani	Lythraceae
<i>Andrographis paniculata</i> (Burm.f.)	Kalmegh	Acanthaceae

<i>Bauhinia variegata</i> L.	Kanchan	Fabaceae
<i>Cassia tora</i> L.	Chakunda	Fabaceae
<i>Cassia pumila</i> Lam.	Sarmal	Fabaceae
<i>Indigofera hirsuta</i> L.	Chota sirphunka	Fabaceae
<i>Zizyphus xylopyra</i> Willd.	Kul/ Ber	Rhamnaceae
<i>Holarrhena antidysenterica</i> Wall.	Kurchi	Apocynaceae
<i>Ixora parviflora</i> L.	Rangan	Rubiaceae
<i>Ipomea cornea</i>	Bankalmi	Convolvulaceae
<i>Euphorbia macrophylla</i> (L.)Cass	Dugdhika	Euphorbiaceae
<i>Opuntia dillenii</i> (Ker Gawl.) Haw.	Fanimanasha	Cactaceae
<i>Carissa spinarum</i> L.	Karamcha	Apocynaceae

Herbs

SCIENTIFIC NAME	COMMON NAME	FAMILY
<i>Achyranthes aspera</i> L.	Apang	Amaranthaceae
<i>Phyllanthus reticulatus</i>	Bhuin amla	Euphorbiaceae
<i>Croton bonplandianum</i> Baill.	Bon-tulusi	Euphorbiaceae
<i>Euphorbia hirta</i> L.	Boro-karni	Euphorbiaceae
<i>Eleusine indica</i> (L.) Gaertn.	Chapra ghas	Poaceae
<i>Xanthium strumarium</i> L.	Chorkanta	Asteraceae
<i>Datura stramonium</i> L.	Datura	Solanaceae
<i>Cleome rutidosperma</i> DC.	fringed spider flower	Cleomaceae
<i>Ageratum conyzoides</i> L.	Goat weed,	Asteraceae
<i>Solanum nigrum</i> Linn.	Kakmachi	Solanaceae
<i>Blumea lacera</i> (Burm.f.) DC.	Kakronda	Asteraceae
<i>Curcuma caesia</i> Roxb.	Kali haldi	Zinzibaraceae
<i>Amaranthus spinosus</i> L.	Kantanotey	Amaranthaceae
<i>Oldenlandia corymbosa</i> L.	Khet papra	Rubiaceae
<i>Leea herbacea</i> Buch.-Ham.	Kukurjiwha	Vitaceae
<i>Acalypha indica</i> L.	Muktajhurih,	Euphorbiaceae

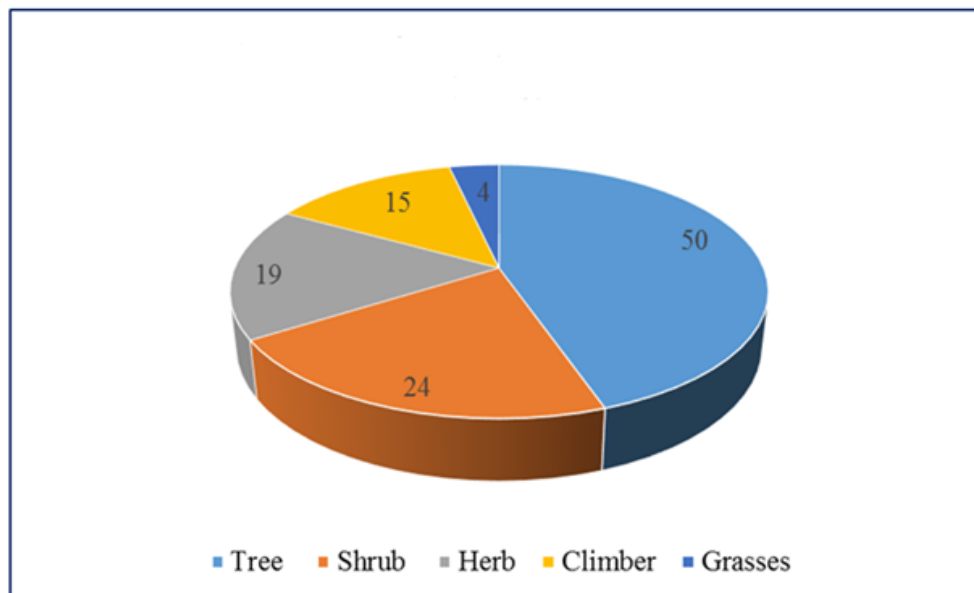
SCIENTIFIC NAME	COMMON NAME	FAMILY
<i>Parthenium hysterophorus</i> L.	Parthenium	Asteraceae
<i>Sida cordifolia</i> L.	Berela	Malvaceae
<i>Andrographis paniculata</i> (Burm. f.)	Kalmagh	Acanthaceae

Climbers

SCIENTIFIC NAME	COMMON NAME	FAMILY
1. <i>Telosma cordata</i> (Burm. f.) Merr.	Pakalana	Apocynaceae
2. <i>Mucuna pruriens</i>	Alkushi	Fabaceae
3. <i>Acacia pennata</i> (L.) Willd.	Rusty mimosa	Fabaceae
4. <i>Ichnocarpus frutesces</i> R. Br.	Syamalata	Apocynaceae
5. <i>Cissampelos Pereira</i> L.	Kijri	Menispermaceae
6. <i>Millettia auriculata</i> Baker ex Brandis	Tuma	Fabaceae
7. <i>Vitis pedata</i> Vahl ex Wall	Godhapadi	Vitaceae
8. <i>Tinospora cordifolia</i> (Willd.) Miers	Guduchi	Menispermaceae
9. <i>Dioscorea pentaphylla</i> L.	Five Leaf Yam,	Dioscoreaceae
10. <i>Butea superba</i> Roxb.	Palash	Fabaceae
11. <i>Bauhinia vahlii</i> Wight & Arnott.	Jallur	Fabaceae
12. <i>Spatholobus roxburghii</i> Benth.	Bando lata	Fabaceae
13. <i>Dioscorea pentaphylla</i> L.	Kanta aloo	Dioscoreaceae
14. <i>Cuscuta reflexa</i> Roxb.	Amarbel	Convolvulaceae
15. <i>Combretum decandrum</i> Roxb.	Atari	Combretaceae

Grasses

SCIENTIFIC NAME	COMMON NAME	FAMILY
<i>Chrysopogon aciculatus</i> (Retz.) Trin.	Chorkanta	Poaceae
<i>Eulaliopsis binate</i> (Retz.) C.E.Hubb.	Sabai grass	Poaceae
<i>Imperata arundinacea</i> Benth.	Cogon grass	Poaceae
<i>Vetivera zuzanoides</i> (L.) Roberty	Khas Khas	Poaceae

Figure 3.17: Habitat wise distribution of vegetation in Dhamja Forest

Both the forests - Dhamja and Dkshin Bhawanipur are far way (4.5 km and 5.5 km) and industry manufacturing process do not have any point source emission so impact on the reserve forests will be insignificant.

FAUNA IN THE STUDY AREA

During the survey and discussion with local people and forest officials it was reported that fauna of the study area include wild squirrel, mongoose, Rats, Moles, Monkeys, Jackals, Snipes, wild Duck, Pigeons, Teals, Geese etc. Wild and large type animals do not exist here.

Amongst reptiles, some non-poisonous snakes, like *Gongylophis Conicus*, *Ptyas Mucosa*, *Hierophis viridiflavus* etc., are found in this area and Naja, Darrash, *Bungarus caeruleus* etc. are also found to be in existence all over the district. The garden lizards and *Varanus bengalensis* are also seen. Butterflies like Common Mormon / Lemon Migrant, Pale Grass Blue, Great Egg fly, Lime Swallowtail, Plains Cupid etc., insects such as beetles, spiders, red ants, and flies are spotted in abundance in the study zone.

Birds found in wetlands and agricultural lands of the study area include - Lesser Whistling duck (*Dendrocygna javanica*), Common kingfisher (*Alcedo atthis*), Stork-billed kingfisher (*Halcyon capensis*), Pied kingfisher (*Ceryle rudis*), Red-wattled lapwing (*Vanellus indicus*), Grey Heron (*Ardea cinerea*), Great egret (*Casmerodius albus*), Intermediate egret (*Mesophoyx intermedia*), Indian pond heron (*Ardeola grayii*) etc.

As per information received during consultation with forest department officials - Birds which are migratory in nature include: Greylag Goose (*Anser anser*), Cotton pygmy goose (*Nettapus coromandelianus*), Common sandpiper (*Actitis hypoleucos*), Little stint (*Calidris minuta*), Little ringed plover (*Charadrius dubius*), Brown headed gull (*Larus brunnicephalus*), Osprey (*Pandion haliaetus*) etc. Among the Ducks, Pintail, Pochard and Brahminy are common.

Animals Found in the Study Area

Mammals

Scientific name	Common name	Family	Schedule
<i>Anser anser domesticus</i>	Domestic Goose	Anatidae	IV
<i>Bos indicus</i>	Cow	Bovidae	IV
<i>Canis familiaris</i>	Dog	Canidae	IV
<i>Capra hircus</i>	Goat	Bovidae	IV
<i>Felis domesticus</i>	Cat	Felidae	II
<i>Axis axis</i>	Spotted Deer/Chital	Cervidae	II
<i>Rattus rattus</i>	Rats	Muridae.	II
<i>Bandicota bengalensis</i>	Moles	Muridae	II
<i>Urva auropunctata</i>	Mongoose	Herpestidae	II
<i>Funambulus tristatus</i>	Palm squirrel	Sciuridae	IV

Birds in the study area

Sl.No.	English Name	Scientific Name	Family	Status as per Wild Life Protection Act
1.	Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae	Schedule II
2.	Night heron	<i>Nycticorax nycticorax</i>	Ardeidae	Schedule II
3.	Pond heron	<i>Ardeola grayii</i>	Ardeidae	Schedule II
4.	Gray heron	<i>Ardea cinera</i>	Ardeidae	Schedule II
5.	Indian cormorant	<i>Phalacrocorax fuscicollis</i>	Phalacrocoracidae	Schedule II
6.	Little cormorant	<i>Microcarbo niger</i>	Phalacrocoracidae	Schedule II
7.	Little egret	<i>Egretta garzetta</i>	Ardeidae	Schedule II

8.	Intermediate egret	<i>Ardea intermedia</i>	Ardeidae	Schedule II
9.	Large egret	<i>Casmerodius albus</i>	Ardeidae	Schedule II
10.	Cattle egret	<i>Bulbulcus</i>	Ardeidae	Schedule II
11.	Common myna	<i>Acridotheres tristis</i>	Sturnidae	Schedule II
12.	House crow	<i>Corvus splendens</i>	Corvidae	--
13.	Red-vented bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	Schedule II
14.	House sparrow	<i>Passer domestica</i>	Passeridae	Schedule II
15.	Black drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Schedule II
16.	Small-blue kingfisher	<i>Alcedo atthis</i>	Alcedinidae	Schedule II
17.	Asian koel	<i>Eudynamys scolopaceus</i>	Cuculidae	Schedule II
18.	White-breasted waterhen	<i>Amaurornis phoenicurus</i>	Rallidae	Schedule II
19.	Rose-ringed parakeet	<i>Psittacula krameri</i>	Psittaculidae	Schedule II
20.	Jungle crow	<i>Corvus macrorhynchos</i>	Corvidae	Schedule II
21.	Spotted dove	<i>Streptopelia chinensis</i>	Columbidae	Schedule II
22.	Oriental-magpie robin	<i>Copsychus saularis</i>	Muscicapidae	Schedule II
23.	Purple sunbird	<i>Nectarinia asiatica</i>	Nectariniidae	Schedule II
24.	Common hoopoe	<i>Upupa epops</i>	Upipidae	Schedule IV

Reptiles in the study area

Scientific name	Common Name	Family Name	Schedule
<i>Xenochrophis piscator</i>	Checkered keelback	Colubridae	II
<i>Calotes versicolor</i>	Garden lizard	Agamidae	--
<i>Naja naja</i>	Common cobra	Elapidae	II
<i>Natrix piscator</i>	Water snake	Colubridae	II
<i>Ptyas mucosus</i>	Rat snake	Colubridae	II
<i>Varanus bengalensis</i>	Bengal monitor	Varanidae	I

Amphibians in the study area

Scientific name	Common Name	Family Name	Schedule
<i>Bufo melanostictus</i>	Common toad	Bufonidae	---
<i>Euphlyctis hexadactyla</i>	Common frog	Dicroglossidae	IV
<i>Phrynoderma hexadactyla</i>	Pond frog	Dicroglossidae	II
<i>Hoplobatrachus tigerinus</i>	Indian bull frog	Dicroglossidae	II

AQUATIC ECOLOGICAL STUDY

Aquatic ecological study was carried out in different water bodies within the core and buffer zones of the study area. Different water bodies have been selected for analysing phytoplankton and zooplankton as required for aquatic ecology survey.

The methodology adopted for the aquatic ecology survey is as follows:

- List of aquatic flora and fauna was prepared from direct field observation.
- For the study of planktons, 50 liters of water was filtered through plankton net for collection of phytoplankton and 100 lit. of water was filtered through very fine special net for zooplanktons. The collected plankton samples were preserved with 4% formalin and transferred to laboratory for analysis under binocular microscope. Lists of phytoplankton and zooplankton as observed are mentioned below.

Aquatic Ecology Sampling Locations

Four aquatic ecology sampling locations were selected for aquatic ecological study of the proposed industry. Sampling locations has been provided in following table –

Sampling location No.	Sampling location	Nature of the aquatic body	Distance from the proposed industry
1.	Srimati Nadi	Perennial stream	0.52 km
2.	Pond in Shanti colony	Pond	3.33 km

Aquatic Flora

Macrophytes

Based on the survey of the different aquatic bodies in the buffer zone of the proposed industry about and discussion with local people in the villages, seventeen aquatic macrophytes were observed in the study area. Aquatic flora was identified from the water sample collected from the water body present in the study site. List aquatic of macrophytes observed in the aquatic bodies of the study area has been listed in following table (Table 3.18).

Table 3.18: List of Aquatic Macrophytes Observed in Study Area

Botanical Name	Family Name	Local Name
<i>Azolla pinnata</i>	Salviniaceae	Duck weed fern
<i>Chara</i>	Characeae	Chara
<i>Eichhornia crassipes</i>	Pontederiaceae	Water hyacinth
<i>Gnaphalium polycaulon</i>	Asteraceae	Sunflower family herb
<i>Hydrilla verticillata</i>	Hydrocharitaceae	Waterthyme
<i>Ipomoea aquatica</i>	Convolvulaceae	Nali
<i>Limnophila repens</i>	Plantaganaceae	Creeping marshweed
<i>Marsilea Minuta</i>	Marsileaceae	Susni Sak
<i>Marsilea quadrifida</i>	Marsiliaceae	Four leaved clover
<i>Murdannia nudiflora</i>	Commelinaceae	Creeping day flower
<i>Najas</i>	Hydrocharitaceae	Water-nymph
<i>Sagittaria saggitifolia</i> L. L.	Alismataceae	Arrowhead

Botanical Name	Family Name	Local Name
<i>Scirpusa riticulatus</i>	Cyperaceae	Club-rush
<i>Valisneria spiralis</i>	Hydrocharitaceae	Pata-seola
<i>Ipomoea carnea</i>	Convolvulaceae	Bush Morning Glory
<i>Lemna minor</i>	Lemnoideae	Common duckweed
<i>Pistia stratiotes</i>	Araceae	water lettuce

Distribution of the Macrophytes in different aquatic bodies (2 sampling locations) has been presented in table 3.19.

Table 3.19: Distribution of The Macrophytes in Different Aquatic Bodies

Botanical Name	Local Name	Sampling locations	
		Srimati Nadi	Pond in Shanti colony
<i>Azolla pinnata</i>	Duck weed fern	--	+
<i>Chara</i>	Chara	+	+
<i>Eichhornia crassipes</i>	Water hyacinth	+	+
<i>Gnaphalium polycaulon</i>	Sunflower family herb	+	+
<i>Hydrilla verticillata</i>	Water thyme	-	+
<i>Ipomoea aquatica</i>	Nali	+	+
<i>Limnophila repens</i>	Creeping marshweed	-	-
<i>Marsilea Minuta</i>	Susni Sak	-	+
<i>Marsilea quadrifida</i>	Four leaved clover	-	+
<i>Murdannia nudiflora</i>	Creeping day flower	-	+
<i>Najas</i>	Water-nymph	-	+
<i>Sagittaria saggitifolia</i> L.	Arrowhead	-	+
<i>Scirpusa riticulatus</i>	Club-rush	+	-

Botanical Name	Local Name	Sampling locations	
		Srimati Nadi	Pond in Shanti colony
<i>Valisneria spiralis</i>	Pata-seola	-	+
<i>Ipomoea carnea</i>	Bush Morning Glory	-	-
<i>Lemna minor</i>	Common duckweed	-	-
<i>Pistia stratiotes</i>	water lettuce	+	+

Planktons

In the present study the phytoplankton species under seven classes were identified qualitatively. the water bodies have different groups of phytoplankton, the members of Chlorophyceae, Cyanophyceae, Charophyceae and Xanthophyceae. These seven phytoplankton species under seven classes were identified qualitatively. The presence of Cyanophyceae, and others that prefer similar ecological conditions in areas where they are not expected to normally occur. It might be a sign of eutrophication. One particular risk of the Cyanophyte group is the fact that most of the species contain toxic substances that can lead to kill different aquatic fauna. Some scientists reported that with eutrophication of water body, the number of Chlorophyceae increased both qualitatively and quantitatively.

A total of five species of zooplankton belonging to four classes were recorded here. Two species of Branchiopoda, one species of Copepod, one Ciliata and Protozoa were recorded during the study period. Poor water quality lowers the abundance and diversity of zooplankton. The results revealed less diversity of zooplankton due to high organic content of the water bodies.

Distribution of the Phytoplankton and Zooplanktons in different aquatic ecological sampling locations has been provided in table 3.20 and 3.21.

Table 3.20: List of Phytoplankton Observed in Aquatic Ecosystem Sampling Locations

Serial No.	Scientific Name	Family
1.	<i>Oscillatoria</i> sp	CYANOPHYCEAE
2.	<i>Nostoc</i> .sp	CYANOPHYCEAE
3.	<i>Spirogyra</i> sp.	CHLOROPHYCEAE
4.	<i>Pediastrum</i> .sp	CHLOROPHYCEAE
5.	<i>Oedogonium</i> sp.	CHLOROPHYCEAE
6.	<i>Chara</i> sp.	CHAROPHYCEAE
7.	<i>Vaucheria</i> sp.	XANTHOPHYCEAE

Table 3.21: List of Zoo Plankton Observed in Aquatic Ecosystem Sampling Locations

Class	Genus
Branchiopoda	1. <i>Daphnia</i> sp.
	2. <i>Moina</i> .sp
Copepoda	1. <i>Cyclops</i> sp.
Ciliata	1. <i>Paramoecium</i> sp.
Tubulinea	1. <i>Amoeba</i>

Table 3.22: Distribution of The Phytoplankton in Different Aquatic Bodies

Serial No.	Scientific Name	Sampling Locations	
		Srimati Nadi	Pond in Shanti colony
1.	<i>Oscillatoria</i> sp	-	+
2.	<i>Nostoc</i> .sp	+	+
3.	<i>Spirogyra</i> sp.	-	+
4.	<i>Pediastrum</i> .sp	+	-
5.	<i>Oedogonium</i> sp.	+	+
6.	<i>Chara</i> sp.	+	-
7.	<i>Vaucheria</i> sp.	-	+

Table 3.23: Distribution of The Zoo Plankton in Different Aquatic Bodies

Genus	Sampling Locations	
	Srimati Nadi	Pond in Shanti colony
<i>Daphnia</i> sp.	+	+
<i>Moina</i> .sp	-	+
<i>Cyclops</i> sp.	+	+
<i>Paramoecium</i> sp.	+	+
<i>Amoeba</i>	+	+

FISHES

The survey team visited local markets and discussed with local people in different villages to acquire the knowledge of availability of fishes in ponds, streams and rivers in the study area.

The visit to the market and discussion with local people in different villages revealed that, generally following species of fishes are found in the project area which has been listed below:

Table 3.24: List of Fishes Observed in Aquatic Ecosystem in The Study Area

Zoological Name	Common Name	Family Name
<i>Ambassis nama</i>	Chanda	Ambassidae
<i>Anabas testudineus</i>	Koi	Anabantidae
<i>Badis badis</i>	Veda	Badidae
<i>Burbus phutunio</i>	Punti	Cyprinidae
<i>Catla catla</i>	Katla	Cyprinidae
<i>Chela bacaila</i>	Chela	Cyprinidae
<i>Cirrhinay mrigala</i>	Mirgale	Cyprinidae
<i>Clarias batrachus</i>	Magur	Clariidae
<i>Heteropneustes</i>	Singhi	Heteropneustidae
<i>Labeo rohita</i>	Rui	Cyprinidae
<i>Mystus cavasius</i>	Tangra	Bagridae
<i>Mystus seenghala</i>	Aar	Bagridae
<i>Ophicephalus gachua</i>	Chang	Channidae
<i>Trichogaster fasciata</i>	Khalisa	Osphronemidae
<i>Wallagonia attu</i>	Boal	Siluridae

ANTICIPATED IMPACT ON TREESTRIAL AND AQUATIC ECOSYSYTEM

The proposed industry – Eco Vision India have some positive environmental features –

- No tree cutting for clearance of site
- No acquisition / diversion of Forest land for the industry
- No effluent discharge from the industry – Zero discharge industry
- No emission from the industry – provided with improved air pollution control devices and green belt around the industry

Hence the proposed industry will not have any significant impact on terrestrial and aquatic ecosystem.

Two forests - Dhamja Reserve Forest and Dkshin Bhawanipur Reserve forest are located within the study area (10 km). The Dhamja reserve forest is at 4.5 km aerial distance and Bhawanipur Reserve forest is at 5.5 km aerial distance from the proposed location of the industry. Industry

manufacturing process do not have any point source emission so impact on the reserve forests will be insignificant.

The area for greenbelt will be above 33% of the total area i.e., 3223.44 sqm. has been proposed within the industry premises and around the industry which will enhance the environmental scenario of the area and will act as an environment enhancement measures.

Figure 3.18: Project Photographs



View of aquatic flora in pond in Shantinagar colony



Floral Survey in Dhamja Forest

3.13 List of Industries

Many industries are located in its adjoining areas as well. The list of industries within 10 km of the proposed site is given below:

Table 3.25: List of Industry

Sl. No.	Name of The Industries	Type of industries
1	Swastik Plywood Industries	Plywood
2	Suprio Light	Light Industry
3	Appolo Plywood	Plywood

CHAPTER 4 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4. Chapter 4: Anticipated Environmental Impacts and Mitigation Methods

4.1 Identification Of Impacts

The potential for the proposed project to have an impact on the environment, society, and ecology during the building and operating phases is identified in this section:

- Impact on land
- Impact on air environment
- Impact on water environment
- Impact of disposal of solid wastes
- Impact on human environment
- Ecological impacts

Overall environmental impact is divided into two phases i.e. during **Construction Phase** and **Operation Phase**. The environmental impact assessment is achieved by identification and prediction of impacts and their assessment. Potential impacts of proposed project on various environmental attributes are listed below:

4.1.1 Impact during Construction Phase

Salient activities during the construction phase having potential for inducing either environmental or social impacts are described below. Incidentally, most of the activities during construction phase induce only short-term environmental impact. However, social impacts arising out of land oustees and loss/change in occupational structure, if applicable, often become long-term affairs.

• Possession of Land

The initial phase of the plant construction involves land acquisition. This stage can lead to both environmental and socio-economic impacts from minor to even severe nature. For this particular project, the total land measuring 0.2 Acre (794.48 Sqm) is identified as one of the vacant Plot No – 27, Khatian No – 586 (LR), JL No – 96, Village-Haldibari, P.O. Dhankoil, P.S. Kaliyaganj, Dist. Uttar Dinajpur, West Bengal - 733129. So the question of impact due to possession of land does not arise.

• Site Development

The landscape is naturally developed. Fortunately, the land did not contain any trees. In general, the plant location is level.

The previously mentioned factual statement makes it clear that the primary cause of air pollution during site development—fugitive dust—will be minimal. Before beginning civil construction, the naturally occurring shrubs on the property will be removed.

• **Civil & Structural Work**

This work falls into two categories: superstructure work and foundation work. In addition will not a high-rise building be required, but neither will massive engines or heavy machinery. Piling work will not be required as a result.

For certain subsurface structures, such as water reservoirs and sewage treatment facilities, excavation, trench cutting, and concreting are all part of the foundation and related ground-based construction activities. Unless suitable steps are taken to manage or minimize dust pollution, it may become an issue, particularly during the dry season. The superstructure work primarily entails masonry, concrete, and other tasks and calls for the employment of tools like welding machines and hoists. These activities may result in dust, noise, and gaseous pollution, all of which are of a small nature. These activities often keep people contained to the site, drawing protection equipment like as dust masks for supervisors and employees. The provision of such health and safety protective equipment during construction is part of the proponent's policy. Water is necessary for concrete work. Permission is requested for this deep tube well, and that will be sufficient.

• **Mechanical and Electrical Erection**

This project's mechanical erection work primarily consisted installing a boiler, resin kettle, pumps, compressors, pipelines, some site fabrication, etc., which resulted in very little gas pollution (from welding) and localized noise. On the other hand, electrical work essentially has no possibility for contamination.

• **Sources of Construction Materials**

Sand and stone chips are necessary materials for any such project. The natural sources of these two essential building components are located in the vicinity. These items will be purchased for this project from nearby vendors.

• **Housing and Other Human Requirement**

It deals with the housing and living arrangements for the construction workers. The majority of the construction phase's work requires qualified laborers. The majority of them are accessible in the immediate area. They usually commute every day, and there isn't any housing on site that is naturally considered for them. Since every industrial complex has the required security system, just two security personnel are thought to be needed on site around-the-clock. Septic tank-equipped toilets and soak pits with sufficient water supply have been considered. In addition, engineers, supervisors, and others will occupy a portion of the proposed office throughout the building period.

• Local Infrastructure

The Raiganj-Buniadpur Road passes beside the site. It is conveniently located from Kaliyaganj, indicating effective communication. The deep tube well, for which application procedures are being completed to get clearance from the appropriate authority, will supply the necessary water. WBSEDCL will supply the electricity.

• Drainage

During the construction phase, sewage generation due to construction labours can impact the surrounding areas. For the labours, temporary toilets will be constructed.

It is evident from the explanation above that a few modest effects during the construction phase would be temporary and acceptable.

4.1.2 Impact during Operation Phase

The main elements and actions that could have an influence on the environment and/or society during the project's operation phase are covered below:

• Hydrology

A deep tube well will be bored on this site to supply the project's necessary consumptive water. The procedure of getting the required approval from the appropriate government is already underway for the proponent. It is anticipated that the relevant authority will assess the issue of impact on the ground water source and local geo-hydrogeology before issuing permission for the sinking of a tube well and the controlled withdrawal of water from the aquifer. The permit will be granted once the data and test results are satisfactory.

The projected water requirement for the entire project, taking into account household and process requirements, is 10 KLD, and it is provided below:

Sl. No.	Particulars	Water Requirement (KLD)
1.	Domestic	0.24
2.	Gardening	0.5
3.	Boiler Feed	3.5
4.	Process (For Resin Mfg.)	0.22
5.	Cooling	5.0
6.	Washing	0.54
Total		10.0

The need for gardening will decrease during the monsoon season, sometimes to nothing, for a few days.

• Air Environment

There will be a boiler of capacity only 1TPH that too using Wood/plywood rejects as fuel and its consumption is 800 kg/day. However, during disruption of power supply DG sets will run, which is generally for short duration.

Flue Gas Emission

Main source of flue gas emission is:

1. Boiler with all accessories
2. A 80 KVA Diesel based Generator equipped with stack of height 3 m from GL

Model Selection

The plant operation will emit gaseous pollutants through stacks, which have the potential to deteriorate the air quality of the area. In order to evaluate the impact on ambient air quality due to such releases, the ground level concentrations (GLCs) as a result of the plant emissions have been evaluated through mathematical modelling using computer aided techniques.

Upon discharge to atmosphere, the emissions from sources are subjected to transport and diffusion processes which together are termed as dispersion. The processes which govern the atmospheric dispersion of pollutants are plume rise, transport by wind, and diffusion by turbulence and a number of physico-chemical processes such as gravitational settling, deposition, chemical reactions, transformation, decomposition and wash out.

The computation has been made applying Lakes Environment Aermod View with ISCST3 mode, which is most widely used and also recommended by CPCB (PROBES/70/1997-98). The model is based on some assumption such as steady state conditions, continuous homogeneous flow, inert passive pollutants, no ground absorption and a Gaussian distribution of the plume in both horizontal and vertical planes.

Data Requirement

The stack and emission data have been used for existing and proposed scenarios respectively as inputs to the model. The prediction of GLCs and corresponding impact have been made for the emission figures mentioned therein.

The hourly meteorological data like ambient temperature, wind speed and wind direction used for air quality modelling have been taken through continuous on-site monitoring during (1st March, 2025 – 31st May, 2025) representing the **summer** season by **Envirocheck lab**.

The hourly occurrence of various atmospheric stability classes has been determined from the on-site hourly wind speed and cloud cover data using the insolation-based stability classification.

Modelling Methodology and Procedure

Assumptions

- Source of emission is continuous and at steady state.
- Predictions have been carried out to estimate concentration values over radial distance of 10 km around the sources.
- Cartesian receptor network has been considered.
- Emission rates from the sources were considered as constant during the entire period.
- The ground level concentrations computed were as in basis without any consideration of decay coefficient.
- Calm winds recorded during the study period were also taken into consideration.

- 24-hour mean meteorological data, extracted from the meteorological data collected during the study period as per guidelines of IMD/CPCB has been used to compute the mean ground level concentrations to study the impact of proposed activity.
- The mathematical equations used for the dispersion modelling assumes that the earth surface acts as a perfect reflector of plume and physico-chemical processes such as dry and wet deposition and chemical transformation of pollutants are negligible.
- Washout by rain is not considered.

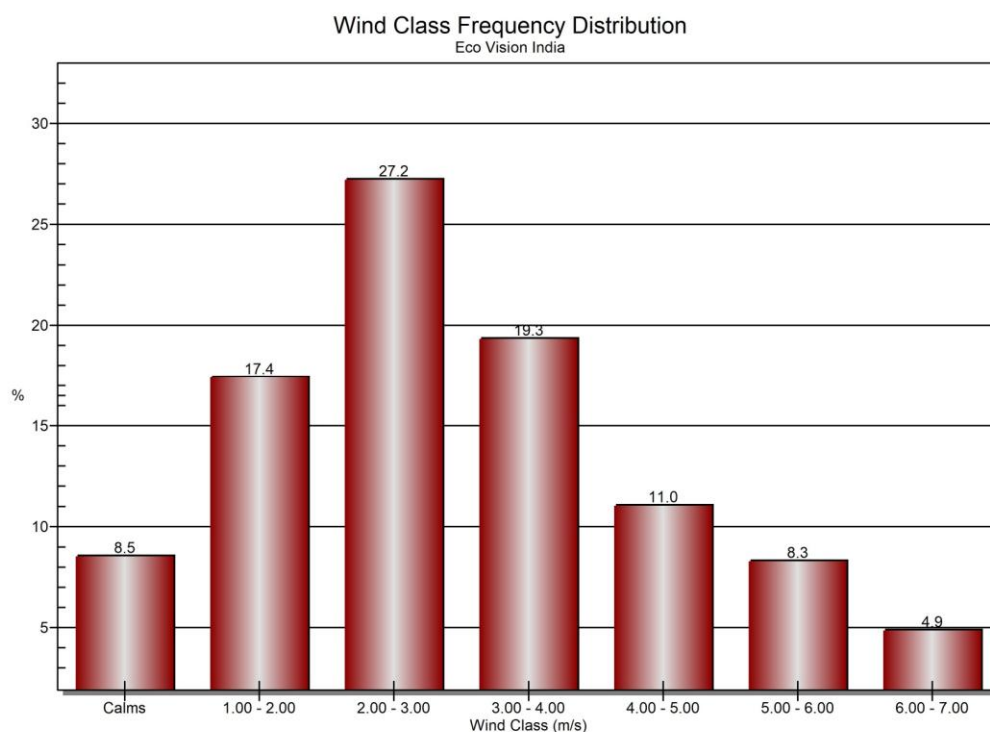
Modelling Results

Prediction of GLCs

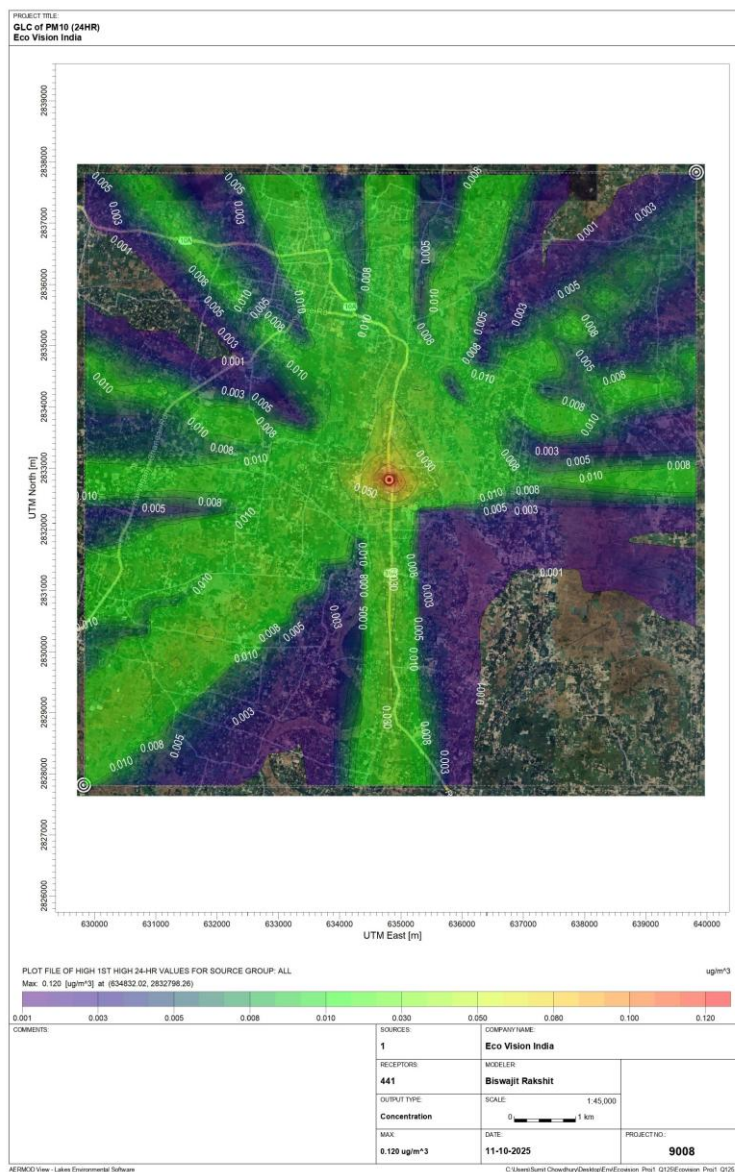
The air pollution prediction from the plant has been done for both the existing and proposed furnaces. It can be easily said that as the plant is going for expansion, its emissions will be increased in comparison to the existing scenario. To predict the emissions in the surrounding areas, modelling for both existing and proposed furnaces has been carried out.

The Wind Class Frequency Distribution is furnished in the following Bar Graph:

Figure 4.1: Wind Class Frequency Distribution



Dispersion Modeling has been done with the predicted stack data for PM10 and the same has been furnished on a 10 km x10 km plot and the same is furnished below as **Fig.-4.2**.

Figure 4.2: Isopleths showing increase in level of PM₁₀ in different directions w.r.t the stack

It can be seen that the maximum predicted increase in GLC under all worst climatic conditions is $0.120 \mu\text{g}/\text{m}^3$. In actual case the Dust Collector efficiencies will be high and will always restrict the emission much below the permitted level. Hence, in reality the actual increase will be less than that is predicted.

Considering the existing background level of the pollutant with the predicted maximum increase will remain within the permissible level and the resultant PM₁₀ value will remain within AAQ standard.

Air emission from DG set, which will be used during emergency for short duration only. The pollutant from this source will be mainly NO_x. Some minimal quantity of SO₂ is also produced depending upon diesel used. Importantly, some particulate matter is also possible to be

occasionally emitted due to incomplete combustion of fuel. Environment-friendly DGs will be procured that will limit the emission of pollutants within the permissible limits. These will be Silent DG sets that will minimize the noise level within tolerable limit. Hence no impact of concern on the air environment is envisaged.

• **Water Environment**

It has been furnished earlier in this report that total ten (10) persons including managers, operators and chemist will be working in the plant. There will be two (2) security staffs that will stay there round the clock. The total domestic water usage comes to 0.24 KLD.

Approximately 0.2 KLD will be waste water (mixed sewage). To treat the household sewage, a sizable septic tank will be supplied. An oil trap will be installed for kitchen waste before it is permitted to enter the septic tank.

• **Physical Environment**

The land is already purchased outright by M/s. Eco Vision India. Land being devoid of trees, no impact on physical environment owing to the development was there. So, as such there will be no impact so far as physical environment is concerned.

• **Human Environment**

When all the negative and positive effects are examined and compared as a whole on an overall basis, the other effects of such a project on the human environment are typically good or constructive, unless there are land oustees and few people are left without jobs. If proper mitigation through *Rehabilitation & Resettlement (R & R) Plan* is not assured for the *Project Affected People (PAP)*, the impact on land and homestead losers may be severe.

Since the land is undeveloped and owned by M/s. Eco Vision India, this aspect is missing in this case.

During the construction phase, such projects are typically linked to employment prospects for both skilled and unskilled locals. Furthermore, a range of support services are required during the phases of building and operation. Local business owners typically discover reliable sources of income as well as other kinds of income. In terms of the local human environment, this has a good effect.

• **Ecological impacts**

There will be very little gaseous emission from the project. There will be no waste water released into the surrounding stream or local drain. Therefore, no effect on aquatic ecosystem in general is considered. There will only be particle emissions, and the maximum AAQ rise is expected to be quite small.

As regards solid waste, it will be ash from burning Wood/plywood rejects will be around 800 kg/day at 5 hour operation per day which has a good local market. This small quantity of solid waste will be sent to Govt. authorized agency.

4.2 Measures For Minimizing Adverse Impacts

4.2.1 Construction Phase

This section outlines the control technologies that were used or suggested to mitigate the likely environmental effects throughout the project's construction period.

- ***Compensatory afforestation***

In order to provide space for the buildings, structures, equipment, and other amenities, it may frequently be required to cut down and remove some trees during the development of such a project. In most cases, this is regrettably inevitable. In this case, there are no trees on the property where the proposed project would be built. However, as recommended by the appropriate authority, they should plant a sufficient number of trees inside their plot, accounting for 33% of the entire land. 35.16% of the plant area will be designated for green belt development by the project proponent. This will undoubtedly contribute to improving the complex's ecological profile, including that of its surrounds.

Additionally, proper gardening and landscaping will be carried out to ensure an appealing appearance, which will eventually contribute to enhancing the area's environmental balance. Chapter 3 of this report already includes the planned Landscape Plan (Site Plan).

- ***Dust Suppression***

During the construction phase, fugitive dust produced by excavation, other earthmoving operations, and vehicle traffic within the site is the primary and most noticeable source of pollution. Although this issue is very temporary, it is typically addressed by using dust suppression techniques, such as misting vehicles, especially on unmetalled roads, with water. To reduce or completely eradicate this fugitive dust annoyance, water sprinklers will be utilized. This generally reduces localized dust pollution and mainly addresses requirements from the perspective of occupational safety and health.

4.2.2 Operation Phase

This section covers the control technologies that were used or suggested to mitigate the likely environmental effects during the project's operation period.

Air Pollution Control Measures

There will be one boiler of capacity 1TPH using only 800 kg/day of Wood/plywood rejects. Apart from this, a DG set has been proposed during emergency that will consume 6 lit/hr of diesel.

Considering the above, boiler will be attached with a bagfilter and an ID fan to control the particulate emission evolved during burning of fuel in the boiler.

Water Pollution Control

In the facility, mixed household sewage is the only source of water pollution. For this soak pit and septic tank, which were covered earlier in this chapter.

Solid Waste Management

About 50 kg/month of Discarded Containers/ Barrels will be generated from the plant. This will be Decontamination and reuse or sell to scrap vendors. Apart from this ETP Sludge and Sewage Sludge will be generated from this plant approx.15 kg/month each. ETP Sludge will send to Govt. authorized agency and Sewage Sludge will mixed with green waste and composted to create a nutrient-rich product for landscaping, horticulture, and gardening or land filling.

Noise Mitigation

In most cases, noise pollution from a project that small is not an issue. Therefore, no source of noise pollution has been found as a cause for concern.

The silent DG units that will be placed will only operate during power outages, adhering to current standards.

4.3 Irreversible And Irretrievable Commitments Of Environmental Components

Even with human intervention, some environmental effects of human activity can be reversed, while others cannot. When an environmental component's primary and secondary effects restrict future possibilities or factors that are only renewable over extended periods of time, the commitment is irreversible. Stated differently, an irreversible commitment of environmental components is one that, even with mitigation attempts, cannot be restored or returned to its initial state.

The ability of an environmental component to recover its value following a disturbance is known as reversibility. An environmental commitment that cannot be recovered or renewed for future usage is referred to as irretrievable.

The environmental components are identified below:

- Air
- Water (ground water and surface water),
- Noise
- Land / soil
- Ecology and
- Socio economy

The irreversible and irretrievable commitments of above environmental components are listed below:

a) Project Construction Stage:

The project's construction period typically has an impact on the environment that lasts until construction is finished. These effects could be substantial, especially if building lasts for a long time. It is usually possible to reverse the effects on environmental elements such as air, water, noise, ecology, and socioeconomics.

However, some effects are irreversible they are as follows:

- Land Resources: Permanent conversion of land to industrial use. Natural topography and land cover are lost.
- Soil Quality: Soil compaction, excavation, and contamination from construction machinery and chemical spills lead to long-term or permanent degradation.
- Vegetation and Habitat: Clearing of vegetation and habitats results in permanent loss of local flora and fauna.

- **Drainage Patterns:** Alteration of natural water flow and drainage, possibly causing irreversible hydrological changes.

Irretrievable Commitments:

- **Construction Materials:** Use of cement, steel, sand, and gravel- once used, these cannot be recovered.
- **Fossil Fuels:** Diesel, petrol for machinery and transport; once burned, the energy is permanently lost.
- **Water Resources:** Water used for dust suppression, curing concrete, etc., is consumed and not recoverable.

For his project, there are no trees on the project site. Even if there were trees, their removal would be possible because the planned landscaping and green belt development would not only make up for the little that was lost but also enhance the ecology of the area.

b) Project Operation Stage:

The project's operating phase will commit to the following irreversible environmental components:

- **Air Quality:** During operation phase there is very little air pollution emitting small volume of flue gas (from Wood/plywood rejects burning) with emission rate well below the permissible level. Hence air pollution from the proposed project will not be a matter of concern at all needing special attention. Vehicular movement will not be much. Considering the entire industrial complex it will also not be a matter of concern.
- **Water:** Deep tube wells that have been thoroughly and methodically sunk will supply the water used in the plant. Therefore, the impact that water use has on surface water is beyond the scope of this report. Examining the ground water hydrological element is necessary because ground water will be used. Furthermore, without the appropriate authorization from the State Water Investigation Department (SWID), no tube well may be sunk. It can be assumed that the appropriate authority will examine the likely effects on groundwater hydrology and, after being satisfied, has approved the tube wells.
- **Land Environment:** There will be some permanent changes to the land environment. The land environment will be altered by the planned project. Within the project area, a suitable drainage system will be created. Therefore, the change is welcome and acceptable for the region and the state as a whole.
- **Ecological Systems:** It is not anticipated that the ecological will be harmed during the occupation stage.
- **Socio Economy:** There will be no irreparable effects on the socioeconomic system. On the other hand, the initiative will increase the likelihood of some employment opportunities.

Irretrievable Commitments:

- Non-renewable Raw Materials: Petroleum-derived feedstocks (e.g., phenol, formaldehyde) once processed into resins are not recoverable.
- Energy: High consumption of electricity and thermal energy (often fossil-based) during polymerization and curing is permanently lost.
- Packaging and Waste Materials: Off-spec products, packaging waste, and chemical containers may be discarded, representing a permanent loss of material resources.

Therefore, there will be negligible impact on overall environment of surrounding area due to the new Plant.

4.4 Assessment of Significance of Impacts

The following is a summary of the effects on each environmental parameter:

- A. Status before to the project
- B. Project activities that are likely to have an impact
- C. Evaluation of the effect

Land

A. There is no human habitation on the whole specified land. The site, which measures approximately 0.2 acres (794.48 square meters), was acquired outright by Eco Vision India.

B. Road and power network in the area is expected to be strengthened as a sequel to industrial development around.

C. When approving such developmental operations, the relevant authority has already taken into account the overall impact of the development, particularly in light of the growth of industry in the appropriate region.

Water Source

A. Deep tube wells with a low extraction rate will supply the project's water supply.

B. Total water requirement for the project has been estimated at 10 KLD.

C. Extracting groundwater will only be carried out with SWID's approval. It is assumed that during full-fledged drawal, the appropriate authority has looked into the likely effects on ground water hydrology. They have given the tube well their approval since they are satisfied. There won't be any adverse effects on groundwater.

Water Quality

A. According to a different analysis, tube well water from the surrounding area is safe to drink without the need for traditional treatment.

B. Waste water generation from the proposed project will be only domestic waste and the same will be disposed as combined sewage to septic tank followed by soak pit.

C. There will not be any effect on the surrounding surface water because the facility will not discharge any waste water.

Air Quality

A. According to the CPCB's National Ambient Air Quality Standard (November 2009), all PM₁₀, PM_{2.5}, SO₂, NO_x, and other readings are typically determined to be within the acceptable range for residential, industrial, rural, and other regions. these is to be expected in areas like these.

B. An estimated 12,000 m³/hr of flue gas is released. There may be a temporary localized fugitive dust issue brought on by an increase in traffic.

C. There will not be any significant negative effects to be concerned about because the plant's particle emissions will be well inside the limit that is permitted.

Ecology

A. Vehicle movements are necessary for the construction activities at the project site. Damage to certain grass will be the main effect of such operations. Common air contaminants will rise in proportion to an increase in vehicle mobility. These effects are temporary, though, and will only be felt during the initial stages of construction or erection. The construction workers will come from the surrounding areas. No work hutment is required.

B. There will be very little air pollution from the project. The ecological quality of the plot and the surrounding area will be enhanced by the planting of carefully selected species and landscaping.

C. No influence on aquatic ecology is anticipated because no waste water will be released into adjacent surface water.

Rehabilitation

A. The entire land is under possession of Eco Vision India and it was devoid of illegal occupancy.

B. No Resettlement and Rehabilitation (R & R) issue is involved.

C. The locals will be beneficated through direct / indirect employment during project implementation period and operation period and thus will enjoy the fruit of economic growth due to setting up of the complex. Most likely beneficial impact will be induced.

Employment/Occupation

A. During the construction phase, a large number of contract laborers will be needed to carry out the proposed project. The majority of them will fall into the semi-skilled and unskilled categories. There is a good chance that a sizable number of workers needed for construction will be available nearby. Local jobless individuals have enough of opportunities to work as construction laborers because the laborers are mostly unskilled and semi-skilled.

B. Only eight employees are needed to operate the factory, and two security personnel will be needed around-the-clock. Therefore, there are essentially very few work opportunities for locals during the operation phase.

Education and Health

A. The study found that the area's local literacy and educational resources are reasonable. Even though there are several private hospitals and nursing homes nearby, the medical facilities in the study region still has room for improvement.

B. This is not a problem because there won't be any residential staff present (except from two security personnel).

C. It is not anticipated that current medical and educational facilities would be strained.

Services

A. There are moderate civic amenities in the vicinity.

B. Local services will not be under pressure because there will not be any immigration throughout the operating period.

4.5 Environmental Impact Matrix

The Environmental Impact Matrix (EIM) provides a quantitative evaluation of the project's overall environmental impact. In this case, the activities are brief and limited. A weighted value of 100 is assigned to the environmental criteria based on the experience of the consultant. Although the weighted values are subjective, they were determined by taking into account interdisciplinary opinions while keeping in mind the project's requirements and nature.

Depending on whether the activities have a positive (+) or negative (-) impact on the environment, they have been designated as such. The following scale has been used to evaluate the extent of impact:

Insignificant - 0

Appreciable - 1

Considerable - 2

Significant - 3

Major - 4

All environmental control measures have been considered while assessing the impacts. The EIM is presented in **Table – 4.1**. A summarized table is presented below:

Table 4.1: Environmental Impact Summary

ENVIRONMENTAL IMPACT SUMMARY				
	Physical	Ecological	Human	Total
Weightage	40	20	40	100
Impact Value	-29	+30	+104	+105

Degree of Impact	-0.725	+1.50	+2.60	+1.05
Remarks	Adverse Insignificant	Beneficial Appreciable	Beneficial Considerable	Beneficial Appreciable

So the overall environmental impact will be beneficial. This is because though there will be some adverse impact on physical environment, there will be appreciable beneficial impact on biological environment significant beneficial impact on human environment. This means by environmental control measures and implementation of the same, the adverse impacts can be mitigated and overall beneficial impact can be affected. The overall impact, as assessed, will be Beneficial Appreciable.

4.6 Mitigation Measures

The design incorporates the following mitigation strategies to satisfy environmental operating conditions and standards:

Air Pollution Mitigation Measures

The air pollution mitigation measures conceived for the project are summarized below:

- ❖ Watering the area in a suitable moment will greatly reduce fugitive dust from vehicle movement. Because of this, the projected tube well capacity already accounts for water use. The stored rainwater collected during the monsoon season will be used to partially meet this requirement during the non-monsoon season.
- ❖ As advised by the WBPCB and regulatory standards, all DG sets will have chimney heights (to be used only during emergencies).

Water Pollution Mitigation Measures

- ❖ After being treated in a sizable septic tank, about 0.2 KLD of household wastewater will be dumped in a soak pit.

Solid Waste Management

- ❖ The plant will produce roughly 50 kg of discarded containers and barrels per month, 15 kg of ETP sludge per month, and 15 kg of sewage sludge per month. Barrels and containers that are discarded will either be sold to scrap vendors or reused following decontamination. Sewage sludge will be used for landfilling or as manure, whereas ETP sludge will be disposed of by a government-approved organization.

Noise Pollution Mitigation Measures

For the proposed project, the following noise reduction strategies have been considered:

- ❖ All DG sets will be acoustic enclosed.
- ❖ A wide enough plantation planned around the plant boundary and in other required places will also aid in lowering noise pollution.

Table 4.2: Environmental Impact Matrix

Environmental Parameters ↓ Activities	PHYSICAL ENVIRONMENT					BIOLOGICAL ENVIRONM-ENT			HUMAN ENVIRONMENT						OVERALL
	Topography (5)	Hydrology (10)	Water Quality (8)	Air Quality (10)	Noise & Odour (7)	Forest & Vegetation (10)	Fauna (5)	Aquatic Life (5)	Rehab & Resettlement (10)	Occupation/Employment (10)	Housing (5)	Services (5)	Health & Education (5)	Horticulture (7)	
Possession of Land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONSTRUCTION
Site Development	(+)			(-)	(-)					(+)			(-)		
Transport				(-)	(-)					(+)					
Construction Work				(-)	(-)					(+)					
Plantation & Greenery	(+)			(+)	(+)	(+)	(+)			(+)			(+)	(+)	
Immigration										(+)					
Water Req.		(-)								(+)					
CONSTRUCTION	+2	-1	0	-2	-2	+1	+1	0	0	+6	0	0	0	+1	
Water Requirement		(-)													OPERATION
Liquid Effluent															
Solid Waste										(+)					
Transport				(-)	(-)					(+)					
Effluent Management/ Green Belt	(+)	(+)		(+)	(+)	(+)	(+)			(+)				(+)	
Operation	+1	0	0	0	0	+1	+1	0	0	+3	0	0	0	+1	
OVERALL	+3	-1	0	-2	-2	+2	+2	0	0	+9	0	0	0	+2	
Impact Value	+15	-10		-20	-14	+20	+10			+90				+14	+105

CHAPTER 5 ANALYSIS OF ALTERNATIVES

5 Chapter 5: Analysis Of Alternatives

5.1 Alternatives Considered

As recommended in the MOEF-published EIA Manual, this part examines several options to achieve the project's objective from several specified perspectives. These are follows:

- Siting of the project
- Technology/Process

5.2 Siting of the Project

The following factors serve as the primary basis for analyzing the option for the project's location:

- Present land use
- Availability of water
- Nearest Towns and upcoming habitation
- Nearness Railway line and roads
- Nearest Port / Air port

The main reasons for choosing the present site are as follows :

- 1) SH-10A adjacent to the proposed site and NH-12 is at a distance of about 21.0 KM from the proposed site. This indicates that there are good road connections to the project site.
- 2) Devoid of tree.
- 3) There are all the necessities, including transportation, communication, electricity, water, and other infrastructure amenities.
- 4) Nearby qualified and skilled labor is available due to the area's close proximity to other cities and towns.
- 5) As per survey carried out by the developer, demand of the product that will be produced in the plant has good market demand.

Taking everything into account, this site was chosen and ranked first. This 0.2 Acre (794.48 Sqm) plot of land has a set site configuration. About 35.16% of the plot's total size, or 279.34 sq m, is set aside for greenery.

Considering all the above aspects no alternative site was considered.

CHAPTER 6

ENVIRONMENTAL

MONITORING PROGRAM



6. Chapter 6: Environmental Monitoring Program

6.1. Introduction

As may be required in order to ensure that environmental protection is maximized throughout the project, environmental monitoring supplies the data for periodic reviews and helps in management plan decision-making. It keeps the management informed and aware of what takes place, the condition of the environment, the way operations are going on the site, and any issues. Additionally, environmental monitoring is necessary to gather baseline data on environmental quality prior to the start of operations and to periodically assess how the operation is affecting ambient air quality, water quality (surface and groundwater, if applicable), native plant and animal species, soil contamination, noise levels, and human health.

Using established sampling and analytical techniques, monitoring will be conducted by authorized and trained persons in accordance with a regular timetable. Without these procedures, the significant cost of monitoring programs could be totally wasted due to unsatisfactory outcomes.

Early detection of undesired environmental impacts and suitable remediation actions can be achieved through effective monitoring.

6.2. Monitoring Schedule and Parameters

It is suggested that a monitoring system be set up for the following parameters in order to ensure the quality of the environment in the post-project scenario. As may be required, monitoring data will also serve as a framework for improving treatment facilities and adopting suitable treatment procedures.

Below is a proposed monitoring schedule that includes the criteria to be monitored:

Parameters to be monitored

- Ambient Air Quality,
- Stack Emission,
- Work zone Air quality,
- Surface water and Ground Water Quality,
- Noise Level

6.2.1 Ambient air Quality

As recommended by the WBPCB, ambient air quality monitoring stations will be installed within and around the site. The parameters monitored include the parameters as per National Ambient Air Quality Standard, 2009.

Description	Number of Monitoring Stations	Frequency
Ambient Air Quality	2 (upwind and downwind direction inside the plant boundary)	Half yearly Basis
Parameters – PM ₁₀ , PM _{2.5} , SO ₂ , NO ₂		

6.2.2 Stack Emission

To evaluate the effectiveness of the pollution control systems installed at the unit, periodic stack monitoring for SPM, SO₂, and NO_x is required for process stacks. However, in compliance with the requirements of the WBPCB or other statutory bodies, the frequency of monitoring may be increased if necessary.

Component	Location	Parameter	Monitoring & Analysis Method	Monitoring Frequency
Stack Emissions Monitoring	Port holes made on the stack (6 cm diameter, 2 Nos. at 90° to each other), provided with flange. Location of the port hole at 6 times the stack diameter. Platforms with railings be provided.	PM SO ₂ NO _x CO ₂	SPM & SO ₂ – CPCB Method NO _x – USEPA Method 7 O ₂ – Orsat analysis CO ₂ – Orsat Analysis Duration of sampling – Isokinetic method using stack monitoring kit Sample volume – 500 l of flue gas	Every week

6.2.3 Fugitive Emission

Once a month, fugitive emissions must be measured at a single point that is around 5–10 meters away from the raw material yard, which is the source of the emissions.

6.2.4 Effluent Quality

The generated domestic wastewater will be treated in a soak pit using a septic tank. There will be no release of plant waste into public waterways or drains.

6.2.5 Ground water Quality

To compare with IS: 10500: 2012 drinking water requirements, two samples will be taken: one from the inside of the plant and the other from a nearby neighborhood.

Component	Location	Parameter	Monitoring & Analysis Method	Monitoring Frequency
Groundwater Quality	Inside plant Nearby neighborhood	pH TDS TSS Total hardness Fluoride O&G	Standard Methods of APHA	Once during pre-monsoon and once during post monsoon

6.2.6 Noise Monitoring

In accordance with the Occupational Safety and Health Administration's (OSHA) standards, noise monitoring must be conducted twice a year near high noise-producing facilities (such as furnaces and discs).

Once every three months, ambient noise levels at the nearest and farthest plant boundaries will be measured during the day (6 AM to 10 PM) and at night (10 PM to 6 AM).

6.2.7 Plantation

Tree density of 1500 trees per hectare with local broad leaf will be planted.

6.2.8 Occupational health & safety monitoring

Programs for monitoring occupational health and safety must confirm that preventative and control measures are working. The indicators chosen must reflect the most important health, safety, and workplace risks as well as the application of preventative and control measures. Every year, the effectiveness and accomplishments of the OHSMS, which is in charge of managing all environmental and health and safety aspects, will be reviewed. The following will be part of the monitoring program for occupational health and safety:

The inspection will confirm that issued personal protective equipment (PPE) is being worn when needed and continues to provide sufficient protection.

- Each instrument that is installed or utilized to track and record parameters of the working environment must undergo routine testing and calibration, and the corresponding documentation must be kept up to date.
- Surveillance of the working environment shall be carried out.
- Workers' health surveillance: When extra precautions are needed, workers must receive appropriate and adequate health monitoring before their first exposure and then on a regular

basis after that. Prior to the initial exposure and at regular intervals after that, the company will give personnel suitable and appropriate health surveillance, with a focus on the dust.

6.2.9 Training

The curriculum, duration, and participants of training sessions for staff members and guests must be properly tracked and documented. Fire drills and other emergency drills must be properly documented.

6.2.10 House keeping

To maintain a clean plant floor, the raw materials should be stored in a separate stockyard. The built-in dust collector and bag homes would be properly maintained and cleaned in accordance with the requirements. Any solid waste produced will be stored in a designated place and, if feasible, sold or reused during the process.

6.2.11 Periodic preventive maintenance

A thorough maintenance plan must be created for every pollution control system. The plant manufacturer's timetable and instructions must be strictly adhered to when doing maintenance. Every piece of safety, monitoring, and pollution control equipment needs to be routinely inspected and calibrated.

6.2.12 Socio-economic development

The establishment of the manufacturing facilities will enhance the socioeconomic circumstances in the neighborhood. The planned project will further enhance economic circumstances and infrastructure, which will enhance socioeconomic growth.

6.2.13 Budget and procurement schedule

The Environment Management Cell will regularly assess the availability and necessity of the resources, technologies, services, and maintenance works. The Cell will create a suitable budget for the objective.

Table 6.1: Cost of Environmental Monitoring Program

S. No.	Item	Cost in Rs. Per year
1.	Cost of monitoring of environmental parameters for Air, Water and Noise	8,00,000
2.	Occupational Health & Safety and others	3,00,000
3.	Greenbelt Development	2,00,000
4	Cost on online CEMS, development of lab and cell for implementing the EMP	3,00,000
TOTAL		16,00,000

CHAPTER 7

ADDITIONAL STUDIES

7. Chapter 7: Additional studies

7.1. Introduction

In this chapter following issues are described and have been carried out by Eco Vision India.

- Public consultation / Public Hearing.
- Hazard Identification and Risk Management

7.2. Public Consultation

As per TOR, Public Hearing will be carried out for the project.

7.3. Hazard Identification and Risk Management:

Hazard is the probability of doing harm. In Industry hazard exists in various forms like Flammability, Toxicity, Electricity, Chemical, and Physical etc. Accident/Incident is an unplanned and uncontrolled event triggering personal injury, property damage and or the probability. Hazard will persist as we are moving from developing to developed stage and as it is interwoven and interconnected with our daily life. If we want progress hazard will definitely come in the way but we should know the technique to isolate the hazard by analyzing them both quantitatively and qualitatively and by taking proper decisions. In this connection the following statement from the Canadian Atomic Energy Control Board Bulletin on “Risk of Energy Production” illustrates the objectives of a good hazard analysis.

The risk to human health does not start when electricity generating plant or solar plant put out energy. It starts when an engineer first puts pencil to paper, continues as materials are acquired, fabricated and installed and terminates only when the installation is dismantled at the end of its useful life.

Similarly the Industries is producing various products from raw material (e.g. Crude oil in case of Refinery)) which is moving the wheel of prosperity but having various hazardous factor like Accident, Fire, Explosion, release of toxic gases, physical hazard etc.

Hence Safety in any industry is of prime important to the management.

To deal with the risk on the concept of hazard alone merely cater for a part of the problem.

Loss, the ultimate risk, is the combination of hazard, effect and probability.

The relationship can be indicated as a simple fire risk equation:

$H + P = L_m$ (loss material),

$E + P = L_b$ (Loss business)

$L_m + L_b = \text{Total risk.}$

With little perception, an anagram can be materialize with total risk representing HELP.

In Industries for isolation of Hazards we believe in three tier activities namely (1) Prevention (2) Protection (3) Situation Control.

Prevention begins from Design/ Layout stages and for that purpose various Standard/Code of practice are taken care of:

- Factories Act and Rule
- Indian Electricity Act
- Boiler Act
- National Fire Protection Association Code (NFPA Code)

MATERIAL HAZARD RATING:

(As per NFPA Guideline)

Health Hazard Rating

4. Material that on very short exposure could cause death or major Residual injury Including those that are too dangerous to be approached without specialized protective equipment.
3. Material that on very short exposure could cause serious temporary or residual injury including those requiring protection from all bodily contact.
2. Materials that on intense or continued (but not Chronic Exposure) could cause temporary incapacitation or possible residual injury.
1. Material that on Exposure would cause irritation but only minor residual injury including those require to use of an approved air purifying respirator these materials are only slightly hazardous to health and only breathing protection is needed.
0. Material that on exposure under fire condition offer no hazard beyond that of ordinary combustible material.

Flammability Hazard Rating:

4. This degree includes flammable gases, Pyrophoric liquid and Class 1A flammable liquid the preferred method of fire attack is to stop the flow of material or to protect exposure while allowing the fire to burn itself out.
3. The degree includes class1B and 1C flammable liquid and materials that can be easily ignited under almost all normal temperature conditions water may be ineffective in controlling or extinguishing fire in such material.

2. The degree includes materials that must be moderately heated before ignition will occur and include class II & IIIA combustible liquid and solid and semisolid that readily gives off ignitable vapor. Water spray may be used to extinguish fires in this material because the materials can be cooled below their flash point.
1. The degree includes materials that must be pre-heated before ignition will occur such as class IIIB combustible liquid, solid, semi solid whose flash point exceeds 200-degree Fahrenheit as well as most ordinary combustible material
0. This degree include any material that will not burn.

Reactivity Hazard Rating:

4. This degree includes those materials that in themselves are readily capable of detonation, explosive decomposition or explosive reaction at normal temperature and pressure this includes materials that are sensitive to localized mechanical or thermal shock. If a material having this reactivity hazard rating is involved in an advanced or massive fire, the area should be immediately evacuated.
3. This degree includes materials that in themselves are capable of detonation. Explosive decomposition or explosive reaction. These materials react explosively with water. Such fire can be fought from a protected location.
2. This degree includes materials that are normally unstable and readily undergo violent chemical change but are not capable of detonation that may react violently with water .Firefighting from safe distance or from protected location.
1. This degree includes materials that are normally stable but may become unstable at elevated temperature and pressure and material that will react with water with some release of energy but not violently fire involving such type of material should be approach with caution.
0. This degree includes materials that are normally stable even under fire exposure condition and that do not react with water. Normal firefighting procedure to be used.

Chemicals

Mode of entry

Inhalation

Ingestion

Skin Contact

Exposure time

Affinity or susceptibility



Dose rate
Type of chemicals
Target organ

Types of chemicals:

Corrosive: A corrosive material is a highly reactive substance that causes obvious damage to living tissue. Corrosives act either directly, by chemically destroying the part (oxidation), or indirectly by causing inflammation like acid, Caustic.

Asphyxiant: An Asphyxiant is a material capable of reducing the level of oxygen in the body to dangerous levels. Most commonly, asphyxiants work by merely displacing air in an enclosed environment. This reduces the concentration of oxygen below the normal level of around 19% which can lead to breathing difficulties, unconsciousness or even death.

Example: Physical- carbon di-oxide, nitrogen chemical: carbon monoxide, Hydrogen Sulphide.

Narcotic/anesthetic: Narcotics can cause drowsiness and significant alterations of mood and behavior. that produces numbness or stupor; capable of depressing physiological or psychological activity or response by a chemical agent :Example Benzene

Poisonous: A substance that causes injury, illness, or death, especially by chemical means. Something destructive or fatal. The action of poisons is generally described by the physiological or biochemical changes which they produce. For most poisons, a descriptive account can be given which indicates what organic system (for example, heart, kidney, liver, brain, and bone marrow.

The strength or potency of poisons is most frequently measured by the lethal dose, potency being inversely proportional to lethal dose. From statistically treated dose-response data, the dose killing 50% of the sample population can be determined, and is usually designated the MLD (median lethal dose) or LD50. This is the commonest measure of toxic potency. Metaldehyde, Phosphorus, Arsenic, Zinc Phosphide,

Add to this list, food poisoning, lead poisoning, drinking antifreeze (they love the stuff) and the accidental ingestion of human drugs and symptoms all look pretty similar to chemical poisoning.

Irritant A chemical that is not corrosive but that causes a reversible inflammatory effect on living tissue by chemical action at the site of contact. A substance producing irritation. A chemical is a skin irritant if, when tested on the intact skin of albino rabbits Example: Strong Acid, strong Solvent, Strong Caustic like sulphuric acid, Nitric acid, Hydrochloric acid, Sodium/potassium Hydroxide, Dichloromethane, N-Methyl pyrrolidine.

MODE OF ENTRY OF TOXIC COTAMINANTS:

(1) Ingestion (2) Inhalation (3) Absorption/Skin contact (4) Accidental

GENERAL EFFECTS OF INDUSTRIAL TOXIC MATERIAL

Generally, the effects of toxic substances depend on the quantity entering into the body system and its retention time

PERMISSIBLE LIMIT: Threshold Limits or Maximum allowable concentration and its Limitation.

APPRIASAL OF HEALTH HAZARD:

Toxicity of the Substance present or handled

Mode of Entry

Physical properties of the Substance

Duration of Exposure

Intensity and Severity of Exposure

Personal Susceptibility

Complain and Evidence of Injury

PREVENTION OF OCCUPATIONAL DISEASES IN GENERAL

(1) Engineering Design stage elimination, Housekeeping, general ventilation, Local exhaust ventilation by which all diseases due to gas, dust, chemical vapor can be avoided.

(2) Mechanization- skin problem can be avoided

(3) Substitution- Chemicals (carcinogenic)

(4) Separate measure for dust control

(5) Isolation – welding (Ionization Radiation)

(6) PPE – Against allergic, sensitizer etc.

Medical:

(1) Pre employment

(2) Periodic

(3) medical and health service



- (4) First aid service
- (5) Immunization Notification: notification of occupational diseases (legal requirement)
- (6) Medical record
- (7) Health Education
- (8) Legal

Section-12 Disposal of effluent to be made innocuous (water pollution)

Section-14 Control of dust and fumes (Air pollution)

Section-35 Eye protection (Arc eye, Infrared cataract and injury)

Section-36 Precaution against dangerous fume in enclosed vessel

Section-42 Provision of washing facility.

Section-45 First-aid

Section –87 Dangerous operation and trade.

Section –89 Provision for notification (Notifiable disease)

Fire Risk Assessment

Fire risk assessment is fundamental to all legislation and there are five key steps:

- Identify fire hazards including sources of ignition, fuel and oxygen the components of fire.
- Identify people at risk -people using the premises and any people especially at risk.
- Evaluate, remove, reduce the risk and protect people.
- Record, plan, inform, instruct and train -record major findings and actions taken.
- Review the fire risk-assessment regularly.

CLASSIFICATION OF FIRES

Class A Fires: involve combustible materials of organic nature, such as wood, paper, rubber and many plastics, etc., where the cooling effect of water is essential for extinction of fires.

Class B Fires: involve flammable liquids, petroleum products, or the like, where a blanketing effect is essential.

Class C Fires: involve flammable gases under pressure including liquefied gases and energized electrical equipment where it is necessary to inhibit the burning gas at a fast rate with an inert gas, powder or vaporizing liquid for extinguishment.

Class D Fires: involve combustible materials such as magnesium, aluminum, zinc, sodium, potassium. The burning metals are reactive to water and water containing agents, and in certain cases carbon dioxide, halogenated hydrocarbons and ordinary dry powders. These fires require special media and technique to extinguish.

Class K Fires: Involved in fat, Vegetable oil etc. which require special type of foam containing saponin as normal foam breaks/ cannot cover this type of fire by blanketing

Hence Safety measure in flammable liquid complex depends on:

- Planning in Safe Design.
- Selection of Safe Technology
- Proper lay out based on: -
- Meteorological data.
- National/International data
- Design data book
- Proper roads, Approaches and Escape routes
- Electrical-Mechanical Safety.
- Environmental –effluent control.
- Flaring of un burnt hydrocarbons
- Blast proof/Blast wall/ Block house construction for explosive reaction/High pressure
- Centralized liquid handling area
- Control of unauthorized entry.
- Round the clock availability of operation/emergency control cell/groups.
- Product name, flow direction and color Code on all lines.

Evaluating the risk of a fire and its prevention in one's premises

One should consider:

- Housekeeping;
- Storage;
- Dangerous substances storage, display and use;
- Equipment and machinery;
- Electrical safety;
- Smoking;
- Managing building work and alterations;
- Existing layout and construction;
- Particular hazards in corridors and stairways used as escape routes;
- insulated core panels;
- restricting the spread of fire and smoke;
- Fire-resisting structures;
- Arson; and
- help for people with special needs.

In industries fuels are available in various forms like solid, liquid, vapour and gas.

The following are the sources of ignition:

- Major Causes of fire in Industries
- Electrical Fault
- Friction
- Mechanical Spark
- Smoking & Matches
- Spontaneous ignition
- Hot Surfaces
- Combustion Spark
- Open Flame
- Cutting and Welding
- Overheated Material
- Static Electricity and other sources like process heating, exposure to fire

Fire service activities can be grouped as follows:

- 1) Prevention 2) Protection 3) Extinction

Fire prevention means: -

To reduce the likely hood of fire occurrence and to reduce the number of fires

Good house keeping

Control of flammable material

- a) Nature b) Inventory c) Minimize leaks d) Early warning of leaks

- 3) Control of sources of ignition

To separate leak points from ignition sources

Area classification

Improvised method like steam curtain, water curtain.

- 4) Fire hazard awareness by a) Education b) Training

- 5) Monitoring like a) Inspection b) Survey c) Audit

Prevention can be achieved by:

- 1) Built in measure 2) Human behavior.

Passive Protection

- Minimum Flammability of building material
- Provide and Safeguard means of escape
- Protect Structure & Vessel
- Protect Cable & Equipment
- Limit size of fire by
- Horizontal and vertical cut off by
- Compartmentalization,
- Avoiding chimney effect,
- By provision of fire door, fire stops etc
- Containment of fuel
- By Bund, paving, Drainage
- Dispersal of heat & smoke by
- Drop out panel/emergency barrier
- Reactive coating.

Active Fire Protection:

- Detection
- Alarm
- First aid firefighting Appliances (like fire extinguishers, Hose reel)
- Training fire drill
- Fixed firefighting system (fire pump house, fire water network, fire hydrant, water monitor, sprinkler, total flooding system etc)
- Isolation (manual, auto electric isolation valve)
- Smoke vent
- To Promote Safety culture various programme is organized throughout the year:
- Monthly awareness programme on different themes
- On spot training Imparted to Employee, contractor, security personnel, Truck drivers, Kalashi's
- Celebration of National safety day /week from 4th March to 10th March in which various competition like Safety Debate, Safety quiz, Safety Slogans, Safety poster amongst employees and contractor.
- Publish of safety Bulletin on quarterly basis to spread the message of safety.
- Celebration of fire service Day on 14th April and world Environment Day on 5th June every year.
- Scheme for giving safety award to employees after attaining accident free million Man – hour worked.

Classification of hazards:

Type of hazards to which a worker is exposed is the basis of selection of the right type of respiratory protective equipments.

The hazards may be classified as under:

(1) Oxygen deficiency: Atmosphere in confined spaces such as vats, tanks etc. may contain air with oxygen content much lower than the normal (21% by volume.). This may be due to dilution or displacement of the air by other gases or vapors or because of loss of oxygen due to decay of organic matter, chemical reaction and natural oxidation over a long period of time. A person breathing air with oxygen content of 16% or less may exhibit symptom ranging from increased rate of breathing, acceleration of pulse rate to unconsciousness and death. Such oxygen deficiency condition can easily be detected as the flame of a safety lamp will be extinguished in such atmosphere. The respiratory protective equipment, in such conditions, should either supply normal air or oxygen to the worker.

(2) Gaseous contaminants. These may be toxic or inert gases. The toxic gases may produce harmful effect even if they are present in relatively low concentrations. The inert gases produce undesirable effects primarily by displacement of oxygen. The term “gases” includes vapors of volatile substances.

(A) Gaseous Contaminants Immediately Dangerous to Life:

These contaminants are gases present in concentrations that would endanger life of a person breathing them even for a short period of time. In other words, a gas is immediately dangerous to life if it is present in certain concentration. Where it is not possible to determine the extent of concentration or the kind of gas is not known, all gases should be considered as “Immediately Dangerous to Life”.

Gaseous Contaminants not Immediately Dangerous to Life:

These contaminants are gases present in concentrations that could be breathed by a person for a short time without endangering his life but which may cause possible injury after a prolonged single exposure or repeated exposures. But even after a prolonged single exposure or repeated exposures. But even after the concentrations of the contaminant is known no exact formula can be applied to determine if the contaminant is immediately dangerous to life or not.

Particulate contaminants (Dusts, Fumes, Smoking, Mist, Fogs):

Majority of particulate contaminants are not immediately dangerous to life. They may be solid, liquid or a combination of both and may be classified into three broad groups.

Toxic particulate contaminants:

These when inhaled may pass from the lungs into the blood stream and are then carried to the various parts of the body. The effect may be chemical irritation, systematic poisoning or allergic reactions. Common contaminants in this group are antimony, arsenic, cadmium, chromic acid and chromates, lead and magnesium.

Fibrosis Producing Dusts:

These dusts do not pass into the blood stream but remain in the lungs and may cause pulmonary impairment. The common example under this group is asbestos, coal, bauxite and free silica.

Nuisance Dusts:

These may dissolve and pass directly into the blood stream or may remain into the lungs neither producing local or systematic effects.

Combination of gaseous and particulate contaminants:

The gaseous and particulate contaminants may be entirely of different substances like carbon monoxide and oxides of nitrogen produced by blasting and the dust from the blasted material or they may be the same substances in liquid and vapour form like volatile liquids.

Types of Respiratory Protective Equipment's

Respiratory Protective equipment may be classified as indicated below:

CLASSIFICATION OF RESPIRATORY PROTECTIVE EQUIPMENT

Breathing Apparatus:

1. Supplied Air
2. Air Purifying

Supplied Air

1. Airline
2. Self Contained

Air Line

1. Airline Respirator
2. Suction Hose Mask
3. Pressure Hose Mask

Airline Respirator

1. Continuous type

2. Demand Type

Self-Contained

1. Demand Type
2. Recirculating type

Demand Type

1. Compressed Air
2. Compressed oxygen

Recirculating Type

1. Compressed oxygen
2. Oxygen Regenerative

Air purifying

1. Chemical filter
2. Mechanical filter
3. Combination of Chemical and Mechanical Filter

Chemical filter

1. Canister Gas mask
2. Chemical Cartridge
3. Self Rescue Type

Mechanical Filter

1. Nuisance Dust
2. Micro Filter

AIR LINE RESPIRATOR:

Airline respirator essentially consists of the face pieces (half or full mask or a loose-fitting helmet or hood) to which air is supplied through a small diameter hose. It may be of continuous flow type or demand type

In a continuous flow type, air is supplied continuously to the face piece helmet or hood. Exhaled air or the excess air entering the face piece escape to the surrounding atmosphere. Air supplied should be at least 170 liters per minute to enter the helmet or hood.

In a demand type respiratory, air is supplied to a face piece when the wearer inhales and the rate are governed by his volume rate of breathing. Air from an air compressor or cylinder of compressed air is supplied to the face piece through a demand valve which is actuated by the slight negative pressure created when the wearer inhales. On exhalation the demand valve closed and exhaled breath escapes to the surrounding atmosphere through exhalation valve. Helmet or hood are not used with demand type respirator.

Airline respirators provide protection so long as the air supply is maintained but the wearer travel is restricted by the length of air supply hose. Care should be taken to ensure that the air supply is respirable and is not contaminated and is free from objectionable Oduors, oil or water mist and rust particle from the supply line.

SUCTION HOSE MASK:

It consists of a full-face piece connected to a large diameter flexible hose. The wearer draws air by his own breathing effort. The hose is attached to the wearer's body by a suitable safety harness with safety line and the air inlet end of the hose is provided with a filter to arrest particulate matter. Air can be drawn in by inspiratory effort of the wearer up to 30 ft length of the hose.

PRESSURE HOSE MASK:

The hose mask is similar to suction hose mask except that the air is forced through a large diameter hose by a hand or motor operated blower. The blower is to be operated continuously while the mask is in use.

SELF CONTAINED COMPRESSED AIR OR OXYGEN BREATHING APPRATUS

This is a device by means of which the user obtains respirable air or oxygen from compressed air or oxygen cylinder which is an integral part of the apparatus. In a demand type self-contained breathing apparatus, air or oxygen is admitted to the face piece through a two stage pressure reducing mechanism, only when the wearer inhales and the quantity of air or oxygen admitted is governed by his breathing. The wearer's exhaled breath escapes to the surrounding atmosphere.

In compressed oxygen cylinder re circulating type breathing apparatus, high pressure oxygen from the Cylinder Passes through a pressure reducing and regulating valve into breathing bag. The wearer inhales this oxygen through a one way breathing valve and his exhaled breath passes into a canister containing chemicals to absorb exhaled carbon-di-oxide and moisture and then through a coupler into the same breathing bag. Oxygen enters the breathing bag from the supply cylinder only when the volume of gas in the bag has decreased sufficiently to allow the supply valve to open.

From respiratory point of view ,self-contained breathing apparatus has no limitation as to the concentration of the Gas or deficiency of oxygen in the surrounding atmosphere but other factors may limit the time that the wearer Can remain in a contaminated atmosphere. Many gases are very irritating to the skin and many can be absorbed in dangerous amounts through the unbroken skin.

OXYGEN REGENERATING RECIRCULATING TYPE SELF CONTAINED BREATHING APPARATUS

In this apparatus moisture content from the wearer's exhaled breath reacts with granular chemical in a canister to liberate oxygen.

Also, the exhaled carbon-di-oxide is absorbed by the chemicals in the canister. This oxygen enters the breathing bag from which the wearer inhales through a corrugated breathing tube connecting the bag to the face piece.

AIR PURIFYING RESPIRATORS:

CANISTER GAS MASK

This consists of a canister, containing appropriate chemicals, a full-face piece and body harness to hold the Canister in place on the body of the wearer. Air is drawn through the container by the wearer and during its passage through the chemicals in the canister the contaminant present in the incoming air is absorbed reacted with a neutralizer. The canister is designed for specific gases and it is very important that the appropriate type is used.

The canister gas mask can only be used in atmosphere not deficient in oxygen and not containing more than 2% by volume of most toxic gases. Also, concentration of gas and activity of the wearer.

CHEMICAL CARTRIDGE RESPIRATOR:

This consists of usually a half mask attached to one or two cartridges. Like canisters, the cartridge are filled with appropriate chemicals to absorb gases or vapours drawn through them. This respirator is a non-emergency gas respirator and it should not be used in an atmosphere deficient in oxygen. Like canister gas mask, chemical cartridge respirator provides respiratory protection for a period that depends on the type of cartridge used, the concentration of the gas or vapour and the wearer's activity. It is recommended for low concentration gases vapours. (Maximum 0.1% of organic vapour).

MECHANICAL FILTER RESPIRATORS:

These remove particulate matter from the inspired air which passes through a filter. These filters may be of the Single use or reusable type. If these respirators are used in heavy concentrations of particulate matter, the filling will be clogged with dust particle too quickly and they may have to be replaced every now and then. Micro filters are special filters designed to arrest ultrascopic size of dust particles and these are used where extremely fine dusts are encountered.

COMBINATION OF CHEMICAL AND MECHANICAL FILTER RESPIRATORS

They remove toxic gases and vapours and particulate matter from inspired air. Common example of their use is in spray painting work.

SELECTION OF RESPIRATOR:

The following factors should be considered: -

Nature of the hazard.

Severity of the hazard

Type of contaminant

Concentration of the contaminant.

Period for which respiratory protection must be provided

Location of the contaminated area with respect to a source of respirable air

Expected activity of the wearer and

Operating characteristic and limitations of the available respirator.

CARE OF RESPIRATORS:

Instructions in the use of respirators, among things should include the following aspects

Why it is to be used?

How it is to be used?

Checking that it is in good operating condition

Fitting of respirator on the wearer, and

Proper use and maintenance of the respirator.



NON-RESPIRATORY PROTECTIVE EQUIPMENT:

Personal protective equipment for various part of the body can be divided into five broad groups

HEAD PROTECTION:

Head protectors may be hard and caps made of Aluminium, Pvc, Fiber glass laminated plastic or vulcanized fiber. They may be fitted with bracket for fixing welding masks protective face screen or a lamp. The hats and caps are provided with replaceable harness which provides sufficient clearance between the top of the head and shell.

Soft caps and hoods are also used for protection against heat spark and other dangerous materials and are made of appropriate materials. Sometimes hoods are made with rigid frame which is held away from the head.

EYE & FACE PROTECTION:

Numerous eye injuries are caused by dusts, flying particles, splashes and harmful radiations. It is difficult to cover precisely the various processes in which the worker may be required to wear goggles. The hazards encountered may be:-Eye protectors may be safety spectacles, mono-goggles, Impact goggles, Welding goggles, Foundry goggles. Chemical goggles, Gas tight goggles, Face shields, Welding helmet etc.

Type of Hazard	Types of activities for which eye protection to be used
Relatively large flying Objects	Chipping, Felting, Rivetting, Slodging, Caulking etc
Dust and Small flying Objects	Scaling,Grinding Stone, Dressing, Wood working
Splashing of metals	Bab biting, Pouring of load joints, Casting of Metal, Galvanizing, Dipping in Molten Metal
Splashing of Liquids gases and fumes	Handling of acids and other chemicals
Reflected Light, Glare and Radiant Energy	Foundry Work, Glass furnace, Gases welding & Gas cutting, Arc welding

HAND AND ARM PROTECTION:

Protection of hands and arms becomes necessary when workers have to handle materials having sharp and sharp edges or when hot and molten metals, chemicals and corrosive substances have to be handled. The protective devices may be gauntlet gloves, wrist gloves, mittens, hand pads and thumb and finger guards and sleeves. It is important not only that the various parts of arms and hands are adequately covered, but that they should be covered by a material suitable for withstanding the specific hazard involved.

Material Safety Data Sheet

Urea

Health effects occur when UF-based materials and products release formaldehyde into the air. Generally, no health effects from formaldehyde are seen when air concentrations are below 1.0 ppm. The onset of respiratory irritation and other health effects, and even increased cancer risk, begin when air concentrations exceed 3.0–5.0 ppm.

Health Hazards of Urea Formaldehyde

There are no health hazards of urea-formaldehyde unless formaldehyde is released from Urea-formaldehyde resins. When formaldehyde is released into the air with a concentration of more than 3.0-5.0 ppm, its effects on health are significant. High exposure to formaldehyde can increase the risk of cancer. When the concentration of formaldehyde begins to increase in air, it causes serious health hazards, such as watery eyes, irritation in the nose, cough, skin rashes, allergic reactions, burning sensation in the throat, nausea, and in some cases, it can even cause difficulty in breathing.

Urea formaldehyde, while not classified as a fire hazard, can still pose risks under certain conditions. Let's explore further:

Decomposition Under Fire Conditions:

When exposed to fire, urea formaldehyde may decompose, releasing ammonia, nitrogen oxides, and carbon dioxide¹.

These decomposition products can contribute to fire hazards and may be harmful to health.

Explosive Mixtures:

Although urea formaldehyde itself is not explosive, it can form explosive mixtures when in contact with strong oxidizing agents such as chlorine (bleach), peroxides, chromates, nitric acid, and other substances.



These mixtures can be hazardous and increase the risk of fire or explosion.

Precautions:

Storage: Store urea formaldehyde in a tightly closed container in a dry, cool, and well-ventilated place to minimize the risk of fire or decomposition¹.

Firefighting Measures: In case of fire, use dry chemical, carbon dioxide, or alcohol-resistant foam for extinguishing. Firefighters should wear self-contained breathing apparatus if necessary

Urea formaldehyde itself is not inherently hazardous, but its associated risks primarily arise from the release of formaldehyde—a chemical used in the production of urea-formaldehyde resins. Let's delve into the health hazards:

Short-Term Effects:

When formaldehyde is present in the air at levels exceeding 0.1 parts per million (ppm), some individuals may experience adverse effects such as:

Watery eyes

Burning sensations in the eyes, nose, and throat

Coughing

Wheezing

Nausea

Skin irritation

Sensitivity to formaldehyde varies among people

Long-Term Risks:

Although the short-term effects are well understood, less is known about formaldehyde's potential long-term health impact.

Laboratory studies in rats have shown that exposure to formaldehyde can cause nasal cancer¹.

In 1987, the U.S. Environmental Protection Agency (EPA) classified formaldehyde as a probable human carcinogen under conditions of unusually high or prolonged exposure

Sources of Exposure:

Indoor Sources: Pressed-wood products (like particleboard, plywood, and fibre board) containing formaldehyde resins are common sources of indoor exposure.

Other Sources: Cigarette smoke, unvented fuel-burning appliances (such as gas stoves and wood-burning stoves), and automobile tailpipe emissions contribute to formaldehyde exposure.

Occupational Exposure: Industrial workers, laboratory technicians, and mortuary employees may be exposed to higher levels of formaldehyde

Urea-Formaldehyde Foam Insulation (UFFI):

In the past, UFFI was used for home insulation, but it can lead to severe health problems due to formaldehyde gas release.

Respiratory issues, allergies, memory loss, and mental problems can result from exposure to foam insulation fumes².

Remember to handle urea formaldehyde with care, especially when it comes to indoor air quality and exposure.

However, it's essential to be aware of potential hazards associated with this material:

High exposure to formaldehyde is associated with an increased risk of cancer.

Toxicity:

Urea itself is not considered toxic, but large amounts taken internally can be dangerous.

The toxicity of formaldehyde is the dominant factor in urea-formaldehyde resins.

Formaldehyde Emission:

The primary concern with urea-formaldehyde is the release of formaldehyde from the resin.

BORAX (POWDER) – Sodium Tetraborate Decahydrate

Hazard identification

May impair fertility. May cause harm to the unborn child.

First aid Measure

INHALATION

Remove victim immediately from source of exposure. Provide rest, warmth and fresh air. In case of severe exposure or if any discomfort continues get medical attention.

INGESTION

Rinse mouth thoroughly. Get medical attention.

SKIN CONTACT

Remove contaminated clothing and wash before re - use. Wash skin thoroughly with soap and water. In serious cases or if discomfort continues after slight contact obtain medical attention.

EYE CONTACT

Promptly wash eyes with plenty of water or eyewash solution while lifting the eyelids. Remove contact lenses if possible. Get medical attention if any discomfort continues.

Firefighting Measure

EXTINGUISHING

The product is non-combustible. Use fire-extinguishing media appropriate for surrounding materials.

PROTECTIVE MEASURES IN FIRE

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Accidental Release measure

PERSONAL PRECAUTIONS

Wear protective clothing as described in Section 8 of this safety data sheet.

Spill CLEAN UP METHODS

Avoid dust formation. Small Spillages: Carefully remove with scoop or shovel if safe to do so and transfer to waste containers. Large Spillages: Contain and mix spillage with sand or other inert absorbent. Collect spillage in containers, seal securely and deliver for disposal according to local regulations. Wash spillage site well with water and detergent, be aware of the potential for surfaces to become slippery. Wash thoroughly after dealing with a spillage.



Handling and Storage

USAGE PRECAUTIONS

Avoid spilling, skin and eye contact.

STORAGE PRECAUTIONS

Store in tightly closed original container in a dry and cool place.

STORAGE CLASS

Chemical storage.

Exposure control/personal protection

ENGINEERING MEASURES

Provide adequate ventilation, including appropriate local extraction, to ensure that the defined workplace exposure limit (WEL) is not exceeded.

RESPIRATORY EQUIPMENT

In case of inadequate ventilation use suitable respirator. Wear respirator if there is dust formation.

HAND PROTECTION

Use protective gloves made of: Rubber or plastic.

EYE PROTECTION

Wear safety glasses. Use tight fitting goggles if dust is generated.

OTHER PROTECTION

Wear suitable protective clothing as protection against splashing or contamination. Provide eyewash station and safety shower.

HYGIENE MEASURES

Wash at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes contaminated. Wash promptly if skin becomes contaminated. When using do not eat, drink or smoke.

Stability and Reactivity

STABILITY

Stable.

MATERIALS TO AVOID

Alkali metals, anhydrides.

Toxicological information

INGESTION

Toxic Dose - LD₅₀ in rats is 4500 - 6000 mg/kg (oral)

INHALATION

LC 50 in rat is greater than 2.0mg/litre may cause irritation to the respiratory system.

INGESTION

Nausea, vomiting, Diarrhoea

SKIN CONTACT

Slightly irritating

EYE CONTACT

Irritating to eye

Ecological Information

ECOTOXICITY

Ecological effects cannot be excluded in the event of improper handling or disposal.

BIOACCUMULATION

Low bioaccumulation potential.

Disposal consideration

DISPOSAL METHODS

Dispose of waste and residues in accordance with local authority requirements.



Transport Information

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

No transport warning sign required.

Physical and chemical properties

Appearance	Solid
Colour	white
Odour	Odourless
Solubility	Soluble in water
Melting point	Approx 743degree centigrade
Relative Density	1.73gm/cu.m
pH value, concentrated solution	9.2 (1% solution)

Product Name Acetic Acid

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquid category-3

Skin corrosion/irritation category 1A

Serious eye damage/eye irritation category 1

Label Elements

Signal Word Danger

Hazard Statements

Flammable liquid and vapor

Causes severe skin burns and eye damage



Precautionary Statements

Prevention

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Take precautionary measures against static discharge

Wear protective gloves/protective clothing/eye protection/face protection

Do not breathe dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area

Wash face, hands and any exposed skin thoroughly after handling

Keep container tightly closed

Response

Immediately call a POISON CENTER or doctor/physician

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower Wash contaminated clothing before reuse Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing Ingestion

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Fire

In case of fire: Use CO₂, dry chemical, or foam for extinction

Storage

Store locked up

Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

First aid measure

General Advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Call a physician

	immediately.
Inhalation	If not breathing, give artificial respiration. Remove from exposure, lie down. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration

Ingestion	Do NOT induce vomiting. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately.
Most important symptoms and effects	Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
Notes to Physician	Treat symptomatically with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately.

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes.

Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO₂). Thermal decomposition can lead to release of irritating gases and vapors.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health Flammability Instability Physical hazards 320 N/A

Accidental release measure

Personal precautions: use personal protective equipment as required. Ensure adequate ventilation, evacuate personnel to safe areas.

Keep people away from and upwind of spill/leak

Environmental precautions: should not be released into the environment

Methods for containment and clean up: soak up with inert absorbent material. Keep in suitable closed container for disposal.

Handling and Storage

Handling	Do not get in eyes, on skin or on clothing. Wear personal protective equipment/face protection. Use only under a chemical fume hood. Do not breath mist/vapours/spray. Do not ingest. If swallowed then seek immediate medical Assistance
Storage	Corrosive area. Keep away from heat, spark and flame. Keep containers tightly closed in a dry , cool and well-ventilated place. Incompatible materials. Strong oxidising Agents.

Exposure control/personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Acetic acid	TWA: 10 ppm STEL: 15 ppm	(Vacated) TWA: 10 ppm (Vacated) TWA: 25 mg/m ³ TWA: 10 ppm TWA: 25 mg/m ³	IDLH: 50 ppm TWA: 10 ppm TWA: 25 mg/m ³ STEL: 15 ppm STEL: 37 mg/m ³	TWA: 10 ppm STEL: 15 ppm

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures Protective Equipment	Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.
Eye/face Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Tight sealing safety goggles. Face protection shield.
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure.
Respiratory Protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirators if exposure limits are exceeded or if irritation or other symptoms are experienced.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

Physical and chemical properties

Physical State	Liquid
Appearance	Colourless
Odor	vinegar-like
Odor Threshold	No information available
pH	< 2.5 10 g/L aq.sol
Melting Point/Range	16 - 16.5 °C / 60.8 - 61.7 °F



Boiling Point/Range	117 - 118 °C / 242.6 - 244.4 °F
Flash Point	40 °C / 104 °F
Evaporation Rate	0.97 (Butyl Acetate = 1.0)
Flammability (solid, gas)	Not applicable
Flammability or explosive limits	
Upper	19.9 vol %
Lower	4.0 vol %
Vapor Pressure	1.52 kPa @ 20 °C
Vapor Density	2.10
Specific Gravity	1.048
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	427 °C / 800.6 °F
Decomposition Temperature	No information available
Viscosity	1.53 mPa.s @ 25 °C
Molecular Formula	C ₂ H ₄ O ₂
Molecular Weight	60.05

Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.
Incompatible Materials	Strong oxidizing agents, Strong bases, Metals

Hazardous Decomposition Products: Carbon monoxide (CO), Carbon dioxide (CO₂), Thermal decomposition can lead to release of irritating gases and vapours.

Toxicological information:

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Acetic acid	3310 mg/kg (Rat)	-	> 40 mg/L (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation: Causes severe burns by all exposure routes

Symptoms / effects, both acute and delayed

Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

Ecotoxicity

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Acetic acid	-	Pimephales promelas: LC50 = 88 mg/L/96h Lepomis macrochirus: LC50 = 75 mg/L/96h	Photobacterium phosphoreum: EC50 = 8.8 mg/L/15 min Photobacterium phosphoreum: EC50 = 8.8 mg/L/25 min Photobacterium phosphoreum: EC50 = 8.8 mg/L/5 min	EC50 = 95 mg/L/ 24h

Persistence and Degradability

Miscible with water Persistence is unlikely based on information available.

Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.



PHENOL

Carbolic acid; Phenic acid; Phenylic acid; Hydroxybenzene;

Phenol, fused; Monohydroxy benzene;

CAS No. : 108-95-2

Molecular Weight : 94.11

Chemical Formula: C₆H₅OH

Hazards Identification

Emergency Overview

Poison, danger, may be fatal if swallowed, inhaled or absorbed through skin. Rapidly absorbed through skin. Corrosive causes severe burns to every area of contact. Affects central nervous system, liver and kidneys and combustible.

Health Rating : 3 - Severe (Poison)

Flammability Rating : 2 - Moderate

Reactivity Rating : 1 - Slight

Contact Rating : 4 - Extreme (Corrosive)

Protective Equipment: Goggles & face shield; Apron; Vent hood. Proper Gloves.

Class B type fire Extinguishers

Storage Colour Code : White Stripe (Store Separately)

Potential Health Effects

The major hazard of phenol is its ability to penetrate the skin rapidly, particularly when liquid, causing severe injury which can be fatal. Phenol also has a strong corrosive effect on body tissue causing severe chemical burns. Due to its local anesthetizing properties, skin burns may be painless.

Inhalation:

Breathing vapor, dust or mist results in digestive disturbances (vomiting, difficulty in swallowing, diarrhoea, loss of appetite). Will irritate, possibly burn respiratory tract. Other symptoms listed under ingestion may also occur.

Ingestion:

Poison. Symptoms may include burning pain in mouth and throat, abdominal pain, nausea, vomiting, headache, dizziness, muscular weakness, central nervous system effects, increase in heart rate, irregular breathing, coma, and possibly death. Acute exposure is also associated with kidney and liver damage. Ingestion of 1 gram has been lethal to humans.

Skin Contact:

Corrosive. Rapidly absorbed through the skin with systemic poisoning effects to follow. Discoloration and severe burns may occur, but may be disguised by a loss in pain sensation.

Eye Contact:

Corrosive. Eye burns with redness, pain, blurred vision may occur. May cause severe damage and blindness.

Chronic Exposure:

Repeated exposure may cause symptoms described for acute poisoning as well as eye and skin discoloration.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin, eye or central nervous system disorders, or impaired liver, kidney, or pulmonary function may be more susceptible to the effects of this substance.

First Aid Measures

IN CASE OF PHENOL POISONING, start first aid treatment immediately, then get medical attention. People administering first aid should take precautions to avoid contact with phenol. A phenol antidote kit (castor oil or other vegetable oil, polyethylene glycol 300) should be available in any phenol work area. Actions to be taken in case of phenol poisoning should be planned and practiced before beginning work with phenol. Castor oil and or polyethylene glycol can be given by a first responder before medical help arrives.

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion:

If swallowed, immediately administer castor oil or other vegetable oil. Never give anything by mouth to an unconscious person. Be ready to induce vomiting at the advice of physician or poison control center. Castor oil (or vegetable oil) dosage should be between 15 and 30 cc. Get medical attention immediately.

Skin Contact:

In case of skin contact, immediately flush skin with large amounts of water while removing contaminated clothing and shoes. As soon as possible, repeatedly apply polyethylene glycol to affected area. Destroy contaminated clothing and shoes. Flush skin with water for at least 30 minutes. It is very important to avoid rubbing or wiping affected parts which would aggravate irritation and cause product dispersion. Continue treatment until the burned area changes color from white to pink. Expect that this can take a long period of time (20 minutes or more). The polyethylene glycol application should be done during transportation to the hospital. If polyethylene glycol is not available, flush with water for at least 30 minutes prior to going to hospital. Get medical attention immediately.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Note to Physician:

Treat ingestion with gastric lavage using 40% aqueous Bacto-Peptone, milk or water until phenolic odour is eliminated. Then give 15 to 50 cc castor or vegetable oil. Debride necrotic skin. Monitor vital signs, fluid status, electrolytes, BUN, renal and hepatic function, and electrocardiogram. Manage sedation, seizures, renal failure, and fluid electrolyte imbalances symptomatically as indicated.

Fire Fighting Measures

Fire:

Flash point : 79C (174F) CC

Auto ignition temperature: 715C (1319F)

Flammable limits in air % by volume: lower explosive limit: 1.3;

Upper explosive limit: 8.6 . Combustible.

Contact with strong oxidizers may cause fire.

Explosion:

Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Sealed containers may rupture when heated.

Fire Extinguishing Media:

Water spray, dry chemical, alcohol foam, or carbon dioxide. Water spray may be used to keep fire exposed containers cool.

Special Information:

In the event of fire, wear full protective clothing and BIS /NOISH Approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. Structural fire fighter's protective clothing is ineffective for fires involving material. Stay away from sealed containers.

Handling and Storage

Keep in a tightly closed container. Store in a cool, dry, ventilated area away from sources of heat or ignition. Protect against physical damage. Store separately from reactive or combustible materials, and out of direct sunlight. Avoid dust formation and control ignition sources. Employ grounding, venting and explosion relief provisions in accord with accepted engineering practices in any process capable of generating dust and/or static electricity. Empty only into inert or non-flammable atmosphere. Emptying contents into a non-inert atmosphere where flammable vapours may be present could cause a flash fire or explosion due to electrostatic discharge. All phenol workers should be properly trained on its hazards and the proper protective measures required. This training should also include emergency actions. All phenol operations should be enclosed to eliminate any potential exposure routes. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

Exposure Controls/Personal Protection

Airborne Exposure Limits:

Phenol : -OSHA

Permissible Exposure Limit (PEL): 5 ppm (TWA) (skin)

ACGIH Threshold Limit Value (TLV): 5 ppm (TWA) (skin) Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded, a full-face piece respirator with organic vapor cartridge and dust/mist filter may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen deficient atmospheres.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Butyl rubber and neoprene are suitable materials for personal protective equipment.

Eye Protection:

Use chemical safety goggles and/or full-face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Physical and Chemical Properties

Appearance : Colourless to light pink crystals.

Odor : Sharp, medicinal, sweet, tarry.

Solubility : 1 g/15 ml of water; very soluble in alcohol.

Specific Gravity : 1.06 @ 20C/4C



pH : ca. 6.0 Aqueous solution

% Volatiles by volume @ 21C (70F): 100

Boiling Point : 182C (360F)

Melting Point : 43C (109F)

Vapor Density (Air=1) : 3.2

Vapor Pressure (mm Hg) : 0.4 @ 20C (68F)

Evaporation Rate (Bu Ac=1): < 0.01

Stability and Reactivity:

Stability:

Stable under ordinary conditions of use and storage heat will contribute to instability.

Hazardous Decomposition Products:

Carbon dioxide and carbon monoxide may form when heated to decomposition.

Toxic gases and vapors may be released if involved in a fire.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Oxidizers, aluminum chloride and nitrobenzene, calcium hypochlorite, butadiene, halogens, formaldehyde, mineral oxidizing acids, isocyanates, sodium nitrite and many other materials. Hot liquid phenol will attack aluminum, magnesium, lead, and zinc metals.

Conditions to Avoid:

Heat, flames, ignition sources and incompatibles.

Toxicological Information

Oral rat LD50: 317 mg/Kg; skin rabbit LD50:630 mg/kg; inhalation rat LC50: 316 mg/m³; irritation data: skin rabbit, standard Draize, 500 mg/24H severe; eye rabbit, standard Draize 5 mg/30S rinse, mild. Investigated as a tumorigen, mutagen, reproductive effector.

Ecological Information

Environmental Fate:

When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is not expected to leach into groundwater. When released into the soil, this material may evaporate to a moderate extent. When released into the soil, this material is expected to have a half-life between 1 and 10 days. When released into water, this material is expected to readily biodegrade. When released into water, this material is not expected to evaporate significantly. When released into water, this material is expected to have a half-life between 10 and 30 days. This material has an estimated bio concentration factor (BCF) of less than 100. This material is not expected to significantly bio accumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be moderately degraded by photolysis. When released into the air, this material is expected to have a half-life of less than 1 day.

Environmental Toxicity:

This material is expected to be toxic to aquatic life. The LC50/96-hour values for fish are between 10 and 100 mg/l.

Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: PHENOL, SOLID

Hazard Class: 6.1

UN/NA: UN1671

Packing Group: II

International (Water, I.M.O.)



Proper Shipping Name: PHENOL, SOLID

Hazard Class: 6.1

UN/NA: UN1671

Packing Group: II

Regulatory information

Hazardous chemical manufacturing storage and import rule 1989

NFPA Ratings:

Health 4

Flammability 2

Reactivity 0

Product Name: Oxalic acid, anhydrous

Classification This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.120)

Acute oral toxicity Category 4

Acute dermal toxicity Category 4

Serious Eye Damage/Eye Irritation Category 1

Specific target organ toxicity - (repeated exposure) Category 2

Target Organs - Kidney, Liver.

Hazard Statements

Causes serious eye damage

May cause damage to organs through prolonged or repeated exposure

Harmful if swallowed or in contact with skin

Precautionary Statements

Prevention Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Wear protective gloves/protective clothing/eye protection/face protection

Do not breathe dust/fume/gas/mist/vapors/spray

Response

Get medical attention/advice if you feel unwell

Skin

IF ON SKIN: Wash with plenty of soap and water

Call a POISON CENTER or doctor/physician if you feel unwell

Wash contaminated clothing before reuse

Eyes

IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do.

Continue rinsing

Immediately call a POISON CENTER or doctor/physician

Ingestion IF SWALLOWED: Call a POISON CENTER or doctor/physician

if you feel unwell Rinse mouth

Disposal Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC) None identified.

First aid measure

General Advice- If symptoms persist, call a physician.

Eye Contact- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact -Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Inhalation -Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Ingestion -Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Most important symptoms and effects -None reasonably foreseeable. Causes severe eye damage.

Notes to Physician- Treat symptomatically

Firefighting measure

Suitable Extinguishing Media Water spray, carbon dioxide (CO₂), dry chemical, alcohol-resistant foam.

Unsuitable Extinguishing Media No information available

Flash Point > 93.4 degree centigrade.

Specific Hazards Arising from the Chemical

Corrosive material.

Thermal decomposition can lead to release of irritating gases and vapors.

Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products Carbon monoxide (CO). Carbon dioxide (CO₂).

Protective Equipment and Precautions for Firefighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA RATING

Health-03

Flammability-01

Accidental Release

Personal Precautions -Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation.

Environmental Precautions- Should not be released into the environment.



Methods for Containment and Clean Up -Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal

Handling and Storage

Handling -Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

Storage- Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Incompatible Materials. Strong oxidizing agents. Strong bases. Metals. Acid chlorides.

Exposure control/personal protection

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Oxalic acid	TWA: 1 mg/m ³ STEL: 2 mg/m ³	(Vacated) TWA: 1 mg/m ³ (Vacated) STEL: 2 mg/m ³ TWA: 1 mg/m ³	IDLH: 500 mg/m ³ TWA: 1 mg/m ³ STEL: 2 mg/m ³	TWA: 1 mg/m ³ STEL: 2 mg/m ³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures:

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment:

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection -Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection- Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirators if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures- Handle in accordance with good industrial hygiene and safety practice.

Physical and Chemical Properties

Physical State- Powder

Solid Appearance -White

Odor -Odourless

pH- 1.3 9 g/L

Melting Point/Range- 189 - 191 °C / 372.2 - 375.8 °F

Flash Point- > 93.4 °C / > 200.1 °F

Vapor Pressure- < 0.01 mmHg @ 20 °C Vapor Density Not applicable

Specific Gravity -1.900 Solubility Soluble in water Partition coefficient; n-octanol/water No data available

Molecular Formula- C₂ H₂ O₄

Molecular Weight- 90.04

Disposal Consideration

Waste Disposal Methods: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Product Name: Caustic Soda

CAUSTIC SODA LIQUID (31.5 % and 48%)

Caustic soda Solution

Sodium hydroxide liquid

Caustic Soda

MAJOR HEALTH HAZARDS:

CORROSIVE. CAUSES SERIOUS EYE DAMAGE. CAUSES SEVERE SKIN BURNS CAUSES DAMAGE TO THE RESPIRATORY SYSTEM AND GASTROINTESTINAL SYSTEM. EFFECTS OF CONTACT OR INHALATION MAY BE DELAYED. PHYSICAL HAZARDS: MAY BE CORROSIVE TO METALS. Mixing with water, acid or incompatible materials may cause splattering and release of heat. Do not store in aluminum container or use aluminum fittings or transfer lines, as flammable hydrogen gas may be generated.

First Aid Measures

INHALATION: If inhalation of mists, vapors, or spray occurs and adverse effects result, remove to uncontaminated area. Evaluate ABC's (is Airway constricted, is Breathing occurring, and is blood Circulating) and treat symptomatically. Get medical attention Immediately. There is no specific antidote, treat symptomatically.

SKIN CONTACT: Immediately flush contaminated areas with water. Remove contaminated clothing, jewelry, and shoes immediately. Wash contaminated areas with large amounts of water. Get Medical Attention Immediately. Thoroughly clean and dry contaminated clothing before reuse. Discard contaminated leather goods.

EYE CONTACT: Immediately flush contaminated eyes with a directed stream of water for as long as possible. Remove contact lenses, if present and easy to do. Continue rinsing. Get Medical Attention Immediately. Washing eyes within several seconds is essential to achieve maximum effectiveness.

INGESTION: If swallowed, do not induce vomiting. For definite or probable ingestion, do not administer oral fluids. If vomiting occurs spontaneously, keep airway clear. Monitor airway. Volume resuscitation (IV fluids) and circulatory support (CPR) may be required. Never give anything by mouth to an unconscious or convulsive person. GET MEDICAL ATTENTION IMMEDIATELY.

Fire Fighting Measures

Fire Hazard: Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. May react with chemically reactive metals such as aluminum, zinc, magnesium, copper, etc. to release hydrogen gas which can form explosive mixtures in air.



Extinguishing Media: Use extinguishing agents appropriate for surrounding fire.

Fire Fighting: Move container from fire area if it can be done without risk.

Cool containers with water.

Do not apply water directly on this product.

Heat is generated when mixed with water.

Immediately Dangerous to Life/ Health (IDLH)- 10 mg/m³

Accidental Release Measures

Personal Precautions: Do not get in eyes, on skin or on clothing. Avoid breathing mist, vapor, or spray. Do not ingest. Wear appropriate personal protective equipment Methods and Materials for Containment and Cleaning Up: In case of spill or leak, stop the leak as soon as possible, if safe to do so. Completely contain spilled materials with dikes, sandbags, etc. Shovel dry material into suitable container. Liquid material may be removed with a vacuum truck. Remaining material may be diluted with water and neutralized with dilute acid, then absorbed and collected. Flush spill area with water, if appropriate

Handling and Storage

Precautions for Safe Handling: Avoid breathing vapor or mist. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Do not ingest. Do not eat, drink or smoke in areas where this material is used. Wear personal protective equipment as described in Exposure Controls/Personal Protection.

Safe Storage Conditions: Store and handle in accordance with all current regulations and standards. Keep container tightly closed and properly labelled. Do not store in aluminum container or use aluminum fittings or transfer lines, as flammable hydrogen gas may be generated.

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection: Wear chemical safety goggles with a face-shield to protect against eye and skin contact when appropriate. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin and Body Protection: Wear protective clothing to minimize skin contact. Wear chemical resistant clothing and rubber boots when potential for contact with the material exists. Always place pants legs over boots. Contaminated clothing should be removed, then discarded or laundered. Discard contaminated leather goods.

Hand Protection: Wear appropriate chemical resistant gloves. Consult a glove supplier for assistance in selecting an appropriate chemical resistant glove.

Protective Material Types: Natural rubber, Neoprene, Nitrile, Polyvinyl chloride (PVC),

Respiratory Protection: A NIOSH approved respirator with N95 (dust, fume, mist) cartridges may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits, or when symptoms have been observed that are indicative of overexposure. If eye irritation occurs, a full-face style mask should be used. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

HYGIENE MEASURES: Handle in accordance with good industrial hygiene and safety practices. Wash hands and affected skin immediately after handling, before breaks, and at the end of the workday. When using do not eat or drink. When using do not smoke.

Physical and Chemical Properties.

Physical state Liquid

Appearance: Clear to opaque

Colour: Colourless to slightly coloured

Odor: Odourless Odor Threshold [ppm]:

Molecular Weight: 40.01

Molecular Formula: NaOH

Decomposition Temperature No data available

Vapor Pressure: 13 - 135 mmHg @ 60 °C

Vapor Density (air=1): No data available

Relative Density/Specific Gravity 1.05–1.56@ 15.6°C (water=1):

Density: 8.8 - 13.0 lbs/gal @ 15.6 °C Water Solubility: 100%



pH: 14.0 (theoretical value of 7.5% solution)

Reactivity: Soluble in water, releasing heat sufficient to ignite combustibles. Reacts with metals, and may form hydrogen gas

Aquatic Toxicity: This material has exhibited moderate toxicity to aquatic organisms. Data provided are for sodium hydroxide.

Disposal Consideration.

Waste from material: Reuse or reprocess, if possible. May be subject to disposal regulations. Dispose in accordance with all applicable regulations. Container Management: Dispose of container in accordance with applicable local, regional, national, and/or international regulations. Container reinstatement must be disposed of in compliance with applicable regulations.

Melamine formaldehyde

Melamine formaldehyde is a thermosetting plastic resin that is formed by the polymerization of melamine and formaldehyde. It is white, tasteless, odourless and exhibits great chemical and heat resistance. Melamine formaldehyde is known for its excellent heat resistance, durability, and chemical resistance. It is a hard, highly durable, and versatile thermosetting aminoplast known best for its resistance to heat and fire. The resin achieves this flame-retardance by releasing nitrogen gas when burned, helping to put itself out.

Reactions to Formaldehyde:

Formaldehyde is both a sensitizer and a potent primary irritant.

Exposure to formaldehyde gas may lead to various symptoms, including:

Burning sensations in the eyes, nose, and throat.

Skin rashes.

Tightness of the chest and wheezing.

Fatigue and headaches.

These symptoms may result from either a primary irritant effect or an allergic sensitization to formaldehyde.

Frequent or prolonged exposure can lead to allergic contact dermatitis

Allergic Contact Dermatitis:

Formaldehyde can cause an allergic reaction in the skin, known as allergic contact dermatitis.

This condition may manifest as an itchy, red rash that can become raised or develop blisters.

Clothing made from fabrics containing formaldehyde can contribute to this type of dermatitis.

The rash tends to affect areas where there is significant friction between the skin and fabric, such as inner thighs, gluteal folds, and the backs of knees.

Other Effects of Formaldehyde Exposure:

At low levels, breathing in formaldehyde can cause eye, nose, and throat irritation.

Higher levels of exposure may result in skin rashes, shortness of breath, wheezing, and changes in lung function⁴.

Remember that individual sensitivity to formaldehyde varies, and some people may be more susceptible to its effects than others. If you suspect formaldehyde exposure or experience any symptoms, consult a healthcare professional for proper evaluation and advice.

Conclusion and Remedial Measure

In view of the above most of the chemicals used for the production of urea formaldehyde, melamine formaldehyde are covering basically either toxic or skin irritant and raw materials used to produce such product are of toxic, poisonous and a little bit of flammable in nature

As the project is a low cost investment at least following measure as fire and accidental prevention ,protection and situation control measure are to be taken.

As fire protection measure provision of Hose reel having 30m of 19mm diameter hose covering 4 corners of the shed and storage tank area including wood storage area for boiler with a pump.

Fire extinguishers are to be provided as per fire classification either pressurised water type for class A free burning material like wood, paper, plastic etc of 9 litres or 45 litres capacity or 6kg of ABC type dry chemical powder and higher capacity near storage tank area.

For Diesel oil or FO as class B fire – mech foam of 9litres or 45 litres
For electrical fire -Co2 4.5 kg or 9kg of trolley mounted and as per Factory ACT and section 38 of WB factory Rule each fire extinguisher should cover @100 sq.m. to be hanged in such way that bottom part of fire extinguishers shall be at 250cm from floor level with proper glow sign to identify during darkness and any isolated area is to be provided at least 2 nos.

Proper display of PASS (Pull, Aim, Squeeze and Sweep) in pictorial form to be displayed at strategic locations

Proper maintenance of fire extinguishers as per standard BIS-2190

Provision of Alternate exit (one Regular and other emergency exit with glow sign paint/illuminated sign with in 45m of travel distance showing directional arrow.

Provision of Assembly point based on prevailing wind direction at safe location.

Provision of Eye washer shower at strategic location where chemical handling are located with glow sign to identify during darkness and in trim condition.

Provision of Airline Breathing Apparatus with face mask either through air compressor to supply fresh air or trolley mounted compressed air cylinder supply breathing apparatus.

Provision of permit to work system for various types of running maintenance activities with terms and condition, checklist for precaution to be followed.

Storage tank to be provided with proper earthing

Both Respiratory PPE like filter, cartridge etc and non-respiratory personal protective equipment like helmet, flash proof goggles, face shield ,Aprons ,Rubber boot/Safety shoe of chemical resistant to be provided to each employees and are of as per BIS certified.

Medical check-up:

During Induction (pre-employment)

Once in a year(post-Employment)

Emergency If any complain (during activities)

Provision of 1st aid trained personnel amongst the employee still activity on.

Provision of 1st aid box at strategic location.

Safety feature to be displayed near boiler

Mock drill to be conducted on quarterly basis having good liaison with local Administration.

Hazardous waste management Rule to be strictly followed.

Zero discharge theory to be followed.

7.4. Occupational health and safety

Occupational health needs attention both during construction and operation phases. However the problem varies both in magnitude and variety in the above phases.

The following administrative controls will be implemented to ensure workers' occupational health and safety:

- Every employee will receive training on EHS procedures and policies.
- Make sure that the exhaust system and ventilation are adequate.
- Regular health examinations for staff members.
- Every employee will receive emergency response and first aid training in the case of a fire.
- Employee safety and emergency preparedness training and preparation.
- System for work permits.
- Compliance with the use of PPE.
- There are safety display notice boards all across the plant.

7.5. Safety Plan

During the building and operating stages, the safety of both personnel and equipment is of the highest priority. The term emergency plan refers to an industry's readiness for potential disasters. The plant must create a safety policy with the following guidelines in mind, taking into account the need for safety during the building, operation, and maintenance phases:

- In order to keep the workplace safe and healthy, enough resources must be allocated.
- To guarantee that every known safety aspect is considered during the design, construction, operation, and maintenance of all machinery and plants.
- To guarantee that every employee receives sufficient safety training.
- To supply safety gear, clothing, and appliances when needed and to make sure they are used properly.
- To alert staff members about tools, supplies, or procedures they utilize on the job that may pose a risk to their health or safety.
- To regularly examine all operations and work practices in order to make the required safety-related adjustments based on experience and current knowledge.
- To offer suitable first aid facilities and timely care for illnesses and injuries incurred on the job.
- To publish and communicate rules, guidelines, and notifications in the employees' native tongue.
- To create distinct safety regulations for every kind of work or procedure used in the project.

7.6. Safety training

With the help of faculty members recruited from universities, professional safety institutions, and corporate centers, the safety officers will conduct safety training. In addition to regular employees, limited contractor labours are also provided with safety training. To create safety awareness safety films will be shown to workers and leaflets etc. will be distributed.

7.7. Health and Safety Monitoring Plan

Every possible workplace danger, including storage areas, needs to be routinely inspected. Every six months, the health of the workers in these regions will be checked in order to identify any illnesses early. The following duties will be assigned to the newly created medical care center:

- An analysis of employees' health in connection with their work.
- Monitoring of work environment.
- Finding and assessing environmental elements that could have an impact on employees' health.
- Evaluation of the health conditions of occupational workers.
- Respect for safety regulations and minimizing or eliminating exposure to hazardous conditions.
- Periodically, the company will conduct monitoring activities to evaluate the risks posed by gases, dusts, vibrations, radiation, etc.

7.8. Fire Fighting Group

The chemical storage facility must also have the proper kinds of fire extinguishers. Each transformer in the transformer yard must have an automatic fire detection and extinguishing system. Furthermore, it is necessary to establish fire detection and alarm systems.

7.9. Emergency Facilities

EMERGENCY CONTROL CENTER (ECC)

For the time being Office Block is identified as Emergency Control Center. It will have external Telephone and Fax facility. The Site Controller/ Incident Controller Officers, Senior Personnel will be located here. Also, it will be an elevated place. The following information and equipment are to be provided at the Emergency Control Center (ECC).

1. Intercom, telephone.
2. P and T telephone.
3. Safe contained breathing apparatus.

4. Fire suit/gas tight goggles/gloves/helmets.
5. Hand tools, wind direction/velocities indications.
6. Public address megaphone, hand bell, telephone directories.
7. (Internal, P and T) factory layout and site plan.
8. Emergency lamp/torch light/batteries.
9. Plan indicating locations of hazard inventories, plant control room, sources of safety equipment, work road plan, assembly points, and rescue location vulnerable zones.
10. Escape routes.
11. Hazard chart.
12. Nominal roll of employees.
13. List of key personnel, list of essential employees, list of Emergency Co-coordinators.
14. Duties of key personnel.
15. Address with telephone numbers and key personnel, emergency coordinator. Essential employees.
16. Important address and telephone numbers including Government agencies. Neighboring industries and sources of help, outside experts, chemical fact sheets population details around the factory.

FIRE FIGHTING FACILITIES

First Aid Fire-fighting equipment suitable for emergency shall be kept in each section in the plant. On the top of the Administration block, top of each production blocks, wind socks will be installed to indicate direction of wind for emergency escape.

EMERGENCY MEDICAL FACILITIES

Stretchers, gas masks and general first aid materials for dealing with chemical burns, fire burns etc. will be maintained in the medical center as well as in the emergency control room. Private medical practitioners help will be sought. Government hospital will be approached for emergency help. Breathing apparatus and other emergency medical equipment will be provided and maintained. An ambulance with driver availability in ails is arranged, emergency shift vehicle will be ensured and maintained to transport injured or affected persons. Number of persons will be trained in first aid so that, in every shift first aid personnel will be available.

7.10. Responsibilities of Key personnel

DEPARTMENT HEADS

The departmental heads will provide assistance as required by the workers. They will decide which members of their departments are required at the incident site.

CHIEF PERSONNEL MANAGER

- He will Report to Work Incident Controller.
- Receive reports from nominated persons from assembly points, and pass on the absence to information services.
- Keep liaison with other coordinators to meet the requirements of services such as materials, security management, transportation, medical, canteen facilities etc. as required during emergency.
- Be in constant touch with the Chief Incident Controller and feed him correct information of the situation.
- Ensure that casualties receive adequate attention at medical center and arrange required additional help and inform relatives of the injured.
- Arrange to inform public on Radio and TV about evacuation etc.
- Arrange TV coverage on handling emergency.

IN CHARGE

On knowing about an emergency, he will report to CIC and assist him in all activities. He will also be in liaison with all teams.

MEDICAL OFFICER

Medical Officer will render medical treatment to the injured and if necessary, will shift the injured to nearby Hospitals. He will mobilize extra medical help from outside if necessary.

HEAD OF SAFETY

On hearing the emergency alarm, he will proceed to the site. He will

- Make sure that all safety equipment's are made available to the emergency teams.
- Participate in rescue operations.
- Co-ordinate to transfer the injured persons to medical center and arrange for first aid.
- Keep in contact with ECO and the WIC and advise them on the condition of injured persons.

SECURITY OFFICER

On hearing the Emergency alarm, he will proceed to main entrance/main gate.

- Arrange to control the traffic at the gate and the incident area



- Direct the security staff to the incident site to take part in emergency operations under his guidance and supervision
- Evacuate the persons in the plant or in the nearby areas as advised by WIC after arranging the transport through the Transport in-charge.
- Allow only those people inside who are associated with handling emergency.
- Maintain law and order in the area; if necessary, seek the help of police.

TRANSPORT ENGINEER IN-CHARGE

On hearing the emergency alarm, he will immediately report to Work incident Controller He will:

- Ensure availability of vehicles for evacuation or other duties, when asked for.
- Make all arrangements regarding transportation.

7.11. Emergency Power Supply

Plant facilities will be connected to emergency power supply and will be placed in auto mode. Thus, water pumps, plant lighting and emergency control center, administrative building and other auxiliary services will be connected to emergency power supply. In all the blocks flame proof type emergency lamps will be provided.

7.12. Off-site emergency management

The off-site emergency management plan is an integral part of any hazard control system. It is based on those accidents identified by the works management, which could affect people and the environment outside the works.

7.13. City Fire Services

It is to combat fire and carry out other emergency operations as per the need. In case of fire, the fire brigade is the best help from outside.

RESPONSIBILITIES:

- To reach the accident spot as soon as possible with all necessary equipment's to extinguish the fire.
- To provide all other necessary help depending on nature of emergency

7.14. Police

In case of emergency the police department has a number of functions to perform.

RESPONSIBILITIES:

- Maintain law and order situation around the premises.
- To control the traffic to facilitate the victims to reach hospitals as early as possible.

- To restrict entry of any unauthorized persons
- To set up communication to assist in disaster management operation
- Shifting injured persons and casualties to nearby hospitals
- To assist in fire-fighting and other emergency operations

7.15. Hospital

Hospitals are required to provide first aid, treatment, and also to arrange for removal of victims/casualties. Prompt and efficient medical aid is important in an emergency situation.

RESPONSIBILITIES:

- Depute doctors and nurses to site with ambulance
- To provide immediate medical relief to casualties
- To provide first aid on the spot to casualties
- To take all out efforts on war-footing to save maximum lives
- To continue treatment to casualties till all of them are attended and properly shifted to medical centres.

7.16. District Administration

Civil administration is meant to provide overall supervision of all off-site emergency operations including order to evacuate off-site population. Local administration means those who are responsible for administration of the geographical area where the industrial facility is located.

RESPONSIBILITIES:

- To monitor the functioning and need of various agencies in rescue operation at site
- To protect the citizens
- To assess the situation for overall control
- To requisite and make available the services and facilities available in the area like additional fire tenders, hospitals, doctors, transport, police, fire brigade, requisition of army and so on
- To coordinate the activities outside the industrial facility in view of their authority and experience in coordinating rescue and relief operations.

7.17. Regional Transport Office

RTO services may be needed to clear all approach roads to and from accident area for free flow of vehicular traffic, which is engaged in combating the emergency, and demarcate parking area for vehicles to evacuate population.

7.18. Controller of explosives and factory inspectorate

These authorities are meant to provide expert advice and help in coordinating emergency operations with government agencies. The inspector of factories is expected to be friend and a guide to industrial establishments.

RESPONSIBILITIES:

- To coordinate with local government body e.g., civil administration, civil hospital, police department, etc., as well as surrounding voluntary organizations
- To inform public for precautionary measures
- To act as off-site emergency controlling authority

7.19. Other industrial installation in the vicinity

Industrial installations present near the site should help to combat the emergency with the available equipment/infrastructure present in their locations.

RESPONSIBILITIES:

- To provide the strongest possible support and resources to the plant managers so that the best accident prevention and emergency preparedness procedures are in place in the industrial facility.
- To encourage their facility managers to commit themselves fully to the awareness and preparedness for emergencies at local level process.

7.20. Personal protective equipment (PPE)

Personal Protective equipment kept onsite is made readily available to plant personnel.

7.21. Rehabilitation and resettlement (R&R) plan

The project land is already acquired and converted into Mil and there are no human habitation on the land. Thus, the project does not require any R&R plan.

CHAPTER 8

PROJECT BENEFITS

8. Chapter 8: Project Benefits

8.1 Introduction

The several advantages anticipated from the proposed project in the designated area are discussed in this chapter. To make the planned project more advantageous for the people living in the IMPACT ZONE, the project proponent should keep up their strong and persistent efforts. In line with Corporate Environment Responsibility (CER), this includes identifying and analyzing needs and issues as well as facilitating needs-based participatory planning with the goal of enhancing the local community and the standard of living for its residents. Details are listed below:

8.2 Physical Infrastructure

The physical infrastructure in this area will be enhanced by this project:

- The industry depends on road-transported raw materials and auxiliary chemicals. Road transportation will be used to deliver the completed goods. Every worker will arrive by road. The administration will get help from the proponents to keep the roads in good condition. The community will benefit from more surface transportation options due to this upgraded physical infrastructure.
- The area will have a pleasant look due to the greenary drive on the property. A portion of the CO₂ generated by the burning of fuel will be absorbed by it. For the creation of green spaces, treated household wastewater is recommended. Tree canopies will arrest noise and dust-fugitive SPM.

8.3 Social Infrastructure

The proposed project, therefore, is not expected to strain existing facilities in the locality. Shops and other daily need centres nearby will definitely have increased clientele. This will also help local business to flourish.

Job opportunity for local people in this small project is minimal excepting during construction phase.

8.4 Employment Potential

- A peak workforce of between 50 to 80 people is anticipated to be employed throughout the construction phase.
- Local transporters may get more clients as a result of the plant's constant requirement for raw material supply and the delivery of finished goods and by-products, which will benefit both parties.

8.5 Education

The expectation of employment, particularly from non-agricultural sources, will rise the local people's interest in education. By providing locals with chances for both direct and indirect work, the initiative is anticipated to raise such aspirations. It is anticipated that the planned project will raise public awareness of the value of education. People's schooling will improve as a result of the project.

8.6 Corporate Environment Responsibility (CER)

The environmental aspects of corporate social responsibility (CSR) are the focus of corporate environment responsibility (CER). In general, it refers to how companies can integrate environmental concerns into their operations to reduce waste and emissions, increase resource productivity and efficiency, and curtail actions that negatively impact the nation's natural resources. The goal of corporate environmental responsibility is to minimize financial costs and environmental effects by controlling the use of natural resources as effectively and efficiently as possible.

Areas of Focus:

- Energy Efficiency and Savings
- Waste Management
- Travel and Transportation
- Sustainable Procurement
- Sustainable Events
- Environmental Management Systems

There is no difference between the ideas of corporate environmental responsibility (CER) and corporate social responsibility (CSR). According to common opinion, corporate environmental responsibility is an integral component of the more general notion of corporate social responsibility. This will become clear if you look at some of the definitions of CSR. CER is regarded as an integral component of the more general idea of CSR. However, CER might be characterized as the company's obligation to lessen its environmental effects.

The aim and objectives of CER is:

- Concentrate effort within the local rural society where business significantly interacts.
- To hold the company responsible for social activities and take care about customer, employees, suppliers, the local community, society and environment.
- Take activities those are important to and even expected by the Public and also contribute to business performance.
- Building a deeper understanding of benefits.

- Contribute to economic development while improving the quality of life of the workforce and their families as well as that of the local community and society.

Benefits of Corporate Environmental Responsibility

- Brand image: Standing out as a green corporate can improve organisation's reputation.
- Customer loyalty: People prefer brands who have environmental concerns and they are more inclined to buy from them in the future.
- Differentiation: Face to increasingly demanding customers and aware of environmental issues, gaining a green reputation can help one differentiate.

Some of the activities which can be carried out in CER, are infrastructure creation for drinking water supply, sanitation, health, education, skill development, roads, cross drains, electrification including solar power, solid waste management facilities, scientific support and awareness to local farmers to increase yield of crop and fodder, rain water harvesting, soil moisture conservation works, avenue plantation in community areas etc.

The Industry intends to undertake CER activities in and around their Plant. A total amount of Rs. 1,44,800/- (Rs. One lakh forty four thousand and eight hundred only) would be utilized for CER program over a period of 5 years. The said amount is 2.0 % of the total project cost.

Table 8.1: Corporate Environmental Responsibility

Sl. No.	Activities	Investment in (Lakhs)					TOTAL (Rs.)	Name of the beneficiaries
		1 ST YEAR	2 ND YEAR	3 RD YEAR	4 TH YEAR	5 TH YEAR		
1	Scholarship	3,000	3,000	3,000	3,000	3,000	15,000	Local School
2	Award	2,000	2,000	2,000	2,000	2,000	10,000	Local School
3	Library	2,000	2,000	2,000	2,000	2,000	10,000	Local School
4	Sports and cultural activities	3,000	3,000	3,000	3,000	3,000	15,000	Villagers
5	Senior citizens	2,000	2,000	2,000	2,000	2,000	10,000	Villagers
6	First aid training	2,000	2,000	2,000	2,000	2,000	10,000	Villagers
7	Ambulance and	2,000	2,000	2,000	2,000	2,000	10,000	Villagers

Sl. No.	Activities	Investment in (Lakhs)					TOTAL (Rs.)	Name of the beneficiaries
	crematorium services							
8	Health support	4,000	4,000	4,000	4,000	4,000	20,000	Villagers
9	Cleaning the entire area with peoples participation	2,000	2,000	2,000	2,000	2,000	10,000	Villagers
10	Plantation in backyards, schools and community lands to preserve eco- and environment friendliness	4,000	4,000	4,000	4,000	4,000	20,000	Forest Dept
11	Construction of community Latrines	2,000	2,000	2,000	2,000	2,000	10,000	Villagers
12	Infrastructure for educational institute	1,000	1,000	1,000	1,000	800	4,800	Villagers
TOTAL COMMITMENT (2.0 % OF TOTAL BUDGET)							1,44,800.00	

8.7 Green Belt Development

The project officials need to maintain environment-friendly buildings with state-of the-art technology and hence it should have a well planned landscape to enhance the beauty and aesthetics of the project area.

Greenbelt will be developed approx. 35.16 % area of the total plant area 279.34 sqm of the plant area will be developed as greenbelt. This greenbelt will serve as a safeguard between the peripheries and the industry, thereby controlling the air emissions and noise levels.

8.8 Other Tangible benefits

In addition to the services sector, the proposed project is anticipated to be a center of a sizable small-scale industrial economy. This is anticipated to have a significant impact on the region's future social and economic growth. The project will support this sector's industrial expansion, particularly in the region's formulation units;

- The project will support this sector's industrial expansion, particularly in the region's formulation units.

- The company will cater needs of the domestic market also.

8.9 Conclusions

The present impact assessment's general findings support the following conclusions:

- The project has both direct and indirect positive effects on income and employment.
- There is a chance that the area around the proposed plant will become more industrialized. More skill diversity among the local population is probably going to result from this.
- The project will result in an increase in community development activities.
- Through the multiplier effect, the project's significant positive impact on the study area's average consumption is expected to raise average income.

CHAPTER 9

ENVIRONMENTAL COST BENEFIT ANALYSIS



9. Chapter 9 Environmental Cost Benefit Analysis

Environmental Cost Benefit Analysis not recommended at scoping stage – thus no detailed analysis carried out separately in this EIA/EMP report.

CHAPTER 10

ENVIRONMENTAL MANAGEMENT PLAN



10. Chapter 10 Environmental Management Plan

10.0 Introduction

Under the heading "Anticipated Environmental Impacts & Mitigation Measures" in Chapter 4 of this report, this section outlines the control methods that were implemented or suggested to mitigate the anticipated negative environmental effects during the project's construction and operation phases.

Environmental mitigation measures are incorporated into the planning process in order to preserve the ecological balance and prevent negative impacts on humans, namely, as a result of the proposed project. The management plan for promoting positive environmental effects and reducing negative ones is covered in this section. Within the scope of numerous national bodies' environmental and socioeconomic legislative and regulatory needs, the EMP was created. EMP consists of the following elements:

- a) Impact Mitigation Measures during Construction Phase
- b) Impact Mitigation Measures during Operation Phase

10.1 Impact Mitigation Measures During Construction Phase

Environmental effects during the construction period would primarily be temporary in nature and should gradually reduce once development is over.

Air Quality Management

The movement of trucks and other vehicles, the usage of construction and earthmoving equipment, the movement of people and materials, foundation work, buildings, and other necessary infrastructure all contribute to the generation of fugitive dust during the construction phase. These activities frequently lead to fugitive dust issues and, on occasion, small-scale (from the vehicles) gaseous emissions such as SO₂, NO_x, CO, and hydrocarbons. The working group at the site is concerned about the impacts, which are confined, transient, and mostly short-term in character. On occasion and for a little length of time, this could worsen the site's ambient air quality, especially the dust annoyance. Nonetheless, the following procedures are followed throughout the building process to lessen these temporary dust issues:

- When required, covered trucks are used to transport construction materials to the construction site.
- Water spraying, or dust suppression, is implemented as needed. For this, a water sprinkler mounted on a truck will be utilized.
- When extensive excavation work is required, earth moving equipment, usually an excavator (back hoe) and ripper, must be employed.

- Vehicles entering the site, particularly those carrying supplies, will be subject to a circular stating that only cars with valid air emission certificates are permitted on the property.

Noise Level Management

The primary source of noise is the machinery and equipment required for construction and material transportation to the site. During the day, the general noise levels at the workplace caused by construction operations can occasionally reach 90 dB(A) or higher. According to OSHA guidelines and other international agencies, the average worker will likely be exposed to an equivalent noise level of 80–90 dB(A) during an 8-hour shift, which is within the TLV. All legal statutory safeguards will still be followed, and employees will receive earplugs if needed, all while keeping occupational safety and health in mind. The following actions are intended to reduce the noise produced on the property:

- Provision of silencers to reduce the noise produced by machinery entails the use of tools and devices with built-in silencers..
- Providing safety equipment, such as earplugs or muffs, to employees who will be working in noisy environments.
- Educating workers and other site visitors about noise and its impact on people.

Water Resource Management

Depending on the construction fronts, the anticipated total water need throughout the proposed project's building phase could range from 2 m3 per day. This water requirement will be satisfied by the bore well that will be drilled on the property with SWID approval. The following actions will be taken to manage water resources:

- Continuous attempt shall be made to optimize / reduce the use of water
- Continuous attempt shall be made to avoid wastage and leakage of water

Water Quality Management

Domestic activities will be the primary source of waste water throughout the construction phase. The projected peak and average numbers of skilled, semiskilled, and unskilled labor needed for construction are 80 and 20, respectively. Wastewater generation will be limited because the majority of workers will be local. A suitable temporary drainage system will be constructed in accordance with the needs. The following will be the key components of managing water quality:

- Raw water quality shall be checked on regular basis for essential parameters and appropriate action taken to render it potable

- All sanitary waste will be disposed into the septic tanks followed by soak pit.
- All the debris generated at site will be isolated from wastewater and disposed off separately generally through local municipal agency.
- Oil trap contemplated in the drain line to prevent contamination by accidental spillage of oil / grease.

Soil Quality Management

Among other construction-related operations, clearing, excavation, topsoil removal, soil disposal, road development, and refuse/waste disposal can all have an impact on the soil. The following steps were taken to prevent or reduce soil contamination:

- Litter, gasoline, oil drums, and spent grease cartridges must be appropriately gathered and removed in accordance with the advice of a competent authority.
- To achieve the objective, dustbins and litter bins will be positioned in certain areas, and a campaign to raise awareness among employees and others will be conducted.
- Separate drums of lubrication waste oil must be gathered before being transferred to a WBPCB-approved organization.
- To the greatest extent feasible, top soil in the project area must be preserved and repurposed after construction is finished.

Traffic Movement

Since there would be a low demand for raw materials and a naturally low demand for the final product, traffic to and from the proposed facility won't become a concern.

Socio-economy

There are prospects for locals to find temporary work in unskilled categories, mostly during the construction phase. Considering into consideration the size, investment, and related responsibilities, the ESH responsibility will be carried out as instructed by the relevant authorities.

10.2 Impact Mitigation Measures during Operation Phase

The environmental effects throughout the operation phase would be essentially insignificant. To reduce the effects during the project's operating phase, environmental protection measures and precautions must be taken. These include all of the suggested and discussed environmental and socioeconomic mitigation methods listed below:

1. Solid Waste Management
2. Water Pollution Control Measure
3. Noise Pollution Control Measure
4. Plantation (Green Belt Development)
5. Building Architectural Design and Energy Conservation Measures
6. Socio-Economic Measures and Corporate Environmental Policy
7. Occupational safety and health
8. Emergency Preparedness (Disaster Management Plan)
9. Audit

Solid Waste Management

About 50 kg/month of Discarded Containers/ Barrels will be generated from the plant. This will be Decontamination and reuse or sell to scrap vendors. Apart from this ETP Sludge and Sewage Sludge will be generated from this plant approx.15 kg/month each. ETP Sludge will send to Govt. authorized agency and Sewage Sludge will mixed with green waste and composted to create a nutrient-rich product for landscaping, horticulture, and gardening or land filling.

Domestic biodegradable waste will be disposed through municipal collectors. Honest effort will be made to dispose used batteries, plastic carry bags, paper wastes etc through appropriate authority.

Air Pollution Control Measure

As indicated in earlier Chapters of this EIA Report the only air pollution will be particulate matters generated due to burning of the briquette and high efficiency bag filter will be there to keep the emission well below the permissible limit. The resultant of predicted increase in GLC of particulate matter will be quite low and not at all a matter of concern.

Water Pollution Mitigation Measures

Approximately 0.2 KLD will be waste water (mixed sewage). To treat the household sewage, a sizable septic tank will be supplied. An oil trap will be installed for kitchen waste before it is permitted to enter the septic tank and Industrial waste water (0.54 KLD) will be generated and will be treated in ETP of 5 KLD Capacity.

Noise Pollution Control

For the proposed project, the following noise reduction strategies have been planned:

- The equipment that generates the noise will be equipped with integrated noise control abatement technology.

- A well-planned green belt that is positioned inside and around plant boundaries as well as in other critical regions might help in reducing noise pollution.

Green Belt Development

Green belt development, or plantations, is a strategy that mitigates the effects of any development that may otherwise impact the environment. In the plant area, a green belt will be created that will encompass 35.16% of the entire land designated for the project. This will undoubtedly contribute to improving the area's land ecology and the surrounding area's overall attractiveness. Protecting the environment and reducing pollution through green belts are two essential elements of any industrial activity, whether it is planned, already underway, or in the process of growing.

Green belt development plan for any project depends upon:

- i) Climatic factors
- ii) Soil and water quality
- iii) Nature and extent of pollution load
- iv) Assimilation capacity of the eco-system.

Nature of plans shall be as follows:-

- i) Fast growing
- ii) high and thick canopy cover;
- iii) preferably perennial and evergreen;
- iv) have large area index;
- v) indigenous;
- vi) resistant to specific air pollutants;
- vii) should maintain the ecological and hydrological balance of the region

The principles to optimize the design of green belt are:

- i) Height and canopy area of trees (maximum)
- ii) mean wind velocity
- iii) pollutants concentration
- iv) Dry deposition velocity of plants.

The effectiveness of a green belt in attenuating the pollution is given by the value of attenuation factor which is defined as the ratio of mass flux of pollutants reaching a distance in the absence of green belt to the mass flux reaching the same distance in the presence of green belt.

Total area of the proposed Project site is 0.2 Acre (794.48 Sqm). Above 35.16% of the total area i.e., 279.34 sqm is proposed for greenbelt development i.e., afforestation program. The plantation is done in three rows along the earmarked area as per the suggested scheme given in figure 10.1. The plantation comprises of shed trees, big trees & lawn trees and based from detailed soil analysis report. Green belt is necessary to minimize the effect of pollution due to this unit in local area. The total planning will be done so that it does not affect the factory operation.

Table 10.1: List of Big Trees for Proposed Plantation

No.	Common name	Scientific name	Family
1	Gulmohar	<u><i>Delonix regia</i></u>	Fabaceae
2	Mahogany	<u><i>Swietenia macrophylla</i></u>	<u>Meliaceae</u>
3	Krishnachura	<u><i>Caesalpinia pulcherrima</i></u>	<u>Fabaceae</u>
4	Nim	<u><i>Azadirachta indica</i></u>	<i>Meliaceae</i>
5	Ghoranim	<u><i>Melia azedarch</i></u>	<i>Meliaceae</i>
6	Akashmoni	<u><i>Acacia moniliformis</i></u>	<u>Fabaceae</u>
7	Aam	<u><i>Mangifera indica</i></u>	<i>Anacardiaceae</i>
8	Sisso	<u><i>Dalbergia sissoo</i></u>	<u>Fabaceae</u>
9	Sirish	<u><i>Albizia Lebbeck</i></u>	<u>Fabaceae</u>
10	Jarul	<u><i>Lagerstroemia speciosa</i></u>	Lythraceae
11	Jam	<u><i>Syzyium cumini</i></u>	Myrtaceae

No.	Common name	Scientific name	Family
12	Debdaru	<i>Polyalthia longifolia</i>	Annonaceae
13	Radhachura	<i>Delonix regia</i>	Fabaceae
14	Arjun, Arjuna	<i>Terminalia arjuna</i>	Combretaceae
15	Chatim	<i>Alstonia scholaris</i>	Apocynaceae

10.2.1 Action plan for Greenbelt Development

Table 10.2: Action plan for Plantation Program

Propagation technique adopted perspective plants in on hectare.			Management & Cost estimation of plantation for 1 st year plan		
Area (hectare) for plantation	No. of plants	Plantation procedure	Management	Cost estimation for 1 st year (Rs.)	Total cost for 1 st year (Rs.)
0.0279	2500 per Hectare Total plant 70 approx	2.0 mt. Spacing [line to line & plant to plant]	1. Plantation of single plant (Rs. 30/- per plant)	2,100/-	46,600/- approx.
			2. Watering, Manuring & Maintenance at seeding stage (Rs. 50/- per plant)	3,500/-	
			3. Maintenance throughout the year by 1 gardening staff for weeding, cleaning, climber cutting, fire line cleaning etc. (Rs. 3000/- p.m)	36,000/-	
			Other expenses	5,000/-	

(I) Plantation for Arresting Dust

Trees particularly having compact branching closely arranged leaves of simple elliptical and hairy structure, shiny or waxy leaves and twigs are efficient filters of dust. The following species are suggested to arrest the dust.

- *Alstonia Scholaris* (Chatim)
- *Delonix regia* (Radhachura)
- *Ficus religiosa* (Aswatha)
- *Tamarindus indica* (Tentul)
- *Azadirachta indica* (Nim)

(II) Plantation For Absorb SO₂ Emissions

The following plants are suggested for plantation to absorb SO₂ in the air.

- *Azadirachta indica* (Nim)
- *Alstonia scholaris* (Chatim)
- *Lagerstroemia speciosa* (Jarul)
- *Poloyalthia longifloia* (Debdaru)

(III) Plantation to Reduce Noise Pollution

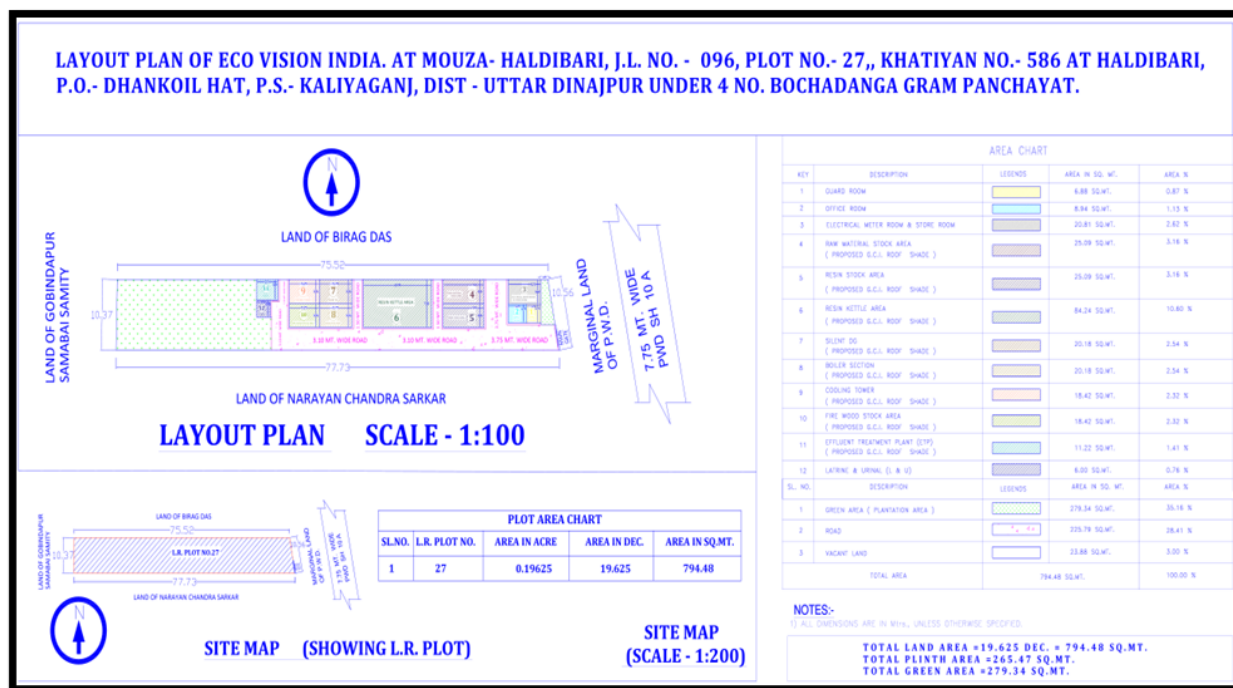
Trees having thick and flushy leaves with petioles are suitable. Heavier branches and trunks of trees also deflect the sound waves. The following plant species are suggested to reduce noise pollution.

- *Alstonia scholaris* (Chatim)
- *Azadirachta indica* (Nim)
- *Tamarindus indica* (Tentul)

(IV) Plantation Along the Roads (Avenue Plantation)

- *Alstonia scholaris* (Chatim)
- *Mimusops elangi* (Bokul)
- *Polyalthia longifolia* (Debdaru)

Figure 10.1: Greenbelt Development



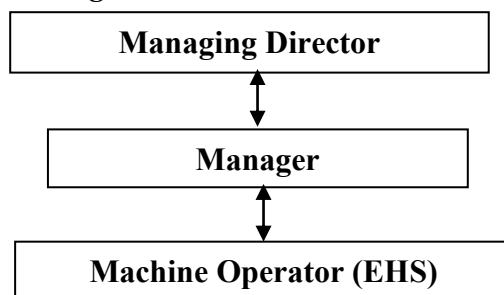
Emergency Preparedness (Disaster Management Plan)

The management team and operators will be the primary focus of regular, comprehensive awareness efforts. Unfortunately, a fire is the most likely emergency situation in such a plant. At all key areas, various kinds of fire extinguishers will be installed in accordance with the statutory authority's suggestion. In order to guarantee that disaster situations are handled appropriately, Eco Vision India will conduct designated mock drills with various scenarios to assess the efficacy and staff members' awareness of the Disaster Management Plan.

10.3 Environment Management Policy

The Company will maintain a well-defined policy to keep the Environment clean and green. The flow is given in Figure 10.1.

Figure 10.2: Organization Chart on Environment Information



10.4 Environment Management Cell

Company is responsible for implementation of all the mitigation and management measures suggested in Environmental Monitoring Program and responsible for monitoring of the plant environment related requirements which include:

10.4.1 Interaction with the state pollution control board

Regular touches with WBPCB and sends them environmental monitoring reports regularly in the prescribed format, as per the prevailing practice.

10.4.2 Proved Training

Responsible for the implementation of the EMP, needs to be trained on the effective implementation of the environmental issues. In-plant, training facilities are developed for environmental control. Specialized courses at various Research / Educational institutes are organized. The special training will be given to employees to cover the following fields:

- Awareness of pollution control and environmental protection to all.
- Operation and maintenance of specialized pollution control equipment.
- Organize field monitoring, maintenance and calibration of pollution monitoring instruments.
- Laboratory testing of pollutants.
- Repair of pollution monitoring instruments.
- Occupational health/safety.
- Disaster management.
- Environmental management.
- Afforestation / plantation and post care of plants.
- Knowledge of norms, regulations and procedures.
- Risk assessment and Disaster Management

10.4.3 Other Responsibilities:

WBPCB registered agency is retained to generate the environment quality data in respect of air, water, noise, soil and meteorology and prepare the Environmental Report.

- Timely renewal of Consents & Authorization is taken care of.
- Submitting environmental monitoring report to WBPCB. The cell is also taken mitigative or corrective measures as required or suggested by the Board.
- Conduct and submit annual Environmental Statement to WBPCB.

10.6 Greenhouse gas emissions reduction

The recommendations for reducing green house gas emission are given below:

- The proposed project has to be optimized in terms of energy consumption and utilization.
- The plant buildings shall be designed with 'Green Buildings' concept. Guidelines issued by the Bureau of Energy Efficiency and Energy Conservation Bureau Code 2007 shall be followed. LED lighting system, energy efficient refrigerators, CFC and HCFC free refrigerants are some recommended energy saving devices that shall be considered in this project.
- Energy efficient building materials shall be considered for construction of structures.

10.7 Budget for EMP

Table 10.3: Cost for EMP

SL No	ITEM DESCRIPTION	For Proposed	
		CAPITAL INVESTMENT (Rs. in Lakhs)	RECURRING COST PER YEAR (Rs. in Lakhs)
1	APC System	3.0	0.25
2	Water sanitation	1.0	0.25
3	Green Belt Development	0.5	0.25
4	Rain Water Harvesting	1.0	0.25
5	Miscellaneous safety including fire fighting purpose and others	1.0	0.25
6	Environmental monitoring and Awareness campaign	0.5	0.25
	Total	7.0	1.5

CHAPTER 11

SUMMARY & CONCLUSION

11. Chapter 11 Summary and Conclusion

11.1 Overall Justification For Implementation Of The Project

Eco Vision India have proposed for setting up manufacturing unit of Synthetic Resin at Plot No – 27, Khatian No – 586 (LR), JL No – 96, Village-Haldibari, P.O. Dhankoil, P.S. Kaliyaganj, Dist. Uttar Dinajpur, West Bengal - 733129.

Therefore, realizing the demand of Resin the management has taken decision for production of Urea Formaldehyde Resin – 2304 TPA (UF Resin), Melamine Formaldehyde Resin – 2304 TPA (MF Resin), Melamine Urea Formaldehyde Resin – 2304 TPA (MUF Resin) and Phenol Formaldehyde Resin – 864 TPA (PF Resin) based on 288 working days. Three (3) resin Kettles will be introduced. The manufacturing unit will be located on 0.2 Acre (794.48 Sqm).

Salient Features of the Project:

1	Name of Project	Eco Vision India is going to set up manufacturing unit of Synthetic Resin for production of Urea Formaldehyde Resin – 2304 TPA (UF Resin), Melamine Formaldehyde Resin – 2304 TPA (MF Resin), Melamine Urea Formaldehyde Resin – 2304 TPA (MUF Resin) and Phenol Formaldehyde Resin – 864 TPA (PF Resin) based on 288 working days at Plot No – 27, Khatian No – 586 (LR), JL No – 96, Village-Haldibari, P.O. Dhankoil, P.S. Kaliyaganj, Dist. Uttar Dinajpur, West Bengal - 733129.
2	Details of Applicant	Shri Subhadip Das
3	Year of Commissioning	2026
4	Capital Investment	Rs. 72.40 Lakhs for the proposed Unit
5	Capital Investment & Recurring Cost for EMP	7 Lakhs will be the capital investment on EMP with a recurring cost of Rs.1.5 Lakh Per annum.
6	Employment Opportunity	Proposed 10
7	Green Belt Development	279.34 sqm approx. 35.16% of total Area has been kept for Green Belt Development.
8	Water Pollution Control	Industrial waste water (0.54 KLD) will be generated and will be treated in ETP of 5 KLD Capacity. Sanitary waste water (approx. 0.2 KLD) will be treated in septic tank followed by soak pit.

9	Air Pollution Control	Boiler will be attached with a Dust Collector and an ID fan to control the particulate emission evolved during burning of fuel in the baby boiler
10	Solid Waste Management	About 50 kg/month of Discarded Containers/ Barrels will be generated from the plant. This will be Decontamination and reuse or sell to scrap vendors. Apart from this ETP Sludge and Sewage Sludge will be generated from this plant approx.15 kg/month each. ETP Sludge will send to Govt. authorized agency and Sewage Sludge will mixed with green waste and composted to create a nutrient-rich product for landscaping, horticulture, and gardening or land filling. Domestic biodegradable waste will be disposed through municipal collectors. Honest effort will be made to dispose used batteries, plastic carry bags, paper wastes etc through appropriate authority.
11	CER Expenditure	Rs. 1,44,800.00/- will be spent on CER Activities over a period of 5 Years

Employment Potential

This is a medium sized MSME project where total manpower requirement is estimated at 10. However, total skilled, semiskilled and unskilled labour required for construction is estimated at 50 (peak) and 20 (average). Definitely some of the workers will be from local area.

Other Benefits

Besides above, indirect benefits is expected to be area by way of possible engagement of local transport contractors.

CHAPTER 12 DISCLOSURE OF CONSULTANTS

12. Chapter 12: Disclosure of Consultants

12.1 Undertaking

Envirocheck hereby gives the undertaking that the prescribed TORs have been complied with and that the data submitted in this report is factually correct.

12.2 Detail of Consultant

The EIA/EMP Report is based on the project report given by Eco Vision India in preparation of this report some experts and advisor were involved. All the instruction of TOR is compiled as far as possible relevant to our project characteristics. The name of Consultants/Experts is given below:

- Dr. Ajoy Paul
- Mr. Biswajit Rakshit
- Mr. Swapan Chakrabarti
- Mrs. Sutanwa Chatterjee
- Dr. Paulomi Das
- Mr. Shahbaz Malik
- Mr. Jyotirmoy Dey
- Mr. S Devi Prasad
- Mr. Swapan Kumar Bandopadhyay
- Mrs. Indrani Bhattacharyya
- Mrs. Arpita Ray

For monitoring report, we have taken the services of Environmental laboratory approved by W.B.P.C.B. The monitoring and analysis of Air, Water, Soil and Noise is done by M/s Envirocheck, Kolkata.

For Envirocheck

Paulomi Das

(Dr. Paulomi Das)

(EIA Coordinator)

List of Experts along with field:

EIA Coordinator:

Sl. No.	Name	Signature
1.	Dr. Paulomi Das	Paulomi Das

Functional Area Expert:

Sl. No.	Name	Functional Area Covered	Signature
1.	Ajoy Paul	WP	Ajoy Paul
2.	Biswajit Rakshit	SHW, AP, WP	Biswajit Rakshit
3.	Paulomi Das	EB, AP	Paulomi Das
4.	Swapan Chakrabarti	NV, AP, AQ, RH	Swapan Chakrabarti
5.	Shabaz Malik	GEO, HG	Shabaz Malik
6.	S Devi Prasad	LU	S Devi Prasad
7.	Swapan Kumar Bandopadhyay	RH	Swapan Kumar Bandopadhyay
8.	Jyotirmoy Dey	SC	Jyotirmoy Dey
9.	Sutanwa Chatterjee	SE	Sutanwa Chatterjee
10.	Indrani Bhattacharyya	AP, WP	Indrani Bhattacharyya
11.	Arpita Ray	AP, WP	Arpita Ray

Functional Area Associate:

Sl. No.	Name	Functional Area Covered	Signature
1.	Ayesa Ali	AP, NV	Ayesa Ali

Apart from the above functionaries, who took part in formulation of the EIA Report in their respective arenas, Envirocheck induced the following Team Members (as FAE) in their respective fields as well as the entire EIA Report for understanding the assignment and individual responsibilities. The said Team Members are:-

1. Saswati Chatterjee	3. Saswata Burman Roy
2. Sharbani Chatterjee	4. Priyanka Mukherjee

Apart from them, additional members who also helped in the completion of the EIA report are:

1. Payel Saha	2. Dona Samanta

List of Annexures

Annexure 1: ToR

Annexure 2: Land Documents

Annexure 3: Meteorological Report

Annexure 4: Ambient Air Quality Monitoring Report

Annexure 5: Noise Level monitoring Report

Annexure 6: Ground water monitoring Report

Annexure 7: Surface water monitoring Report

Annexure 8: Soil Quality Report

Annexure 9: Traffic Survey Report

Annexure 10: All certificates towards Accreditation/ Recognition

Annexure – 1



File No: EN/T-II-1/194/2025

Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment
Authority(SEIAA), WEST BENGAL)



Dated 11/09/2025



To,

SUBHADIP DAS

Plot No - 27, Khatiyon No - 586 (LR), JL No - 96, Village - Haldibari, P.O. Dhankoil, P.S. Kaliyaganj,
Haldibari, DINAJPUR UTTAR, WEST BENGAL, 733129
ecovisionindia2025@gmail.com

Subject: Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding.

Sir/Madam,

This is in reference to your application for Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding in respect of project M/s. ECO VISION INDIA proposes for Setting up manufacturing unit of Synthetic Resin viz. Urea Formaldehyde Resin - 2304 TPA (UF Resin), Melamine Formaldehyde Resin - 2304 TPA (MF Resin), Melamine Urea Formaldehyde Resin - 2304 TPA (MUF Resin) and Phenol Formaldehyde Resin - 864 TPA (PF Resin) submitted to Ministry vide proposal number SIA/WB/IND3/547381/2025 dated 09/08/2025.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO25B0202WB5218018N
(ii) File No.	EN/T-II-1/194/2025
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	5(f) Synthetic organic chemicals industry M/s. ECO VISION INDIA proposes for Setting up manufacturing unit of Synthetic Resin viz. Urea Formaldehyde Resin - 2304 TPA (UF Resin), Melamine Formaldehyde Resin - 2304 TPA (MF Resin), Melamine Urea Formaldehyde Resin - 2304 TPA (MUF Resin) and Phenol Formaldehyde Resin - 864 TPA (PF Resin)
(vii) Name of Project	
(viii) Name of Company/Organization	SUBHADIP DAS
(ix) Location of Project (District, State)	DINAJPUR UTTAR, WEST BENGAL
(x) Issuing Authority	SEIAA
(xi) Applicability of General Conditions	no
(xii) Applicability of Specific Conditions	no

3. In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were submitted to the Ministry for an appraisal by the State Environment Impact Assessment Authority (SEIAA) in the Ministry under the provision of EIA notification 2006 and its subsequent amendments.

4. The above-mentioned proposal has been considered by State Environment Impact Assessment Authority (SEIAA) in the meeting held on 01/09/2025. The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B, Part C EIA, EMP)] are available on PARIVESH portal which can be accessed by scanning the QR Code above.

5. The brief and salient features of the project are a follows:

The brief and salient features of the project are as follows :

This is a proposal for for setting up of manufacturing unit of Synthetic Resin viz. Urea Formaldehyde Resin - 2304 TPA (UF Resin), Melamine Formaldehyde Resin - 2304 TPA (MF Resin), Melamine Urea Formaldehyde Resin - 2304 TPA (MUF Resin) and Phenol Formaldehyde Resin - 864 TPA (PF Resin) at Plot No – 27, Khatian No – 586 (LR), JL No – 96, Mouza-Haldibari, Kaliyaganj, Dist - Uttar Dinajpur, West Bengal, PIN – 733129 by M/s. Eco Vision India (Subhadip Das, Proprietor). It is based on 288 working days and one shifts per day. Three (3) resin Kettles will be introduced. Land area is 794.48 Sqm.

According to the DSS of the PARIVESH portal, the project area does not touch any CRZ, ESZ & PA WII. The nearest RFA – RAIGANJ is at a distance of 2.49 km.

Project Details	Setting up manufacturing unit of Synthetic Resin viz. Urea Formaldehyde Resin - 2304 TPA (UF Resin), Melamine Formaldehyde Resin - 2304 TPA (MF Resin), Melamine Urea Formaldehyde Resin - 2304 TPA (MUF Resin) and Phenol Formaldehyde Resin - 864 TPA (PF Resin).			
Location of the Project	Plot No – 27, Khatiyon No – 586 (LR), JL No – 96, Mouza-Haldibari, Kaliyaganj, Uttar Dinajpur, West Bengal – 733129.			
Latitude & Longitude	Latitude 25°36'24.36"N 25°36'24.70"N 25°36'24.77"N 25°36'24.44"N		Longitude 88°20'34.25"E 88°20'34.16"E 88°20'31.36"E 88°20'31.35"E	
Total Plant Area	0.2 Acre (794.48 sqm)			
Plant area breakup	Sl. No.	Area Chart	Area (sq.m.)	Area (%)
	1.	Guard Room	6.88	0.87
	2.	Office Room	8.04	1.13
	3.	Electrical Meter Room & Store Room	20.81	2.62
	4.	Raw Material Stock Area (Proposed G.C.I. Roof Shade)	25.09	3.16
	5.	Resin Stock Area (Proposed G.C.I. Roof Shade)	25.09	3.16
	6.	Resin Kattle Area (Proposed G.C.I. Roof Shade)	84.24	10.60
	7.	Silent DG (Proposed G.C.I. Roof Shade)	20.18	2.54
	8.	Boiler Section (Proposed G.C.I. Roof Shade)	20.18	2.54
	9.	Cooling Tower (Proposed G.C.I. Roof Shade)	18.42	2.32
	10.	Fire Wood Stock Area (Proposed G.C.I. Roof Shade)	18.42	2.32
	11.	Effluent Treatment Plant	11.22	1.41

	(Proposed G.C.I. Roof Shade)		
	12. Latrine & Urinal	6.0	0.76
	13. Green Area	279.34	35.16
	14. Road	225.79	28.41
	15. Vacant Land	23.88	3.0
	Total-	794.48	100%
Green belt area & No. of Plantation proposed	35.16 % area of the total plant area i.e. 279.34 sqm. No. of Plantation proposed: 70.		
Production Capacity	Urea Formaldehyde Resin - 2304 TPA (UF Resin), Melamine Formaldehyde Resin - 2304 TPA (MF Resin), Melamine Urea Formaldehyde Resin - 2304 TPA (MUF Resin) and Phenol Formaldehyde Resin - 864 TPA (PF Resin) Different products that will be produced from the proposed plant:		
	Sl. No.	Name of the product	Production Capacity (TPA)
	1	Urea Formaldehyde Resin	2304
	2	Melamine Formaldehyde Resin	2304
	3	Melamine Urea Formaldehyde Resin	2304
	4	Phenol Formaldehyde Resin	864
	Total	7776	
Machinery and Plant Equipment	Sl. No	Plant Machinery Details	
		Machinery	Specification
	1.	Boiler (Steam)	Boiler with all accessories and stack of 0.2 m diameter and 20-meter height; Capacity 1TPH
	2.	Resin Kettle	Capacity 8 Ton
	3.	Resin Kettle	Capacity 4 Ton
	4.	Resin Kettle	Capacity 1.5 Ton
	5.	Silent DG Set	Capacity 80KVA with stack of height 5 m from GL
	6.	Cooling Tower	85°C to 45°C in 1 hour
	7.	ETP	200 Liter/Day
Air Pollution Control Device	· In the process there will be no chance of generation of air pollution as all the reactors will be kept closed during the reaction process. During addition of chemicals, there will be a chance of escaping of fumes as generated in the reaction. To arrest these fumes, suitable suction hood will be placed over the reactor. This hood will be attached with a network of ducting & connected to Packed Bed Scrubber then with the ID fan. · Baby boiler will be attached with a bag filter and an ID fan to control the particulate emission evolved during burning of fuel in the baby boiler.		
Manpower	10 persons		
Total water requirement	10 KLD		
Fresh water requirement & source	10 KLD (Ground Water)		
Waste water discharge	The only source of water pollution in the plant is combined domestic sewage. For this, Sanitary waste water (approx. 0.2 KLD) will be treated in septic tank followed by soak pit. Industrial Waste Water of 0.54 KLD will be treated in ETP of 5 KLD Capacity.		
Waste water recycled	0.4 KLD		

Source of water requirement	Ground Water & Rain Water Harvesting
Solid waste disposal	As regards solid waste, Discarded Containers/ Barrels will be around 50 Kg/Month and will be decontamination and reuse or sell to scrap vendors. ETP Sludge – 15 Kg/Month – Collection, Storage & Disposal to Govt. authorized agency. Sewage Sludge – 15 Kg/Month – To be given to Govt. approved incinerators
Power Requirement (MW) & Source	75 KVA, WBSEDCL (West Bengal State Electricity Distribution Company Limited)
Power Backup	During emergency purpose D. G. Set of 80 KVA will be utilized.
Total Cost of the Project (Rs.)	Rs. 72.40 Lakhs

6. The SEIAA, in its meeting held on 01/09/2025, based on information & clarifications provided by the project proponent and after detailed deliberations recommended the proposal for grant of Terms of Reference under the provision of EIA Notification, 2006 and as amended thereof subject to stipulation of specific and general conditions as detailed in Annexure (1).
7. The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the State Environment Impact Assessment Authority(SEIAA) hereby decided to grant Terms of Reference for instant proposal of M/s. SUBHADIP DAS under the provisions of EIA Notification, 2006 and as amended thereof.
8. The Ministry reserves the right to stipulate additional conditions, if found necessary.
9. The Terms of Reference to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.
10. **The ToR is valid for a period of 4 years from the date of issue. EIA/EMP to be submitted before the expiry of the ToR for consideration of EC applications.**
11. This issues with the approval of the Competent Authority.

Annexure 1

Specific Terms of Reference for (Synthetic Organic Chemicals Industry)

1. A. Standard Terms Of Reference

S. No	Terms of Reference
1.1	1) Executive Summary – Annexure-A 2) Introduction i. Details of the EIA Consultant including NABET accreditation. ii. Information about the project proponent. iii. Importance and benefits of the project. 3) Project Description i. Cost of project and time of completion. ii. Products with capacities for the proposed project. iii. If expansion project, details of existing products with capacities and whether adequate land is available for expansion, reference of earlier EC if any. iv. List of raw materials required and their source along with mode of transportation. v. Other chemicals and materials required with quantities and storage capacities.

S. No	Terms of Reference
	vi. Details of Emission, effluents, hazardous waste generation and their management. vii. Requirement of water, power, with source of supply, status of approval, water balance diagram, man-power requirement (regular and contract). viii. Process description along with major equipment and machineries, process flow sheet (quantative) from raw material to products to be provided. ix. Hazard identification and details of proposed safety systems. x. Expansion/modernization proposals: a) Copy of all the Environmental Clearance(s) including Amendments thereto obtained for the project from MOEF/SEIAA shall be attached as an Annexure. A certified copy of the latest Monitoring Report of the Regional Office of the Ministry of Environment and Forests as per circular dated 30th May, 2012 on the status of compliance of conditions stipulated in all the existing environmental clearances including Amendments shall be provided. In the project from SPCB shall be attached with the EIA-EMP report. b) In case the existing project has not obtained environmental clearance, reasons for not taking EC under the provisions of the EIA Notification 1994 and/or EIA Notification 2006 shall be provided. Copies of Consent to Establish/No Objection Certificate and Consent to Operate (in case of units operating prior to EIA Notification 2006, CTE and CTO of FY 2005-2006) obtained from the SPCB shall be submitted. Further, compliance report to the conditions of consents from the SPCB shall be submitted. 4) Site Details i. Location of the project site covering village, Taluka/Tehsil, District and State, Justification for selecting the site, whether other sites were considered. ii. A toposheet of the study area of radius of 10km and site location on 1:50,000/1:25,000 scale on an A3/A2 sheet. (including all eco-sensitive areas and environmentally sensitive places). iii. Details w.r.t. option analysis for selection of site. iv. Co-ordinates (lat-long) of all four corners of the site. v. Google map-Earth downloaded of the project site. vi. Layout maps indicating existing unit as well as proposed unit indicating storage area, plant area, greenbelt area, utilities etc. If located within an Industrial area/Estate/Complex, layout of Industrial Area indicating location of unit within the Industrial area/Estate. vii. Photographs of the proposed and existing (if applicable) plant site. If existing, show photographs of plantation/greenbelt, in particular. viii. Land use break-up of total land of the project site (identified and acquired), government/private - agricultural, forest, wasteland, water bodies, settlements, etc. shall be included. (not required for industrial area). ix. A list of major industries with name and type within study area (10km radius) shall be incorporated. Land use details of the study area. x. Geological features and Geo-hydrological status of the study area shall be included. xi. Details of Drainage of the project upto 5km radius of study area. If the site is within 1 km radius of any major river, peak and lean season river discharge as well as flood occurrence frequency based on peak rainfall data of the past 30 years. Details of Flood Level of the project site and maximum Flood Level of the river shall also be provided. (mega green field projects). xii. Status of acquisition of land. If acquisition is not complete, stage of the acquisition process and expected time of complete possession of the land. xiii. R&R details in respect of land in line with state Government policy. 5) Forest and wildlife related issues (if applicable): i. Permission and approval for the use of forest land (forestry clearance), if any, and recommendations of the State Forest Department. (if applicable). ii. Land use map based on High resolution satellite imagery (GPS) of the proposed site delineating the forestland (in case of projects involving forest land more than 40 ha). iii. Status of Application submitted for obtaining the stage I forestry clearance along with latest status shall be submitted.

S. No	Terms of Reference
	iv. The projects to be located within 10 km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife Warden-thereon. v. Wildlife Conservation Plan duly authenticated by the Chief Wildlife Warden of the State Government for conservation of Schedule I fauna, if any exists in the study area. vi. Copy of application submitted for clearance under the Wildlife (Protection) Act, 1972, to the Standing Committee of the National Board for Wildlife. 6) Environmental Status i. Determination of atmospheric inversion level at the project site and site-specific micrometeorological data using temperature, relative humidity, hourly wind speed and direction and rainfall. ii. AAQ data (except monsoon) at 8 locations for PM10, PM2.5, SO2, NOX, CO and other parameters relevant to the project shall be collected. The monitoring stations shall be based CPCB guidelines and take into account the pre-dominant wind direction, population zone and sensitive receptors including reserved forests. iii. Raw data of all AAQ measurement for 12 weeks of all stations as per frequency given in the NAQPM Notification of Nov. 2009 along with - min., max., average and 98% values for each of the AAQ parameters from data of all AAQ stations should be provided as an annexure to the EIA Report. iv. Surface water quality of nearby River (100m upstream and downstream of discharge point) and other surface drains at eight locations as per CPCB/MoEF&CC guidelines. v. Whether the site falls near to polluted stretch of river identified by the CPCB/MoEF&CC, if yes give details. vi. Ground water monitoring at minimum at 8 locations shall be included. vii. Noise levels monitoring at 8 locations within the study area. viii. Soil Characteristic as per CPCB guidelines. ix. Traffic study of the area, type of vehicles, frequency of vehicles for transportation of materials, additional traffic due to proposed project, parking arrangement etc. x. Detailed description of flora and fauna (terrestrial and aquatic) existing in the study area shall be given with special reference to rare, endemic and endangered species. If Schedule-I fauna are found within the study area, a Wildlife Conservation Plan shall be prepared and furnished. xi. Socio-economic status of the study area. 7) Impact and Environment Management Plan i. Assessment of ground level concentration of pollutants from the stack emission based on site-specific meteorological features. In case the project is located on a hilly terrain, the AQIP Modeling shall be done using inputs of the specific terrain characteristics for determining the potential impacts of the project on the AAQ. Cumulative impact of all sources of emissions (including transportation) on the AAQ of the area shall be assessed. Details of the model used and the input data used for modeling shall also be provided. The air quality contours shall be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. ii. Water Quality modeling - in case of discharge in water body. iii. Impact of the transport of the raw materials and end products on the surrounding environment shall be assessed and provided. In this regard, options for transport of raw materials and finished products and wastes (large quantities) by rail or rail-cum road transport or conveyor cum- rail transport shall be examined. iv. A note on treatment of wastewater from different plant operations, extent recycled and reused for different purposes shall be included. Complete scheme of effluent treatment. Characteristics of untreated and treated effluent to meet the prescribed standards of discharge under E(P) Rules. v. Details of stack emission and action plan for control of emissions to meet standards. vi. Measures for fugitive emission control. vii. Details of hazardous waste generation and their storage, utilization and management. Copies of

S. No	Terms of Reference
	MOU regarding utilization of solid and hazardous waste in cement plant shall also be included. EMP shall include the concept of waste-minimization, recycle/reuse/recover techniques, Energy conservation, and natural resource conservation. viii. Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 2009. A detailed plan of action shall be provided. ix. Action plan for the green belt development plan in 33 % area i.e. land with not less than 1,500 trees per ha. Giving details of species, width of plantation, planning schedule etc. shall be included. The green belt shall be around the project boundary and a scheme for greening of the roads used for the project shall also be incorporated. x. Action plan for rainwater harvesting measures at plant site shall be submitted to harvest rainwater from the roof tops and storm water drains and also to use for the various activities at the project site to conserve fresh water and reduce the water requirement from other sources. xi. Total capital cost and recurring cost/annum for environmental pollution control measures shall be included. xii. Action plan for post-project environmental monitoring shall be submitted. xiii. Onsite and Offsite Disaster (natural and Man-made) Preparedness and Emergency Management Plan including Risk Assessment and damage control. Disaster management plan should be linked with District Disaster Management Plan. 8) Occupational health i. Plan and fund allocation to ensure the occupational health & safety of all contract and casual workers ii. Details of exposure specific health status evaluation of worker. If the workers' health is being evaluated by pre designed format, chest x rays, Audiometry, Spirometry, Vision testing (Far & Near vision, colour vision and any other ocular defect) ECG, during pre-placement and periodical examinations give the details of the same. Details regarding last month analyzed data of above mentioned parameters as per age, sex, duration of exposure and department wise. iii. Details of existing Occupational & Safety Hazards. What are the exposure levels of hazards and whether they are within Permissible Exposure level (PEL). If these are not within PEL, what measures the company has adopted to keep them within PEL so that health of the workers can be preserved. iv. Annual report of health status of workers with special reference to Occupational Health and Safety. 9) Corporate Environment Policy i. Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report. ii. Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA. iii. What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions? Details of this system may be given. iv. Does the company have system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism shall be detailed in the EIA report. 10) Details regarding infrastructure facilities such as sanitation, fuel, restroom etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase. 11) Environment Management Plan (EMP) i. Adequate funds shall be earmarked towards Environment Management Plan based on Public Hearing issues and item-wise details along with time bound action plan shall be included. Socio-economic development activities need to be elaborated upon. The office Memorandum issued by the MoEF&CC vide F.No.22-65/2017-IA, III dated 30/09/2020 should be strictly followed.

S. No	Terms of Reference
	12) Any litigation pending against the project and/or any direction/order passed by any Court of Law against the project, if so, details thereof shall also be included. Has the unit received any notice under the Section 5 of Environment (Protection) Act, 1986 or relevant Sections of Air and Water Acts? If so, details thereof and compliance/ATR to the notice(s) and present status of the case. 13) A tabular chart with index for point wise compliance of above TOR.

2. B. Specific Terms Of Reference For Eia Studies For Synthetic Organic Chemicals Industry (Dyes & Dye Intermediates; Bulk Drugs And Intermediates Excluding Drug Formulations; Synthetic Rubbers; Basic Organic Chemicals, Other Synthetic Organic Chemicals And Chemical Intermediates)

S. No	Terms of Reference
2.1	- Details on solvents to be used, measures for solvent recovery and for emissions control. - Details of process emissions from the proposed unit and its arrangement to control. - Ambient air quality data should include VOC, other process-specific pollutants* like NH₃*, chlorine*, HCl*, HBr*, H₂S*, HF*, etc. (*-as applicable) - Work zone monitoring arrangements for hazardous chemicals. - Detailed effluent treatment scheme including segregation of effluent streams for units adopting 'Zero' liquid discharge. - Action plan for odour control to be submitted. - A copy of the Memorandum of Understanding signed with cement manufacturers indicating clearly that they co-process organic solid/hazardous waste generated. - Authorization/Membership for the disposal of liquid effluent in CETP and solid/hazardous waste in TSDF, if any. - Action plan for utilization of MEE/dryers salts. - Material Safety Data Sheet for all the Chemicals are being used/will be used. - Authorization/Membership for the disposal of solid/hazardous waste in TSDF. - Details of incinerator if to be installed. - Risk assessment for storage and handling of hazardous chemicals/solvents. Action plan for handling & safety system to be incorporated. - Arrangements for ensuring health and safety of workers engaged in handling of toxic materials.

3. C. Additional Conditions Imposed By Seac :

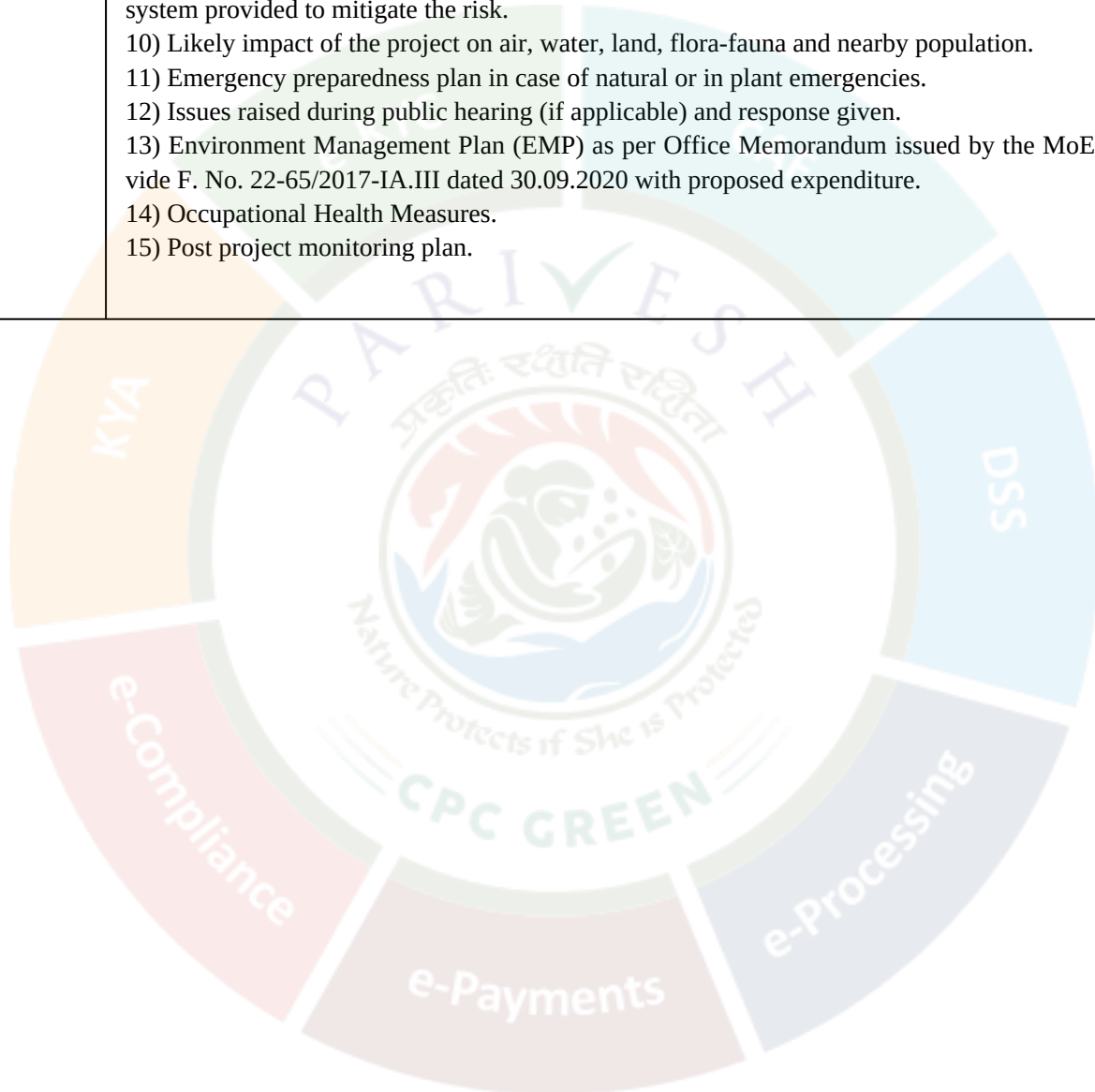
S. No	Terms of Reference
3.1	Mandatory Documents - MSDS of all chemicals should be provided along with EIA report. - Wood/plywood rejects to be specified as boiler fuel instead of firewood. - Revised lay out maps indicating proposed unit with 100 percent services viz, storage details of flammable, toxic and corrosive chemicals, parking area, entry/exit, storm water drain, storage of hazardous waste, location of silent DG, ETP, cooling tower, occupational health centre etc. - Process description along with major equipment and machinery, - Land use break up. - Membership of TSDF, CHWIF. - Present and future traffic and transport facilities for the area and analysis with detailed measures to show that LOS of the existing road will not be affected due to this project. Water and waste water - Ground water level monitoring should be carried out. Water level data should be represented with

S. No	Terms of Reference										
	respected to ground level and mean sea level. Locations should be specified along with depth of wells and other details, water level elevation contour map with flow directions should be provided and groundwater chemical analysis reports should be submitted. 9) Monitoring of the water quality of the nearby water body. 10) A DMW plant with backwash and regeneration facilities should be provided. 11) Design details of ETP and detailed action plan to achieve ZLD. 12) Details of emission, effluent, hazardous waste generated and their management details. Emission 13) Action plan to control and monitor fugitive emission from all sources. Greenbelt 14) Detailed plantation plan with local spp with large foliage and suitable for pollution abatement and their maintenance plan. 15) Distance from nearest habitation and the impact of project activities on the local inhabitants in respect of ground water, noise level and soil characteristics. The West Bengal Pollution Control Board shall arrange public hearing as per EIA Notification, 2006 on submission of draft EIA/EMP prepared by the Project Proponent as per the above mentioned ToRs. All the issues mentioned in the 'Public Hearing Report' and public consultation must also be addressed and incorporated in the final EIA / EMP report. The project proponent is requested to pursue the matter with the WBPCB for organizing the public hearing/consultation on submission of the draft EIA/EMP report as per the provision of EIA notification 2006 & its amendments. The project proponent is requested to submit the final EIA/EMP prepared as per the above mentioned ToRs and incorporating all the issues raised during Public Hearing / Public Consultation to the SEAC for further consideration of the proposal for environmental clearance. The ToR is valid for a period of 4 (four) years from the date of issue. The contact details of the proponent and the name of the consultant are given below – <table border="0"> <tr> <td>Name of the Contact person with Designation</td><td>Shri Subhadip Das, Proprietor</td></tr> <tr> <td>Address</td><td>M/s. Eco Vision India, Plot No - 27, Khatyan No - 586 (LR), JL No - 96, Village - Haldibari, P.O. Dhankoil, P.S. Kaliyaganj, Uttar Dinajpur – 733129.</td></tr> <tr> <td>Email</td><td>subhadip09.tintu@gmail.com / ecovisionindia2025@gmail.com</td></tr> <tr> <td>Telephone Number / Mobile No.</td><td>7908172924 / 9002158264</td></tr> <tr> <td>Name of the Environmental Consultant</td><td>M/s. Envirocheck.</td></tr> </table>	Name of the Contact person with Designation	Shri Subhadip Das, Proprietor	Address	M/s. Eco Vision India, Plot No - 27, Khatyan No - 586 (LR), JL No - 96, Village - Haldibari, P.O. Dhankoil, P.S. Kaliyaganj, Uttar Dinajpur – 733129.	Email	subhadip09.tintu@gmail.com / ecovisionindia2025@gmail.com	Telephone Number / Mobile No.	7908172924 / 9002158264	Name of the Environmental Consultant	M/s. Envirocheck.
Name of the Contact person with Designation	Shri Subhadip Das, Proprietor										
Address	M/s. Eco Vision India, Plot No - 27, Khatyan No - 586 (LR), JL No - 96, Village - Haldibari, P.O. Dhankoil, P.S. Kaliyaganj, Uttar Dinajpur – 733129.										
Email	subhadip09.tintu@gmail.com / ecovisionindia2025@gmail.com										
Telephone Number / Mobile No.	7908172924 / 9002158264										
Name of the Environmental Consultant	M/s. Envirocheck.										

4. Annexure - A

S. No	Terms of Reference
4.1	Annexure - A Executive Summary The Executive summary of the EIA/EMP report in about 8-10 pages should be prepared incorporating the information on following points: 1) Project name and location (Village, District, State, Industrial Estate (if applicable). 2) Products and capacities. If expansion proposal, then existing products with capacities and reference to earlier EC. 3) Requirement of land, raw material, water, power, fuel, with source of supply (Quantitative). 4) Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.

S. No	Terms of Reference
	5) Measures for mitigating the impact on the environment and mode of discharge or disposal. 6) Capital cost of the project, estimated time of completion. 7) Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./private land, status of its acquisition, nearby (in 2-3 km.) water body, population, within 10km. other industries, forest, eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary). 8) Baseline environmental data - air quality, surface and ground water quality, soil characteristics, flora and fauna, socio-economic condition of the nearby population. 9) Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk. 10) Likely impact of the project on air, water, land, flora-fauna and nearby population. 11) Emergency preparedness plan in case of natural or in plant emergencies. 12) Issues raised during public hearing (if applicable) and response given. 13) Environment Management Plan (EMP) as per Office Memorandum issued by the MoEF & CC vide F. No. 22-65/2017-IA.III dated 30.09.2020 with proposed expenditure. 14) Occupational Health Measures. 15) Post project monitoring plan.



Signature Not Verified

Digitally Signed by: SMT SUMANA
BHATTACHARYYA IFS
Member Secretary, SEIAA

Date: 11/09/2025

Annexure – 2

Government of West Bengal

Office of the Sub-Divisional Land & Land Reforms Officer

বায়গঞ্জ উত্তর দিনাজপুর

Certificate of Conversion



Memo : SOLLR0/RAI/CON/699/2024

Date : 16/12/2024

To

নাম: শুভদীপ দাস

পিতা/স্বামীর নাম: বীরেন্দ্র নাথ দাস

ঠিকানা: নিজ

P.S.: কালিয়াগঞ্জ

District: উত্তর দিনাজপুর

Sub: Order allowing Change, conversion or alteration of mode of use of land.

Ref: His/Her application dated: 24/08/2024

In terms of the provision laid down in sec 4C of the West Bengal Land Reforms Act, 1955 as amended up to date read with the provision of Rule 5A of West Bengal Land Reforms Rules, 1965 permission is hereby accorded to him/her for change, conversion or alteration of mode of use of land from one class to another as noted in the schedule-I below with effect from 16/12/2024, subject to the terms and condition as noted in schedule-II.

Schedule-I

(Schedule of Land for which conversion is allowed vide case no. CN/2024/1808/366)

Mouza With JL No. & PS	Khatian No.(LR)	LR Plot No. Noted in the Deed	New Plot No. (after creation of Bata if any)	Share	Area (in Acres)	Classification as per ROR	Classification for which permission accorded
হলদিবাড়ী, 096, কালিয়াগঞ্জ	586	27		1250	0.2000	ডাঙ্গা	মিল

Schedule – II

(Terms and conditions for conversion)

- This permission for conversion is without prejudice to any of the provisions of chapter IIB of West Bengal Land Reforms Act, 1955 and any of the provisions of sub section(3) of section 6 of the West Bengal Estate Acquisition Act 1953.(West Bengal Act I of 1954)
- This permission for conversion is also without prejudice to any provision of the Urban Land (Ceiling and Regulation) Act, 1976 (Act 33 of 1976) & the Town & Country (Planning & Development) Act, 1979, if these are applicable to the land involved.

- c) This permission for conversion is also without prejudice to any provision of the East Kolkata Wetlands (Conservation and Management) Act, 2006 (West Bengal ACT VII of 2006) where the land is situated within the areas of East Kolkata Wetlands as defined in the East Kolkata Wetlands (Conservation and Management) Act, 2006 (West Bengal ACT VII of 2006).

- d) Where the object of change or conversion is to use the land for a purpose for which approval or license from an appropriate authority is necessary, the order directing change, conversion or alteration is subject to obtaining such approval or permission or license from such authority as soon as the order granting change or conversion as sought for is made.

- e) Where the application relates to permission for change, Conversion or alteration of any land having water body, the order allowing change, conversion or alteration is subject to creation of compensatory water body of equal or larger size of such water body within a period of 90 days from the date of issue of the order granting change, conversion as sought for is made.

- f) This permission of conversion will stand revoked if the land is found already acquired under any proceedings of Land Acquisition Act or any other Act.

- g) This permission for conversion is subject to the approval of the Competent Authority under the West Bengal Trees (Protection and Conservation in Non-Forest Areas) Act, 2006 wherever applicable.

- h) This permission for conversion will stand revoked if there is any violation of the provision of prevailing laws enforcing prevention of environmental pollution affecting public health in general of the locality at any point of time.

- i) This permission of conversion will also stand revoked if the land is used for other than the purpose for which permission is given.

- j) The Land Revenue shall be determined as per sec. 23 of amended WBLR Act.

- k) This conversion certificate is issued in accordance with the notification bearing no. 4296-LR/1A-05/07 GE(M) dated 17.09.2009 of the Commissioner General, Land and Land Reforms Deptt and Addl Chief Secretary to the Govt of West Bengal, published on 24.09.2009 in the Kolkata Gazette, Extraordinary.

M Gu
16/12/24
Collector u/s 4C of the WBLR Act, 1955

Sub-Divisional Land & Land Reforms Officer, Raiganj
Sub-Divisional Land & Land Reforms Officer

Memo

No:

Dated: 16/12/2024

- (i) The BL&LRO, কালিয়াজঙ্গ for information and taking necessary action.
(ii) The RI, of the বোচাডাঙ্গা for information and taking necessary action.
(iii) Office copy of the certificate to be kept with the relevant case Record

Sub-Divisional Land & Land Reforms Officer

Annexure – 3

METEOROLOGICAL REPORT

ECO VISION INDIA

Location: Plot No.-27, Khatian No.- 586 (LR), L No – 96, Mouza-Haldibari, Uttar Dinajpur,
West Bengal – 733129

ENVIROCHECK

189, Rastraguru Avenue,

Kolkata - 700 028

PROJECT SITE: COMPANY GUEST HOUSE

STATION HEIGHT FROM THE GROUND: 10 MT.

STATION TYPE : FIXED

STATION CODE:M

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
01.03.2025 to 02.03.2025	10	2.23	45.0	25.8	65	0	392.5	3
	11	C	-	26.1	51	0	410.2	2
	12	1.34	67.5	28.9	51	0	555.5	3
	13	C	-	30.5	43	0	620.5	3
	14	3.12	67.5	31.8	41	0	580.8	3
	15	1.34	90.0	31.2	42	0	435.8	3
	16	1.34	135.0	28.8	51	0	278.6	4
	17	1.34	22.5	27.4	69	0	68.5	5
	18	C	-	25.5	64	0		
	19	2.68	67.5	23.1	64	0		
	20	C	-	21.8	68	0		
	21	C	-	21.3	68	0		
	22	1.12	67.5	21.1	78	0		
	23	1.12	90.0	20.9	79	0		
	0	1.34	45.0	20.5	83	0		
	1	1.34	360.0	20.1	83	0		
	2	1.34	67.5	20.1	83	0		
	3	2.23	90.0	19.9	85	0		
	4	1.34	112.5	19.7	85	0		
	5	2.23	45.0	19.0	86	0		
	6	2.68	45.0	20.1	79	0	45.8	3
	7	2.68	360.0	21.9	73	0	200.5	4
	8	1.34	22.5	22.0	70	0	310.5	3
	9	2.23	360.0	24.2	65	0	385.5	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
02.03.2025 to 03.03.2025	10	2.23	112.5	25.8	52	0.0	392.8	3
	11	C	-	28.9	45	0.0	410.5	3
	12	1.34	67.5	31.1	51	0.0	579.5	3
	13	C	-	31.7	51	0.0	657.6	3
	14	2.23	67.5	32.2	48	0.0	435.5	3
	15	1.34	112.5	30.1	51	0.0	345.6	3
	16	1.34	67.5	28.1	53	0.0	245.5	3
	17	1.34	45	26.9	62	0.0	68.6	3
	18	C	-	23.2	64	0.0		
	19	2.68	45	22.9	64	0.0		
	20	C	-	22.7	68	0.0		
	21	C	-	22.5	68	0.0		
	22	C	-	21.8	83	0.0		
	23	1.12	22.5	21.6	78	0.0		
	0	1.34	360	21.3	78	0.0		
	1	1.34	360	21.1	75	0.0		
	2	1.34	67.5	20.7	73	0.0		
	3	2.24	90	20.5	69	0.0		
	4	1.34	112.5	20.4	68	0.0		
	5	2.24	45	20.3	65	0.0		
	6	2.68	45	21.9	63	0.0	45.6	2
	7	2.68	360	22.7	62	0.0	244.3	2
	8	1.34	22.5	23.9	59	0.0	315.8	2
	9	2.24	45	24.9	56	0.0	394.6	2

METEOROLOGICAL REPORT

ECO VISION INDIA

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
03.03.2025 to 04.03.2025	10	2.24	45	26.6	52	0.0	392.9	3
	11	C	-	27.9	51	0.0	415.5	2
	12	1.34	112.5	28.9	49	0.0	589.5	3
	13	C	-	30.4	49	0.0	659.6	2
	14	3.13	67.5	31.0	51	0.0	445.5	3
	15	1.34	112.5	29.1	56	0.0	345.6	3
	16	1.34	90	27.6	59	0.0	265.5	2
	17	1.34	45	26.0	63	0.0	66.6	2
	18	C	-	25.1	64	0.0		
	19	2.68	22.5	24.8	65	0.0		
	20	C	-	23.9	68	0.0		
	21	C	-	23.5	68	0.0		
	22	1.12	45	22.7	78	0.0		
	23	1.12	112.5	22.1	83	0.0		
	0	1.34	360	22.6	83	0.0		
	1	1.34	360	22.8	78	0.0		
	2	1.34	67.5	22.5	73	0.0		
	3	2.24	90	22.4	75	0.0		
	4	1.34	112.5	22.0	77	0.0		
	5	2.24	45	22.0	75	0.0		
	6	2.68	22.5	23.4	71	0.0	45.6	3
	7	2.68	360	24.9	67	0.0	264.3	3
	8	1.34	22.5	25.1	65	0.0	315.9	2
	9	2.24	45	26.2	65	0.0	393.6	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
04.03.2025 to 05.03.2025	10	2.24	112.5	26.9	64	0.0	382.9	3
	11	C	-	27.2	64	0.0	418.5	3
	12	1.34	112.5	29.8	56	0.0	599.5	2
	13	C	-	31.6	55	0.0	669.6	3
	14	3.13	67.5	32.9	51	0.0	465.5	2
	15	1.34	112.5	33.1	47	0.0	385.6	2
	16	1.34	90	32.5	48	0.0	275.5	2
	17	1.34	67.5	31.7	52	0.0	68.6	3
	18	1.12	135	29.8	57	0.0		2
	19	2.68	180	28.9	57	0.0		
	20	C	-	28.1	58	0.0		
	21	1.12	67.5	27.6	61	0.0		
	22	1.12	45	26.6	63	0.0		
	23	C	-	25.4	64	0.0		
	0	2.68	67.5	25.1	65	0.0		
	1	2.24	90	25.0	66	0.0		
	2	2.68	22.5	24.7	68	0.0		
	3	4.02	67.5	24.4	71	0.0		
	4	4.02	90	23.9	75	0.0		
	5	5.36	90	23.1	78	0.0		
	6	5.36	360	24.9	71	0.0	87.3	2
	7	5.36	22.5	26.2	68	0.0	189.6	3
	8	4.02	360	27.5	65	0.0	297.2	2
	9	3.13	22.5	28.3	58	0.0	387.9	3

METEOROLOGICAL REPORT

ECO VISION INDIA

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
05.03.2025 to 06.03.2025	10	2.68	360	28.9	58	0.0	392.9	2
	11	3.13	22.5	29.0	56	0.0	415.5	3
	12	3.58	360	30.3	52	0.0	589.5	2
	13	3.13	22.5	30.9	51	0.0	659.6	3
	14	1.34	67.5	31.2	51	0.0	445.5	3
	15	C	-	30.6	53	0.0	345.6	2
	16	C	-	29.6	55	0.0	265.5	3
	17	C	-	27.9	59	0.0	66.6	3
	18	4.02	45	26.1	63	0.0	46.8	
	19	3.13	22.5	25.0	68	0.0		
	20	2.68	112.5	25.0	72	0.0		
	21	2.24	90	24.3	79	0.0		
	22	2.68	45	23.9	81	0.0		
	23	2.68	67.5	23.9	83	0.0		
	0	2.68	360	22.8	85	0.0		
	1	2.68	360	22.2	86	0.0		
	2	3.13	22.5	21.1	86	0.0		
	3	4.02	360	21.1	86	0.0		
	4	4.02	90	21.1	88	0.0		
	5	3.13	22.5	21.0	89	0.0		
	6	4.02	360	22.9	85	0.0	45.6	2
	7	4.02	22.5	23.3	81	0.0	268.3	3
	8	3.13	360	24.9	75	0.0	316.9	3
	9	C	-	26.1	70	0.0	350.3	2

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
06.03.2025 to 07.03.2025	10	2.68	360	26.1	69	0.0	392.9	3
	11	2.68	360	26.8	68	0.0	415.5	2
	12	2.68	360	27.8	65	0.0	589.5	3
	13	2.24	45	28.1	57	0.0	659.6	2
	14	1.34	360	30.1	54	0.0	445.5	2
	15	2.24	22.5	29.9	58	0.0	345.6	3
	16	2.68	45	29.9	59	0.0	265.5	3
	17	C	-	29.9	59	0.0	69.9	2
	18	C	-	28.8	61	0.0		
	19	C	-	27.8	63	0.0		
	20	C	-	27.2	65	0.0		
	21	2.68	67.5	26.8	66	0.0		
	22	3.13	360	25.1	67	0.0		
	23	3.13	45	24.1	69	0.0		
	0	4.02	90	23.1	73	0.0		
	1	2.68	360	23.1	73	0.0		
	2	3.58	22.5	22.7	75	0.0		
	3	4.02	360	22.8	77	0.0		
	4	3.13	45	22.8	78	0.0		
	5	3.13	45	21.9	78	0.0		
	6	3.13	22.5	21.1	79	0.0	45.6	3
	7	2.24	360	23.0	77	0.0	264.3	2
	8	2.24	67.5	23.7	75	0.0	315.9	2
	9	1.12	360	24.3	72	0.0	393.6	3

METEOROLOGICAL REPORT

ECO VISION INDIA

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
07.03.2025 to 08.03.2025	10	1.34	45	25.0	41	0.0	396.2	3
	11	1.34	67.5	25.0	44	0.0	425.5	3
	12	C	-	26.9	50	0.0	586.3	4
	13	C	-	26.8	50	0.0	689.5	5
	14	1.34	90	26.8	50	0.0	489.6	4
	15	1.34	67.5	24.9	50	0.0	389.3	5
	16	1.34	22.5	23.9	53	0.0	248.5	5
	17	1.34	90	23.8	57	0.0	69.6	5
	18	C	-	23.8	69	0.0		
	19	2.24	180	22.8	69	0.0		
	20	1.34	22.5	22.8	73	0.0		
	21	C	-	22.8	73	0.0		
	22	1.34	360	22.2	78	0.0		
	23	3.13	360	21.1	83	0.0		
	0	1.12	45	20.0	73	0.0		
	1	2.68	67.5	20.0	73	0.0		
	2	2.24	360	19.9	73	0.0		
	3	2.24	22.5	19.7	74	0.0		
	4	4.02	90	19.3	77	0.0		
	5	3.58	360	18.1	83	0.0		
	6	3.13	360	18.6	81	0.0	45.5	2
	7	2.68	45	19.7	76	0.0	245.8	3
	8	6.26	67.5	20.0	74	0.0	315.5	2
	9	6.26	22.5	20.1	73	0.0	395.5	2

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
08.03.2025 to 09.03.2025	10	2.23	360	22.0	69	0.0	399.5	3
	11	1.12	360	24.9	65	0.0	415.5	3
	12	3.13	22.5	27.1	62	0.0	580.9	2
	13	1.12	45	29.0	59	0.0	680.9	2
	14	1.34	45	30.7	55	0.0	460.5	3
	15	1.12	45	31.0	51	0.0	350.5	4
	16	1.12	360	30.9	53	0.0	246.3	5
	17	C	-	30.0	55	0.0	69.5	4
	18	1.34	22.5	29.7	57	0.0		
	19	2.68	45	28.9	60	0.0		
	20	1.34	90	27.8	63	0.0		
	21	3.13	90	26.1	65	0.0		
	22	C	-	23.9	67	0.0		
	23	C	-	22.6	68	0.0		
	0	1.34	360	21.9	72	0.0		
	1	1.34	67.5	21.1	76	0.0		
	2	1.34	360	21.1	76	0.0		
	3	3.58	67.5	20.9	78	0.0		
	4	3.13	45	20.6	78	0.0		
	5	4.02	360	19.7	82	0.0		
	6	2.24	22.5	19.3	82	0.0	48.9	2
	7	1.12	45	20.0	79	0.0	248.3	2
	8	3.58	360	21.7	76	0.0	315.9	2
	9	1.34	360	22.2	76	0.0	390.5	2

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
09.03.2025 to 10.03.2025	10	3.58	90	22.8	73	0.0	392.5	2
	11	3.58	97.5	23.9	67	0.0	412.5	2
	12	2.68	22.5	25.0	65	0.0	578.3	3
	13	2.24	45	27.8	61	0.0	645.8	4
	14	C	-	28.6	53	0.0	432.4	4
	15	1.12	22.5	29.4	53	0.0	345.6	5
	16	1.12	22.5	27.2	62	0.0	245.6	5
	17	1.12	22.5	26.9	65	0.0	67.5	5
	18	1.12	45	25.8	65	0.0		
	19	C	-	25.1	68	0.0		
	20	1.34	360	24.8	69	0.0		
	21	C	-	22.9	73	0.0		
	22	1.34	360	22.8	75	0.0		
	23	2.24	90	22.2	77	0.0		
	0	2.24	67.5	21.1	78	0.0		
	1	2.24	360	21.1	78	0.0		
	2	1.34	360	20.0	78	0.0		
	3	2.24	360	20.0	79	0.0		
	4	1.34	45	18.9	82	0.0		
	5	2.68	22.5	18.9	83	0.0		
	6	2.24	67.5	18.1	79	0.0	89.7	3
	7	2.24	22.5	20.0	77	0.0	189.7	3
	8	4.02	90	22.6	74	0.0	345.6	3
	9	4.02	45	24.6	69	0.0	578.6	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
10.03.2025 to 11.03.2025	10	4.02	360	25.6	65	0.0	392.8	3
	11	5.36	360	26.6	63	0.0	412.6	3
	12	3.58	360	27.1	61	0.0	578.7	3
	13	2.68	22.5	28.9	59	0.0	645.8	3
	14	2.68	22.5	29.5	52	0.0	432.6	3
	15	2.24	67.5	28.6	49	0.0	345.6	3
	16	1.34	45	28.4	58	0.0	255.5	3
	17	C	-	26.9	62	0.0	69.9	3
	18	1.12	45	25.1	65	0.0		
	19	1.12	45	24.7	68	0.0		
	20	2.24	360	23.9	68	0.0		
	21	1.34	67.5	23.1	72	0.0		
	22	C	-	22.9	73	0.0		
	23	1.34	360	21.8	78	0.0		
	0	2.24	45	20.0	81	0.0		
	1	2.68	22.5	20.0	81	0.0		
	2	C	-	20.0	81	0.0		
	3	C	-	19.6	85	0.0		
	4	1.34	360	19.1	86	0.0		
	5	1.34	90	18.9	89	0.0		
	6	2.24	67.5	20.7	81	0.0	45.6	3
	7	2.24	112.5	21.1	79	0.0	245.3	3
	8	2.24	45	23.9	75	0.0	315.6	3
	9	3.13	22.5	24.2	73	0.0	346.2	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
11.03.2025 to 12.03.2025	10	2.68	22.5	25.0	71	0.0	396.8	3
	11	2.68	67.5	27.8	68	0.0	416.5	2
	12	1.34	90	29.4	61	0.0	577.7	3
	13	2.68	45	29.5	57	0.0	645.9	2
	14	3.13	67.5	29.9	52	0.0	455.5	3
	15	3.13	360	28.7	49	0.0	345.6	2
	16	3.58	360	28.3	51	0.0	245.8	2
	17	2.24	22.5	27.6	52	0.0	69.9	3
	18	C	-	27.5	52	0.0		
	19	1.34	360	27.2	56	0.0		
	20	1.34	360	27.1	60	0.0		
	21	2.24	67.5	26.9	60	0.0		
	22	2.24	22.5	26.8	63	0.0		
	23	2.68	45	26.7	66	0.0		
	0	C	-	26.6	94	5.2		
	1	1.12	90	26.5	100	6.7		
	2	1.34	67.5	26.3	94	4.9		
	3	1.34	90	26.1	89	3.7		
	4	1.12	90	25.6	83	2.1		
	5	1.12	90	24.5	79	0.0		
	6	1.34	67.5	23.9	75	0.0	46.6	3
	7	2.24	45	25.2	73	0.0	245.5	3
	8	3.58	67.5	27.7	69	0.0	315.6	2
	9	1.34	112.5	28.3	65	0.0	394.5	2

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
12.03.2025 to 13.03.2025	10	2.68	45	28.9	61	0.0	395.8	3
	11	2.24	90	29.3	57	0.0	420.5	3
	12	2.68	22.5	29.5	53	0.0	576.9	2
	13	4.02	67.5	29.7	47	0.0	645.9	3
	14	4.47	360	29.9	45	0.0	480.9	2
	15	5.36	360	29.8	49	0.0	350.5	3
	16	5.36	67.5	29.7	50	0.0	25.5	2
	17	5.36	90	29.6	55	0.0	70.5	3
	18	3.58	22.5	28.6	65	0.0		
	19	3.58	67.5	28.3	71	0.0		
	20	2.68	90	27.6	78	0.0		
	21	1.34	22.5	26.3	82	0.0		
	22	1.34	67.5	26.1	85	0.0		
	23	C	-	25.8	87	0.0		
	0	C	-	25.0	89	0.0		
	1	C	-	25.0	89	0.0		
	2	C	-	25.0	89	0.0		
	3	3.13	90	24.8	92	0.0		
	4	2.24	45	24.5	94	0.0		
	5	3.13	67.5	24.0	95	0.0		
	6	4.02	45	24.9	91	0.0	46.5	3
	7	4.02	90	25.3	83	0.0	248.8	3
	8	2.68	90	26.1	76	0.0	320.8	2
	9	4.02	67.5	26.7	75	0.0	395.5	2

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
13.03.2025 to 14.03.2025	10	3.13	90	27.2	73	0.0	399.9	4
	11	2.24	112.5	28.5	69	0.0	415.5	2
	12	1.34	67.5	28.6	62	0.0	578.9	3
	13	3.58	22.5	29.5	59	0.0	645.5	2
	14	2.24	67.5	29.9	74	0.0	435.5	3
	15	3.13	90	29.7	84	0.0	356.5	4
	16	2.24	22.5	29.5	89	0.0	248.8	3
	17	3.13	45	29.3	84	0.0	69.5	4
	18	3.13	22.5	28.8	89	0.0		
	19	3.13	67.5	28.5	89	0.0		
	20	3.58	90	28.3	84	0.0		
	21	2.24	67.5	27.8	89	0.0		
	22	C	-	27.5	89	0.0		
	23	C	-	27.2	94	0.0		
	0	2.24	45	27.1	89	0.0		
	1	2.24	90	26.1	89	0.0		
	2	2.68	67.5	25.6	89	0.0		
	3	2.68	22.5	25.0	89	0.0		
	4	2.68	112.5	24.9	84	0.0		
	5	2.24	22.5	24.4	79	0.0		
	6	2.24	22.5	25.8	66	0.0	45.5	3
	7	2.24	90	26.3	70	0.0	246.5	3
	8	2.24	45	26.7	59	0.0	315.8	3
	9	2.24	360	28.9	56	0.0	395.5	2

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
14.03.2025 to 15.03.2025	10	2.24	90	29.6	66	0.0	395.8	3
	11	1.34	112.5	31.1	66	0.0	420.5	2
	12	2.24	67.5	32.2	70	0.0	576.9	4
	13	5.36	22.5	33.5	75	0.0	645.9	3
	14	6.26	67.5	34.3	79	0.0	480.9	3
	15	3.13	90	34.1	84	0.0	350.5	4
	16	4.02	45	31.7	84	0.0	225.5	3
	17	5.36	67.5	29.4	84	0.0	70.5	4
	18	2.24	22.5	28.9	79	0.0		
	19	3.58	67.5	27.8	83	0.0		
	20	3.13	90	27.2	89	0.0		
	21	4.02	67.5	26.1	89	0.0		
	22	3.13	45	26.1	89	0.0		
	23	2.24	67.5	26.1	89	0.0		
	0	2.24	90	26.1	94	0.0		
	1	2.24	112.5	26.1	94	0.0		
	2	2.68	112.5	26.1	94	0.0		
	3	2.24	90	24.6	89	0.0		
	4	2.68	67.5	23.7	79	0.0		
	5	1.34	112.5	23.1	70	0.0		
	6	4.02	22.5	25.5	52	0.0	46.5	2
	7	4.02	67.5	27.3	49	0.0	248.8	2
	8	2.68	45	27.8	41	0.0	320.8	2
	9	3.13	112.5	28.9	41	0.0	395.5	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
15.03.2025 to 16.03.2025	10	3.13	112.5	32.8	41	0.0	392.9	3
	11	3.13	45	34.9	52	0.0	412.5	4
	12	2.24	90	32.4	52	0.0	578.9	4
	13	5.36	67.5	25.9	74	0.0	645.9	3
	14	4.47	90	25.9	79	0.0	432.5	4
	15	2.68	90	25.9	83	0.0	345.7	2
	16	1.34	112.5	25.9	83	0.0	245.6	3
	17	C	-	25.9	83	0.0	69.9	3
	18	1.34	45	25.9	84	0.0		
	19	2.24	22.5	25.9	89	0.0		
	20	C	-	25.9	89	0.0		
	21	1.12	45	27.2	89	0.0		
	22	1.12	67.5	27.2	84	0.0		
	23	2.68	45	26.1	89	0.0		
	0	C	-	25.3	85	0.0		
	1	2.68	360	25.0	88	0.0		
	2	C	-	23.9	83	0.0		
	3	3.13	45	23.9	82	0.0		
	4	1.34	45	23.9	76	0.0		
	5	2.24	135	23.4	79	0.0		
	6	3.13	90	25.6	74	0.0	46.6	3
	7	2.24	135	27.4	66	0.0	245.9	3
	8	1.34	157.5	27.9	62	0.0	315.8	3
	9	1.34	180	28.3	62	0.0	394.6	4

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
16.03.2025 to 17.03.2025	10	C	-	30.0	62	0.0	392.5	3
	11	3.13	157.5	31.1	66	0.0	415.5	2
	12	2.24	112.5	32.2	74	0.0	578.9	3
	13	2.68	157.5	28.9	74	0.0	655.5	2
	14	3.13	180	28.9	74	0.0	444.4	3
	15	7.60	135	25.0	74	0.0	333.3	3
	16	6.26	112.5	25.0	73	0.0	66.6	2
	17	3.13	112.5	23.9	83	0.0		3
	18	1.34	90	22.2	83	0.0		
	19	C	-	23.9	81	0.0		
	20	C	-	22.8	79	0.0		
	21	1.34	180	23.9	80	0.0		
	22	1.12	180	23.9	82	0.0		
	23	C	-	23.9	83	0.0		
	0	1.34	135	23.9	88	0.0		
	1	C	-	23.9	88	0.0		
	2	1.34	157.5	23.9	88	0.0		
	3	2.68	180	22.8	83	0.0		
	4	2.68	112.5	22.2	83	0.0		
	5	3.58	22.5	22.2	78	0.0		
	6	1.34	67.5	23.1	70	0.0	55.5	3
	7	2.68	135	23.6	66	0.0	99.9	2
	8	1.34	112.5	24.8	58	0.0	250.3	3
	9	1.34	180	25.0	55	0.0	333.3	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
17.03.2025 to 18.03.2025	10	2.24	292.5	26.2	55	0.0	399.9	3
	11	3.13	112.5	22.2	62	0.0	410.5	3
	12	2.24	112.5	22.2	66	0.0	444.4	4
	13	2.68	180	22.2	70	0.0	505.5	3
	14	2.24	180	22.2	74	0.0	444.4	4
	15	2.24	180	22.2	74	0.0	333.3	3
	16	1.34	180	21.1	74	0.0	222.2	4
	17	C	-	21.1	74	0.0	66.6	4
	18	5.36	157.5	22.2	88	0.0		
	19	2.68	135	22.2	88	0.0		
	20	2.68	180	22.8	83	0.0		
	21	2.68	112.5	22.8	83	0.0		
	22	2.68	135	22.2	80	0.0		
	23	1.34	157.5	21.1	79	0.0		
	0	1.34	135	21.1	75	0.0		
	1	1.34	112.5	22.2	74	0.0		
	2	1.34	180	22.2	80	0.0		
	3	2.24	90	22.8	83	0.0		
	4	3.13	157.5	22.8	85	0.0		
	5	3.58	135	23.9	88	0.0		
	6	4.02	112.5	25.0	89	0.0	44.4	4
	7	1.34	180	26.1	79	0.0	85.5	3
	8	2.68	157.5	27.8	74	0.0	199.9	3
	9	2.68	135	28.9	70	0.0	289.3	4

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
18.03.2025 to 19.03.2025	10	C	-	30.0	70	0.0	333.3	4
	11	3.13	112.5	30.0	70	0.0	404.4	4
	12	1.34	135	27.8	74	0.0	555.5	4
	13	C	-	27.8	74	0.0	666.6	4
	14	1.34	157.5	27.8	74	0.0	444.4	4
	15	1.12	135	27.2	79	0.0	333.3	4
	16	1.12	157.5	27.2	79	0.0	222.2	6
	17	2.24	135	27.2	84	0.0	66.6	2
	18	1.34	112.5	26.1	74	0.0		
	19	C	-	25.0	78	0.0		
	20	C	-	25.0	83	0.0		
	21	1.12	180	25.0	83	0.0		
	22	1.12	112.5	23.9	83	0.0		
	23	1.12	157.5	23.9	89	0.0		
	0	3.13	135	23.9	74	0.0		
	1	2.68	112.5	23.9	74	0.0		
	2	1.34	180	23.9	83	0.0		
	3	2.68	180	23.9	69	0.0		
	4	2.68	112.5	23.9	61	0.0		
	5	1.12	135	23.9	55	0.0		
	6	2.68	157.5	25.2	48	0.0	44.4	1
	7	1.34	135	26.1	46	0.0	85.6	1
	8	1.34	112.5	27.2	43	0.0	250.3	1
	9	1.34	157.5	28.9	43	0.0	394.6	1

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
19.03.2025 to 20.03.2025	10	1.34	112.5	30.0	46	0.0	400.5	3
	11	2.68	135	30.0	48	0.0	444.4	3
	12	2.24	180	30.9	51	0.0	555.5	2
	13	3.13	157.5	31.1	55	0.0	666.6	3
	14	3.58	135	32.1	62	0.0	444.4	3
	15	3.58	157.5	30.9	70	0.0	333.3	2
	16	1.34	180	28.9	78	0.0	222.2	2
	17	C	-	27.8	78	0.0	66.6	2
	18	2.24	112.5	27.2	84	0.0		
	19	2.24	135	26.1	79	0.0		
	20	2.68	157.5	25.0	79	0.0		
	21	C	-	25.0	78	0.0		
	22	C	-	23.9	78	0.0		
	23	2.68	135	21.1	83	0.0		
	0	1.34	157.5	20.0	88	0.0		
	1	C	-	20.0	85	0.0		
	2	C	-	20.0	84	0.0		
	3	1.34	22.5	18.9	82	0.0		
	4	1.34	360	18.9	80	0.0		
	5	3.58	135	18.9	79	0.0		
	6	2.68	112.5	20	75	0.0	55.5	3
	7	2.24	135	21	74	0.0	163.3	3
	8	2.68	157.5	23	94	0.0	333.3	3
	9	2.24	90	25	94	0.0	394.5	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
20.03.2025 to 21.03.2025	10	2.68	180	26.6	70	0.0	392.50	2
	11	2.24	135	28.6	70	0.0	412.50	2
	12	1.34	112.5	28.3	74	0.0	578.90	2
	13	4.02	157.5	29.6	74	0.0	645.6	3
	14	2.68	135	30.3	74	0.0	433.5	3
	15	C	-	29.9	79	0.0	333.3	2
	16	2.68	112.5	28.8	79	0.0	202.30	3
	17	1.34	180	27.6	84	0.0	66.7	2
	18	C	-	26.6	74	0.0		
	19	3.58	157.5	26.1	78	0.0		
	20	4.02	112.5	22.8	83	0.0		
	21	6.71	180	21.1	83	0.0		
	22	2.24	157.5	18.9	83	0.0		
	23	2.24	202.5	18.9	89	0.0		
	0	1.34	135	18.9	74	0.0		
	1	C	-	18.9	74	0.0		
	2	1.34	112.5	17.8	83	0.0		
	3	2.68	45	17.8	69	0.0		
	4	2.24	67.5	17.8	61	0.0		
	5	C	-	17.8	55	0.0		
	6	1.34	90	21.1	48	0.0	44.4	3
	7	2.24	90	21.1	46	0.0	244.4	3
	8	3.58	90	22.8	43	0.0	333.3	3
	9	3.58	135	22.8	43	0.0	394.5	2

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
21.03.2025 to 22.03.2025	10	3.58	90	21.1	78	0.0	392.5	3
	11	2.68	67.5	21.1	78	0.0	410.2	2
	12	1.34	67.5	21.1	83	0.0	625.0	3
	13	1.12	45	23.1	83	0.0	620.5	2
	14	1.12	45	21.1	83	0.0	580.8	3
	15	1.12	45	21.1	83	0.0	435.8	3
	16	C	-	20.0	85	0.0	278.6	2
	17	1.34	22.5	20.0	84	0.0	68.5	3
	18	C	-	19.9	88	0.0		
	19	2.24	90	19.6	87	0.0		
	20	C	-	19.3	89	0.0		
	21	C	-	18.9	88	0.0		
	22	1.34	22.5	18.7	85	0.0		
	23	1.12	22.5	18.5	86	0.0		
	0	1.34	67.5	17.8	87	0.0		
	1	1.12	67.5	17.6	83	0.0		
	2	1.12	67.5	17.5	89	0.0		
	3	2.24	67.5	17.4	83	0.0		
	4	1.34	22.5	17.3	78	0.0		
	5	2.24	360	17.1	74	0.0		
	6	3.58	67.5	18.6	69	0.0	45.8	3
	7	2.68	22.5	19.6	65	0.0	200.5	2
	8	3.13	157.5	20.3	62	0.0	310.5	3
	9	2.68	45	21.8	62	0.0	385.5	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
22.03.2025 to 23.03.2025	10	C	-	23.6	62	0.0	392.8	3
	11	3.13	135	24.6	62	0.0	410.5	2
	12	2.24	22.5	26.8	58	0.0	579.5	2
	13	2.24	67.5	28.6	56	0.0	657.6	3
	14	3.13	45	29.3	54	0.0	435.5	3
	15	2.24	67.5	28.9	57	0.0	345.6	2
	16	1.12	360	28.9	59	0.0	245.5	2
	17	1.12	360	26.1	64	0.0	68.6	3
	18	1.34	360	25.8	68	0.0		
	19	C	-	23.1	72	0.0		
	20	1.34	22.5	22.8	75	0.0		
	21	C	-	22.8	78	0.0		
	22	1.12	45	21.0	79	0.0		
	23	1.14	45	21.1	80	0.0		
	0	C	-	21.1	78	0.0		
	1	2.24	135	20.0	77	0.0		
	2	1.34	157.5	20.0	75	0.0		
	3	1.34	135	18.9	74	0.0		
	4	2.68	135	18.9	76	0.0		
	5	3.13	157.5	18.9	78	0.0		
	6	2.24	180	20.1	79	0.0	45.6	2
	7	2.68	180	23.9	73	0.0	244.3	3
	8	2.68	157.5	25.3	68	0.0	315.8	3
	9	3.13	157.5	27.8	59	0.0	394.6	2

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
23.03.2025 to 24.03.2025	10	5.36	157.5	28.9	55	0.0	382.9	3
	11	5.36	180	30.0	51	0.0	418.5	2
	12	5.36	202.5	32.8	48	0.0	599.5	3
	13	5.36	180	34.1	45	0.0	669.6	3
	14	5.36	157.5	33.2	47	0.0	465.5	2
	15	6.71	135	32.2	49	0.0	385.6	2
	16	4.02	180	32.2	49	0.0	275.5	3
	17	4.02	180	32.2	52	0.0	68.6	2
	18	1.12	157.5	31.1	58	0.0		
	19	1.12	112.5	28.9	61	0.0		
	20	1.12	135	27.9	65	0.0		
	21	1.12	90	27.6	65	0.0		
	22	1.12	180	27.3	69	0.0		
	23	C	-	26.8	69	0.0		
	0	3.58	157.5	26.6	69	0.0		
	1	3.13	202.5	26.3	69	0.0		
	2	3.58	202.5	25.8	72	0.0		
	3	3.13	157.5	25.5	75	0.0		
	4	3.58	135	24.8	74	0.0		
	5	4.02	112.5	24.6	70	0.0		
	6	4.47	135	26.4	72	0.0	87.3	3
	7	6.26	157.5	27.8	69	0.0	189.6	4
	8	3.13	135	28.9	65	0.0	297.2	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
24.03.2025 to 25.03.2025	10	3.58	135	31.1	59	0.0	392.9	3
	11	2.24	180	32.8	57	0.0	415.5	3
	12	1.12	135	33.9	49	0.0	589.5	4
	13	3.13	180	35.0	45	0.0	659.6	4
	14	3.13	202.5	36.1	42	0.0	445.5	3
	15	1.12	180	35.3	45	0.0	345.6	4
	16	1.34	157.5	32.6	49	0.0	265.5	3
	17	3.13	180	31.1	58	0.0	69.9	3
	18	1.34	112.5	30.0	62	0.0		
	19	3.13	157.5	28.9	65	0.0		
	20	3.58	180	27.8	69	0.0		
	21	3.13	202.5	27.2	69	0.0		
	22	3.58	180	27.2	69	0.0		
	23	3.58	180	26.1	71	0.0		
	0	2.24	135	26.1	73	0.0		
	1	2.24	135	26.1	73	0.0		
	2	3.13	157.5	25.5	76	0.0		
	3	2.24	180	25.3	79	0.0		
	4	1.12	180	24.9	81	0.0		
	5	3.58	157.5	24.1	84	0.0		
	6	2.68	180	25.6	80	0.0	45.6	2
	7	2.68	135	26.1	76	0.0	264.3	2
	8	1.34	157.5	27.2	72	0.0	315.9	2
	9	1.34	90	28.9	70	0.0	393.6	2

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
25.03.2025 to 26.03.2025	10	3.13	135	30	66	0.0	382.9	3
	11	3.58	157.5	31.1	66	0.0	418.5	3
	12	3.58	135	32.8	70	0.0	599.5	6
	13	5.36	202.5	34.9	79	0.0	669.6	6
	14	7.60	157.5	36.1	83	0.0	465.5	6
	15	6.26	180	33.2	83	0.0	385.6	6
	16	6.71	202.5	32.6	65	0.0	275.5	4
	17	7.60	180	29.7	57	0.0	68.6	3
	18	2.68	135	27.4	55	0.0		
	19	3.58	112.5	27.2	56	0.0		
	20	2.24	180	26.1	60	0.0		
	21	C	-	26.1	65	0.0		
	22	1.34	90	25	66	0.0		
	23	C	-	25	71	0.0		
	0	4.02	112.5	22.8	73	0.0		
	1	3.13	135	22.8	73	0.0		
	2	2.24	180	23.9	69	0.0		
	3	1.34	135	25.6	74	0.0		
	4	C	-	24.7	69	0.0		
	5	2.68	112.5	24.1	70	0.0		
	6	3.13	157.5	23.1	58	0.0	87.3	2
	7	4.02	112.5	24.5	62	0.0	189.6	3
	8	4.02	90	26.1	62	0.0	297.2	2
	9	2.24	112.5	27.8	62	0.0	387.9	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
26.03.2025 to 27.03.2025	10	3.13	67.5	28.9	62	0.0	396.2	3
	11	2.68	90	30.6	70	0.0	425.5	2
	12	2.68	135	31.1	71	0.0	586.3	3
	13	5.36	157.5	32.2	75	0.0	689.5	3
	14	6.26	157.5	32.6	77	0.0	489.6	2
	15	4.47	157.5	31.6	79	0.0	389.3	3
	16	3.13	135	30.3	84	0.0	248.5	2
	17	2.24	112.5	29.8	79	0.0	69.6	3
	18	3.58	202.5	29.1	76	0.0		
	19	2.68	180	28.7	73	0.0		
	20	2.24	202.5	27.8	71	0.0		
	21	2.68	112	27.8	70	0.0		
	22	3.13	157.5	27.2	69	0.0		
	23	3.13	112.5	26.1	69	0.0		
	0	3.58	135	26.1	89	0.0		
	1	2.68	180	26.1	89	0.0		
	2	3.13	157.5	25.9	89	0.0		
	3	4.47	135	25.4	84	0.0		
	4	3.58	157.5	25.2	79	0.0		
	5	2.24	135	24.9	74	0.0		
	6	2.24	112.5	26.7	63	0.0	45.5	2
	7	4.02	90	26.9	56	0.0	245.8	2
	8	1.34	112.5	28.9	53	0.0	315.5	3
	9	2.24	180	30	59	0.0	395.5	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
27.03.2025 to 28.03.2025	10	2.24	135	32.2	56	0.0	399.5	3
	11	2.24	180	33.9	52	0.0	415.5	3
	12	3.13	45	33.9	75	0.0	580.9	2
	13	2.68	90	34.6	79	0.0	680.9	2
	14	1.34	90	35.8	84	0.0	460.5	3
	15	4.02	157.5	33.9	84	0.0	350.5	3
	16	4.02	157.5	32.5	89	0.0	246.3	2
	17	2.68	67.5	31.6	94	0.0	69.5	2
	18	2.24	180	30.3	94	0.0		
	19	3.13	157.5	30.1	89	0.0		
	20	1.34	202.5	29.8	89	0.0		
	21	1.34	180	29.7	89	0.0		
	22	1.34	112.5	28.7	89	0.0		
	23	3.13	180	27.6	89	0.0		
	0	2.68	180	26.6	100	0.0		
	1	1.34	202.5	25.1	94	0.0		
	2	1.34	112.5	24.6	89	0.0		
	3	2.24	157.5	23.3	84	0.0		
	4	C	-	23.1	84	0.0		
	5	1.34	360	22.3	79	0.0		
	6	2.24	90	23.3	66	0.0	48.9	3
	7	3.58	112.5	25.5	59	0.0	248.3	2
	8	3.13	157.5	26.6	56	0.0	315.9	3
	9	2.24	112.5	27.9	47	0.0	390.5	2

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
28.03.2025 to 29.03.2025	10	4.47	157.5	28.3	44	0.0	392.5	4
	11	3.58	112.5	29.3	49	0.0	412.5	3
	12	2.24	45	31.3	55	0.0	578.3	3
	13	2.24	90	32.8	62	0.0	645.8	4
	14	1.34	90	33.9	66	0.0	432.4	3
	15	3.13	135	32.2	74	0.0	345.6	4
	16	2.68	17.5	31.1	79	0.0	245.6	4
	17	2.24	90	30	89	0.0	67.5	3
	18	2.24	135	28.9	89	3.4		
	19	2.68	180	27.8	89	3.4		
	20	1.34	112.5	27.2	94	3.8		
	21	1.34	67.5	26.5	94	4.1		
	22	2.24	135	26.4	94	4.0		
	23	2.24	157.5	26.1	100	4.2		
	0	2.68	90	25.9	89	3.6		
	1	2.68	135	25.7	84	2.1		
	2	1.34	112.5	25.4	84	1.3		
	3	3.13	157.5	25.3	82	0.0		
	4	2.68	157.5	25.1	74	0.0		
	5	1.34	135	25.8	70	0.0		
	6	1.34	157.5	25.9	63	0.0	89.7	2
	7	C	-	26.3	59	0.0	189.7	3
	8	2.24	67.5	26.8	59	0.0	345.6	2
	9	1.34	90	27.3	63	0.0	578.6	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
29.03.2025 to 30.03.2025	10	3.13	112.5	29.9	66	0.0	392.8	3
	11	2.24	90	30.6	66	0.0	412.6	2
	12	3.13	135	31.6	75	0.0	578.7	3
	13	4.02	180	32.6	69	0.0	645.8	2
	14	5.36	180	34.9	71	0.0	432.6	2
	15	4.02	157.5	33.6	75	0.0	345.6	3
	16	3.58	180	32.8	79	0.0	255.5	3
	17	5.36	180	32.2	82	0.0	69.9	3
	18	2.68	112.5	31.1	85	0.0		
	19	2.68	135	28.9	89	0.0		
	20	3.13	157.5	28.6	89	0.0		
	21	3.58	157.5	27.8	85	0.0		
	22	2.24	157.5	27.6	89	0.0		
	23	2.68	157.5	27.3	84	0.0		
	0	1.34	180	26.8	89	0.0		
	1	2.24	180	26.3	89	0.0		
	2	1.34	90	25.5	89	0.0		
	3	C	-	25.3	84	0.0		
	4	C	-	24.3	84	0.0		
	5	C	-	24.1	75	0.0		
	6	2.24	180	25.6	66	0.0	45.6	2
	7	1.34	157.5	26.3	59	0.0	245.3	2
	8	2.68	112.5	27.6	53	0.0	315.6	3
	9	4.02	90	28.9	63	0.0	346.2	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
30.03.2025 to 31.03.2025	10	3.13	90	29.6	67	0.0	396.8	4
	11	3.58	112.5	30.3	71	0.0	416.5	4
	12	3.58	112.5	31.6	75	0.0	577.7	4
	13	5.81	157.5	32.6	72	0.0	645.9	4
	14	5.36	180	33.3	75	0.0	455.5	4
	15	5.81	135	33.1	82	0.0	345.6	4
	16	6.71	157.5	31.3	84	0.0	245.8	4
	17	5.36	135	30.3	89	0.0	69.9	4
	18	5.81	112.5	30.1	89	0.0		
	19	4.47	90	29.3	89	0.0		
	20	5.36	157.5	29.1	89	0.0		
	21	3.13	180	28.9	89	0.0		
	22	3.13	112.5	28.6	89	0.0		
	23	2.68	180	28.3	89	0.0		
	0	7.15	22.5	27.8	89	0.0		
	1	6.71	360	27.6	83	0.0		
	2	4.02	135	27.3	83	0.0		
	3	2.68	180	27.1	70	0.0		
	4	3.58	157.5	26.8	66	0.0		
	5	5.36	180	25.6	66	0.0		
	6	4.02	202.5	25.3	66	0.0	46.6	4
	7	4.02	135	27.8	59	0.0	245.5	4
	8	4.02	180	31.1	53	0.0	315.6	4
	9	3.13	202.5	32.2	53	0.0	394.5	4

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
31.03.2025 to 01.04.2025	10	4.47	180	32.8	56	0.0	395.8	3
	11	4.47	157.5	35.6	63	0.0	420.5	2
	12	5.81	135	36.1	66	0.0	576.9	3
	13	6.26	157.5	36.1	70	0.0	645.9	2
	14	5.81	135	37.1	79	0.0	480.9	2
	15	5.36	112.5	36.7	84	0.0	350.5	3
	16	4.47	180	35.6	79	0.0	25.5	3
	17	5.36	202.5	33.8	79	0.0	70.5	3
	18	5.36	180	33.1	84	0.0		
	19	3.13	157.5	32.8	89	0.0		
	20	4.02	157.5	32.2	89	0.0		
	21	4.47	180	31.1	89	0.0		
	22	2.24	180	30.8	89	0.0		
	23	4.47	292.5	30.1	89	0.0		
	0	3.58	202.5	29.4	79	0.0		
	1	4.02	202.5	28.9	79	0.0		
	2	3.13	247.5	28.5	74	0.0		
	3	2.68	247.5	28.1	66	0.0		
	4	3.13	270	27.9	59	0.0		
	5	3.13	270	27.1	52	0.0		
	6	3.13	225	27.8	39	0.0	46.5	2
	7	2.68	202.5	28.9	31	0.0	248.8	2
	8	2.68	180	33.9	31	0.0	320.8	3
	9	3.13	270	36.1	25	0.0	350.2	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
01.04.2025 to 02.04.2025	10	3.58	247.5	37.8	27	0.0	382.9	2
	11	3.13	247.5	37.2	30	0.0	418.5	3
	12	2.24	247.5	38.6	32	0.0	599.5	3
	13	2.68	180	38.7	38	0.0	669.6	2
	14	3.13	180	38.8	49	0.0	465.5	2
	15	4.02	180	37.6	62	0.0	385.6	3
	16	3.58	180	36.1	70	0.0	275.5	3
	17	4.02	202.5	33.9	70	0.0	68.6	3
	18	5.36	180	32.8	79	0.0		
	19	4.47	202.5	31.1	79	0.0		
	20	3.58	202.5	30.6	79	0.0		
	21	4.02	225	29.6	79	0.0		
	22	3.58	202.5	28.9	79	0.0		
	23	4.02	202.5	28.7	79	0.0		
	0	2.24	90	28.6	89	0.0		
	1	C	-	28.5	94	0.0		
	2	C	-	28.1	89	0.0		
	3	1.34	67.5	27.8	79	0.0		
	4	3.58	112.5	27.5	55	0.0		
	5	4.47	135	27.2	44	0.0		
	6	3.13	157.5	27.5	36	0.0	87.3	3
	7	2.68	180	28.9	32	0.0	189.6	3
	8	2.24	180	29.3	30	0.0	297.2	3
	9	2.24	135	30.8	32	0.0	387.9	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
02.04.2025 to 03.04.2025	10	2.24	90	32.3	32	0.0	399.9	3
	11	2.68	112.5	34.6	39	0.0	415.5	3
	12	1.34	157.5	35.3	41	0.0	578.9	3
	13	1.34	135	36.6	44	0.0	645.5	3
	14	2.24	157.5	37.2	52	0.0	435.5	3
	15	3.13	180	36.1	62	0.0	356.5	3
	16	4.02	180	35.5	74	0.0	248.8	3
	17	4.47	180	34.3	74	0.0	69.5	3
	18	2.68	157.5	33.3	79	0.0		
	19	3.13	180	31.2	84	0.0		
	20	3.58	202.5	30.2	84	0.0		
	21	2.24	180	29.6	84	0.0		
	22	2.24	202.5	28.9	84	0.0		
	23	C	247.5	28.5	84	0.0		
	0	2.24	202.5	28.3	89	0.0		
	1	1.34	180	27.7	89	0.0		
	2	2.24	157.5	27.5	84	0.0		
	3	C	-	27.3	75	0.0		
	4	1.34	270	26.5	66	0.0		
	5	2.68	180	26.1	56	0.0		
	6	2.24	112.5	27.9	51	0.0	45.5	3
	7	1.34	225	28.6	49	0.0	246.5	3
	8	1.34	157.5	29.3	45	0.0	315.8	3
	9	1.34	135	30.3	39	0.0	395.5	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
03.04.2025 to 04.04.2025	10	2.24	135	32.3	31	0.0	395.8	2
	11	2.24	135	33.3	29	0.0	420.5	2
	12	2.24	157.5	34.5	29	0.0	576.9	3
	13	1.34	180	35.2	27	0.0	645.9	3
	14	2.24	157.5	35.5	30	0.0	480.9	2
	15	1.12	180	36.6	36	0.0	350.5	3
	16	1.34	202.5	36.2	42	0.0	225.5	3
	17	2.68	180	35.0	53	0.0	70.5	2
	18	3.13	90	33.9	72	0.0		
	19	2.24	157.5	32.2	79	0.0		
	20	1.34	180	31.4	84	0.0		
	21	C	-	30.0	84	0.0		
	22	2.24	247.5	30.0	84	0.0		
	23	2.24	225	29.6	84	0.0		
	0	3.58	247.5	28.9	84	0.0		
	1	3.58	225	28.9	89	0.0		
	2	4.47	202.5	28.9	89	0.0		
	3	3.58	225	27.8	89	0.0		
	4	3.58	112.5	27.6	89	0.0		
	5	3.13	247.5	27.1	89	0.0		
	6	3.58	180	27.6	74	0.0	46.5	3
	7	4.02	135	28.9	70	0.0	248.8	3
	8	4.02	157.5	29.9	63	0.0	320.8	3
	9	3.58	180	30.2	63	0.0	350.5	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
04.04.2025 to 05.04.2025	10	4.02	157.5	32.3	63	0.0	392.9	2
	11	5.81	180	34.6	71	0.0	412.5	3
	12	4.47	157.5	35.5	75	0.0	578.9	3
	13	1.34	135	36.3	84	0.0	645.9	2
	14	5.81	180	36.7	84	0.0	432.5	2
	15	3.58	157.5	36.1	79	0.0	345.7	3
	16	3.13	112.5	35.6	81	0.0	245.6	3
	17	5.81	135	33.9	83	0.0	69.9	3
	18	5.81	180	32.8	84	0.0		
	19	5.81	202.5	31.1	89	0.0		
	20	5.36	202.5	30.6	84	0.0		
	21	4.02	225	30.2	89	0.0		
	22	4.47	202.5	29.6	89	0.0		
	23	3.58	247.5	28.9	89	0.0		
	0	4.02	202.5	28.6	89	0.0		
	1	3.58	225	27.8	89	0.0		
	2	3.58	180	27.6	89	0.0		
	3	1.34	270	27.3	89	0.0		
	4	1.34	292.5	27.9	89	0.0		
	5	1.34	270	27.5	84	0.0		
	6	2.24	202.5	28.9	79	0.0	46.6	3
	7	3.13	247.5	30.8	75	0.0	245.9	3
	8	3.58	180	32.2	69	0.0	315.8	3
	9	1.34	157.5	35.6	63	0.0	350.3	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
05.04.2025 to 06.04.2025	10	3.13	112.5	36.1	65	0.0	392.5	3
	11	4.02	135	37.2	67	0.0	415.5	2
	12	2.68	112.5	37.2	67	0.0	578.9	3
	13	2.24	112.5	37.8	67	0.0	655.5	2
	14	1.12	135	37.2	67	0.0	444.4	3
	15	2.24	157.5	35.0	78	0.0	333.3	2
	16	2.24	180	33.9	79	0.0	122.3	2
	17	3.58	202.5	32.8	84	0.0	66.6	2
	18	1.12	180	31.1	84	0.0		
	19	5.36	180	30.0	86	0.0		
	20	3.58	202.5	30.0	89	0.0		
	21	3.58	90	28.9	89	0.0		
	22	4.02	112.5	28.7	89	0.0		
	23	4.47	202.5	28.6	89	0.0		
	0	C	-	28.3	89	0.0		
	1	C	-	27.8	89	0.0		
	2	1.34	135	27.6	89	0.0		
	3	2.68	90	27.3	89	0.0		
	4	C	-	26.8	84	0.0		
	5	2.68	135	26.3	79	0.0		
	6	2.24	112.5	27.9	60	0.0	55.5	3
	7	3.13	112.5	28.6	60	0.0	222.2	2
	8	3.13	112.5	29.9	56	0.0	333.3	3
	9	3.58	157.5	30.3	56	0.0	385.6	2

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
06.04.2025 to 07.04.2025	10	3.58	135	32.3	56	0.0	399.9	3
	11	3.58	180	34.6	67	0.0	410.5	3
	12	5.36	157.5	35.5	75	0.0	444.4	3
	13	5.36	90	37.2	79	0.0	505.5	3
	14	5.36	157.5	37.9	79	0.0	444.4	3
	15	6.26	157.5	36.1	79	0.0	333.3	3
	16	6.26	180	34.8	79	0.0	222.2	3
	17	5.36	202.5	33.8	84	0.0	66.6	3
	18	5.36	180	32.2	89	0.0		
	19	4.47	202.5	31.1	84	0.0		
	20	3.13	180	30.6	89	0.0		
	21	3.13	202.5	29.8	89	0.0		
	22	1.34	180	29.6	89	0.0		
	23	1.34	225	29.3	89	0.0		
	0	C	-	28.9	89	0.0		
	1	C	-	28.5	89	0.0		
	2	C	-	27.6	84	0.0		
	3	8.05	112.5	27.5	84	0.0		
	4	2.24	90	27.3	84	0.0		
	5	2.68	135	27.2	84	0.0		
	6	7.15	180	27.8	79	0.0	46.6	5
	7	4.47	135	28.9	74	0.0	245.9	5
	8	5.81	157.5	29.3	74	0.0	315.8	5
	9	4.02	135	30.3	70	0.0	385.6	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
07.04.2025 to 08.04.2025	10	3.58	135	31.3	70	0.0	399.9	3
	11	3.58	135	32.3	70	0.0	404.4	3
	12	C	-	33.3	70	0.0	555.5	3
	13	C	-	34.5	74	0.0	666.6	2
	14	2.24	247.5	35.6	74	0.0	444.4	2
	15	3.13	225	34.6	74	0.0	333.3	2
	16	4.02	225	33.3	74	0.0	222.2	2
	17	5.36	135	32.2	74	0.0	66.6	2
	18	4.02	180	31.5	74	0.0		
	19	3.58	180	30.3	74	0.0		
	20	5.36	157.5	29.9	78	0.0		
	21	4.02	112.5	28.8	84	0.0		
	22	1.34	180	27.8	84	0.0		
	23	2.24	225	27.5	84	0.0		
	0	3.13	202.5	27.2	84	0.0		
	1	3.58	180	26.8	84	0.0		
	2	4.02	247.5	26.5	84	0.0		
	3	1.34	247.5	26.4	78	0.0		
	4	2.68	270	25.6	75	0.0		
	5	2.24	247.5	25.1	68	0.0		
	6	3.58	270	27.8	65	0.0	44.4	4
	7	5.36	292.5	28.9	58	0.0	222.2	4
	8	3.58	292.5	29.8	55	0.0	333.3	4
	9	4.47	270	30.6	45	0.0	394.6	4

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
08.04.2025 to 09.04.2025	10	2.68	292.5	31.1	49	0.0	417.6	3
	11	3.58	135	32.2	49	0.0	613.5	3
	12	6.26	292.5	32.8	51	0.0	587.2	3
	13	4.47	270	33.1	52	0.0	484.2	3
	14	2.24	292.5	33.1	54	0.0	416.5	2
	15	C	-	31.2	54	0.0	323.2	2
	16	1.12	247.5	30.9	55	0.0	80.6	2
	17	1.34	225	30.5	58	0.0	45.3	2
	18	4.47	225	29.8	58	0.0		
	19	4.02	247.5	29.7	58	0.0		
	20	4.02	270	29.5	57	0.0		
	21	3.13	270	28.7	84	0.0		
	22	2.68	270	28.5	84	0.0		
	23	2.68	180	27.8	84	0.0		
	0	2.68	270	27.2	89	0.0		
	1	3.13	270	26.3	89	0.0		
	2	2.24	292.5	26.1	78	0.0		
	3	2.68	292.5	25.6	78	0.0		
	4	3.13	270	25.3	78	0.0		
	5	4.02	270	24.6	76	0.0		
	6	3.58	225	27.8	65	0.0	44.4	2
	7	3.58	180	28.9	58	0.0	244.4	3
	8	2.24	247.5	30.6	52	0.0	333.3	2
	9	1.34	180	32.5	43	0.0	394.5	2

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
09.04.2025 to 10.04.2025	10	1.34	135	33.9	43	0.0	449.5	3
	11	C	157.5	34.5	46	0.0	555.5	2
	12	1.34	135	34.9	49	0.0	625.0	3
	13	1.34	270	35.9	52	0.0	620.5	2
	14	1.12	180	36.5	52	0.0	580.8	3
	15	2.24	157.5	34.1	62	0.0	435.8	2
	16	1.12	180	33.9	66	0.0	278.6	3
	17	1.12	180	32.8	70	0.0	68.5	2
	18	1.12	157.5	32.2	61	0.0		
	19	1.34	270	31.6	61	0.0		
	20	1.34	225	31.1	61	0.0		
	21	1.34	247.5	28.9	65	0.0		
	22	2.24	202.5	27.8	65	0.0		
	23	2.68	247.5	27.2	65	0.0		
	0	1.34	202.5	26.5	69	0.0		
	1	1.34	180	26.1	69	0.0		
	2	2.24	180	25.8	73	0.0		
	3	C	-	25.6	73	0.0		
	4	2.24	270	25.3	66	0.0		
	5	2.24	292.5	25.1	52	0.0		
	6	2.68	270	26.6	75	0.0	45.8	3
	7	1.34	112.5	27.2	90	1.8	200.5	4
	8	1.34	135	28.9	89	1.7	310.5	4
	9	2.24	112.5	30.6	85	0.0	385.5	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
10.04.2025 to 11.04.2025	10	2.24	112.5	31.5	91	1.5	392.5	4
	11	2.24	135	32.8	89	0.0	410.2	3
	12	2.24	112.5	33.9	88	0.0	625.0	3
	13	1.34	135	34.5	85	0.0	620.5	3
	14	1.12	112.5	34.9	79	0.0	580.8	2
	15	1.12	112.5	33.9	74	0.0	435.8	3
	16	1.12	360	32.8	70	0.0	278.6	2
	17	1.12	112.5	32.2	74	0.0	68.5	3
	18	1.12	90	31.1	78	0.0		
	19	1.34	135	30.0	70	0.0		
	20	2.24	292.5	29.8	74	0.0		
	21	1.34	202.5	28.8	74	0.0		
	22	C	-	28.6	81	0.0		
	23	C	-	28.4	81	0.0		
	0	1.12	67.5	27.8	81	0.0		
	1	1.12	112.5	27.5	83	0.0		
	2	2.24	157.5	27.2	83	0.0		
	3	3.13	90	26.3	83	0.0		
	4	3.13	157.5	26.1	83	0.0		
	5	1.34	90	25.9	84	0.0		
	6	C	-	26.1	83	0.0	45.8	4
	7	2.24	270	27.2	79	0.0	200.5	3
	8	4.02	292.5	27.8	77	0.0	310.5	3
	9	2.68	225	28.9	62	0.0	385.5	2

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
11.04.2025 to 12.04.2025	10	1.34	292.5	30.5	52	0.0	392.8	3
	11	2.24	247.5	30.9	52	0.0	410.5	3
	12	2.68	157.5	31.1	48	0.0	579.5	3
	13	1.34	67.5	32.2	46	0.0	657.6	3
	14	2.24	112.5	33.9	45	0.0	435.5	2
	15	1.34	180	32.2	49	0.0	345.6	2
	16	1.12	135	31.3	52	0.0	245.5	2
	17	1.12	180	30.2	52	0.0	68.6	2
	18	1.12	90	28.9	65	0.0		
	19	1.12	112.5	28.7	68	0.0		
	20	1.12	135	27.8	61	0.0		
	21	1.12	157.5	27.5	61	0.0		
	22	1.12	180	27.2	69	0.0		
	23	1.34	202.5	26.8	78	0.0		
	0	3.13	225	26.6	86	0.0		
	1	C	-	26.5	90	1.9		
	2	2.24	225	26.3	92	2.3		
	3	C	-	25.9	96	2.6		
	4	C	-	25.6	95	1.9		
	5	2.24	90	25.1	90	1.2		
	6	2.24	90	25.9	85	0.0	45.6	3
	7	2.24	135	26.1	78	0.0	54.3	2
	8	2.24	157.5	28.9	75	0.0	35.8	3
	9	3.58	157.5	31.1	68	0.0	39.6	2

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
12.04.2025 to 13.04.2025	10	3.13	157.5	32.2	65	0.0	395.8	3
	11	2.68	157.5	33.9	60	0.0	420.5	2
	12	2.24	180	34.6	59	0.0	576.9	3
	13	2.24	270	35.9	55	0.0	645.9	2
	14	C	-	36.5	50	0.0	480.9	3
	15	1.12	247.5	35.2	48	0.0	350.5	2
	16	1.12	225	33.3	45	0.0	25.5	3
	17	1.12	247.5	32.2	43	0.0	70.5	3
	18	1.34	180	32.2	46	0.0		
	19	1.34	270	31.1	52	0.0		
	20	C	-	30.3	58	0.0		
	21	2.24	292.5	29.7	58	0.0		
	22	1.12	247.5	29.1	58	0.0		
	23	2.68	225	28.9	61	0.0		
	0	C	-	27.6	65	0.0		
	1	1.34	270	27.2	65	0.0		
	2	1.34	202.5	26.8	74	0.0		
	3	2.68	225	26.5	74	0.0		
	4	1.34	247.5	26.1	74	0.0		
	5	C	-	25.3	79	0.0		
	6	2.24	112.5	26.1	75	0.0	46.5	2
	7	3.58	90	27.8	66	0.0	248.8	3
	8	3.58	135	28.9	61	0.0	320.8	3
	9	2.24	112.5	31.3	58	0.0	395.5	2

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
13.04.2025 to 14.04.2025	10	2.68	112.5	32.6	51	0.0	399.9	2
	11	3.13	135	34.5	49	0.0	415.5	3
	12	2.24	135	36.5	45	0.0	578.9	3
	13	C	-	36.6	41	0.0	645.5	2
	14	3.58	202.5	36.9	49	0.0	435.5	3
	15	3.13	202.5	34.5	51	0.0	356.5	2
	16	2.68	202.5	33.9	52	0.0	248.8	2
	17	C	-	33.5	52	0.0	69.5	3
	18	C	-	32.8	66	0.0		
	19	1.34	270	32.6	66	0.0		
	20	3.13	202.5	32.1	66	0.0		
	21	2.24	247.5	31.7	66	0.0		
	22	1.34	270	30.9	69	0.0		
	23	C	-	30.6	70	0.0		
	0	2.24	270	29.9	70	0.0		
	1	1.34	247.5	29.6	70	0.0		
	2	1.34	270	29.3	70	0.0		
	3	2.24	247.5	28.9	70	0.0		
	4	2.24	292.5	28.6	70	0.0		
	5	1.34	292.5	28.1	73	0.0		
	6	1.34	180	27.2	71	0.0	45.5	2
	7	3.13	135	29.3	55	0.0	246.5	3
	8	2.68	112.5	32.5	43	0.0	315.8	3
	9	2.68	112.5	34.5	39	0.0	395.5	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
14.04.2025 to 15.04.2025	10	2.68	112.5	36.1	35	0.0	395.8	2
	11	2.68	112.5	37.2	37	0.0	420.5	3
	12	2.24	112.5	37.8	37	0.0	576.9	2
	13	2.24	157.5	39.1	35	0.0	645.9	3
	14	4.02	180	38.3	33	0.0	480.9	2
	15	3.58	180	37.2	37	0.0	350.5	3
	16	3.13	180	37.8	37	0.0	225.5	3
	17	2.24	157.5	33.9	42	0.0	70.5	2
	18	C	-	32.8	55	0.0		
	19	1.34	225	32.2	58	0.0		
	20	1.34	247.5	31.9	62	0.0		
	21	2.68	247.5	31.5	62	0.0		
	22	C	-	31.1	66	0.0		
	23	2.24	247.5	30.5	70	0.0		
	0	2.68	247.5	29.6	70	0.0		
	1	2.24	247.5	28.7	72	0.0		
	2	2.24	202.5	28.6	72	0.0		
	3	3.58	225	27.8	76	0.0		
	4	3.13	225	27.8	76	0.0		
	5	2.68	247.5	27.6	78	0.0		
	6	2.24	270	27.2	76	0.0	46.5	3
	7	C	-	28.9	72	0.0	248.8	3
	8	3.13	135	30.8	69	0.0	320.8	2
	9	3.13	157.5	32.6	58	0.0	395.5	2

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
15.04.2025 to 16.04.2025	10	3.58	112.5	34.5	55	0.0	392.9	2
	11	4.02	135	36.3	53	0.0	412.5	3
	12	5.36	157.5	37.6	49	0.0	578.9	3
	13	5.36	157.5	38.5	45	0.0	645.9	2
	14	4.02	180	38.9	41	0.0	432.5	2
	15	5.81	180	37.8	39	0.0	345.7	3
	16	5.36	202.5	37.3	53	0.0	245.6	2
	17	5.36	202.5	36.1	62	0.0	69.9	3
	18	2.68	180	35.7	65	0.0		
	19	3.13	202.5	35.6	70	0.0		
	20	3.58	225	34.5	75	0.0		
	21	2.68	225	33.3	79	0.0		
	22	2.68	247.5	32.2	77	0.0		
	23	2.68	247.5	31.3	76	0.0		
	0	2.24	202.5	30.3	75	0.0		
	1	2.68	202.5	30.1	74	0.0		
	2	3.13	202.5	29.8	73	0.0		
	3	3.58	225	28.9	72	0.0		
	4	2.68	225	27.6	71	0.0		
	5	2.24	247.5	26.9	70	0.0		
	6	2.68	225	27.9	69	0.0	46.6	2
	7	C	-	28.6	65	0.0	245.9	3
	8	3.58	292.5	28.9	64	0.0	315.8	3
	9	3.58	292.5	30.1	63	0.0	394.6	2

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
16.04.2025 to 17.04.2025	10	3.13	270	32.9	29	0.0	392.5	5
	11	3.13	270	34.6	31	0.0	415.5	5
	12	1.34	292.5	35.5	31	0.0	420.6	4
	13	2.68	135	36.8	37	0.0	455.5	5
	14	3.13	180	37.8	42	0.0	444.4	4
	15	4.02	202.5	36.1	46	0.0	333.3	5
	16	4.47	202.5	35.5	53	0.0	150.6	4
	17	3.13	247.5	33.9	69	0.0	66.6	5
	18	4.47	180	32.8	69	0.0		
	19	4.47	202.5	32.8	69	0.0		
	20	3.13	180	32.8	75	0.0		
	21	2.24	157.5	31.1	84	0.0		
	22	2.68	180	30.6	83	0.0		
	23	2.24	202.5	29.9	85	0.0		
	0	2.68	180	28.9	88	0.0		
	1	2.24	180	28.9	90	2.1		
	2	3.13	225	28.9	93	1.9		
	3	3.58	225	27.8	95	1.8		
	4	2.68	247.5	27.8	96	1.6		
	5	2.24	247.5	27.8	98	2.2		
	6	2.24	180	28.9	98	1.7	55.5	5
	7	3.13	225	28.5	97	1.6	222.2	5
	8	1.34	157.5	28.6	96	1.8	333.3	4
	9	C	-	28.3	95	1.6	444.4	4

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
17.04.2025 to 18.04.2025	10	2.24	202.5	29.6	96	1.8	399.9	5
	11	C	-	28.7	96	1.7	410.5	4
	12	C	-	28.6	98	2.1	444.4	5
	13	1.34	157.5	27.9	97	1.7	505.5	4
	14	3.13	180	27.8	97	1.6	444.4	5
	15	4.47	247.5	27.6	98	1.5	333.3	4
	16	5.36	225	27.2	96	1.9	222.2	4
	17	4.47	180	28.9	94	2.2	66.6	4
	18	2.68	202.5	28.6	93	2.1		
	19	3.58	180	28.3	88	0.0		
	20	3.58	180	27.8	85	0.0		
	21	2.24	157.5	27.6	84	0.0		
	22	2.68	157.5	27.5	83	0.0		
	23	2.68	157.5	27.3	85	0.0		
	0	2.68	270	26.8	83	0.0		
	1	1.34	270	26.6	81	0.0		
	2	C	-	26.5	79	0.0		
	3	1.34	135	26.3	76	0.0		
	4	2.24	180	25.7	73	0.0		
	5	1.34	202.5	25.3	71	0.0		
	6	5.36	225	26.6	65	0.0	44.4	3
	7	4.47	180	27.8	59	0.0	222.2	3
	8	5.81	247.5	28.9	37	0.0	298.6	3
	9	4.47	270	29.9	29	0.0	333.3	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
18.04.2025 to 19.04.2025	10	3.13	270	32.6	29	0.0	398.3	2
	11	2.68	247.5	34.6	31	0.0	404.4	2
	12	1.34	270	35.5	31	0.0	555.5	2
	13	C	-	34.6	37	0.0	666.6	2
	14	C	-	36.9	42	0.0	444.4	2
	15	C	-	36.6	46	0.0	333.3	2
	16	3.58	180	36.3	53	0.0	222.2	2
	17	3.13	225	35.9	69	0.0	66.6	2
	18	4.02	180	34.5	69	0.0		
	19	3.58	180	34.3	69	0.0		
	20	2.68	225	33.9	75	0.0		
	21	2.24	247.5	32.8	79	0.0		
	22	C	-	32.5	79	0.0		
	23	2.24	270	32.1	79	0.0		
	0	4.02	202.5	31.9	81	0.0		
	1	4.02	202.5	31.1	81	0.0		
	2	3.13	247.5	29.8	84	0.0		
	3	3.13	225	29.5	84	0.0		
	4	3.13	247.5	29.1	84	0.0		
	5	3.58	225	28.5	84	0.0		
	6	3.58	270	29.8	84	0.0	44.4	2
	7	3.58	270	31.1	71	0.0	222.2	3
	8	4.02	247.5	32.2	68	0.0	333.3	2
	9	5.81	180	34.5	59	0.0	394.6	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
19.04.2025 to 20.04.2025	10	2.68	202.5	35.6	49	0.0	392.8	3
	11	2.68	157.5	36.8	48	0.0	410.5	3
	12	2.24	202.5	37.6	46	0.0	579.5	2
	13	2.24	180	37.9	37	0.0	657.6	2
	14	4.02	202.5	38.5	37	0.0	435.5	3
	15	3.58	180	37.8	41	0.0	345.6	3
	16	3.13	202.5	36.1	44	0.0	245.5	3
	17	2.24	202.5	35.8	53	0.0	68.6	2
	18	C	-	33.9	59	0.0		
	19	1.34	135	32.8	63	0.0		
	20	1.34	225	32.5	70	0.0		
	21	2.68	247.5	32.2	75	0.0		
	22	C	-	32.1	59	0.0		
	23	2.24	180	31.8	62	0.0		
	0	2.68	202.5	31.6	58	0.0		
	1	2.24	157.5	31.4	55	0.0		
	2	2.24	202.5	31.3	55	0.0		
	3	3.58	225	31.1	52	0.0		
	4	3.13	202.5	30.5	74	0.0		
	5	2.68	225	29.6	85	1.6		
	6	2.24	247.5	28.7	90	1.8	45.6	4
	7	C	-	29.2	93	2.1	54.3	5
	8	3.13	225	29.6	94	2.0	35.8	5
	9	3.13	180	29.9	95	1.9	39.6	4

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
20.04.2025 to 21.04.2025	10	5.36	180	30.2	96	1.9	382.9	5
	11	6.71	157.5	30.4	98	2.0	418.5	4
	12	7.15	202.5	30.5	96	1.8	599.5	5
	13	8.05	135	30.7	91	0.0	669.6	4
	14	7.15	112.5	30.9	89	0.0	465.5	4
	15	5.81	225	30.5	88	0.0	385.6	3
	16	6.26	247.5	29.6	85	0.0	275.5	3
	17	6.26	180	29.5	80	0.0	68.6	4
	18	6.26	202.5	29.2	78	0.0		
	19	5.81	225	28.9	75	0.0		
	20	5.36	247.5	28.6	80	0.0		
	21	4.02	202.5	28.6	84	0.0		
	22	3.58	157.5	28.3	89	0.0		
	23	3.13	180	27.8	90	0.0		
	0	3.58	202.5	27.6	92	1.7		
	1	3.13	225	27.2	93	1.6		
	2	2.68	135	26.8	94	1.9		
	3	3.13	225	26.7	95	2.1		
	4	1.34	270	26.5	96	2.2		
	5	C	-	26.1	97	2.2		
	6	1.34	112.5	26.5	98	1.6	87.3	4
	7	C	-	26.8	96	0.0	189.6	4
	8	1.34	135	27.2	93	0.0	297.2	3
	9	3.13	90	27.9	89	0.0	387.9	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
21.04.2025 to 22.04.2025	10	3.13	112.5	28.6	59	0.0	396.2	0
	11	2.68	157.5	29.8	52	0.0	425.5	0
	12	3.13	135	30.6	37	0.0	586.3	0
	13	8.05	180	33.3	39	0.0	689.5	0
	14	6.26	112.5	35.5	63	0.0	489.6	0
	15	5.36	202.5	34.8	59	0.0	389.3	0
	16	5.81	180	34.6	70	0.0	248.5	0
	17	4.02	202.5	34.3	75	0.0	69.6	0
	18	5.36	180	32.6	75	0.0		
	19	4.02	157.5	32.2	79	0.0		
	20	3.13	180	32.1	85	0.0		
	21	4.02	202.5	31.8	88	0.0		
	22	4.02	180	31.5	89	0.0		
	23	2.68	180	31.2	90	0.0		
	0	C	-	30.8	92	1.7		
	1	C	-	30.4	93	1.6		
	2	1.34	112.5	30.6	94	1.9		
	3	C	-	29.6	95	2.1		
	4	2.24	202.5	28.7	96	2.2		
	5	2.68	225	18.1	97	2.2		
	6	2.68	180	31.1	98	1.6	45.6	0
	7	2.24	292.5	32.2	96	0.0	58.3	0
	8	3.13	157.5	33.9	93	0.0	36.9	0
	9	4.47	135	36.1	89	0.0	398.6	0

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
22.04.2025 to 23.04.2025	10	3.58	112.5	36.3	90	1.9	382.9	5
	11	2.68	90	36.5	93	1.6	418.5	4
	12	2.24	247.5	36.7	94	1.8	380.2	5
	13	2.24	225	36.8	96	1.2	356.5	4
	14	2.24	270	36.9	95	1.6	280.3	4
	15	2.68	180	37.9	96	1.4	255.5	5
	16	4.02	180	37.8	99	1.5	180.3	5
	17	3.58	202.5	37.5	98	2.2	68.6	5
	18	4.02	180	36.1	95	1.9		
	19	2.68	202.5	35.8	65	0.0		
	20	4.02	202.5	35.7	77	0.0		
	21	3.58	225	34.8	79	0.0		
	22	3.13	225	34.6	80	0.0		
	23	C	-	34.7	79	0.0		
	0	C	-	33.3	78	0.0		
	1	1.34	225	32.2	75	0.0		
	2	2.68	270	32.2	73	0.0		
	3	4.02	247.5	31.1	75	0.0		
	4	5.36	247.5	30.6	70	0.0		
	5	3.58	270	30.1	65	0.0		
	6	4.47	270	31.8	60	0.0	87.3	2
	7	4.02	292.5	32.5	55	0.0	189.6	2
	8	2.68	225	33.3	52	0.0	297.2	3
	9	2.68	270	34.5	53	0.0	387.9	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
23.04.2025 to 24.04.2025	10	2.24	225	36.5	51	0.0	392.9	3
	11	C	-	37.8	49	0.0	415.5	3
	12	1.34	112.5	38.3	45	0.0	589.5	2
	13	1.12	112.5	38.5	37	0.0	659.6	3
	14	2.24	180	38.9	45	0.0	445.5	3
	15	4.47	135	37.8	49	0.0	345.6	2
	16	5.36	180	37.2	52	0.0	265.5	3
	17	4.02	202.5	36.1	55	0.0	69.9	2
	18	C	-	35.8	61	0.0		
	19	2.68	270	35.6	63	0.0		
	20	2.24	292.5	34.8	65	0.0		
	21	1.34	270	34.6	67	0.0		
	22	C	-	33.3	69	0.0		
	23	2.24	247.5	32.2	71	0.0		
	0	3.58	202.5	31.8	73	0.0		
	1	4.02	202.5	31.7	76	0.0		
	2	3.58	225	31.6	78	0.0		
	3	2.68	247.5	31.3	76	0.0		
	4	3.58	270	31.1	77	0.0		
	5	3.13	270	29.6	79	0.0		
	6	3.13	270	31.1	75	0.0	45.6	3
	7	4.02	247.5	32.8	69	0.0	264.3	3
	8	3.58	270	33.9	55	0.0	315.9	3
	9	3.58	270	34.5	49	0.0	393.6	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
24.04.2025 to 25.04.2025	10	2.68	270	37.8	45	0.0	396.2	2
	11	C	-	40	43	0.0	425.5	2
	12	1.34	112.5	40	41	0.0	586.3	2
	13	4.47	180	41.1	43	0.0	689.5	3
	14	6.26	180	41.1	45	0.0	489.6	3
	15	4.47	202.5	40	48	0.0	389.3	2
	16	5.36	180	37.8	46	0.0	248.5	2
	17	4.47	202.5	36.1	49	0.0	69.6	3
	18	5.36	180	35	50	0.0		
	19	4.02	202.5	33.9	51	0.0		
	20	2.68	270	33.9	52	0.0		
	21	1.34	247.5	32.8	55	0.0		
	22	2.24	225	32.8	59	0.0		
	23	3.13	202.5	32.8	66	0.0		
	0	1.34	247.5	32.2	66	0.0		
	1	1.34	270	30	72	0.0		
	2	3.13	247.5	30	73	0.0		
	3	3.58	225	30	74	0.0		
	4	3.13	180	30	75	0.0		
	5	5.36	157.5	30	76	0.0		
	6	4.02	135	31.1	75	0.0	45.5	2
	7	3.58	202.5	33.9	74	0.0	45.8	3
	8	3.58	180	36.1	75	0.0	35.5	2
	9	2.68	157.5	37.8	77	0.0	45.5	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
25.04.2025 to 26.04.2025	10	2.68	292.5	38.2	76	0.0	399.5	2
	11	2.24	202.5	38.3	77	0.0	415.5	3
	12	2.68	90	38.6	69	0.0	580.9	2
	13	1.34	135	38.9	65	0.0	680.9	3
	14	3.58	180	39.9	63	0.0	460.5	2
	15	5.81	180	38.7	60	0.0	350.5	3
	16	4.47	202.5	37.8	58	0.0	246.3	2
	17	5.36	202.5	36.1	63	0.0	69.5	2
	18	2.68	247.5	35.5	55	0.0		
	19	2.68	225	34.5	58	0.0		
	20	2.68	202.5	33.9	59	0.0		
	21	3.13	225	32.8	62	0.0		
	22	2.68	225	32.7	65	0.0		
	23	1.34	247.5	32.6	66	0.0		
	0	2.68	180	32.4	68	0.0		
	1	2.24	180	31.8	70	0.0		
	2	3.13	157.5	31.6	76	0.0		
	3	3.58	225	30.8	84	0.0		
	4	2.68	225	30.6	85	0.0		
	5	2.68	292.5	30.2	86	0.0		
	6	1.34	225	31.1	81	0.0	48.9	3
	7	3.13	180	32.8	75	0.0	248.3	2
	8	4.02	135	33.9	69	0.0	35.9	3
	9	4.47	157.5	34.5	55	0.0	39.5	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
26.04.2025 to 27.04.2025	10	4.47	157.5	35.5	59	0.0	396.2	3
	11	5.36	180	36.5	65	0.0	425.5	3
	12	4.47	135	37.5	55	0.0	586.3	4
	13	6.71	157.5	38.5	69	0.0	689.5	4
	14	4.47	135	38.9	75	0.0	489.6	3
	15	1.12	180	37.2	83	0.0	389.3	4
	16	2.68	202.5	36.3	88	0.0	248.5	4
	17	1.34	180	33.9	90	0.0	69.6	3
	18	4.02	225	32.8	92	1.9		
	19	2.68	202.5	32.7	93	2.2		
	20	3.13	202.5	32.6	94	2.1		
	21	3.13	180	32.4	96	1.8		
	22	3.58	202.5	31.6	97	1.8		
	23	3.13	180	31.5	98	2.1		
	0	2.68	180	31.4	98	2.2		
	1	2.68	202.5	31.2	95	0.0		
	2	3.13	180	30.8	93	0.0		
	3	3.58	202.5	30.6	92	0.0		
	4	3.58	270	30.4	93	0.0		
	5	2.68	292.5	30.1	91	0.0		
	6	3.58	202.5	31.1	89	0.0	45.5	2
	7	4.02	180	32.8	85	0.0	45.8	2
	8	2.24	157.5	33.9	83	0.0	35.5	3
	9	2.24	135	34.5	79	0.0	395.5	2

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
27.04.2025 to 28.04.2025	10	1.34	225	35.5	75	0.0	339.5	2
	11	2.68	135	36.6	73	0.0	412.5	3
	12	2.68	135	37.8	75	0.0	578.3	3
	13	6.26	157.5	38.6	76	0.0	645.8	2
	14	6.71	180	38.9	77	0.0	432.4	2
	15	4.02	157.5	38.5	85	0.0	345.6	3
	16	4.02	157.5	37.2	87	0.0	245.6	2
	17	5.81	225	36.8	89	0.0	67.5	3
	18	5.36	202.5	35.5	90	1.6		
	19	4.02	225	34.4	93	1.7		
	20	3.58	247.5	33.3	95	1.9		
	21	3.13	135	32.3	96	2.1		
	22	2.68	180	31.8	94	2.2		
	23	4.02	180	31.7	93	1.9		
	0	C	-	31.5	95	0.0		
	1	1.34	180	31.2	92	0.0		
	2	3.13	225	30.8	90	0.0		
	3	3.13	247.5	30.7	89	0.0		
	4	2.24	225	30.6	88	0.0		
	5	3.13	157.5	30.1	84	0.0		
	6	4.02	202.5	30.8	70	0.0	46.6	2
	7	3.13	202.5	31.1	63	0.0	245.9	3
	8	3.13	270	32.8	56	0.0	315.8	3
	9	1.34	292.5	33.3	50	0.0	350.3	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
28.04.2025 to 29.04.2025	10	3.13	292.5	34.7	59	0.0	399.8	4
	11	1.34	270	34.8	65	0.0	412.6	2
	12	3.13	202.5	35.8	69	0.0	578.7	2
	13	6.26	157.5	36.6	71	0.0	645.8	3
	14	5.81	180	36.9	75	0.0	432.6	2
	15	6.26	202.5	36.8	78	0.0	345.6	3
	16	5.36	180	36.6	75	0.0	255.5	2
	17	3.58	202.5	36.1	69	0.0	69.9	3
	18	5.36	180	33.9	62	0.0		
	19	5.81	202.5	33.7	75	0.0		
	20	4.47	202.5	33.5	71	0.0		
	21	4.02	202.5	32.8	75	0.0		
	22	3.58	180	32.5	78	0.0		
	23	2.24	202.5	32.2	79	0.0		
	0	2.24	225	31.9	81	0.0		
	1	2.68	247.5	31.8	84	0.0		
	2	2.68	247.5	31.5	85	0.0		
	3	3.58	270	31.3	89	0.0		
	4	3.58	270	30.8	84	0.0		
	5	3.13	270	30.5	75	0.0		
	6	C	-	31.1	70	0.0	45.6	2
	7	1.34	270	32.5	69	0.0	245.3	3
	8	C	-	33.3	65	0.0	315.6	2
	9	2.24	270	33.9	63	0.0	346.2	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
29.04.2025 to 30.04.2025	10	3.58	292.5	34.3	65	0.0	396.8	3
	11	1.34	247.5	34.6	68	0.0	416.5	2
	12	1.34	157.5	34.9	69	0.0	577.7	3
	13	4.47	180	35.3	71	0.0	645.9	2
	14	6.71	202.5	35.8	75	0.0	455.5	3
	15	5.81	157.5	35.6	77	0.0	345.6	2
	16	6.26	202.5	35.3	79	0.0	245.8	3
	17	6.26	225	34.8	80	0.0	69.9	3
	18	4.02	202.5	34.6	79	0.0		
	19	2.68	225	33.9	75	0.0		
	20	3.58	202.5	33.8	73	0.0		
	21	2.24	225	33.5	71	0.0		
	22	3.13	202.5	32.8	69	0.0		
	23	3.13	225	32.6	65	0.0		
	0	4.02	202.5	32.5	55	0.0		
	1	4.02	202.5	32.2	59	0.0		
	2	3.58	202.5	31.8	66	0.0		
	3	3.13	247.5	31.7	69	0.0		
	4	3.13	270	31.5	70	0.0		
	5	4.02	247.5	31.1	71	0.0		
	6	3.13	292.5	32.8	66	0.0	46.6	3
	7	5.36	180	33.9	59	0.0	245.5	2
	8	2.68	292.5	34.5	44	0.0	35.6	2
	9	4.02	247.5	34.9	42	0.0	394.5	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
30.04.2025 to 01.05.2025	10	3.13	157.5	35.3	35	0.0	395.8	2
	11	5.36	180	35.6	22	0.0	420.5	3
	12	6.71	202.5	35.9	23	0.0	576.9	2
	13	6.71	225	36.5	23	0.0	645.9	3
	14	6.26	247.5	36.7	23	0.0	480.9	2
	15	6.26	157.5	36.9	40	0.0	350.5	3
	16	4.02	180	36.5	50	0.0	25.5	2
	17	4.47	225	36.1	56	0.0	70.5	3
	18	4.02	202.5	35.6	63	0.0		
	19	3.58	247.5	34.6	67	0.0		
	20	4.02	202.5	35.1	71	0.0		
	21	5.36	225	33.3	76	0.0		
	22	5.36	202.5	32.8	79	0.0		
	23	3.58	180	32.7	83	0.0		
	0	2.24	270	32.5	85	0.0		
	1	2.24	225	32.1	88	1.3		
	2	2.68	247.5	31.8	90	1.6		
	3	2.68	270	31.7	93	1.9		
	4	3.58	180	31.2	94	2.1		
	5	3.13	180	30.2	95	2.2		
	6	2.68	157.5	31.8	96	1.9	46.5	4
	7	2.24	202.5	32.3	95	2.1	248.8	5
	8	2.68	135	33.3	94	1.6	320.8	3
	9	2.68	112.5	34.6	96	1.8	395.5	5

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
01.05.2025 to 02.05.2025	10	3.13	112.5	35.5	93	1.8	399.9	4
	11	2.68	112.5	36.5	92	1.6	415.5	5
	12	1.34	112.5	36.9	93	1.5	578.9	5
	13	6.71	180	37.6	96	1.7	645.5	5
	14	7.60	180	37.9	91	1.4	435.5	5
	15	4.02	157.5	37.6	90	1.6	356.5	4
	16	4.02	225	37.8	89	0.0	248.8	4
	17	1.34	225	36.1	88	0.0	69.5	3
	18	5.36	202.5	33.9	87	0.0		
	19	3.13	202.5	32.8	85	0.0		
	20	4.47	225	32.7	83	0.0		
	21	3.58	225	32.5	81	0.0		
	22	3.13	247.5	32.4	79	0.0		
	23	2.24	247.5	31.9	75	0.0		
	0	2.68	225	31.8	73	0.0		
	1	3.58	225	31.7	79	0.0		
	2	4.02	225	31.5	80	0.0		
	3	2.68	225	31.4	81	0.0		
	4	2.68	247.5	31.1	84	0.0		
	5	0.89	315	30.5	79	0.0		
	6	2.24	315	31.5	75	0.0	45.5	3
	7	C	-	32.8	65	0.0	246.5	3
	8	C	-	33.9	57	0.0	315.8	4
	9	2.24	90	34.5	53	0.0	395.5	4

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
02.05.2025 to 03.05.2025	10	C	-	36.1	46	0.0	395.8	3
	11	2.68	247.5	37.8	52	0.0	420.5	3
	12	2.24	247.5	38.9	55	0.0	576.9	2
	13	6.71	180	39.8	58	0.0	645.9	3
	14	5.36	180	39.8	61	0.0	480.9	2
	15	5.81	202.5	38.9	65	0.0	350.5	3
	16	5.36	180	37.8	66	0.0	225.5	3
	17	4.02	202.5	33.9	67	0.0	70.5	3
	18	6.26	180	32.8	75	0.0		
	19	4.02	180	32.5	75	0.0		
	20	7.15	202.5	32.8	79	0.0		
	21	7.15	180	32.7	75	0.0		
	22	5.81	180	32.2	75	0.0		
	23	3.13	180	31.8	78	0.0		
	0	1.34	90	31.7	81	0.0		
	1	1.34	112.5	31.5	83	0.0		
	2	C	-	31.2	84	0.0		
	3	2.24	112.5	30.5	85	0.0		
	4	2.68	90	29.5	86	0.0		
	5	2.68	135	28.9	83	0.0		
	6	2.24	90	29.9	79	0.0	46.5	3
	7	C	-	30.5	75	0.0	248.8	2
	8	2.24	90	31.8	69	0.0	320.8	3
	9	2.68	157.5	32.5	65	0.0	395.5	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
03.05.2025 to 04.05.2025	10	2.24	90	33.3	69	0.0	392.9	3
	11	2.68	135	34.5	71	0.0	415.5	4
	12	1.34	112.5	35.5	73	0.0	589.5	3
	13	4.02	157.5	36.6	75	0.0	659.6	4
	14	5.36	157.5	37.8	74	0.0	445.5	3
	15	6.26	180	37.2	76	0.0	345.6	3
	16	6.71	180	36.1	73	0.0	265.5	3
	17	6.71	202.5	35.5	78	0.0	69.9	3
	18	2.68	202.5	33.3	75	0.0		
	19	2.24	292.5	32.8	80	0.0		
	20	1.34	270	32.7	84	0.0		
	21	2.24	202.5	32.6	85	0.0		
	22	C	-	32.5	86	0.0		
	23	1.34	112.5	32.3	83	0.0		
	0	5.36	202.5	31.8	85	0.0		
	1	4.02	225	31.5	84	0.0		
	2	4.02	202.5	31.3	86	0.0		
	3	5.36	180	30.7	89	0.0		
	4	4.02	157.5	30.5	88	0.0		
	5	4.02	157.5	29.8	87	0.0		
	6	4.02	180	31.1	79	0.0	45.6	3
	7	4.47	157.5	32.2	65	0.0	264.3	4
	8	5.36	180	32.8	56	0.0	315.9	4
	9	5.36	180	33.9	47	0.0	393.6	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
04.05.2025 to 05.05.2025	10	6.26	180	34.5	45	0.0	382.9	3
	11	6.71	225	35.5	47	0.0	418.5	3
	12	7.15	202.5	36.8	46	0.0	599.5	2
	13	7.60	157.5	37.2	49	0.0	669.6	3
	14	6.26	135	37.8	55	0.0	465.5	2
	15	6.26	180	36.5	56	0.0	385.6	3
	16	6.71	247.5	35.5	59	0.0	275.5	3
	17	6.71	180	33.3	63	0.0	68.6	2
	18	6.71	202.5	32.3	66	0.0	54.2	
	19	4.47	180	32.1	71	0.0		
	20	4.02	180	31.9	75	0.0		
	21	5.36	225	31.7	74	0.0		
	22	4.47	202.5	31.5	76	0.0		
	23	5.36	202.5	31.3	80	0.0		
	0	3.58	180	30.8	83	0.0		
	1	3.13	157.5	30.5	84	0.0		
	2	4.02	135	30.3	85	0.0		
	3	5.36	202.5	29.8	86	0.0		
	4	5.81	135	29.6	87	0.0		
	5	5.81	180	29.3	88	0.0		
	6	6.26	202.5	31.1	85	0.0	87.3	3
	7	6.71	180	32.2	79	0.0	101.5	2
	8	4.02	202.5	32.8	75	0.0	297.2	2
	9	1.12	180	33.3	74	0.0	300.5	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
05.05.2025 to 06.05.2025	10	8.94	202.5	35.5	69	0.0	350.2	2
	11	4.02	225	37.2	65	0.0	388.5	3
	12	5.36	202.5	37.8	63	0.0	349.3	3
	13	4.02	180	38.2	61	0.0	223.5	3
	14	6.26	135	38.6	59	0.0	280.6	3
	15	6.26	112.5	37.8	57	0.0	350.5	2
	16	6.26	180	36.6	65	0.0	246.3	2
	17	7.15	247.5	35.5	71	0.0	69.5	3
	18	6.26	180	34.5	75	0.0		
	19	5.36	225	32.2	78	0.0		
	20	6.71	180	31.8	79	0.0		
	21	6.71	157.5	31.7	80	0.0		
	22	4.47	180	31.6	82	0.0		
	23	3.13	202.5	31.5	83	0.0		
	0	5.36	180	30.8	85	0.0		
	1	5.81	157.5	30.6	89	0.0		
	2	5.81	202.5	30.5	90	1.8		
	3	8.05	180	30.6	91	1.6		
	4	6.26	225	30.3	93	1.9		
	5	6.26	180	29.5	92	2.1		
	6	7.60	247.5	29.6	94	2.2	48.9	3
	7	7.60	180	29.9	89	0.0	66.6	3
	8	7.60	225	30.3	88	0.0	111.0	3
	9	7.60	180	30.9	85	0.0	180.3	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
06.05.2025 to 07.05.2025	10	7.60	180	32.3	84	0.0	222.2	2
	11	7.15	247.5	33.3	86	0.0	333.3	2
	12	6.71	180	34.6	83	0.0	444.4	3
	13	7.60	225	35.5	82	0.0	555.3	2
	14	8.28	157.5	37.6	80	0.0	698.3	3
	15	7.60	135	35.5	79	0.0	444.4	3
	16	3.58	90	33.3	75	0.0	66.6	3
	17	4.47	90	32.2	74	0.0	53.1	3
	18	7.15	180	31.9	73	0.0		
	19	6.71	180	31.8	72	0.0		
	20	6.71	225	31.5	71	0.0		
	21	4.02	157.5	30.5	69	0.0		
	22	5.36	135	30.4	65	0.0		
	23	5.36	157.5	30.3	64	0.0		
	0	5.81	135	29.8	65	0.0		
	1	5.81	157.5	29.7	67	0.0		
	2	4.47	112.5	29.6	69	0.0		
	3	2.24	90	29.5	71	0.0		
	4	2.24	135	29.3	73	0.0		
	5	2.24	112.5	29.2	75	0.0		
	6	1.34	90	29.8	79	0.0	55.5	3
	7	C	-	30.8	82	0.0	57.9	3
	8	1.34	112.5	31.6	84	0.0	65.5	3
	9	1.34	90	32.5	85	0.0	222.2	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
07.05.2025 to 08.05.2025	10	1.34	90	31.1	86	0.0	342.5	3
	11	2.24	135	32.2	87	0.0	372.5	3
	12	3.13	135	32.8	88	0.0	478.9	3
	13	2.24	112.5	32.8	86	0.0	445.6	3
	14	2.68	135	30	85	0.0	433.5	3
	15	2.24	180	30	84	0.0	361.3	4
	16	3.13	180	30	83	0.0	291.2	4
	17	1.34	157.5	30	82	0.0	96.7	4
	18	5.81	135	28.9	80	0.0		
	19	5.36	180	23.9	78	0.0		
	20	4.02	135	23.9	79	0.0		
	21	3.13	180	23.9	76	0.0		
	22	3.13	202.5	23.9	77	0.0		
	23	2.24	135	22.8	75	0.0		
	0	C	-	22.8	73	0.0		
	1	2.24	202.5	22.8	72	0.0		
	2	3.13	45	22.8	71	0.0		
	3	3.13	67.5	22.8	75	0.0		
	4	3.58	90	22.8	76	0.0		
	5	3.13	90	22.8	79	0.0		
	6	5.81	135	25	74	0.0	44.5	3
	7	5.81	157.5	26.1	70	0.0	193.2	3
	8	4.02	180	27.2	69	0.0	231.3	3
	9	4.02	135	28.9	65	0.0	290.5	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
08.05.2025 to 09.05.2025	10	3.13	157.5	31.1	62	0.0	415.5	3
	11	3.13	157.5	32.2	66	0.0	520.3	3
	12	2.68	112.5	32.8	74	0.0	578.9	3
	13	2.68	157.5	33.3	75	0.0	645.9	3
	14	2.68	135	34.8	77	0.0	432.5	2
	15	4.02	157.5	33.3	78	0.0	345.7	2
	16	3.58	157.5	32.3	79	0.0	245.6	3
	17	2.68	157.5	31.3	81	0.0	69.9	3
	18	C	-	30.3	83	0.0		
	19	6.26	315	29.3	85	0.0		
	20	5.36	112.5	28.6	87	0.0		
	21	3.13	90	27.8	85	0.0		
	22	2.24	112.5	27.6	83	0.0		
	23	C	-	27.2	81	0.0		
	0	1.34	225	26.9	89	0.0		
	1	1.34	90	26.8	85	0.0		
	2	2.24	225	25.8	84	0.0		
	3	3.13	90	25.6	89	0.0		
	4	2.68	247.5	25.3	84	0.0		
	5	3.13	90	24.6	75	0.0		
	6	3.13	135	24.8	70	0.0	46.6	3
	7	2.68	135	25.5	75	0.0	245.9	2
	8	5.36	157.5	26.3	75	0.0	315.8	3
	9	3.13	180	27.8	79	0.0	350.3	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
09.05.2025 to 10.05.2025	10	C	-	29.8	75	0.0	392.5	3
	11	3.58	247.5	30.5	74	0.0	410.2	2
	12	5.36	202.5	31.1	76	0.0	625	3
	13	6.26	225	32.5	79	0.0	620.5	3
	14	5.36	135	33.3	80	0.0	580.8	2
	15	4.47	225	32.5	81	0.0	435.8	3
	16	5.36	180	32.1	85	0.0	278.6	3
	17	4.47	202.5	31.3	89	0.0	68.5	3
	18	2.24	157.5	30.3	84	0.0		
	19	1.34	157.5	29.8	87	0.0		
	20	C	-	29.7	84	0.0		
	21	C	-	29.6	89	0.0		
	22	C	-	29.3	85	0.0		
	23	1.34	90	28.8	89	0.0		
	0	3.58	247.5	28.6	83	0.0		
	1	2.68	180	28.3	88	0.0		
	2	4.02	135	27.8	89	0.0		
	3	4.02	90	27.6	89	0.0		
	4	3.58	180	27.3	85	0.0		
	5	2.24	90	27.1	79	0.0		
	6	3.13	180	26.2	75	0.0	45.8	3
	7	3.13	180	26.6	70	0.0	200.5	3
	8	3.58	157.5	27.8	66	0.0	310.5	3
	9	4.02	180	28.9	63	0.0	385.5	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
10.05.2025 to 11.05.2025	10	3.58	180	29.8	66	0.0	392.5	3
	11	4.02	225	30.6	70	0.0	410.2	2
	12	6.71	180	32.2	71	0.0	625.0	3
	13	2.68	202.5	32.6	73	0.0	620.5	2
	14	1.34	135	31.6	69	0.0	580.8	2
	15	2.68	157.5	30.4	67	0.0	435.8	3
	16	3.13	180	28.9	65	0.0	278.6	3
	17	2.24	157.5	27.8	71	0.0	68.5	4
	18	3.13	247.5	27.2	79	0.0		
	19	2.24	292.5	27.1	85	1.1		
	20	2.24	225	26.3	88	1.3		
	21	1.34	247.5	25.3	89	1.9		
	22	2.68	180	24.8	92	2.1		
	23	3.58	225	24.6	95	2.2		
	0	C	-	23.8	96	2.3		
	1	1.34	135	23.5	95	2.1		
	2	2.68	157.5	23.2	91	1.6		
	3	2.68	180	22.8	93	1.9		
	4	3.13	202.5	22.6	94	2.1		
	5	3.58	225	22.3	95	2.2		
	6	3.58	202.5	22.9	93	2.3	45.8	5
	7	5.36	90	23.6	89	0.0	200.5	4
	8	5.36	112.5	24.6	85	0.0	310.5	3
	9	5.36	112.5	25.6	83	0.0	385.5	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
11.05.2025 to 12.05.2025	10	5.36	135	26.6	71	0.0	382.9	3
	11	5.36	157.5	27.9	71	0.0	418.5	3
	12	6.26	180	29.5	89	0.0	599.5	2
	13	4.02	135	32.2	89	0.0	669.6	3
	14	5.36	225	34.5	83	0.0	465.5	2
	15	3.58	180	33.3	83	0.0	385.6	2
	16	3.13	225	32.8	83	0.0	275.5	3
	17	4.02	180	31.5	83	0.0	68.6	3
	18	3.13	135	30.5	89	0.0		
	19	2.24	180	30.2	89	0.0		
	20	3.58	90	29.8	89	0.0		
	21	1.34	135	29.5	89	0.0		
	22	C	-	29.1	89	0.0		
	23	2.24	157.5	28.9	100	0.0		
	0	C	-	28.6	99	0.0		
	1	C	-	28.3	99	0.0		
	2	2.68	135	27.6	99	0.0		
	3	1.34	90	26.6	99	0.0		
	4	2.68	112.5	26.3	83	0.0		
	5	3.13	90	26.1	74	0.0		
	6	2.68	135	26.5	70	0.0	87.3	3
	7	1.34	112.5	27.2	63	0.0	189.6	3
	8	2.24	225	28.9	59	0.0	297.2	3
	9	1.34	135	30.2	59	0.0	387.9	3

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
12.05.2025 to 13.05.2025	10	1.34	90	31.1	59	0.0	392.9	4
	11	2.24	90	32.2	55	0.0	415.5	4
	12	2.24	112.5	32.8	62	0.0	589.5	4
	13	2.24	112.5	33.3	66	0.0	659.6	4
	14	2.24	225	34.6	74	0.0	445.5	4
	15	1.34	112.5	33.6	79	0.0	345.6	4
	16	4.02	202.5	32.2	80	0.0	265.5	4
	17	3.13	202.5	31.1	81	0.0	66.6	4
	18	2.68	202.5	30.5	83	0.0		
	19	1.34	270	28.9	85	0.0		
	20	C	-	28.7	89	0.0		
	21	2.24	247.5	28.6	88	0.0		
	22	1.34	202.5	27.6	89	0.0		
	23	2.24	247.5	27.2	87	0.0		
	0	1.34	90	25.8	88	0.0		
	1	1.12	90	25.6	87	0.0		
	2	1.12	90	25.3	84	0.0		
	3	1.12	135	23.9	75	0.0		
	4	1.34	135	23.6	66	0.0		
	5	C	-	23.1	63	0.0		
	6	2.24	112.5	23.9	61	0.0	45.6	3
	7	2.68	135	24.9	59	0.0	268.3	3
	8	2.24	135	26.6	56	0.0	316.9	3
	9	2.24	90	28.8	52	0.0	398.6	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
13.05.2025 to 14.05.2025	10	C	-	29.9	52	0.0	396.2	4
	11	2.24	112.5	30.3	52	0.0	425.5	4
	12	2.24	135	32.6	59	0.0	586.3	4
	13	1.34	135	34.5	59	0.0	689.5	4
	14	4.02	202.5	35.9	66	0.0	489.6	4
	15	4.47	202.5	34.6	75	0.0	389.3	4
	16	6.26	202.5	33.3	79	0.0	248.5	4
	17	3.58	202.5	32.2	84	0.0	69.6	4
	18	2.68	180	31.8	84	0.0		
	19	2.68	202.5	31.6	84	0.0		
	20	1.34	180	30.5	84	0.0		
	21	1.12	202.5	30.3	89	0.0		
	22	1.12	225	29.5	89	0.0		
	23	1.12	202.5	28.8	89	0.0		
	0	2.24	90	27.8	94	0.0		
	1	2.24	90	27.6	94	0.0		
	2	2.24	247.5	27.5	84	0.0		
	3	C	-	26.6	84	0.0		
	4	2.24	270	26.3	86	0.0		
	5	2.24	135	25.8	86	0.0		
	6	2.24	90	25.6	88	0.0	45.5	4
	7	2.68	135	26.6	90	1.8	245.8	5
	8	3.13	135	26.8	93	1.9	315.5	5
	9	2.68	135	26.9	95	2.1	395.5	5

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
14.05.2025 to 15.05.2025	10	3.13	135	33.9	96	2.3	399.5	4
	11	7.60	202.5	33.9	97	2.3	415.5	4
	12	4.47	202.5	33.9	96	2.1	580.9	4
	13	6.26	180	35.6	94	0.0	680.9	4
	14	5.36	202.5	35.9	93	0.0	460.5	4
	15	4.47	180	32.2	87	0.0	350.5	4
	16	3.58	202.5	32.2	85	0.0	246.3	4
	17	4.02	202.5	31.9	84	0.0	69.5	4
	18	5.36	180	31.5	82	0.0		
	19	4.02	202.5	31.1	81	0.0		
	20	2.24	202.5	30.8	84	0.0		
	21	2.24	225	30.5	87	0.0		
	22	2.24	225	28.9	89	0.0		
	23	2.24	135	28.7	88	0.0		
	0	2.24	202.5	28.6	89	0.0		
	1	1.34	202.5	28.2	93	1.9		
	2	3.58	180	27.8	94	1.8		
	3	2.68	180	27.6	95	2.0		
	4	2.24	202.5	27.6	96	2.1		
	5	2.24	180	27.1	95	2.2		
	6	3.13	157.5	28.6	93	1.7	48.9	5
	7	3.58	135	28.9	91	0.0	248.3	5
	8	3.58	157.5	29.6	90	0.0	315.9	5
	9	3.13	135	30.5	89	0.0	390.5	5

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
15.05.2025 to 16.05.2025	10	3.58	157.5	32.8	85	0.0	392.5	4
	11	4.02	135	33.3	83	0.0	412.5	4
	12	3.58	157.5	34.5	79	0.0	578.3	4
	13	5.36	202.5	36.3	75	0.0	645.8	4
	14	5.36	180	36.8	69	0.0	432.4	4
	15	4.47	202.5	35.5	65	0.0	345.6	4
	16	5.36	202.5	33.9	55	0.0	245.6	4
	17	3.58	202.5	32.8	66	0.0	67.5	4
	18	3.13	202.5	32.5	71	0.0		
	19	2.68	225	32.2	75	0.0		
	20	3.58	202.5	31.8	79	0.0		
	21	2.68	225	31.1	80	0.0		
	22	1.34	225	30.8	81	0.0		
	23	2.68	202.5	30.7	83	0.0		
	0	3.58	225	30.5	81	0.0		
	1	3.58	202.5	29.8	84	0.0		
	2	3.58	225	28.7	85	0.0		
	3	4.02	225	28.6	84	0.0		
	4	3.13	225	28.3	87	0.0		
	5	2.68	247.5	27.8	86	0.0		
	6	3.58	180	28.9	79	0.0	89.7	4
	7	2.24	157.5	32.2	69	0.0	189.7	4
	8	2.68	135	32.8	59	0.0	345.6	4
	9	3.13	135	33.3	56	0.0	578.6	4

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
16.05.2025 to 17.05.2025	10	4.02	157.5	33.9	53	0.0	392.8	5
	11	4.02	112.5	35.8	46	0.0	412.6	5
	12	3.58	157.5	36.1	46	0.0	578.7	5
	13	4.02	202.5	37.2	43	0.0	645.8	5
	14	3.58	202.5	37.8	46	0.0	432.6	5
	15	2.68	225	36.5	46	0.0	345.6	5
	16	4.47	202.5	35.5	46	0.0	255.5	5
	17	3.13	180	34.6	54	0.0	69.9	5
	18	3.13	202.5	33.3	62	0.0		
	19	2.68	202.5	32.7	79	0.0		
	20	2.68	247.5	32.2	79	0.0		
	21	3.13	247.5	31.5	82	0.0		
	22	3.13	202.5	31.3	84	0.0		
	23	2.68	225	30.7	86	0.0		
	0	4.02	157.5	30.6	88	0.0		
	1	4.02	202.5	30.4	89	0.0		
	2	5.36	225	30.3	90	1.2		
	3	4.02	180	30.1	92	1.6		
	4	4.02	202.5	29.8	93	1.8		
	5	3.13	135	29.6	94	2.0		
	6	3.58	202.5	30.5	96	2.1	45.6	5
	7	2.24	112.5	32.2	95	1.8	245.3	5
	8	2.68	180	33.9	98	1.9	315.6	4
	9	3.58	180	34.5	97	1.6	346.2	5

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
17.05.2025 to 18.05.2025	10	5.81	157.5	34.5	95	1.9	395.8	5
	11	5.81	180	34.6	93	1.7	420.5	5
	12	5.81	202.5	34.5	92	1.5	576.9	5
	13	5.36	180	35.5	89	0.0	645.9	4
	14	5.36	180	35.9	85	0.0	480.9	4
	15	7.15	180	34.8	83	0.0	350.5	4
	16	5.36	202.5	34.6	81	0.0	25.5	3
	17	6.71	180	33.3	80	0.0	70.5	3
	18	2.68	202.5	32.8	79	0.0		
	19	3.13	225	32.5	78	0.0		
	20	5.36	202.5	32.2	75	0.0		
	21	4.47	180	31.8	77	0.0		
	22	4.02	225	31.6	76	0.0		
	23	4.02	202.5	31.1	79	0.0		
	0	5.36	157.5	30.6	84	0.0		
	1	4.02	135	30.4	85	0.0		
	2	4.02	225	30.3	88	0.0		
	3	4.02	202.5	30.1	89	0.0		
	4	3.58	225	29.5	85	0.0		
	5	3.13	202.5	28.7	84	0.0		
	6	2.68	270	28.8	79	0.0	46.5	4
	7	2.24	247.5	29.3	75	0.0	248.8	5
	8	1.34	225	29.8	73	0.0	320.8	4
	9	1.34	180	31.5	69	0.0	395.5	4

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
18.05.2025 to 19.05.2025	10	2.24	112.5	32.8	67	0.0	395.8	4
	11	3.13	112.5	33.3	65	0.0	420.5	3
	12	6.26	112.5	34.5	69	0.0	576.9	3
	13	5.36	135	35.8	74	0.0	645.9	4
	14	3.58	157.5	37.2	84	0.0	480.9	4
	15	3.58	180	36.1	88	0.0	350.5	4
	16	6.26	180	32.2	87	0.0	225.5	5
	17	5.36	202.5	28.9	90	1.2	70.5	5
	18	6.26	180	27.2	93	1.6		
	19	5.36	202.5	26.6	93	1.8		
	20	5.81	180	26.3	94	1.9		
	21	6.26	202.5	25.5	95	2.1		
	22	5.81	202.5	24.7	96	2.0		
	23	6.26	202.5	24.3	97	2.2		
	0	3.13	180	23.3	96	2.3		
	1	2.68	180	31.1	92	2.3		
	2	2.24	202.5	31.1	93	2.2		
	3	2.24	247.5	31.1	94	2.1		
	4	1.34	270	31.1	95	1.9		
	5	2.24	225	31.1	96	1.8		
	6	2.68	90	32.2	96	1.6	46.5	5
	7	2.68	112.5	32.2	98	2.2	248.8	5
	8	3.13	112.5	32.8	97	2.1	320.8	5
	9	3.58	180	33.9	98	2.3	395.5	5

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
19.05.2025 to 20.05.2025	10	3.13	202.5	33.5	98	2.4	400.5	6
	11	4.47	157.5	34.6	97	2.3	444.5	6
	12	4.02	180	34.7	96	2.2	578.9	6
	13	5.36	157.5	34.8	95	2.1	645.9	6
	14	4.02	247.5	34.9	93	2.2	432.5	6
	15	5.36	157.5	34.3	94	2.3	345.7	6
	16	6.71	180	33.9	93	2.2	245.6	6
	17	6.26	180	32.8	96	1.9	69.9	6
	18	4.02	202.5	32.2	95	1.8		
	19	4.02	202.5	31.1	98	2.1		
	20	4.02	180	30.3	99	2.2		
	21	4.02	202.5	30.2	100	1.9		
	22	4.02	202.5	29.8	99	1.8		
	23	2.24	180	29.7	100	1.7		
	0	2.24	135	29.3	99	2.1		
	1	2.68	157.5	28.3	98	2.2		
	2	3.58	135	28.2	96	2.3		
	3	5.36	180	27.8	99	1.6		
	4	5.36	135	27.6	96	1.9		
	5	2.68	180	27.3	97	2.1		
	6	5.36	135	27.5	98	2.3	46.6	7
	7	6.26	135	27.6	96	2.2	150.5	7
	8	3.13	180	28.6	96	2.1	245.9	7
	9	2.68	112.5	29.6	93	2.0	315.8	7

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
20.05.2025 to 21.05.2025	10	3.13	112.5	32.8	93	2.3	392.5	5
	11	3.13	135	33.9	95	2.2	415.5	5
	12	3.13	135	34.5	94	1.9	578.9	5
	13	3.13	112.5	34.6	93	0.0	655.5	5
	14	2.68	135	34.9	89	0.0	444.4	5
	15	2.68	157.5	33.8	87	0.0	333.3	5
	16	2.24	157.5	33.3	86	0.0	66.6	5
	17	C	-	31.3	85	0.0		
	18	5.36	180	29.8	84	0.0		
	19	5.36	202.5	28.6	85	0.0		
	20	4.47	180	27.2	86	0.0		
	21	3.58	180	26.6	87	0.0		
	22	2.24	157.5	26.5	89	0.0		
	23	2.24	135	26.4	85	0.0		
	0	2.24	225	26.3	86	0.0		
	1	2.24	202.5	26.1	89	0.0		
	2	2.68	15.5	25.7	88	0.0		
	3	2.24	90	25.6	87	0.0		
	4	2.68	112.5	25.3	89	0.0		
	5	2.24	112.5	25.1	88	0.0		
	6	2.24	157.5	25.5	85	0.0	55.5	4
	7	3.13	112.5	25.6	82	0.0	222.2	4
	8	2.24	112.5	25.9	79	0.0	333.3	4
	9	2.24	135	26.6	71	0.0	380.6	4

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
21.05.2025 to 22.05.2025	10	1.34	90	27.8	67	0.0	392.9	5
	11	6.26	180	28.6	67	0.0	412.5	5
	12	6.26	180	29.8	66	0.0	578.9	5
	13	4.47	202.5	30.2	71	0.0	645.9	5
	14	3.58	180	30.4	76	0.0	432.5	5
	15	3.13	202.5	30.1	75	0.0	345.7	5
	16	2.68	202.5	29.8	73	0.0	245.6	5
	17	3.13	180	29.7	79	0.0	69.9	5
	18	1.34	135	29.6	84	0.0		
	19	1.34	112.5	29.3	85	0.0		
	20	1.34	202.5	28.8	86	0.0		
	21	C	-	28.7	87	0.0		
	22	1.34	22.5	28.6	88	0.0		
	23	1.34	270	27.8	86	0.0		
	0	2.68	112.5	27.6	85	0.0		
	1	2.68	135	27.3	89	0.0		
	2	2.68	112.5	26.7	88	0.0		
	3	3.13	157.5	26.6	85	0.0		
	4	3.13	112.5	26.3	87	0.0		
	5	1.34	180	26.1	86	0.0		
	6	3.13	112.5	26.3	83	0.0	46.6	5
	7	3.13	90	26.8	78	0.0	245.9	5
	8	6.26	180	28.9	75	0.0	315.8	5
	9	4.47	202.5	31.1	69	0.0	394.6	5

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Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
22.05.2025 to 23.05.2025	10	C	-	32.2	79	0.0	399.9	5
	11	1.12	180	32.8	76	0.0	410.5	5
	12	C	-	33.5	75	0.0	444.4	5
	13	C	-	33.9	76	0.0	505.5	5
	14	1.34	157.5	35.6	79	0.0	444.4	5
	15	C	-	35.4	78	0.0	333.3	5
	16	1.34	135	34.5	79	0.0	222.2	5
	17	2.68	135	33.3	80	0.0	66.6	5
	18	2.24	157.5	32.8	81	0.0		
	19	2.24	180	32.6	83	0.0		
	20	2.24	225	32.3	85	0.0		
	21	1.34	157.5	31.8	86	0.0		
	22	1.34	180	31.5	84	0.0		
	23	2.68	135	30.6	89	0.0		
	0	1.12	90	30.3	88	0.0		
	1	1.12	202.5	28.9	87	0.0		
	2	1.12	112.5	27.8	86	0.0		
	3	1.34	90	27.6	83	0.0		
	4	1.34	247.5	27.3	84	0.0		
	5	2.24	90	27.1	81	0.0		
	6	1.34	112.5	28.9	79	0.0	44.4	4
	7	1.34	112.5	31.1	75	0.0	222.2	4
	8	2.24	135	32.2	71	0.0	350.3	4
	9	2.68	135	33.3	70	0.0	390.3	7

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
23.05.2025 to 24.05.2025	10	3.13	135	33.9	78	0.0	399.9	5
	11	7.15	180	34.6	85	0.0	415.5	4
	12	4.02	157.5	34.5	90	1.8	578.9	5
	13	3.58	180	36.8	92	2.1	645.5	5
	14	2.24	157.5	36.1	96	2.0	435.5	5
	15	3.58	180	35.8	95	2.3	356.5	5
	16	2.68	202.5	35.7	93	2.4	248.8	4
	17	1.12	202.5	35.5	94	2.1	69.5	4
	18	C	-	35.3	93	1.7		
	19	2.24	157.5	35.1	89	0.0		
	20	1.12	157.5	33.8	94	0.0		
	21	C	-	33.5	94	0.0		
	22	1.34	90	33.3	94	0.0		
	23	1.12	90	32.6	94	0.0		
	0	2.24	22.5	32.3	97	0.0		
	1	1.34	22.5	31.8	97	0.0		
	2	2.24	202.5	31.5	97	0.0		
	3	3.58	180	31.3	97	0.0		
	4	3.13	90	30.5	97	0.0		
	5	2.68	112.5	30.3	97	0.0		
	6	4.02	112.5	30.5	75	0.0	45.5	4
	7	3.58	112.5	31.1	71	0.0	246.5	4
	8	2.24	90	32.2	67	0.0	315.8	4
	9	2.68	112.5	32.8	63	0.0	395.5	4

METEOROLOGICAL REPORT

ECO VISION INDIA

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
24.05.2025 to 25.05.2025	10	3.13	135	33.9	56	0.0	415.5	3
	11	2.68	112.5	34.5	56	0.0	520.3	3
	12	4.02	157.5	36.1	59	0.0	578.9	3
	13	4.02	180	36.5	71	0.0	645.9	3
	14	4.47	180	37.2	75	0.0	432.5	3
	15	3.13	180	36.8	75	0.0	345.7	3
	16	2.68	157.5	36.5	79	0.0	245.6	3
	17	2.24	180	35.6	79	0.0	69.9	3
	18	1.34	90	32.8	81	0.0		
	19	1.34	112.5	32.6	81	0.0		
	20	1.34	90	32.1	81	0.0		
	21	C	-	31.8	84	0.0		
	22	C	-	31.6	84	0.0		
	23	1.34	45	28.9	86	0.0		
	0	2.68	22.5	28.6	89	0.0		
	1	3.13	360	28.5	89	0.0		
	2	1.34	112.5	28.3	89	0.0		
	3	1.34	135	27.8	89	0.0		
	4	2.68	90	27.6	89	0.0		
	5	2.68	112.5	27.1	79	0.0		
	6	2.68	90	28.3	71	0.0	46.6	3
	7	3.13	180	28.5	67	0.0	245.9	3
	8	4.02	112.5	28.9	63	0.0	315.8	3
	9	5.81	135	29.9	61	0.0	350.3	3

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
25.05.2025 to 26.05.2025	10	2.68	135	30.3	61	0.0	392.5	3
	11	2.24	112.5	32.5	55	0.0	410.2	3
	12	2.24	112.5	33.3	53	0.0	625.0	3
	13	2.24	157.5	35.5	59	0.0	620.5	3
	14	2.24	90	36.5	75	0.0	580.8	3
	15	1.34	112.5	35.8	75	0.0	435.8	3
	16	4.02	90	34.6	75	0.0	278.6	3
	17	4.02	90	34.3	79	0.0	68.5	3
	18	C	-	34.1	79	0.0		
	19	C	-	33.3	79	0.0		
	20	C	-	33.1	84	0.0		
	21	2.24	270	32.8	84	0.0		
	22	3.13	247.5	32.6	89	0.0		
	23	2.24	225	32.5	89	0.0		
	0	5.81	180	32.3	89	0.0		
	1	5.81	180	31.5	89	0.0		
	2	6.71	112.5	31.3	89	0.0		
	3	7.60	202.5	30.6	89	0.0		
	4	6.71	225	30.2	90	1.2		
	5	7.60	157.5	29.2	91	2.3		
	6	9.28	202.5	29.5	93	2.3	45.8	5
	7	7.60	225	29.6	94	2.2	200.5	5
	8	8.05	247.5	29.5	95	1.9	310.5	5
	9	7.15	157.5	29.8	96	2.1	385.5	6

METEOROLOGICAL REPORT

ECO VISION INDIA

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
26.05.2025 to 27.05.2025	10	8.05	135	29.5	95	2.1	393.9	5
	11	7.15	157.5	28.9	96	2.3	421.5	5
	12	8.05	225	27.8	93	1.9	489.3	5
	13	8.94	180	27.7	94	1.8	555.5	5
	14	8.94	202.5	27.5	95	1.7	623.2	5
	15	9.39	225	27.6	95	1.8	422.2	5
	16	8.94	202.5	27.3	96	1.9	296.3	5
	17	5.68	22.5	26.3	97	2.1	66.6	5
	18	5.68	112.5	26.1	98	1.6		
	19	4.02	225	25.8	95	0.0		
	20	4.02	202.5	25.7	93	0.0		
	21	5.36	180	25.6	91	0.0		
	22	5.36	157.5	25.4	89	0.0		
	23	4.47	247.5	25.3	88	0.0		
	0	5.36	180	25.1	85	0.0		
	1	5.36	225	24.6	84	0.0		
	2	5.36	202.5	24.5	83	0.0		
	3	4.02	225	24.3	82	0.0		
	4	4.47	270	24.1	83	0.0		
	5	2.68	247.5	23.9	81	0.0		
	6	6.71	292.5	24.6	80	0.0	45.6	4
	7	2.68	270	25.5	79	0.0	264.3	4
	8	1.12	270	26.1	75	0.0	315.9	4
	9	7.60	270	26.9	74	0.0	350.3	4

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
27.05.2025 to 28.05.2025	10	7.15	270	27.6	78	0.0	396.2	3
	11	7.60	270	27.9	83	0.0	425.5	3
	12	7.60	292.5	28.6	85	0.0	586.3	3
	13	6.71	270	28.9	89	0.0	689.5	3
	14	6.26	270	29.3	93	0.0	489.6	3
	15	6.26	270	29.1	94	0.0	389.3	3
	16	5.36	247.5	28.8	95	0.0	248.5	3
	17	7.60	270	28.7	96	0.0	69.6	3
	18	14.75	202.5	28.6	97	0.0		
	19	14.31	180	28.5	92	0.0		
	20	12.96	157.5	28.3	89	0.0		
	21	14.75	135	28.8	88	0.0		
	22	11.62	135	28.6	87	0.0		
	23	8.94	202.5	28.5	85	0.0		
	0	2.24	225	27.7	84	0.0		
	1	1.34	225	27.6	86	0.0		
	2	1.34	225	27.3	87	0.0		
	3	1.34	270	27.1	89	0.0		
	4	C	-	26.5	88	0.0		
	5	1.34	225	25.5	87	0.0		
	6	3.13	157.5	25.8	86	0.0	45.6	5
	7	5.36	180	26.6	85	0.0	58.3	3
	8	5.81	180	26.8	84	0.0	150.5	3
	9	8.05	180	26.9	83	0.0	250.3	3

METEOROLOGICAL REPORT

ECO VISION INDIA

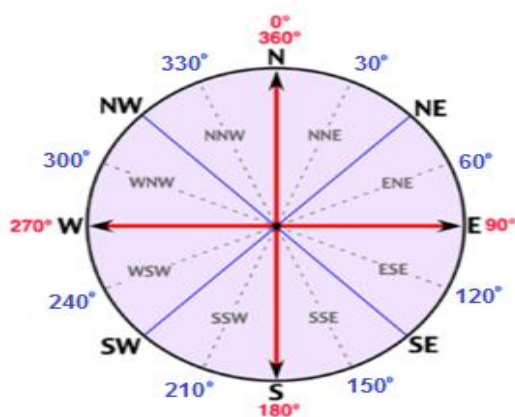
Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
28.05.2025 to 29.05.2025	10	5.36	157.5	27.6	87	0.0	392.9	6
	11	6.26	180	27.8	89	0.0	415.5	6
	12	4.02	157.5	28.3	90	1.6	589.5	6
	13	5.36	180	28.5	93	1.8	659.6	6
	14	5.36	180	29.5	96	1.9	445.5	6
	15	5.36	247.5	29.6	95	2.0	345.6	6
	16	5.36	180	28.8	98	2.1	265.5	6
	17	8.94	180	28.7	97	1.8	69.9	6
	18	4.02	247.5	28.3	96	1.6		
	19	4.02	247.5	27.8	84	0.0		
	20	3.58	247.5	27.6	89	0.0		
	21	3.13	225	27.3	89	0.0		
	22	3.13	247.5	26.7	89	0.0		
	23	2.24	270	26.6	89	0.0		
	0	9.39	180	26.5	89	0.0		
	1	8.05	180	26.3	84	0.0		
	2	8.05	112.5	26.1	89	0.0		
	3	6.26	90	26.6	84	0.0		
	4	6.71	225	26.3	79	0.0		
	5	8.05	180	26.1	75	0.0		
	6	8.05	180	26.3	71	0.0	45.6	5
	7	7.60	225	26.5	71	0.0	264.3	5
	8	6.26	180	26.8	75	0.0	315.9	5
	9	8.05	180	26.9	79	0.0	393.6	5

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
29.05.2025 to 30.05.2025	10	7.60	270	27.3	79	0.0	396.2	5
	11	6.26	270	27.5	84	0.0	425.5	5
	12	6.26	292.5	27.8	84	0.0	586.3	5
	13	5.36	270	28.3	84	0.0	689.5	5
	14	5.36	270	28.4	84	0.0	489.6	5
	15	5.36	270	28.3	84	0.0	389.3	5
	16	6.26	247.5	27.6	84	0.0	248.5	5
	17	7.15	270	27.3	89	0.0	69.6	5
	18	6.26	202.5	26.8	93	1.6		
	19	6.26	180	26.7	94	1.9		
	20	7.60	157.5	26.6	95	1.8		
	21	6.71	135	26.5	96	2.0		
	22	7.60	135	26.4	95	2.1		
	23	7.15	202.5	26.3	97	2.2		
	0	5.36	225	26.1	95	2.1		
	1	6.71	225	25.8	96	1.8		
	2	7.60	225	25.7	98	1.7		
	3	5.36	270	25.6	97	1.9		
	4	5.36	-	25.5	96	2.3		
	5	5.36	225	25.3	93	2.1		
	6	6.26	157.5	25.6	97	2.0	87.3	5
	7	6.26	180	25.9	95	1.8	189.6	5
	8	6.26	180	26.6	94	2.1	297.2	5
	9	6.26	180	26.9	96	2.2	387.9	5

METEOROLOGICAL REPORT

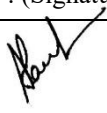
ECO VISION INDIA

Date	Time (Hr.)	WS (m/sec)	WD	Temp. [C]	RH [%]	Rain [mm]	Solar Radiation	Okta
30.05.2025 to 31.05.2025	10	7.15	180	27.9	96	2.1	392.9	5
	11	6.26	225	27.8	97	2.2	415.5	5
	12	6.26	180	27.7	98	2.0	589.5	5
	13	6.26	180	27.6	100	2.3	659.6	5
	14	5.36	157.5	27.7	100	2.2	445.5	5
	15	5.81	157.5	27.4	98	2.1	345.6	5
	16	5.81	180	27.3	99	1.9	265.5	5
	17	3.58	202.5	27.2	97	1.6	69.9	
	18	8.05	180	27.1	96	1.7		
	19	6.26	225	26.9	93	0.0		
	20	7.15	202.5	26.8	89	0.0		
	21	6.26	135	26.7	87	0.0		
	22	7.60	225	26.6	85	0.0		
	23	5.36	180	26.5	89	0.0		
	0	6.26	225	26.4	84	0.0		
	1	5.36	180	26.3	83	0.0		
	2	3.13	225	26.2	81	0.0		
	3	5.81	292.5	26.1	82	0.0		
	4	6.26	225	25.9	89	0.0		
	5	5.36	202.5	25.6	84	0.0		
	6	4.47	225	27.2	83	0.0	45.6	4
	7	2.68	157.5	27.6	81	0.0	264.3	4
	8	3.13	157.5	27.8	84	0.0	315.9	4
	9	4.02	180	28.9	79	0.0	393.6	4



NOTE:

1. 'C' means very low Wind Speed (<0.5 m/s)
2. Wind Direction is given - 36° (360°) as North
9° (90°) as East
18° (180°) as South
27° (270°) as West

Compiled by : (Signature)	Certified by : (Signature)
	
Name : Dr. AJOY PAUL	Name : Dr. SUMIT BARAN CHOWDHURY
For ENVIROCHECK	Seal: 
Date of Issue : 20.06.2025	
Place : Kolkata	

REPORT ON AMBIENT AIR QUALITY

**REPORT ON AMBIENT AIR QUALITY MONITORING FOR
SYNTHETIC ORGANIC CHEMICALS INDUSTRY**

ECO VISION INDIA
Plot No – 27, Khatiyan No – 586 (LR), JL No – 96, Mouza-Haldibari, Kaliyaganj,
Uttar Dinajpur, West Bengal - 733129

MONITORING MONTH & YEAR :MAR'25 - MAY'25

MONITORED BY :

Envirocheck
189, Rastraguru Avenue,
Kolkata - 700 028

LOCATION : PROJECT SITE
STATION CODE : A1

STATION TYPE : Fixed

Date of sampling	Pollutants level in $\mu\text{g}/\text{m}^3$				mg/m^3	$\mu\text{g}/\text{m}^3$
	PM10	PM2.5	SO ₂	NO _x	CO	VOC
01.03.25 - 02.03.25	57.2	26.0	<4.0	15.0	<0.1	<0.1
05.03.25 - 06.03.25	65.1	32.5	4.8	20.0	<0.1	<0.1
09.03.25 - 10.03.25	59.2	29.4	<4.0	18.5	<0.1	<0.1
13.03.25 - 14.03.25	71.5	35.1	5.2	21.5	<0.1	<0.1
17.03.25 - 18.03.25	68.2	32.6	4.8	20.0	<0.1	<0.1
21.03.25 - 22.03.25	73.5	36.5	5.8	23.5	<0.1	<0.1
25.03.25 - 26.03.25	55.2	28.5	<4.0	18.2	<0.1	<0.1
29.03.25 - 30.03.25	53.6	23.6	<4.0	15.0	<0.1	<0.1
02.04.25 - 03.04.25	48.2	26.5	<4.0	16.5	<0.1	<0.1
06.04.25 - 07.04.25	46.0	24.5	<4.0	12.5	<0.1	<0.1
10.04.25 - 11.04.25	57.0	26.7	<4.0	15.0	<0.1	<0.1
14.04.25 - 15.04.25	64.0	30.5	<4.0	18.5	<0.1	<0.1

Date of sampling	Pollutants level in $\mu\text{g}/\text{m}^3$				mg/m^3	$\mu\text{g}/\text{m}^3$
	PM10	PM2.5	SO ₂	NO _x	CO	VOC
18.04.25 - 19.04.25	74.0	32.5	6.2	18.5	<0.1	<0.1
22.04.25 - 23.04.25	41.2	21.8	<4.0	10.0	<0.1	<0.1
26.04.25 - 27.04.25	36.5	18.5	<4.0	8.0	<0.1	<0.1
30.04.25 - 01.05.25	42.8	16.2	<4.0	10.0	<0.1	<0.1
04.05.25 - 05.05.25	62.0	25.1	5.8	15.0	<0.1	<0.1
08.05.25 - 09.05.25	68.0	26.8	6.2	16.5	<0.1	<0.1
12.05.25 - 13.05.25	54.0	24.1	<4.0	12.5	<0.1	<0.1
16.05.25 - 17.05.25	31.5	15.2	<4.0	10.0	<0.1	<0.1
20.05.25 - 21.05.25	45.0	20.8	<4.0	16.5	<0.1	<0.1
24.05.25 - 25.05.25	67.0	31.5	5.6	18.2	<0.1	<0.1
27.05.25 - 28.05.25	45.0	22.5	<4.0	15.0	<0.1	<0.1
30.05.25 - 31.05.25	56.0	26.5	<4.0	16.5	<0.1	<0.1

Compiled by : (Signature)



Name : Dr. AJAY PAUL

For ENVIROCHECK

Date of Issue : 10.07.2025

Place : Kolkata

Certified by : (Signature)



Name : DR. SUMIT CHOWDHURY

Seal :



**REPORT ON AMBIENT AIR QUALITY MONITORING FOR
SYNTHETIC ORGANIC CHEMICALS INDUSTRY**

ECO VISION INDIA
Plot No – 27, Khatiyan No – 586 (LR), JL No – 96, Mouza-Haldibari, Kaliyaganj,
Uttar Dinajpur, West Bengal - 733129

MONITORING MONTH & YEAR :MAR'25 - MAY'25

MONITORED BY :

Envirocheck
189, Rastraguru Avenue,
Kolkata - 700 028

LOCATION : NEAR SINTORE SSK SCHOOL
STATION CODE : A2

STATION TYPE : Fixed

Date of sampling	Pollutants level in $\mu\text{g}/\text{m}^3$				mg/m^3	$\mu\text{g}/\text{m}^3$
	PM10	PM2.5	SO ₂	NO _x	CO	VOC
01.03.25 - 02.03.25	32.5	18.2	<4.0	15.0	<0.1	<1.0
05.03.25 - 06.03.25	38.2	21.5	<4.0	18.5	<0.1	<1.0
09.03.25 - 10.03.25	30.5	15.2	<4.0	12.5	<0.1	<1.0
13.03.25 - 14.03.25	31.8	18.6	<4.0	15.0	<0.1	<1.0
17.03.25 - 18.03.25	49.2	22.5	<4.0	20.0	<0.1	<1.0
21.03.25 - 22.03.25	43.6	19.5	<4.0	18.5	<0.1	<1.0
25.03.25 - 26.03.25	45.1	20.1	<4.0	16.2	<0.1	<1.0
29.03.25 - 30.03.25	35.2	18.2	<4.0	18.5	<0.1	<1.0
02.04.25 - 03.04.25	47.2	23.8	<4.0	15.0	<0.1	<1.0
06.04.25 - 07.04.25	39.2	20.1	<4.0	12.5	<0.1	<1.0
10.04.25 - 11.04.25	51.6	25.3	<4.0	16.5	<0.1	<1.0
14.04.25 - 15.04.25	57.2	24.5	<4.0	20.0	<0.1	<1.0

Date of sampling	Pollutants level in $\mu\text{g}/\text{m}^3$				mg/m^3	$\mu\text{g}/\text{m}^3$
	PM10	PM2.5	SO ₂	NO _x	CO	VOC
18.04.25 - 19.04.25	47.2	24.1	<4.0	18.5	<0.1	<1.0
22.04.25 - 23.04.25	28.5	18.2	<4.0	10.0	<0.1	<1.0
26.04.25 - 27.04.25	26.2	14.5	<4.0	8.0	<0.1	<1.0
30.04.25 - 01.05.25	24.1	16.2	<4.0	10.0	<0.1	<1.0
04.05.25 - 05.05.25	45.2	21.8	<4.0	12.5	<0.1	<1.0
08.05.25 - 09.05.25	49.2	25.1	<4.0	15.0	<0.1	<1.0
12.05.25 - 13.05.25	41.5	20.3	<4.0	16.5	<0.1	<1.0
16.05.25 - 17.05.25	25.1	14.8	<4.0	9.0	<0.1	<1.0
20.05.25 - 21.05.25	33.6	18.5	<4.0	12.5	<0.1	<1.0
24.05.25 - 25.05.25	47.2	23.6	<4.0	16.5	<0.1	<1.0
27.05.25 - 28.05.25	56.2	25.1	<4.0	18.5	<0.1	<1.0
30.05.25 - 31.05.25	47.5	20.6	<4.0	20.0	<0.1	<1.0

Compiled by : (Signature)



Name : Dr. AJAY PAUL

For ENVIROCHECK

Date of Issue : 10.07.2025

Place : Kolkata

Certified by : (Signature)



Name : DR. SUMIT CHOWDHURY

Seal :



**REPORT ON AMBIENT AIR QUALITY MONITORING FOR
SYNTHETIC ORGANIC CHEMICALS INDUSTRY**

ECO VISION INDIA
Plot No – 27, Khatiyan No – 586 (LR), JL No – 96, Mouza-Haldibari, Kaliyaganj,
Uttar Dinajpur, West Bengal - 733129

MONITORING MONTH & YEAR :MAR'25 - MAY'25

MONITORED BY :

Envirocheck
189, Rastraguru Avenue,
Kolkata - 700 028

LOCATION : NEAR NASIRHAT
STATION CODE : A3

STATION TYPE : Fixed

Date of sampling	Pollutants level in $\mu\text{g}/\text{m}^3$				mg/m^3	$\mu\text{g}/\text{m}^3$
	PM10	PM2.5	SO ₂	NO _x	CO	VOC
01.03.25 - 02.03.25	51.2	23.5	<4.0	15.0	<0.1	<1.0
05.03.25 - 06.03.25	45.1	22.8	<4.0	16.5	<0.1	<1.0
09.03.25 - 10.03.25	39.5	19.5	<4.0	10.0	<0.1	<1.0
13.03.25 - 14.03.25	47.2	24.5	<4.0	12.5	<0.1	<1.0
17.03.25 - 18.03.25	54.2	26.1	<4.0	15.0	<0.1	<1.0
21.03.25 - 22.03.25	55.1	24.8	<4.0	16.5	<0.1	<1.0
25.03.25 - 26.03.25	47.2	22.8	<4.0	10.0	<0.1	<1.0
29.03.25 - 30.03.25	49.2	26.2	<4.0	15.0	<0.1	<1.0
02.04.25 - 03.04.25	41.5	20.5	<4.0	12.5	<0.1	<1.0
06.04.25 - 07.04.25	54.2	26.2	<4.0	16.5	<0.1	<1.0
10.04.25 - 11.04.25	56.1	28.2	<4.0	18.5	<0.1	<1.0
14.04.25 - 15.04.25	49.5	23.5	<4.0	12.5	<0.1	<1.0

Date of sampling	Pollutants level in $\mu\text{g}/\text{m}^3$				mg/m^3	$\mu\text{g}/\text{m}^3$
	PM10	PM2.5	SO ₂	NO _x	CO	VOC
18.04.25 - 19.04.25	55.1	28.5	<4.0	16.5	<0.1	<1.0
22.04.25 - 23.04.25	48.5	22.6	<4.0	15.0	<0.1	<1.0
26.04.25 - 27.04.25	32.6	18.5	<4.0	8.0	<0.1	<1.0
30.04.25 - 01.05.25	28.5	20.1	<4.0	10.0	<0.1	<1.0
04.05.25 - 05.05.25	55.1	26.5	<4.0	15.0	<0.1	<1.0
08.05.25 - 09.05.25	61.5	32.8	<4.0	16.5	<0.1	<1.0
12.05.25 - 13.05.25	49.2	19.2	<4.0	12.5	<0.1	<1.0
16.05.25 - 17.05.25	31.5	21.5	<4.0	10.0	<0.1	<1.0
20.05.25 - 21.05.25	47.5	22.5	<4.0	16.5	<0.1	<1.0
24.05.25 - 25.05.25	54.2	24.1	<4.0	18.5	<0.1	<1.0
27.05.25 - 28.05.25	50.1	26.1	<4.0	16.5	<0.1	<1.0
30.05.25 - 31.05.25	52.8	23.8	<4.0	12.5	<0.1	<1.0

Compiled by : (Signature)



Name : Dr. AJAY PAUL

For ENVIROCHECK

Date of Issue : 10.07.2025

Place : Kolkata

Certified by : (Signature)



Name : DR. SUMIT CHOWDHURY

Seal :



**REPORT ON AMBIENT AIR QUALITY MONITORING FOR
SYNTHETIC ORGANIC CHEMICALS INDUSTRY**

ECO VISION INDIA
Plot No – 27, Khatiyan No – 586 (LR), JL No – 96, Mouza-Haldibari, Kaliyaganj,
Uttar Dinajpur, West Bengal - 733129

MONITORING MONTH & YEAR :MAR'25 - MAY'25

MONITORED BY :

Envirocheck
189, Rastraguru Avenue,
Kolkata - 700 028

LOCATION : NEAR ATGHARA FP SCHOOL
STATION CODE : A4

STATION TYPE : Fixed

Date of sampling	Pollutants level in $\mu\text{g}/\text{m}^3$				mg/m^3	$\mu\text{g}/\text{m}^3$
	PM10	PM2.5	SO ₂	NO _x	CO	VOC
01.03.25 - 02.03.25	54.2	26.5	<4.0	15.0	<0.1	<1.0
05.03.25 - 06.03.25	43.2	21.5	<4.0	12.5	<0.1	<1.0
09.03.25 - 10.03.25	38.1	18.2	<4.0	10.0	<0.1	<1.0
13.03.25 - 14.03.25	46.2	24.5	<4.0	12.5	<0.1	<1.0
17.03.25 - 18.03.25	51.8	26.5	<4.0	16.5	<0.1	<1.0
21.03.25 - 22.03.25	42.6	22.5	<4.0	15.0	<0.1	<1.0
25.03.25 - 26.03.25	47.2	24.3	<4.0	16.5	<0.1	<1.0
29.03.25 - 30.03.25	55.8	28.2	<4.0	18.2	<0.1	<1.0
02.04.25 - 03.04.25	51.6	22.5	<4.0	14.2	<0.1	<1.0
06.04.25 - 07.04.25	42.8	24.3	<4.0	12.5	<0.1	<1.0
10.04.25 - 11.04.25	39.5	19.5	<4.0	10.0	<0.1	<1.0
14.04.25 - 15.04.25	41.5	22.8	<4.0	15.0	<0.1	<1.0

Date of sampling	Pollutants level in $\mu\text{g}/\text{m}^3$				mg/m^3	$\mu\text{g}/\text{m}^3$
	PM10	PM2.5	SO ₂	NO _x	CO	VOC
18.04.25 - 19.04.25	57.2	26.5	<4.0	16.5	<0.1	<1.0
22.04.25 - 23.04.25	36.8	18.5	<4.0	10.0	<0.1	<1.0
26.04.25 - 27.04.25	32.5	12.6	<4.0	9.0	<0.1	<1.0
30.04.25 - 01.05.25	30.8	14.2	<4.0	8.0	<0.1	<1.0
04.05.25 - 05.05.25	46.5	23.5	<4.0	16.5	<0.1	<1.0
08.05.25 - 09.05.25	50.1	26.5	<4.0	18.5	<0.1	<1.0
12.05.25 - 13.05.25	53.6	24.2	<4.0	20.0	<0.1	<1.0
16.05.25 - 17.05.25	30.2	16.5	<4.0	12.5	<0.1	<1.0
20.05.25 - 21.05.25	54.2	24.8	<4.0	16.5	<0.1	<1.0
24.05.25 - 25.05.25	61.8	32.6	<4.0	18.5	<0.1	<1.0
27.05.25 - 28.05.25	53.2	24.1	<4.0	15.0	<0.1	<1.0
30.05.25 - 31.05.25	49.5	19.2	<4.0	12.5	<0.1	<1.0

Compiled by : (Signature)

Name : Dr. AJAY PAUL

For ENVIROCHECK

Date of Issue : 10.07.2025

Place : Kolkata

Certified by : (Signature)

Name : DR. SUMIT CHOWDHURY

Seal :



**REPORT ON AMBIENT AIR QUALITY MONITORING FOR
SYNTHETIC ORGANIC CHEMICALS INDUSTRY**

ECO VISION INDIA
Plot No – 27, Khatiyan No – 586 (LR), JL No – 96, Mouza-Haldibari, Kaliyaganj,
Uttar Dinajpur, West Bengal - 733129

MONITORING MONTH & YEAR :MAR'25 - MAY'25

MONITORED BY :

Envirocheck
189, Rastraguru Avenue,
Kolkata - 700 028

LOCATION : NEAR NASIRHAT MAHAJONPARA ANGANWADI KANDRA
STATION CODE : A5

STATION TYPE : Fixed

Date of sampling	Pollutants level in $\mu\text{g}/\text{m}^3$				mg/m^3	$\mu\text{g}/\text{m}^3$
	PM10	PM2.5	SO ₂	NO _x	CO	VOC
03.03.25 - 04.03.25	55.2	23.6	<4.0	20.0	<0.1	<1.0
07.03.25 - 08.03.25	49.5	22.8	<4.0	21.5	<0.1	<1.0
11.03.25 - 12.03.25	36.2	19.5	<4.0	12.5	<0.1	<1.0
15.03.25 - 16.03.25	51.8	26.5	<4.0	15.0	<0.1	<1.0
19.03.25 - 20.03.25	41.2	19.5	<4.0	10.0	<0.1	<1.0
23.03.25 - 24.03.25	58.2	26.5	<4.0	15.0	<0.1	<1.0
27.03.25 - 28.03.25	50.6	21.8	<4.0	12.5	<0.1	<1.0
31.03.25 - 01.04.25	45.2	20.5	<4.0	16.5	<0.1	<1.0
04.04.25 - 05.04.25	51.8	24.8	<4.0	18.5	<0.1	<1.0
08.04.25 - 09.04.25	55.6	23.6	<4.0	20.0	<0.1	<1.0
12.04.25 - 13.04.25	49.5	21.8	<4.0	15.0	<0.1	<1.0
16.04.25 - 17.04.25	47.2	24.1	<4.0	14.2	<0.1	<1.0

Date of sampling	Pollutants level in $\mu\text{g}/\text{m}^3$				mg/m^3	$\mu\text{g}/\text{m}^3$
	PM10	PM2.5	SO ₂	NO _x	CO	VOC
20.04.25 - 21.04.25	55.7	22.5	<4.0	16.5	<0.1	<1.0
24.04.25 - 25.04.25	61.5	34.6	<4.0	20.0	<0.1	<1.0
28.04.25 - 29.04.25	57.2	30.2	<4.0	18.5	<0.1	<1.0
02.05.25 - 03.05.25	59.1	29.4	<4.0	14.2	<0.1	<1.0
06.05.24 - 07.05.25	48.2	22.6	<4.0	12.5	<0.1	<1.0
10.05.25 - 11.05.25	45.3	21.8	<4.0	16.5	<0.1	<1.0
14.05.25 - 15.05.25	32.5	16.5	<4.0	9.0	<0.1	<1.0
18.05.25 - 19.05.25	26.8	14.2	<4.0	10.0	<0.1	<1.0
22.05.25 - 23.05.25	41.2	22.6	<4.0	15.0	<0.1	<1.0
25.05.25 - 26.05.25	45.3	21.5	<4.0	16.5	<0.1	<1.0
28.05.25 - 29.05.25	51.8	25.8	<4.0	18.2	<0.1	<1.0
31.05.25 - 01.06.25	53.6	24.1	<4.0	20.0	<0.1	<1.0

Compiled by : (Signature)



Name : Dr. AJAY PAUL

For ENVIROCHECK

Date of Issue : 10.07.2025

Place : Kolkata

Certified by : (Signature)



Name : DR. SUMIT CHOWDHURY

Seal :



REPORT ON AMBIENT AIR QUALITY MONITORING FOR
SYNTHETIC ORGANIC CHEMICALS INDUSTRY

ECO VISION INDIA
Plot No – 27, Khatiyan No – 586 (LR), JL No – 96, Mouza-Haldibari, Kaliyaganj,
Uttar Dinajpur, West Bengal - 733129

MONITORING MONTH & YEAR :MAR'25 - MAY'25

MONITORED BY :

Envirocheck
189, Rastraguru Avenue,
Kolkata - 700 028

LOCATION : NEAR BALARAMPUR PRATHAMIK SCHOOL
STATION CODE : A6

STATION TYPE : Fixed

Date of sampling	Pollutants level in $\mu\text{g}/\text{m}^3$				mg/m^3	$\mu\text{g}/\text{m}^3$
	PM10	PM2.5	SO ₂	NO _x	CO	VOC
03.03.25 - 04.03.25	56.2	23.5	<4.0	15.0	<0.1	<1.0
07.03.25 - 08.03.25	51.8	21.8	<4.0	12.5	<0.1	<1.0
11.03.25 - 12.03.25	62.8	36.2	<4.0	20.0	<0.1	<1.0
15.03.25 - 16.03.25	57.2	28.5	<4.0	16.5	<0.1	<1.0
19.03.25 - 20.03.25	49.2	23.5	<4.0	15.0	<0.1	<1.0
23.03.25 - 24.03.25	57.6	28.2	<4.0	16.5	<0.1	<1.0
27.03.25 - 28.03.25	50.2	20.6	<4.0	15.0	<0.1	<1.0
31.03.25 - 01.04.25	59.1	26.5	<4.0	18.2	<0.1	<1.0
04.04.25 - 05.04.25	52.6	21.5	<4.0	15.0	<0.1	<1.0
08.04.25 - 09.04.25	48.5	23.8	<4.0	12.5	<0.1	<1.0
12.04.25 - 13.04.25	55.2	24.5	<4.0	16.5	<0.1	<1.0
16.04.25 - 17.04.25	53.9	21.6	<4.0	15.0	<0.1	<1.0

Date of sampling	Pollutants level in $\mu\text{g}/\text{m}^3$				mg/m^3	$\mu\text{g}/\text{m}^3$
	PM10	PM2.5	SO ₂	NO _x	CO	VOC
20.04.25 - 21.04.25	49.2	22.5	<4.0	18.5	<0.1	<1.0
24.04.25 - 25.04.25	55.2	23.6	<4.0	20.0	<0.1	<1.0
28.04.25 - 29.04.25	51.9	24.1	<4.0	16.5	<0.1	<1.0
02.05.25 - 03.05.25	47.2	21.5	<4.0	15.0	<0.1	<1.0
06.05.24 - 07.05.25	61.8	32.6	<4.0	19.2	<0.1	<1.0
10.05.25 - 11.05.25	49.5	28.2	<4.0	15.0	<0.1	<1.0
14.05.25 - 15.05.25	39.2	19.5	<4.0	12.5	<0.1	<1.0
18.05.25 - 19.05.25	35.1	24.5	<4.0	10.0	<0.1	<1.0
22.05.25 - 23.05.25	55.8	26.8	<4.0	15.0	<0.1	<1.0
25.05.25 - 26.05.25	61.5	30.5	<4.0	18.5	<0.1	<1.0
28.05.25 - 29.05.25	47.2	24.6	<4.0	15.0	<0.1	<1.0
31.05.25 - 01.06.25	42.6	20.5	<4.0	12.5	<0.1	<1.0

Compiled by : (Signature)

Name : Dr. AJOY PAUL

For ENVIROCHECK

Date of Issue : 10.07.2025

Place : Kolkata

Certified by : (Signature)

Name : DR. SUMIT CHOWDHURY

Seal :



REPORT ON AMBIENT AIR QUALITY MONITORING FOR
SYNTHETIC ORGANIC CHEMICALS INDUSTRY

ECO VISION INDIA
Plot No – 27, Khatiyan No – 586 (LR), JL No – 96, Mouza-Haldibari, Kaliyaganj,
Uttar Dinajpur, West Bengal - 733129

MONITORING MONTH & YEAR :MAR'25 - MAY'25

MONITORED BY :

Envirocheck
189, Rastraguru Avenue,
Kolkata - 700 028

LOCATION : NEAR FATEHPUR CD HIGH SCHOOL GROUND
STATION CODE : A7

STATION TYPE : Fixed

Date of sampling	Pollutants level in $\mu\text{g}/\text{m}^3$				mg/m^3	$\mu\text{g}/\text{m}^3$
	PM10	PM2.5	SO ₂	NO _x	CO	VOC
03.03.25 - 04.03.25	47.2	23.5	<4.0	18.5	<0.1	<1.0
07.03.25 - 08.03.25	65.2	31.8	<4.0	20.0	<0.1	<1.0
11.03.25 - 12.03.25	57.8	28.5	<4.0	16.5	<0.1	<1.0
15.03.25 - 16.03.25	65.2	34.2	<4.0	23.5	<0.1	<1.0
19.03.25 - 20.03.25	42.6	21.5	<4.0	12.5	<0.1	<1.0
23.03.25 - 24.03.25	49.2	23.8	<4.0	15.0	<0.1	<1.0
27.03.25 - 28.03.25	41.5	19.5	<4.0	12.5	<0.1	<1.0
31.03.25 - 01.04.25	58.2	22.5	<4.0	18.5	<0.1	<1.0
04.04.25 - 05.04.25	53.8	21.8	<4.0	15.0	<0.1	<1.0
08.04.25 - 09.04.25	57.2	25.1	<4.0	16.5	<0.1	<1.0
12.04.25 - 13.04.25	54.2	20.5	<4.0	15.0	<0.1	<1.0
16.04.25 - 17.04.25	58.2	23.8	<4.0	20.0	<0.1	<1.0

Date of sampling	Pollutants level in $\mu\text{g}/\text{m}^3$				mg/m^3	$\mu\text{g}/\text{m}^3$
	PM10	PM2.5	SO ₂	NO _x	CO	VOC
20.04.25 - 21.04.25	64.2	33.6	<4.0	22.5	<0.1	<1.0
24.04.25 - 25.04.25	57.2	29.5	<4.0	18.5	<0.1	<1.0
28.04.25 - 29.04.25	50.8	25.1	<4.0	15.0	<0.1	<1.0
02.05.25 - 03.05.25	54.1	22.6	<4.0	16.5	<0.1	<1.0
06.05.24 - 07.05.25	48.2	24.8	<4.0	12.5	<0.1	<1.0
10.05.25 - 11.05.25	41.6	19.5	<4.0	10.0	<0.1	<1.0
14.05.25 - 15.05.25	40.2	18.5	<4.0	8.0	<0.1	<1.0
18.05.25 - 19.05.25	36.5	16.8	<4.0	10.0	<0.1	<1.0
22.05.25 - 23.05.25	49.5	19.2	<4.0	15.0	<0.1	<1.0
25.05.25 - 26.05.25	53.2	21.5	<4.0	16.5	<0.1	<1.0
28.05.25 - 29.05.25	43.2	19.2	<4.0	18.5	<0.1	<1.0
31.05.25 - 01.06.25	51.8	21.8	<4.0	15.0	<0.1	<1.0

Compiled by : (Signature)



Name : Dr. AJOY PAUL

For ENVIROCHECK

Date of Issue : 10.07.2025

Place : Kolkata

Certified by : (Signature)



Name : DR. SUMIT CHOWDHURY

Seal :



**REPORT ON AMBIENT AIR QUALITY MONITORING FOR
SYNTHETIC ORGANIC CHEMICALS INDUSTRY**

ECO VISION INDIA
Plot No – 27, Khatiyan No – 586 (LR), JL No – 96, Mouza-Haldibari, Kaliyaganj,
Uttar Dinajpur, West Bengal - 733129

MONITORING MONTH & YEAR :MAR'25 - MAY'25

MONITORED BY :

Envirocheck
189, Rastraguru Avenue,
Kolkata - 700 028

LOCATION : NEAR ANAUN UTTAR PARA MASJID
STATION CODE : A8

STATION TYPE : Fixed

Date of sampling	Pollutants level in $\mu\text{g}/\text{m}^3$				mg/m^3	$\mu\text{g}/\text{m}^3$
	PM10	PM2.5	SO ₂	NO _x	CO	VOC
03.03.25 - 04.03.25	71.2	35.2	<4.0	23.5	<0.1	<1.0
07.03.25 - 08.03.25	65.8	32.8	<4.0	20.0	<0.1	<1.0
11.03.25 - 12.03.25	54.2	26.5	<4.0	18.5	<0.1	<1.0
15.03.25 - 16.03.25	49.5	21.8	<4.0	16.5	<0.1	<1.0
19.03.25 - 20.03.25	68.1	34.5	<4.0	21.5	<0.1	<1.0
23.03.25 - 24.03.25	55.2	26.8	<4.0	18.5	<0.1	<1.0
27.03.25 - 28.03.25	64.8	31.5	<4.0	22.6	<0.1	<1.0
31.03.25 - 01.04.25	49.5	24.6	<4.0	19.5	<0.1	<1.0
04.04.25 - 05.04.25	51.8	26.5	<4.0	21.8	<0.1	<1.0
08.04.25 - 09.04.25	49.2	21.8	<4.0	16.5	<0.1	<1.0
12.04.25 - 13.04.25	55.1	25.1	<4.0	18.5	<0.1	<1.0
16.04.25 - 17.04.25	61.5	33.6	<4.0	20.0	<0.1	<1.0

Date of sampling	Pollutants level in $\mu\text{g}/\text{m}^3$				mg/m^3	$\mu\text{g}/\text{m}^3$
	PM10	PM2.5	SO ₂	NO _x	CO	VOC
20.04.25 - 21.04.25	41.5	19.5	<4.0	10.0	<0.1	<1.0
24.04.25 - 25.04.25	55.7	21.5	<4.0	16.5	<0.1	<1.0
28.04.25 - 29.04.25	61.5	33.6	<4.0	18.5	<0.1	<1.0
02.05.25 - 03.05.25	57.2	31.5	<4.0	15.0	<0.1	<1.0
06.05.24 - 07.05.25	69.1	38.2	<4.0	20.0	<0.1	<1.0
10.05.25 - 11.05.25	54.2	22.8	<4.0	16.5	<0.1	<1.0
14.05.25 - 15.05.25	61.8	31.5	<4.0	20.0	<0.1	<1.0
18.05.25 - 19.05.25	48.2	19.5	<4.0	15.0	<0.1	<1.0
22.05.25 - 23.05.25	58.1	24.2	<4.0	16.5	<0.1	<1.0
25.05.25 - 26.05.25	55.3	22.8	<4.0	19.2	<0.1	<1.0
28.05.25 - 29.05.25	49.5	21.5	<4.0	15.0	<0.1	<1.0
31.05.25 - 01.06.25	54.1	22.6	<4.0	16.5	<0.1	<1.0

Compiled by : (Signature)



Name : Dr. AJAY PAUL

For ENVIROCHECK

Date of Issue : 10.07.2025

Place : Kolkata

Certified by : (Signature)



Name : DR. SUMIT CHOWDHURY

Seal :



NOISE ANALYSIS REPORT

REPORT ON SAMPLE SURVEY FOR NOISE LEVEL
EIA FOR PROPOSED SYNTHETIC ORGANIC CHEMICALS INDUSTRY

ECO VISION INDIA
PLOT NO – 27, KHATIYAN NO – 586 (LR), JL NO – 96, MOUZA-HALDIBARI, KALIYAGANJ,
DIST.- UTTAR DINAJPUR, WEST BENGAL – 733129

MONITORED AND ASSIGNED BY:

ENVIROCHECK
 189, Rastraguru Avenue,
 Calcutta - 700 028

DAY TIME : 10.00 AM. TO 12.00

Date	Station code	Station location	Ambient Noise Level dB(A)		
			L _{min}	L _{max}	L _{eq}
03.04.25	N1	Near Project Site	61.2	72.5	63.50
03.04.25	N2	Near Sintore SSK School	59.2	70.5	61.48
04.04.25	N3	Near Nasirhat	58.2	64.8	60.12
04.04.25	N4	Near Atghara FP School	54.2	71.5	61.57
05.04.25	N5	Near Nasirhat Mahajonpara Anganwadi Kandra	61.8	70.5	62.89
05.04.25	N6	Near Balarampur Prathamik School	55.8	63.2	60.18
06.04.25	N7	Near Fatehpur CD High School Ground	56.9	67.5	61.91
06.04.25	N8	Near Anaun Uttar Para Masjid	61.8	74.3	64.28

REPORT ON SAMPLE SURVEY FOR NOISE LEVEL
EIA FOR PROPOSED SYNTHETIC ORGANIC CHEMICALS INDUSTRY

ECO VISION INDIA
PLOT NO – 27, KHATIYAN NO – 586 (LR), JL NO – 96, MOUZA-HALDIBARI, KALIYAGANJ,
DIST.- UTTAR DINAJPUR, WEST BENGAL – 733129

MONITORED AND ASSIGNED BY :

ENVIROCHECK
189, Rastraguru Avenue,
Calcutta - 700 028

NIGHT TIME : 10 PM. TO 12 MIDNIGHT

Date	Station code	Station location	Ambient Noise Level dB(A)		
			L _{min}	L _{max}	L _{eq}
03.04.25	N1	Near Project Site	48.2	54.1	51.23
03.04.25	N2	Near Sintore SSK School	42.8	50.6	47.32
04.04.25	N3	Near Nasirhat	45.7	53.6	51.78
04.04.25	N4	Near Atghara FP School	42.8	50.8	47.38
05.04.25	N5	Near Nasirhat Mahajonpara Anganwadi Kandra	45.7	52.9	48.61
05.04.25	N6	Near Balarampur Prathamik School	49.2	56.7	52.78
06.04.25	N7	Near Fatehpur CD High School Ground	45.8	52.9	49.89
06.04.25	N8	Near Anaun Uttar Para Masjid	49.8	54.2	52.18

Compiled by : (Signature)



Name : Dr. AJOY PAUL

For ENVIROCHECK

Date of Issue : 25.04.2025

Place : Kolkata

Certified by : (Signature)



Name : DR. SUMIT CHOWDHURY

Seal :



GROUND WATER QUALITY

GROUND WATER ANALYSIS REPORT

ECO VISION INDIA

Plot No – 27, Khatiyan No – 586 (LR), JL No – 96, Mouza-Haldibari, Kaliyaganj,
Uttar Dinajpur, West Bengal - 733129

MONITORED AND ASSIGNED BY :

ENVIROCHECK
189, Rastraguru Avenue,
Calcutta - 700 028

LOCATION OF SAMPLING :

GW1 : NEAR PROJECT SITE (TUBEWELL)
GW2: NEAR SINGTORE SSK SCHOOL (TUBEWELL)
GW3: NEAR DHANKOLI MORE (TUBEWELL)
GW4: NEAR HALDI BARI (TUBEWELL)

MODE OF SAMPLING:

Grab & mixed.

DATE: 06.04.2025

Sl. No.	Parameters	[GW1]	[GW2]	[GW3]	[GW4]
1	Odour (TON)	Odourless	Odourless	Odourless	Odourless
2	Colour (Hazen)	1	1	1	1
3	Taste	Acceptable	Acceptable	Acceptable	Acceptable
4	Temperature (°C)	16.5	15.0	14.5	16.5
5	Total Suspended Solid (mg/l)	<10.0	<10.0	<10.0	<10.0
6	Total Dissolved Solid (mg/l)	436.0	485.0	450.0	397.0
7	Electrical Conductivity	671.6	750.3	689.4	610.5
8	Turbidity (NTU)	1.62	1.80	1.50	1.23
9	pH	6.8	6.76	6.9	6.85
10	Total Hardness (mg/l)	46.00	53.00	40.00	33.00
11	Dissolved Oxygen (mg/l)	7.2	7	6.8	7.4
12	BOD at 27°C for 3days (mg /l)	<2.0	<2.0	<2.0	<2.0
13	COD (mg./l)	<5.0	<5.0	<5.0	<5.0
14	Carbonate (mg./l)	8.5	12.5	7.2	6.5
15	Alkalinity (mg/l)	27	30	28	20
16	Total Nitrogen (mg/l)	8.2	12.5	7.2	6.5
17	Phenol (mg/l)	<0.01	<0.01	<0.01	<0.01
18	Nitrate + Nitrate (mg/l)	6.5	9.20	6.8	5.60
19	Chloride (mg/l)	42.5	46.50	45.2	36.5
20	Fluoride (mg/l)	<0.1	<0.1	<0.1	<0.1
21	Sulphate (mg/l)	16.5	20	18.2	12.5
22	Bi-Carbonate (mg/l)	32.94	36.6	34.16	24.4
23	Residual Chlorine (mg/l)	<0.01	<0.01	<0.01	<0.01
24	Ortho-Phosphate (mg/l)	3.5	3.8	2.8	2.3
25	Calcium (mg/l)	12.42	16.03	11.62	10.82
26	Magnesium (mg/l)	3.6	3.12	2.64	1.44
27	Potassium (mg/l)	3.5	8.2	9.5	4.6
28	Sodium (mg/l)	23.5	28.5	25.6	18.2
29	Manganese (mg/l)	<0.03	<0.03	<0.03	<0.03
30	Boron (mg/l)	<0.1	<0.1	<0.1	<0.1
31	Lead (mg/l)	<0.05	<0.05	<0.05	<0.05
32	Arsenic (mg/l)	<0.01	<0.01	<0.01	<0.01
33	Zinc (mg/l)	0.29	0.45	0.32	0.25
34	Iron (mg/L)	0.61	0.65	0.48	0.39
35	Copper (mg/l)	<0.04	<0.04	<0.04	<0.04
36	Chromium (VI) (mg/l)	<0.1	<0.1	<0.1	<0.1
37	Nickel (mg/l)	<0.02	<0.02	<0.02	<0.02
38	Mercury (mg/l)	<0.001	<0.001	<0.001	<0.001
39	Cadmium (mg/l)	<0.002	<0.002	<0.002	<0.002
40	Cyanide (mg/l)	<0.01	<0.01	<0.01	<0.01
41	Aluminium (mg/l)	<0.02	<0.02	<0.02	<0.02
42	Total Coliform (CFU/ 100 ml)	<1	<1	<1	<1
43	Fecal Coliform (CFU/100 ml)	<1	<1	<1	<1

<1 indicate No Colony developed.

GROUND WATER ANALYSIS REPORT

ECO VISION INDIA

**Plot No – 27, Khatiyan No – 586 (LR), JL No – 96, Mouza-Haldibari, Kaliyaganj,
Uttar Dinajpur, West Bengal - 733129**

MONITORED AND ASSIGNED BY :

ENVIROCHECK
189, Rastraguru Avenue,
Calcutta - 700 028

LOCATION OF SAMPLING :

GW5 : NEAR VIVEKANANDA CLUB KALIYAGANJ (TUBEWELL)
GW6: NEAR FATEHPUR (TUBEWELL)
GW7: NEAR KALIAGANJ NEAR KALIAGUNJ POLICE STATION (TUBEWELL)
GW8: NEAR DHANKALI HAT (TUBEWELL)

MODE OF SAMPLING:

Grab & mixed.

DATE: 06.04.2025

Sl. No.	Parameters	[GW5]	[GW6]	[GW7]	[GW8]
1	Odour (TON)	Odourless	Odourless	Odourless	Odourless
2	Colour (Hazen)	1	1	1	1
3	Taste	Acceptable	Acceptable	Acceptable	Acceptable
4	Temperature (°C)	16.5	15.0	14.5	16
5	Total Suspended Solid (mg/l)	<10.0	<10.0	<10.0	<10.0
6	Total Dissolved Solid (mg/l)	467.0	480.0	425.0	364.0
7	Electrical Conductivity	720.8	739.6	653.7	552.8
8	Turbidity (NTU)	1.2	1.5	1.6	1.38
9	pH	6.8	6.9	7.1	7.2
10	Total Hardness (mg/l)	69	73	58.0	47
11	Dissolved Oxygen (mg/l)	6.8	6.6	7.2	7.4
12	BOD at 27°C for 3days (mg./l)	<2.0	<2.0	<2.0	<2.0
13	COD (mg./l)	<5.0	<5.0	<5.0	<5.0
14	Carbonate (mg./l)	6.8	7.2	5.2	4.8
15	Alkalinity (mg/l)	38	43	35	27
16	Total Nitrogen (mg/l)	8.2	9.5	6.2	5.6
17	Phenol (mg/l)	<0.01	<0.01	<0.01	<0.01
18	Nitrate + Nitrate (mg/l)	8.5	12.50	9.2	6.5
19	Chloride (mg/l)	36.5	42.8	32.5	28.5
20	Fluoride (mg/l)	<0.1	<0.1	<0.1	<0.1
21	Sulphate (mg/l)	21.5	26.8	18.5	16.2
22	Bi-Carbonate (mg/l)	46.36	52.46	42.7	32.94
23	Residual Chlorine (mg/l)	<0.01	<0.01	<0.01	<0.01
24	Ortho-Phosphate (mg/l)	6.5	7.2	5.8	4.5
25	Calcium (mg/l)	20.04	21.24	24.04	12.02
26	Magnesium (mg/l)	4.56	4.8	4.32	4.08
27	Potassium (mg/l)	18.2	21.5	12.5	9.2
28	Sodium (mg/l)	26.5	34.8	23.1	19.5
29	Manganese (mg/l)	<0.03	<0.03	<0.03	<0.03
30	Boron (mg/l)	<0.1	<0.1	<0.1	<0.1
31	Lead (mg/l)	<0.05	<0.05	<0.05	<0.05
32	Arsenic (mg/l)	<0.01	<0.01	<0.01	<0.01
33	Zinc (mg/l)	0.48	0.62	0.34	0.45
34	Iron (mg/L)	0.68	0.71	0.54	0.43
35	Copper (mg/l)	<0.04	<0.04	<0.04	<0.04
36	Chromium (VI) (mg/l)	<0.1	<0.1	<0.1	<0.1
37	Nickel (mg/l)	<0.02	<0.02	<0.02	<0.02
38	Mercury (mg/l)	<0.001	<0.001	<0.001	<0.001
39	Cadmium (mg/l)	<0.002	<0.002	<0.002	<0.002
40	Cyanide (mg/l)	<0.01	<0.01	<0.01	<0.01
41	Aluminium (mg/l)	<0.02	<0.02	<0.02	<0.02
42	Total Coliform (CFU/ 100 ml)	<1.0	<1.0	<1.0	<1.0
43	Fecal Coliform (CFU/100 ml)	<1.0	<1.0	<1.0	<1.0

<1 indicate No Colony developed .

Compiled by : (Signature)

Date of Issue : 20.05.2024

Certified by : (Signature)

Name : DR. AJOY PAUL

Seal :



Name : DR. S.B.CHOWDHURY

SURFACE WATER QUALITY

SURFACE WATER ANALYSIS REPORT

ECO VISION INDIA

Plot No – 27, Khatiyon No – 586 (LR), JL No – 96, Mouza-Haldibari, Kaliyaganj,
Uttar Dinajpur, West Bengal - 733129

MONITORED AND ASSIGNED BY :

ENVIROCHECK
189, Rastraguru Avenue,
Calcutta - 700 028

LOCATION OF SAMPLING :

SW1 : NEAR PROJECT SITE (POND)
SW2: NEAR NEAR SINTAIR (POND)
SW3: NEAR NASIRHAT (POND)
SW4: NEAR ATGHARA (POND)

MODE OF SAMPLING:

Grab & mixed.

DATE OF SAMPLING : 03.04.25

Sl. No.	Parameters	[SW1]	[SW2]	[SW3]	[SW4]
1	Odour (T.O.N)	Odourless	Odourless	Odourless	Odourless
2	Temperature (°C)	14.0	15	14.5	14
3	pH	7.23	7.28	7.2	7.36
4	Total Suspended Solid (mg./l)	16.0	18.0	23.0	20.0
5	Total Dissolved Solid (mg./l)	310.0	350.0	380.0	230.0
6	Electrical Conductivity	475.6	539	581.3	349.73
7	Turbidity	1.68	1.80	1.65	1.50
8	Total Hardness (mg/l)	65.0	70.0	85.0	50.0
9	Dissolved Oxygen (mg/l)	7.2	7.0	6.8	7.4
10	BOD, 3 days at 27°C (mg./l)	3.0	4.0	6.0	3.0
11	COD (mg./l)	10.0	12.0	15.0	10.0
12	Oil & Grease (mg./l)	<1.0	<1.0	<1.0	<1.0
13	Salinity (ppt.)	0.0	0.0	0.0	0.0
14	Kjeldahl Nitrogen (mg/l)	3.6	5.2	6.5	2.5
15	NH ₃ - N (mg/l)	1.6	2.1	2.3	1.5
16	Nitrate + Nitrite (mg/l)	6.5	8.2	12.5	5.8
17	Chloride (mg/l)	32.5	38.5	41.8	21.5
18	Fluoride (mg/l)	<0.1	<0.1	<0.1	<0.1
19	Sulphates as SO ₄ (mg/l)	18.2	23.5	28.5	15.0
20	Alkalinity (mg/l)	35.0	39.0	48.0	27.0
21	Bi-Carbonate (mg/l)	43.50	48.50	58.2	32.5
22	Total P (mg/l)	8.5	12.5	16.2	11.5
23	Phosphate (mg/l)	5.3	6.2	7.2	6.5
24	Calcium (mg/l)	16.43	19.64	25.65	15.23
25	Magnesium (mg/l)	5.76	5.04	5.04	2.88
26	Potassium (mg/l)	9.5	12.5	18.5	6.2
27	Sodium (mg/l)	41.2	56.8	65.2	26.5
28	Manganese (mg/l)	<0.02	<0.02	<0.02	<0.02
29	Boron (mg/l)	<0.1	<0.1	<0.1	<0.1
30	Lead (mg/l)	<0.05	<0.05	<0.05	<0.05
31	Arsenic (mg/l)	<0.01	<0.01	<0.01	<0.01
32	Zinc (mg/l)	0.12	0.1	0.16	0.08
33	Iron (mg/l)	0.08	0.12	0.1	0.06
34	Chromium (Total) (mg/l)	<0.02	<0.02	<0.02	<0.02
35	Hexavalent Chromium (mg/l)	<0.1	<0.1	<0.1	<0.1
36	Nickel (mg/l)	<0.02	<0.02	<0.02	<0.02
37	Mercury (mg/l)	<0.001	<0.001	<0.001	<0.001
38	Cadmium (mg/l)	<0.002	<0.002	<0.002	<0.002
39	Total Coliform /100 ml.	2.3x10 ⁴	2.5x10 ⁴	2.8x10 ⁴	1.9x10 ⁴
40	Faecal Coliform (MPN/100 ml.)	9.2x10 ³	8.5x10 ³	8.6x10 ³	6.2x10 ³

SURFACE WATER ANALYSIS REPORT

ECO VISION INDIA
Plot No – 27, Khatiyan No – 586 (LR), JL No – 96, Mouza-Haldibari, Kaliyaganj,
Uttar Dinaipur, West Bengal - 733129

MONITORED AND ASSIGNED BY :
ENVIROCHECK
189, Rastraguru Avenue,
Calcutta - 700 028

LOCATION OF SAMPLING :
SW5 : NEAR KALIAGUNJ COLLEGE (POND)
SW6: NEAR BALARAMPUR STADIUM (POND)
SW7: 100 M UP-STREAM OF TANGON RIVER (RIVER)
SW8: 100 M DOWN-STREAM OF TANGON RIVER (RIVER)

MODE OF SAMPLING:
Grab & mixed.

DATE OF SAMPLING : 03.04.25

Sl. No.	Parameters	[SW5]	[SW6]	[SW7]	[SW8]
1	Odour (T.O.N)	Odourless	Odourless	Odourless	Odourless
2	Temperature (°C)	15.0	16.5	15.0	16.0
3	pH	7.2	6.9	7.36	7.45
4	Total Suspended Solid (mg./l)	20.0	26.0	16.0	18.0
5	Total Dissolved Solid (mg./l)	350.0	380.0	230.0	260.0
6	Electrical Conductivity	526.6	579	341.0	396.3
7	Turbidity	1.65	1.57	1.8	1.9
8	Total Hardness (mg/l)	32.0	36.0	25.0	2.9
9	Dissolved Oxygen (mg/l)	6.8	7.2	7.4	7.6
10	BOD . 3 days at 27°C (mg./l)	5.0	6.0	7.0	6.0
11	COD (mg./l)	16.0	15.2	20.0	23.0
12	Oil & Grease (mg./l)	<1.0	<1.0	<1.0	<1.0
13	Salinity (ppt.)	0.0	0.0	0.0	0.0
14	Kjeldahl Nitrogen (mg/l)	3.5	3.8	2.3	2.1
15	NH ₃ - N (mg/l)	1.8	1.9	2.3	2.5
16	Nitrate + Nitrate (mg/l)	6.5	7.2	6.5	9.2
17	Chloride (mg/l)	23.6	28.58	16.33	19.96
18	Fluoride (mg/l)	<0.1	<0.1	<0.1	<0.1
19	Sulphates as SO ₄ (mg/l)	16.5	18.2	21.5	25
20	Alkalinity (mg/l)	26.0	32.0	22.0	26.0
21	Bi-Carbonate (mg/l)	31.72	39.04	26.84	31.72
22	Total P (mg/l)	7.2	8.9	6.5	8.2
23	Phosphate (mg/l)	3.2	4.5	3.8	5.2
24	Calcium (mg/l)	8.02	11.62	7.21	7.62
25	Magnesium (mg/l)	2.88	1.68	1.68	2.4
26	Potassium (mg/l)	4.5	5.8	6.2	8.5
27	Sodium (mg/l)	16.50	21.8	15.2	23.8
28	Manganese (mg/l)	<0.02	<0.02	<0.02	<0.02
29	Boron (mg/l)	<0.1	<0.1	<0.1	<0.1
30	Lead (mg/l)	<0.05	<0.05	<0.05	<0.05
31	Arsenic (mg/l)	<0.01	<0.01	<0.01	<0.01
32	Zinc (mg/l)	0.09	0.1	0.06	0.08
33	Iron (mg/l)	0.06	0.08	0.12	0.07
34	Chromium (Total) (mg/l)	<0.02	<0.02	<0.02	<0.02
35	Hexavalent Chromium (mg/l)	<0.1	<0.1	<0.1	<0.1
36	Nickel (mg/l)	<0.02	<0.02	<0.02	<0.02
37	Mercury (mg/l)	<0.001	<0.001	<0.001	<0.001
38	Cadmium (mg/l)	<0.002	<0.002	<0.002	<0.002
39	Total Coliform /100 ml.	2.6X10 ⁴	3.2X10 ⁴	2.8X10 ⁴	3.8X10 ⁴
40	Faecal Coliform (MPN/100 ml.)	8.5X10 ³	9.2X10 ³	1.6X10 ³	6.8X10 ³

Compiled by : (Signature)

Date of Issue : 21.05.2025

Certified by : (Signature)


Name : DR. AJAY PAUL

Seal :




Name : DR. S.B. CHOWDHURY

ANNEXURE - 8.0
SOIL ANALYSIS

SOIL ANALYSIS REPORT FOR

ECO VISION INDIA**Plot No – 27, Khatiyan No – 586 (LR), JL No – 96, Mouza-Haldibari, Kaliyaganj, Uttar Dinaipur, West Bengal - 733129****MONITORED AND ASSIGNED BY:**Envirocheck
189, Rastraguru Avenue,
Calcutta - 700 028**LOCATION OF SAMPLING :**S1 : INSIDE PROJECT SITE
S2 : NEAR BISWADEB MATH
S3 : NEAR ANAUN UTTAR PARA MASJID
S4 : NEAR PLAYGROUND OF FATEHPUR CD HIGH SCHOOL

Date : 03.04.2025

No.	Name of the soil sampling site	[S1]	[S2]	[S3]	[S4]
1	Description of Soil	Undisturbed soil	Undisturbed soil	Undisturbed soil	Undisturbed soil
	<u>PARAMETERS</u>				
	PHYSICAL				
2	Colour	Grayish	Grayish	Grayish	Grayish
3	pH (1:2)	7.36	7.46	7.23	7.12
4	Particle size distribution				
	Soil Texture (upto 60 cm depth)	Sandy loam	Sandy loam	Sandy loam	Sandy loam
	Sand (%)	60	55	65	70
	Silt (%)	20	20	20	20
	Clay (%)	20	25	15	10
5	Electrical conductivity	1.6	1.8	1.5	1.8
6	Cation exchange capacity	12.4	14.7	13.9	11
7	Sodium Absorption Ratio (SAR)	6.15	5.22	5.73	5.44
8	Permeability (cm/sec)	1.5	1.8	2.1	2.3
9	Water holding capacity (%)	45	42	38	34
	CHEMICAL				
10	Nitrogen (mg/Kg)	1080	660	680	580
11	Potassium (mg/Kg)	1250	710	920	620
12	Phosphorous (mg/Kg)	680	980	620	380
13	Organic Carbon (gm/Kg)	6.5	5.2	4.8	3.8
14	Sodium (mg/kg)	680	650	710	730
15	Calcium (mg/kg)	650	780	830	660
16	Magnesium (gm/kg)	720	1080	890	750

Compiled by : (Signature)

Name : Dr. AJAY PAUL

For ENVIROCHECK

Date of Issue : 22.05.2025

Place : Kolkata

Certified by : (Signature)

Name : DR. SUMIT CHOWDHURY

Seal :



Annexure – 9

TRAFFIC DENSITY SURVEY

ECO VISION INDIAPlot No – 27, Khatiyon No – 586 (LR), JL No – 96, Mouza-Haldibari, Kaliyaganj,Uttar Dinajpur, West Bengal - 733129**MONITORED BY :**

ENVIROCHECK

189, Rastraguru Avenue,

Kolkata - 700 028

SURVEY SITE 1: Raiganj- Buniadpur Rd

DATE OF SAMPLING: 04/04/2025

Time	Car & Jeep	Bus	Truck	Two Wheeler	Total
8:00 – 9:00 A.M	32	8	8	85	133
9:00 – 10:00 A.M	53	12	6	126	197
10:00 – 11:00 A.M	85	8	8	91	192
11:00 – 12:00 P.M	76	15	10	85	186
12:00 – 1:00 P.M	71	12	8	110	201
1:00 – 2:00 P.M	67	8	5	102	182
2:00 – 3:00 P.M	62	10	9	85	166
3:00 – 4:00 P.M	71	4	8	81	164
4:00 – 5:00 P.M	36	6	6	65	113
5:00 – 6:00 P.M	38	8	2	63	111
6:00 – 7:00 P.M	51	5	5	80	141
7:00 – 8:00 P.M	42	3	8	45	98
8:00 – 9:00 P.M	23	4	3	42	72
9:00 – 10:00 P.M	28	2	6	38	74
10:00 – 11:00 P.M	12	0	8	18	38
11:00 – 12:00 A.M	8	0	5	20	33
12:00 – 1:00 A.M	6	0	6	12	24
1:00 – 2:00 A.M	3	0	10	8	21
2:00 – 3:00 A.M	5	0	16	2	23
3:00 – 4:00 A.M	3	0	18	5	26
4:00 – 5:00 A.M	4	0	12	3	19
5:00 – 6:00 A.M	3	0	15	23	41
6:00 – 7:00 A.M	18	8	8	28	62
7:00 – 8:00 A.M	23	5	5	46	79

TRAFFIC DENSITY SURVEY**ECO VISION INDIA****Plot No – 27, Khatiyan No – 586 (LR), JL No – 96, Mouza-Haldibari, Kaliyaganj,****Uttar Dinajpur, West Bengal - 733129****MONITORED BY :**

ENVIROCHECK

189, Rastraguru Avenue,
Kolkata - 700 028

SURVEY SITE 2: Kunore Rd

DATE OF SAMPLING: 04/04/2025

Time	Car & Jeep	Bus	Truck	Two Wheeler	Total
8:00 – 9:00 A.M	12	5	0	23	40
9:00 – 10:00 A.M	42	8	0	28	78
10:00 – 11:00 A.M	16	12	2	35	65
11:00 – 12:00 P.M	23	6	5	38	72
12:00 – 1:00 P.M	28	8	0	46	82
1:00 – 2:00 P.M	36	10	0	32	78
2:00 – 3:00 P.M	32	6	0	51	89
3:00 – 4:00 P.M	28	5	0	28	61
4:00 – 5:00 P.M	30	6	0	38	74
5:00 – 6:00 P.M	25	3	0	26	54
6:00 – 7:00 P.M	28	5	3	21	57
7:00 – 8:00 P.M	43	2	5	18	68
8:00 – 9:00 P.M	26	0	2	12	40
9:00 – 10:00 P.M	21	0	0	15	36
10:00 – 11:00 P.M	18	0	0	10	28
11:00 – 12:00 A.M	8	0	0	8	16
12:00 – 1:00 A.M	5	0	0	6	11
1:00 – 2:00 A.M	7	0	0	5	12
2:00 – 3:00 A.M	8	0	0	3	11
3:00 – 4:00 A.M	3	0	0	4	7
4:00 – 5:00 A.M	2	0	0	3	5
5:00 – 6:00 A.M	5	0	0	8	13
6:00 – 7:00 A.M	12	3	0	10	25
7:00 – 8:00 A.M	36	8	0	26	70

Compiled by : (Signature)



Name : Dr. AJOY PAUL

For ENVIROCHECK

Date of Issue : 16/04/2025

Place : Kolkata

Certified by : (Signature)



Name : DR. SUMIT CHOWDHURY

Seal :



Annexure-10



National Accreditation Board for Education and Training

Certificate of Accreditation

ENVIROCHECK

63/B, Rastraguru Ave, Clive House, Ramgarh, Kamardanga, South Dumdum, Kolkata, West Bengal- 700028

The organization is accredited as **Category-A** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organization, Version 3: for preparing EIA/EMP reports in the following Sectors-

S. No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1.	Mining of minerals including opencast & underground	1	1 (a) (i)	A
2.	Thermal power plants	4	1 (d)	A
3.	Metallurgical industries (Ferrous & non-ferrous)	8	3 (a)	A
4.	Cement plants	9	3 (b)	A
5.	Petroleum refining industry	10	4 (a)	A
6.	Petro-chemical complexes	18	5 (c)	A
7.	Petrochemical based processing	20	5 (e)	A
8.	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	21	5 (f)	B
9.	Industrial estates/parks/complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes	31	7(c)	A
10.	Ports, harbours, jetties, marine terminals, break waters and dredging	33	7(e)	A
11.	Highways	34	7 (f)	A
12.	Common Municipal Solid Waste Management Facility (CMSWMF)	37	7 (i)	B
13.	Building and construction projects	38	8 (a)	B
14.	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in SAAC minutes dated February 18, 2025, posted on QCI-NABET website.

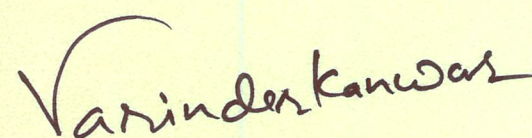
The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/25/3615 dated May 30, 2025. The accreditation needs to be renewed before the expiry date ENVIROCHECK, Kolkata following due process of assessment.

Valid up to
January 18, 2026



Certificate No.
NABET/EIA/23-26/SA 0238

Issue Date
May 30, 2025



Prof (Dr) Varinder S Kanwar
CEO - NABET

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.





National Accreditation Board for
Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

ENVIROCHECK

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

**"General Requirements for the Competence of Testing &
Calibration Laboratories"**

for its facilities at

63/B, 189, 190 & 192 RASTRAGURU AVENUE, 24 PARGANAS (N), WEST BENGAL, INDIA

in the field of

TESTING

Certificate Number: TC-6014

Issue Date: 13/01/2025

Valid Until: 12/01/2029

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Entity: ENVIROCHECK

Signed for and on behalf of NABL



Anuja Anand
Director

N. Venkateswaran
Chief Executive Officer

CERTIFICATE



ENVIROCHECK

ADDRESS : 63/B, 189, 190 & 192 RASTRAGURU AVENUE, KOLKATA – 700028,
WEST BENGAL, INDIA

Certify that the quality management system of the above organization has been audited
and found to be in accordance with the requirements of standard detailed below

ISO 9001:2015

For The Following Scope

ENVIRONMENTAL, SOIL, CHEMICAL, FOOD TESTING LABORATORY AND
ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Certificate No:- QACS-UAF-Q-EC-10.23.1041

EA Code:- 35

*This certificate is issued in accordance with the QACS International Pvt. Ltd. auditing and
Certification procedures and it is remain valid subject to annual surveillance audit.

Certificate Issue Date	: 04.12.2023	1 st surveillance Date	: 03.12.2024
Dated Of Initial Registration	: 04.12.2023	2 nd surveillance Date	: 03.12.2025
Certificate Validity	: 03 Years	*Certificate Expiry Date	: 03.12.2026

Note: Certificate shall be valid after surveillance, only if continuation letter by QACS is present.

QACS International Pvt. Ltd.
Kh. No. 850, 2nd floor, opp.SBI bank, sant nagar Burari,
delhi-110084
Email: info@qacsworld.com
To check the certificate validity please refer
Web: www.globalqacs.com

QACS Accredited By:
United Accreditation Foundation Inc. (UAF)
400 North Centre DR, STE 202, Norfolk,
VA 23502, United States Of America (USA)
Web: www.uafaccreditation.org

Authorized Signatory



CB-MS-6335

Disclaimer :- This certificate is issued on the basis of random onsite inspection w.r.t. System/Product
Certification of organisation as per the standard mentioned. This Certification do not involve any financial
auditing. This certificate cannot be used as justification for running any type of deposit schemes. QACS will not
be responsible if someone give deposit/advance based on this System/Product certification mistreating at as
international financial audit.





CERTIFICATE

ENVIROCHECK

ADDRESS: 63/B, 51, 185, 186, 189, 190 & 192 RASTRAGURU AVENUE,
KOLKATA – 700028, WEST BENGAL, INDIA

QACS certify that the environmental management system of the above organization has been audited and found to be in accordance with the requirements of standard detailed below

ISO 14001:2015

For The Following Scope

ENVIRONMENTAL, CHEMICAL, FOOD, COAL, MINERAL & FERTILIZER
AND MICROBIOLOGICAL TESTING LABORATORY

Certificate No:- QACS-UAF-E-EN-875

EA Code:- 34

*This certificate is issued in accordance with the QACS International Pvt. Ltd. auditing and Certification procedures and it is remain valid subject to annual surveillance audit.

Certificate Issue Date	: 27.08.2024	1st Surveillance Date	: 26.08.2025
Dated Of Initial Registration	: 27.08.2024	2nd Surveillance Date	: 26.08.2026
Certificate Validity	: 03 Years	*Certificate Expiry Date	: 26.08.2027

Note: Certificate shall be valid after surveillance, only if continuation letter by QACS is present.

QACS International Pvt. Ltd.
Kh. No. 850, 2nd floor, opp.SBI bank,
sant nagar Burari, delhi-110084
Email: info@qacsworld.com
To check the certificate validity please refer
Web: www.globalqacs.com

QACS Accredited By:
United Accreditation Foundation Inc. (UAF)
400 North Centre DR, STE 202, Norfolk,
VA 23502, United States Of America (USA)
Web: www.uafaccreditation.org

Authorized Signatory



Disclaimer :- This certificate is issued on the basis of random onsite inspection w.r.t. System/Product Certification of organisation as per the standard mentioned. This Certification do not involve any financial auditing. This certificate cannot be used as justification for running any type of deposit schemes. QACS will not be responsible if someone give deposit/advance based on this System/Product certification mistreating at as international financial audit.





CERTIFICATE

ENVIROCHECK

OFFICE ADDRESS: 63/B, RASTRAGURU AVENUE, KOLKATA – 700028, W.B., INDIA

WORKS ADDRESS: 189, 190 & 192 RASTRAGURU AVENUE, KOLKATA – 700028, W.B., INDIA

QACS certify that the occupational health & safety management system of the above organization has been audited and found to be in accordance with the requirements of standard detailed below

ISO 45001:2018

For The Following Scope

ENVIRONMENTAL, CHEMICAL, MICROBIOLOGICAL, FOOD, COAL, ORES & MINERALS, FERTILIZER AND TRANSFORMER OIL TESTING LABORATORY

Certificate No:- QACS-UAF-OH-EC-02.24.859

IAF Code:- 34

*This certificate is issued in accordance with the QACS International Pvt. Ltd. auditing and Certification procedures and it is remain valid subject to annual surveillance audit.

Certificate Issue Date	: 06.05.2025	1st Surveillance Date	: 21.07.2026
Dated Of Initial Registration	: 23.04.2024	2nd Surveillance Date	: 21.07.2027
Certificate Validity	: 03 Years	*Certificate Expiry Date	: 21.07.2028
		Revision	: 01

Note: Certificate shall be valid after surveillance, only if continuation letter by QACS is present.

QACS International Pvt. Ltd.
Kh. No. 850, 2nd floor, opp.SBI bank,
sant nagar Burari, delhi-110084
Email: info@qacsworld.com
To check the certificate validity please refer
Web: www.globalqacs.com

QACS Accredited By:
United Accreditation Foundation Inc. (UAF)
1060 Laskin Road, STE 12B/13B
Virginia Beach, VA 23451
United States of America (USA)
Web: www.uafaccreditation.org

[Signature]

Authorized Signatory



Disclaimer :- This certificate is issued on the basis of random onsite inspection w.r.t. System/Product Certification of organisation as per the standard mentioned. This Certification do not involve any financial auditing. This certificate cannot be used as justification for running any type of deposit schemes. QACS will not be responsible if someone give deposit/advance based on this System/Product certification mistreating at as International financial audit.

